City Council Regular Meeting Agenda
Tuesday, February 17, 2026, 7:00 PM
Council Chambers, 616 NE 4th AVE

NOTE: The City welcomes public meeting citizen participation. TTY Relay Service: 711. In compliance with the ADA, if you need special assistance to participate in a meeting, contact the City Clerk's office at (360) 834-6864, 72 hours prior to the meeting so reasonable accommodations can be made (28 CFR 35.102-35.104 ADA Title 1)

To observe the meeting (no public comment ability)
- go to https://vimeo.com/event/5727805

To participate in the meeting (able to public comment)
- go to https://cityofcamas-us.zoom.us/j/88951076096
(public comments may be submitted to publiccomments@cityofcamas.us)

CALL TO ORDER

PLEDGE OF ALLEGIANCE

ROLL CALL

PUBLIC COMMENTS

CONSENT AGENDA

NOTE: Consent Agenda items may be removed for general discussion or action.

1. February 2, 2026 Camas City Council Regular and Workshop Meeting Minutes
2. Automated Clearing House and Claim Checks Approved by Finance Committee
3. $327,784 to HDR Engineering for Task Order 9 Camas NPDES Support Outfall and Sediment Study
(Submitted by Rob Charles, Utilities Manager)
4. 2026 Surplus Equipment
(Submitted by Will Noonan, Public Works Operations Manager)
5. Final Plat Approval for Camas Heights Ph. III Subdivision
(Submitted by Madeline Coulter, Planner)
6. Citywide Horizontal Curve Safety Improvements, Vertex Contracting LLC, Final Acceptance
(Submitted by James Carothers, Engineering Manager)
7. NW 38th Avenue Improvements Phase 3, Rotschy Inc., Final Acceptance
(Submitted by James Carothers, Engineering Manager)

MAYOR

8. Mayor Announcements

9. Council Assignment - Washington State Energy Facility Site Evaluation Council (EFSEC)

MEETING ITEMS

10. Public Hearing – SunCal Development Agreement and Master Plan
    Presenter: Robert Maul, Planning Manager
    Time Estimate: 30 minutes

PUBLIC COMMENTS

NON-AGENDA ITEMS

11. Staff

12. Council

CLOSE OF MEETING

City Council Workshop Minutes - Draft
Monday, February 02, 2026, 4:30 PM
Council Chambers, 616 NE 4th AVE

NOTE: Please see the published Agenda Packet for all item file attachments

CALL TO ORDER

Mayor Hogan called the meeting to order at 4:30 p.m.

ROLL CALL

Present: Council Members Marilyn Boerke, Martin Elzingre, Mahsa Eshghi, John Nohr, Jennifer Senescu and John Svilarich

Remote: Council Member Tim Hein

Staff: Sydney Baker, James Carothers, Rob Charles, Scott Collins, Carrie Davis, Cliff Free, Jennifer Gorsuch, Jim Hodges, Cathy Huber Nickerson, Michelle Jackson, Tina Jones, Robert Maul, Alan Peters, Doug Quinn, Bryan Rachal, Heidi Steffensen, Connie Urquhart and Chris Witkowski

Press: Doug Flanagan, Camas-Washougal Post Record

PUBLIC COMMENTS

No one from the public wished to speak.

WORKSHOP TOPICS

1. Downtown Parking Changes
   Presenter: James Carothers, Engineering Manager

   This item was for Council's information only.

2. Professional Services Agreement Task Order 9 for Camas National Pollutant Discharge Elimination System Permit (NPDES) Support Outfall and Sediment Study
   Presenter: Rob Charles, Utilities Manager

   This item will be placed on the February 17, 2026 City Council Regular Meeting Consent Agenda for Council's consideration.

3. Staff Miscellaneous Updates
   Presenter: Doug Quinn, City Administrator

   Quinn commented about Jim Hodges retirement.

Rachal provided a legislative update.

Peters provided an update on Our Camas 2045 Preferred Alternative.

PUBLIC COMMENTS

No one from the public wished to speak.

COUNCIL COMMENTS AND REPORTS

Boerke attended Molly Coston's Celebration of Life. Boerke commented on the Downtown Camas Association (DCA) Little Art Camas event. Boerke commented on the form of government discussion.

Nohr attended Molly Coston's Celebration of Life. Nohr commented about the form of government discussion.

Elzingre attended the Camas Washougal Chamber of Commerce Luncheon, a Lacamas Watershed Council meeting and the 2026 Volunteer & Community Engagement Summit. Elzingre commented about Little Art Camas and the form of government discussion.

Svilarich attended Molly Coston's Celebration of Life and the Camas Washougal Chamber of Commerce Luncheon.

Senescu attended Molly Coston's Celebration of Life and the Camas Washougal Chamber of Commerce Luncheon. Senescu commented about the upcoming Camas Washougal Chamber of Commerce Luncheon presentations for State of the Schools and State of the Cities. Senescu commented about the form of government discussion.

Eshghi attended Molly Coston's Celebration of Life and the Port of Camas Washougal meeting and provided updates from the Port. Eshghi attended the City/School Committee meeting. Eshghi commented about the Camas Mill clean up.

Hein attended the Parks & Recreation Commission meeting. Hein commented about Molly Coston and the form of government discussion.

Mayor Hogan commented about the Joint Policy Advisory Committee (JPAC) and Regional Fire Authority (RFA), a Prosecuting Attorney rate increase and recommending Council Member Senescu for the Cascade Renewable Transmission advisory group.

CLOSE OF MEETING

The meeting closed at 5:41 p.m.

City Council Regular Meeting Minutes - Draft
Monday, February 02, 2026, 7:00 PM
Council Chambers, 616 NE 4th AVE

NOTE: Please see the published Agenda Packet for all item file attachments

CALL TO ORDER

Mayor Hogan called the meeting to order at 7:00 p.m.

PLEDGE OF ALLEGIANCE

ROLL CALL

Present: Council Members Marilyn Boerke, Martin Elzingre, Mahsa Eshghi, John Nohr, Jennifer Senescu and John Svilarich

Remote: Council Member Tim Hein

Staff: Sydney Baker, James Carothers, Rob Charles, Scott Collins, Carrie Davis, Cliff Free, Jennifer Gorsuch, Cathy Huber Nickerson, Tina Jones, Shawn MacPherson, Robert Maul, Alan Peters, Doug Quinn, Bryan Rachal, Heidi Steffensen, Connie Urquhart and Chris Witkowski

Press: No one from the press was present.

MAYOR

5. Mayor Announcements

   There were no additional Mayor comments.

6. Black History Month Proclamation

   February 2026 as Black History Month in the City of Camas.

PUBLIC COMMENTS

Douglas Tweet, Camas, commented about Interstate Bridge Replacement and Light Rail.

Margaret Tweet, Camas commented about CTRAN.

Jenn Buford, Camas, commented about code enforcement.

CONSENT AGENDA

NOTE: Consent Agenda items may be removed for general discussion or action.

1. January 20, 2026 Camas City Council Regular and Workshop Meeting Minutes

2. $2,634,899.82 Automated Clearing House 703141-703226 and Claim Checks 162168-162316 and $453.03 Camas Assistance Program (CAP) Check 162167 Approved by Finance Committee

3. Construction Award for Advanced Meter Infrastructure
(Submitted by Rob Charles, Utilities Manager)

4. Final Plat Approval for the Overlook at Prune Hill Subdivision Final Plat
(Submitted by Madeline Coulter, Planner)

It was moved by Elzingre, and seconded, to approve the Consent Agenda. The motion passed unanimously.

MEETING ITEMS

7. Resolution 26-001 Creating a Police Lieutenant position
Presenter: Jennifer Gorsuch, Administrative Services Director

It was moved by Nohr, and seconded, to adopt Resolution No. 26-001. The motion passed unanimously.

8. Professional Services Agreement Amendment General Sewer Plan Update
Presenter: Rob Charles, Utilities Manager

It was moved by Boerke, and seconded, to approve the Professional Services Agreement Amendment General Sewer Plan Update. The motion passed unanimously.

9. Ordinance No. 26-001 Providing for the Vacation of a Portion of SE Bybee Road
Presenter: James Carothers, Engineering Manager

It was moved by Boerke, and seconded, to approve Ordinance No. 26-001 and publish according to law. The motion passed unanimously.

PUBLIC COMMENTS

Douglas Tweet, Camas, commented about the Fire Department.

NON-AGENDA ITEMS

10. Staff

There were no staff updates.

11. Council

Eshghi commented about the Camas School District's covered tennis court.

Boerke commented about public comments.

Senescu commented about Curt Warner.

Mayor Hogan commented about an upcoming Executive Session.

CLOSE OF MEETING

The meeting closed at 7:30 p.m.

City of Camas

Wastewater Treatment Plant

Scope of Services

For

Task Order No. 009

NPDES Permit Study Support

November 2025

1050 SW 6th Ave, Ste 1800

Portland, OR 97204

(503) 423-3700

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EXHIBIT A

SCOPE OF SERVICES

Background

City of Camas owns the Wastewater Treatment Plant (WWTP). The facility treats wastewater using activated sludge, nutrient removal, pH adjustment, filtration, and UV disinfection. The WWTP operates under Pollutant Discharge Elimination System (NPDES) Permit WA0020249 for discharge to the Columbia River, effective 8/1/2025. The City of Camas requires assistance with implementation of the renewed NPDES permit including two studies and reports.

This scope of work includes the following tasks, following NPDES permit requirements:

- Sediment Data Report Field Sampling, Analyses and Report
- Outfall Evaluation

A sediment analysis plan was completed under Task Order 4. If the Washington State Department of Ecology (Ecology) requires information in addition to that provided in this scope of work, the additional work is subject to an amendment.

Scope of Services

Task 100 Project Management

Objective
The purpose of this task is to monitor the work of HDR and subconsultants, coordinate with City staff, monitor and adjust scope, schedule, and budget as well as provide monthly status reporting, accounting, and invoicing.

HDR Services

- Prepare a Project Management Plan (PMP) outlining the scope, team organization, schedule, safety and communications information for the HDR team. Implement the PMP by conducting overall quality control reviews and processes for the duration of the project.
- Coordinate and manage the project team.
- Subcontract with and manage project subconsultants.
- Prepare monthly status reports describing the following:
    - Services completed during the month
    - Services planned for the next month
    - Needs for additional information

  - Scope/schedule/budget status
  - Schedule updates

- Prepare monthly invoices.
- Conduct monthly conference calls to review status of work in progress and project needs and to review project scope, schedule, and budget status..
- Lead and coordinate a project kickoff meeting with the City.

City Responsibilities

- Attend project management conference calls, and project kick-off meeting.
- Coordinate with City staff on attendance at meetings, or for data requests/needs of the project team.
- Timely processing and payment of invoices.
- Review and process contract change requests and amendments, if needed.

Assumptions

- The project duration is expected to be 20 months from the Notice to Proceed (NTP). HDR anticipates assisting the City with discussions involving the study approvals with Ecology through June 2026.
- The PMP is intended for HDR project team but available to the City upon request.
- Invoices will be HDR standard invoice format.
- Expense backup will not be provided with invoices but will be available from HDR upon request.
- Project management meetings will be held via video conferencing (i.e., Cisco Webex or Microsoft Teams) at the beginning of each month. Up to 1 hour of project manager time will be required for each meeting including preparation, attendance, follow-up, and notes.
- The Kickoff Meeting will be held in person at the City. This effort is assumed to be three hours in length, virtual, and attended by up to 2 HDR staff members. HDR will prepare the agenda and summary notes.

Deliverables

- Monthly reports and invoices (one copy with invoice to be e-mailed)
- Monthly project schedule and budget updates.
- Project management meeting agenda and notes (PDF).

Task 200 Sediment Data Report Field Sampling, Analyses and Report

Objective

The purpose of this task is to conduct the field work, lab work, analysis and reporting for the NPDES permit's S10.B Sediment Data Report (SDR) requirement.

HDR Services

FIELD WORK

HDR will conduct field work for sediment sampling between August 15 and September 30, 2026. The field work will be conducted in accordance with Ecology guidance provided within the Sediment Cleanup User's Manual (SCUM), Ecology Publication 12-09-057 and the approved Sampling and Analysis Plan. Surface sediment grab samples will be collected from up to six sampling station locations around the existing City outfall. The overall study design is intended to facilitate comparison between the sediment data collected upstream of the current outfall to those collected downstream of the same outfall. Priority for sediment sampling will be for biological toxicity endpoints approved by Ecology and listed in Table A-4 of Appendix A in the SCUM (Ecology 2021).

Sediment samples will be collected from a research vessel.

The HDR has budgeted for 3 staff for 2 days of field work, up to 6 samples for bioassay and sediment chemistry.

DATA ANALYSIS, RECORDKEEPING AND REPORTING

Data from the sediment investigation will be summarized in a data report that interprets chemical and biological test results in accordance with the approved SAP. Samples that exceed criteria and their respective values will be identified in the data report summary.

Following completion of the draft SDR, the City and HDR will meet to review City comments.

Once City comments have been incorporated into the draft SDR, a meeting will be scheduled by the City to discuss with Ecology comments on the SDR.

HEALTH AND SAFETY PLAN

HDR will coordinate the Health and Safety Plan as outlined in Section 8 of the Sediment Sampling Analysis Plan. HDR will provide PPE for HDR field personnel.

City Responsibilities

- Provide comments on the Draft SDR within 2 weeks of draft submission to City.
- Provide City personnel during field activities to facilitate coordination with City as needed.
- Provide river access and space for equipment storage and sample preparation.
- City will help accommodate and support the coordination of the Health and Safety Plan as needed.

Assumptions

- Data entry into Environmental Information Management System (EIM) is not part of this scope of work.
- Validation of lab data is not part of this scope of work.

- Vessel for in water work will be provided by a marine subcontractor. Marine subcontractor will supply equipment (van veen grab sampler or similar) for gathering samples. Soil is assumed to be sampleable and free of coarse sediment.
- Field work is assumed to be two days. A meeting will take place prior to the field work to coordinate staff field activities. This preparation meeting will be attended by HDR, and marine subcontractor (subconsultant), and the City. Marine subcontractor may attend remotely.
- Chemical, biological, and lab analysis QA/QC reports will be included as appendices to the SDR. See SAP for details.
- It is assumed the SDR will be no more than 20 pages in length, each page being a single side. This is inclusive of graphics and tables. Appendices are not included in this total.
- A meeting with Ecology to discuss the completed field work is anticipated. The meeting with Ecology will be attended by up to 3 HDR staff and is assumed to be 1 hour in duration. It is assumed that this meeting will be virtual.
- The Draft SDR meeting with the City will be conducted virtually, will be 1 hour in length, and attended by up to 4 HDR staff.
- Comments from the City on the draft SDR will be provided in one consolidated set electronically and no later than 2 weeks after submittal.
- One meeting with the City and one with Ecology are anticipated for discussion of the draft SDR.
- Equipment to be provided by HDR for the SDR will be outlined in the Ecology approved SAP.
- Field work may be rescheduled due to weather or river conditions that would interfere with HDR staff safety or compromise the sediment study data collection.
- At least 4 liters (L) of sediment is required per sampling location to perform the bioassay testing. If insufficient volume of sediment is available to complete the bioassay testing, then sediment samples will be collected and analyzed for chemical analytes from Table 8-1 and the conventional parameters listed in Table A-2 of Appendix A in the SCUM (Ecology 2021). A minimum of 150 to 200 grams (g) of sediment per sampling location is required for the chemical analytes to be analyzed. If at least 4.5 L of sampleable sediment is available, then both bioassay testing and chemical analytes will be analyzed as described above. Lab analysis of sediment samples will follow the SAP and is included in this scope of work.

Deliverables

- Draft Sediment Data Report (PDF format)
- Final Sediment Data Report (PDF format)

Task 300 Outfall Evaluation

Objective
Assess the existing outfall condition in accordance with permit requirement S11 for the Outfall Evaluation, including information generated from underwater contractor support services**.**

HDR Activities:

OUTFALL CONDITION SUMMARY

- Review existing materials (videos, photographs, drawings, reports, etc.) to determine the existing condition of the outfall piping and diffusers within the Columbia River.
- Visually assess the effluent pipeline and diffusers for corrosion, defects, damage, and general exterior condition.
- Summarize observations in technical memorandum.

UNDERWATER CONTRACTOR SUPPORT

- Participate in the in-person Outfall Evaluation kick-off meeting.
- Provide a marine traffic control specification.
- Develop an outfall evaluation report based upon the findings from the underwater contractor's field investigation, which is assumed to include visual inspection, photography, video/CCTV, and survey of the outfall pipe and diffusers. The report will include an assessment of the sediment and debris that has accumulated around the outfall system.

City's Activities:
City will:

- Support HDR staff by identifying and providing relevant prior inspections, studies, reports, and drawings prepared by others.
- Provide review comments on deliverables issued for City review within two weeks of submittal to the City.
- Coordinate City staff support.

HDR Deliverables:

The following deliverables shall be provided:

- Draft Condition Assessment Report (PDF)
- Final Condition Assessment Report (PDF)

Assumptions:

- HDR will provide 3 team members for the Outfall Evaluation kick off meeting.
- HDR will provide 2 team members for the Outfall Evaluation field work.
- Unless otherwise defined elsewhere, 1 electronic (.pdf) copy of deliverables will be submitted to the City.

- Field investigation work is scheduled to occur on two (2) days, one day for work within the river (outfall and diffuser inspection, photography, video, etc.) and one day for work on land.

Task 400 Management Reserve

Objective

HDR can provide additional services if requested by the City up to the amount identified in the fee schedule in Task 400, $15,000. The scope and level of effort for these services will be determined at the time of the City's request and are only to be performed if written authorization is provided by the City. A management reserve is required so that the City has a discretionary task budget to cover additional professional services not currently included in this Scope of Services. Services authorized under this task will be at the City's discretion.

HDR Activities

HDR will conduct specific activities including the following subtask:

- Additional Subtask: Provide professional services at the request of the City as mutually agreed upon and defined.

City Activities

- Identify and request professional services deemed necessary that are not expressly included in this Scope of Services.

Deliverables

- To be determined and mutually agreed upon by the City and HDR.

Assumptions

- Agreement for the services to be performed under the contingency task and budget will be documented and agreed upon by the City and HDR before proceeding.

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Schedule

The table below presents key milestones and an anticipated schedule for the study. A delay in NTP will equate to slippage in the schedule dates shown. The schedule limitations outlined in Section S10.B and S11 of the permit include submitting the final Sediment Data Report summarizing the results of the study to Ecology by February 15, 2027. The outfall evaluation task must be complete no later than October 31, 2029. Some assumptions in the schedule include timely reviews and approval of documents from Ecology and the City and that the sample collection period is sufficient to obtain the necessary samples as required by the approved SAP.

Description	Completed / Delivered
Notice to proceed	December 15, 2025
Outfall evaluation field work	June 1 – June 26, 2026
Draft Outfall Evaluation Condition Report delivered to City	August 20, 2026
City completes Outfall Evaluation Report Review	September 10, 2026
Deliver Final Outfall Evaluation Report to City	October 8, 2026
Sediment study field work	August 15 – September 30, 2026
Draft sediment data report to City for review	December 30, 2026
City completes review of draft SDR	January 13, 2027
Deliver final SDR to City	February 10, 2027
Report due to Ecology	February 15, 2027

Fee

The estimated fee for the professional services identified in this Scope of Services is offered on a time and material basis not to exceed $327,784.

Professional services rendered in connection with this Scope of Services will be billed on a time and materials basis for actual hours rendered by HDR employees up to the estimated total contract amount in accordance with the terms and conditions outlined in the signed Agreement.

Task	Description	Hours	Subconsultants	Total
100	Project Management	180		$41,735
200	Sediment Data Report Field Sampling, Analyses, and Report	528	$77,175	$217,514
300	Outfall Evaluation	181	$14,700	$53,535
400	Management Reserve			$15,000
	Totals	**889**	**$91,875**	**$327,784**

City of Camas Surplus Equipment 1/2026

EQ #	Description	Model Year	Manufacturer ID	Model ID	VIN
478	Polce Patrol Unit	2020	Ford	Police Interceptor Utility	1FM5K8AC0LGA03804
509	Polce Patrol Unit	2020	Ford	Police Interceptor Utility	1FM5K8AC3LGD02185
477	Polce Patrol Unit	2020	Ford	Police Interceptor Utility	1FM5K8AC4LGA03806
515	Polce Patrol Unit	2021	Ford	Police Interceptor Utility	1FM5K8AC2MNA16115
315	Fire Engine	2003	American LaFrance	Fire Engine	4Z3AAACK53RL89596
409	Fire Engine	2004	Sutphen	Fire Engine	1S9A1BLD741003030
410	Fire Engine	2010	Sutphen	Fire Engine	1S9A1BMD2A003124

Staff Report – Consent Agenda

February 17, 2026, Council Regular Meeting

Final Plat Approval for Camas Heights Ph. III Subdivision (Submitted by Madeline Coulter, Planner)

Phone	Email
360.817.1568	mcoulter@cityofcamas.us

BACKGROUND: Camas Heights Ph. III Subdivision is a 36-lot residential subdivision located at 22630 NE 28th St. The subject site is bordered to the north and west by Green Mountain Estates Subdivision zoned Single-Family Residential R-10 and R-6. To the east, are single-family residences zoned Agriculture in unincorporated Clark County. To the south is NE 28th Street.

LOCATION: Parcel Number(s): 173157000

OWNER: Cal Hearthstone
23975 Park Sorrento Suite 220
Calabasas CA , 91302

ZONING: Single-Family Residential (R-10)

TOTAL SITE AREA: 12.9 acres

LOTS: 36 residential lots

SUMMARY: A public hearing before the Hearings Examiner was held on May 4, 2022, and a land use decision with conditions of approval was issued for the subdivision on June 9, 2022. The reconsideration decision was issued June 18, 2022.

The applicant is requesting final plat approval. Except for punch list items, the site improvements have been completed. Final acceptance will not be issued until the remaining punch list items have been completed in accordance with Camas Municipal Code (CMC) section 17.21.070.

Staff has reviewed the final plat drawings, lot closures, CC&R's, and all other associated final platting documents.

FINAL PLAT APPROVAL CRITERIA (CMC 17.21.060.E):

1. That the proposed final plat bears the required certificates and statements of approval.
2. That the title insurance report furnished by the developer/owner confirms the title of the land, and the proposed subdivision is vested in the name of the owner(s) whose

signature(s) appears on the plat certificate;
3. That the facilities and improvements required to be provided by the developer/owner have been completed or, alternatively, that the developer/owner has submitted with the proposed final plat an improvement bond or other security in conformance with CMC 17.21.040;
4. That the plat is certified as accurate by the land surveyor responsible for the plat;
5. That the plat is in substantial conformance with the approved preliminary plat; and
6. That the plat meets the requirements of Chapter 58.17 RCW and other applicable state and local laws which were in effect at the time of preliminary plat approval.

Finding: Staff finds the submitted plat meets the requirements of CMC 17.21.060.E listed above, is consistent with the applicable conditions of approval, and with the applicable state and local regulations.

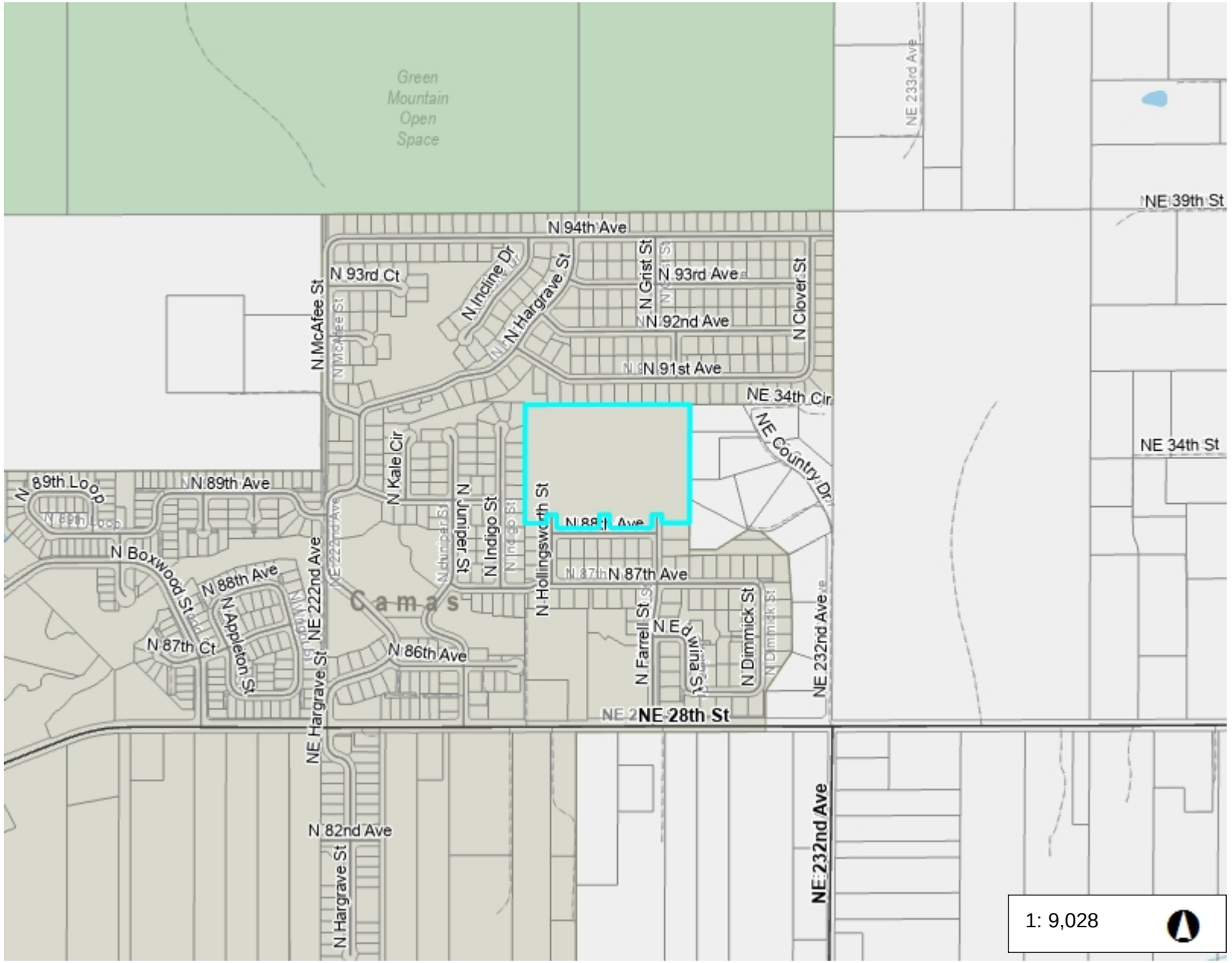
BENEFITS TO THE COMMUNITY: The development of this site implements several Comprehensive Plan goals and policies, including the Park and Open Space Comprehensive Plan and the Camas Municipal Code, as discussed in the staff report to the Hearings Examiner.

STRATEGIC PLAN: This final plat supports the strategic plan goal of Economic Prosperity by providing a supply of buildable homesites to accommodate new housing growth.

BUDGET IMPACT: Revenues will be generated from building permits issued for the 36 new residential lots.

RECOMMENDATION: Staff recommends that Council approve the final plat for the Camas Heights Ph. III Subdivision.

Camas Heights Phase 3



Legend

- Taxlots
- All Roads
  - Interstate
  - State Route
  - Arterial
  - Forest Arterial
  - Minor Collector
  - Forest Collector
  - Private or Other

Notes:

1: 9,028

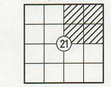
1,504.7 0 752.33 1,504.7 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Clark County, WA. GIS - http://gis.clark.wa.gov

This map was generated by Clark County's "MapsOnline" website. Clark County does not warrant the accuracy, reliability or timeliness of any information on this map, and shall not be held liable for losses caused by using this information. Taxlot (i.e., parcel) boundaries cannot be used to determine the location of property lines on the ground.

CAMAS HEIGHTS SUBDIVISION PHASE 3

A REPLAT OF A PORTION OF LOT 16 OF THE PLAT "COUNTRY VIEW ESTATES II" (H-345)
LOCATED IN THE NORTHEAST, NORTHWEST, SOUTHEAST, AND SOUTHWEST QUARTERS OF
THE NORTHEAST QUARTER OF SECTION 21,
TOWNSHIP 2 NORTH, RANGE 3 EAST, WILLAMETTE MERIDIAN,
CITY OF CAMAS, CLARK COUNTY, WASHINGTON
CITY FILE NO. SUB21-01
MARCH 2025



PLAT NOTES

1. THIS DEVELOPMENT SHALL BE A PART OF THE CAMAS HEIGHTS HOMEOWNER'S ASSOCIATION (HEREON REFERRED TO AS HOA). THE DECLARATION (CC&R'S) FOR CAMAS HEIGHTS WAS RECORDED UNDER CLARK COUNTY AUDITOR'S FILE NUMBER _____. COPIES OF THE CC&R'S SHALL BE SUBMITTED AND ON FILE WITH THE CITY OF CAMAS.
2. BUILDING PERMITS WILL NOT BE ISSUED BY THE BUILDING DEPARTMENT UNTIL ALL SUBDIVISION IMPROVEMENTS SHOWN ON APPROVED CONSTRUCTION PLANS ARE COMPLETED AND FINAL ACCEPTANCE HAS BEEN ISSUED BY THE CITY.
3. MAXIMUM BUILDING LOT COVERAGE FOR THIS SUBDIVISION IS 50%.
4. THE LOTS IN THIS SUBDIVISION ARE SUBJECT TO TRAFFIC IMPACT FEES, SCHOOL IMPACT FEES, FIRE IMPACT FEES AND PARK/OPEN SPACE IMPACT FEES. EACH NEW DWELLING WILL BE SUBJECT TO THE PAYMENT OF APPROPRIATE IMPACT FEES AT THE TIME OF BUILDING PERMIT ISSUANCE.
5. A PUBLIC UTILITY EASEMENT (PUE) AS SHOWN HEREON IS HEREBY GRANTED UNDER AND UPON TRACT I AND THE EXTERIOR SIX FEET ON ALL BOUNDARY LINES OF THE LOTS AND TRACTS ADJACENT TO PUBLIC ROADS AND ADJACENT TO TRACT I AS SHOWN FOR THE INSTALLATION, CONSTRUCTION, RENEWING, OPERATING AND MAINTAINING ELECTRIC, TELEPHONE, TV, CABLE, WATER AND SANITARY SEWER SERVICES. ALL LOTS CONTAINING PADMOUNT TRANSFORMERS ARE SUBJECT TO THE MINIMUM CLEARANCES AS DEFINED BY CLARK PUBLIC UTILITIES CONSTRUCTION STANDARDS. ALL PROPOSED BUILDING DESIGNS ON THESE LOTS MUST PROVIDE ADEQUATE CLEARANCE FOR ALL COMBUSTIBLE MATERIALS. ALSO, A SIDEWALK EASEMENT, AS NECESSARY TO COMPLY WITH ADA SLOPE REQUIREMENTS, IS HEREBY GRANTED TO THE CITY OF CAMAS UPON THE EXTERIOR SIX (6) FEET ALONG THE FRONT BOUNDARY LINES OF ALL LOTS AND TRACTS ADJACENT TO PUBLIC STREETS.
6. THE PRIVATE STORMWATER EASEMENTS BURDENING AND/OR BENEFITING LOTS 28, 30, 80-86, 92-96, AND 102-108 ARE TO BE GRANTED TO AND MAINTAINED BY THE APPLICABLE LOT OWNERS AS SHOWN ON SHEETS 3 AND 4. PRIVATE STORMWATER SYSTEMS ARE TO BE MAINTAINED BY THE APPLICABLE LOT AND TRACT OWNERS UPON WHICH THE PRIVATE STORMWATER SYSTEMS ARE LOCATED.
7. A LATECOMERS FEE IN THE AMOUNT OF $534.14 PER LOT SHALL BE COLLECTED AT THE TIME OF BUILDING PERMIT ISSUANCE FOR THE PROPORTIONATE SHARE OF REIMBURSEMENT FOR THE GOODWIN ROAD SANITARY SEWER PUMP STATION, PER LATECOMER REIMBURSEMENT AGREEMENT UNDER AUDITOR'S FILE NUMBER 5594198, RECORDED 03/25/2019, CLARK COUNTY RECORDS. AT THE TIME OF BUILDING PERMIT ISSUANCE, THE LOTS IN THIS SUBDIVISION ARE SUBJECT TO A $534.14 FEE PER LOT, AS THEIR PROPORTIONATE SHARE CONTRIBUTION FOR THE NORTHSHORE SEWER TRANSMISSION SYSTEM (PREVIOUSLY KNOWN AS THE "NORTH URBAN GROWTH AREA-SEWER TRANSMISSION SYSTEM" OR NUGA-STS).
8. TREE TOPPING IS NOT PERMITTED WITHIN THIS DEVELOPMENT, NOR REMOVAL OF MORE THAN 20 PERCENT OF A TREE'S CANOPY. TREES THAT ARE DETERMINED TO BE HAZARDOUS BY A LICENSED ARBORIST MAY BE REMOVED AFTER APPROVAL BY THE CITY. REQUIRED STREET TREES SHALL BE PROMPTLY REPLACED WITH A CITY OF CAMAS APPROVED SPECIES.
9. THE CAMAS HEIGHTS SUBDIVISION IS UNDER A FLIGHT CORRIDOR FOR GROVE AIRFIELD; AIRCRAFT NOISE IS TO BE EXPECTED.
10. IN THE EVENT ANY ITEM OF ARCHAEOLOGICAL INTEREST IS UNCOVERED DURING THE COURSE OF PERMITTED GROUND DISTURBING ACTION OR ACTIVITY, ALL GROUND DISTURBING ACTIVITIES SHALL IMMEDIATELY CEASE, AND THE APPLICANT SHALL NOTIFY THE CITY AND DEPARTMENT OF ARCHAEOLOGY AND HISTORIC PRESERVATION (DAHP).
11. TRACT J IS AN OPEN SPACE TRACT TO BE OWNED AND MAINTAINED BY THE HOA.
12. TRACT I IS A PRIVATE STREET TO BE OWNED AND MAINTAINED BY THE HOA. TRACT I IS SUBJECT TO A PRIVATE ACCESS AND UTILITY EASEMENT TO LOTS 85 AND 86, A WATER EASEMENT TO THE CITY OF CAMAS, AND A PUBLIC UTILITY EASEMENT (SEE NOTE 5) OVER ITS ENTIRETY.

SHEET INDEX

PAGE 1 APPROVALS, NARRATIVE, PLAT NOTES, SURVEYOR'S CERTIFICATE, DECLARANT DECLARATION, ACKNOWLEDGEMENTS, LEGAL DESCRIPTION

PAGE 2 BOUNDARY, LEGEND, REFERENCES

PAGE 3 LOTS 27-30, 80-82, 89-94, 99-104, AND 109-111, LEGEND, REFERENCES, CURVE TABLE, RIGHT-OF-WAY NOTES

PAGE 4 LOTS 83-88, 95-98, AND 105-108, TRACTS I, AND J, LEGEND, REFERENCES, CURVE TABLE, RIGHT-OF-WAY NOTES

PERIMETER LEGAL DESCRIPTION

A PORTION OF LOT 16 OF THE PLAT "COUNTRY VIEW ESTATES II" (H-345) LOCATED IN THE NORTHEAST, NORTHWEST, SOUTHEAST, AND SOUTHWEST QUARTERS OF THE NORTHEAST QUARTER OF SECTION 21, TOWNSHIP 2 NORTH, RANGE 3 EAST, WILLAMETTE MERIDIAN, CITY OF CAMAS, CLARK COUNTY, WASHINGTON AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF THE PLAT "CAMAS HEIGHTS SUBDIVISION PHASE 1" (312-340); THENCE ALONG THE EAST LINES OF THE PLATS "GREEN MOUNTAIN ESTATES PHASE 2" (312-42) AND "GREEN MOUNTAIN ESTATES PHASE 3" (312-99) NORTH 01°33'30" EAST 607.85 FEET TO THE NORTHWEST CORNER OF SAID LOT 16; THENCE ALONG THE SOUTH LINE OF "GREEN MOUNTAIN ESTATES PHASE 4A" (312-201) SOUTH 88°43'18" EAST 847.60 FEET TO THE NORTHEAST CORNER OF SAID LOT 16; THENCE ALONG THE EAST LINE OF SAID LOT 16 SOUTH 01°33'37" WEST 608.35 FEET TO THE NORTH LINE OF THE PLAT "CAMAS HEIGHTS SUBDIVISION PHASE 1" (312-340); THENCE ALONG THE NORTH LINE OF SAID PLAT THE FOLLOWING SEVENTEEN (17) COURSES: THENCE NORTH 88°42'43" WEST 141.84 FEET; THENCE NORTH 01°17'17" EAST 43.36 FEET; THENCE NORTH 88°42'43" WEST 52.00 FEET; THENCE SOUTH 01°17'17" WEST 56.00 FEET; THENCE ALONG A CURVE TO THE RIGHT WITH A RADIUS OF 13.00 FEET, A DELTA OF 90°00'00", A LENGTH OF 20.42 FEET, AND A CHORD OF SOUTH 46°17'17" WEST 18.38 FEET; THENCE NORTH 88°42'43" WEST 193.00 FEET; THENCE ALONG A CURVE TO THE RIGHT WITH A RADIUS OF 13.00 FEET, A DELTA OF 90°00'00", A LENGTH OF 20.42 FEET, AND A CHORD OF NORTH 43°42'43" WEST 18.38 FEET; THENCE NORTH 01°17'17" EAST 56.00 FEET; THENCE NORTH 88°42'43" WEST 52.00 FEET; THENCE SOUTH 01°17'17" WEST 56.00 FEET; THENCE ALONG A CURVE TO THE RIGHT WITH A RADIUS OF 13.00 FEET, A DELTA OF 90°00'00", A LENGTH OF 20.42 FEET, AND A CHORD OF SOUTH 46°17'17" WEST 18.38 FEET; THENCE NORTH 88°42'43" WEST 193.00 FEET; THENCE ALONG A CURVE TO THE RIGHT WITH A RADIUS OF 13.00 FEET, A DELTA OF 90°00'00", A LENGTH OF 20.42 FEET, AND A CHORD OF NORTH 43°42'43" WEST 18.38 FEET; THENCE NORTH 01°17'17" EAST 56.00 FEET; THENCE NORTH 88°42'43" WEST 52.00 FEET; THENCE SOUTH 01°17'17" WEST 43.01 FEET; THENCE NORTH 88°42'43" WEST 111.74 FEET TO THE POINT OF BEGINNING.

NARRATIVE

THE PURPOSE OF THIS SURVEY WAS TO SUBDIVDE THE TRACT PER AUDITOR'S FILE NUMBER 6136768, CLARK COUNTY DEED RECORDS (CLARK COUNTY PARCEL NO. 173157-000) INTO LOTS AND TRACTS, TO CREATE ROADS TO BE DEDICATED TO THE CITY OF CAMAS, AS WELL AS CREATING NECESSARY EASEMENTS AS SHOWN.

THE BASIS OF BEARINGS IS THE SOUTH LINE OF THE NORTHEAST QUARTER OF SECTION 21 AS SHOWN. BEARINGS SHOWN HEREON ARE BASED ON WASHINGTON STATE PLANE COORDINATE SYSTEM SOUTH ZONE 4602, NAD 83(2011)EPOCH2010.000 DERIVED FROM GPS TIES FROM THE WASHINGTON STATE REFERENCE NETWORK(WSRN).

FOUND MONUMENTS, BEARINGS AND DISTANCES PER RECORD OF SURVEY BOOK 73, PAGE 47 WERE HELD TO ESTABLISH THE BOUNDARY OF THE SUBJECT PROPERTY.

A 3 SECOND TRIMBLE S6 TOTAL STATION AND TRIMBLE R-10 GPS RECEIVER WERE USED IN THIS SURVEY. ALL TRAVERSES MEET THE STANDARDS CONTAINED IN WAC 332-130-090.

DECLARANT DECLARATION:

THE UNDERSIGNED OWNER OR OWNERS OF THE INTEREST IN THE REAL ESTATE DESCRIBED HEREIN HEREBY DECLARE THIS MAP AND DEDICATE THE SAME FOR A COMMON INTEREST COMMUNITY NAMED CAMAS HEIGHTS, A PLAT COMMUNITY, AS THAT TERM IS DEFINED IN THE WASHINGTON UNIFORM COMMON INTEREST OWNERSHIP ACT, SOLELY TO MEET THE REQUIREMENTS OF THE WASHINGTON UNIFORM COMMON INTEREST OWNERSHIP ACT AND NOT FOR ANY PUBLIC PURPOSE. THIS MAP AND ANY PORTION THEREOF IS RESTRICTED BY LAW AND THE DECLARATION FOR CAMAS HEIGHTS RECORDED UNDER CLARK COUNTY RECORDING NUMBER _____.

CAL HEARTHSTONE LOT OPTION POOL 05, L.P.
A DELAWARE LIMITED PARTNERSHIP

BY: _____ _____
DATE

NAME: _____

TITLE: _____

ACKNOWLEDGMENT

STATE OF _____)
) SS
COUNTY OF _____)

I CERTIFY THAT I KNOW OR HAVE SATISFACTORY EVIDENCE

THAT _____ IS THE PERSON THAT APPEARED BEFORE ME,

AND SAID PERSON ACKNOWLEDGED THAT THEY SIGNED THIS INSTRUMENT; ON OATH STATED THAT THEY WERE AUTHORIZED TO EXECUTE THE INSTRUMENT; AND ACKNOWLEDGED IT, AS AUTHORIZED SIGNATORY OF CAL HEARTHSTONE LOT OPTION POOL 05, L.P., A DELAWARE LIMITED PARTNERSHIP, TO BE THE FREE AND VOLUNTARY ACT OF SUCH PARTY FOR THE USES AND PURPOSES MENTIONED IN THE INSTRUMENT.

_____
NOTARY SIGNATURE

DATED: _____

PRINTED NAME: _____

NOTARY PUBLIC IN AND FOR THE STATE OF _____

MY COMMISSION EXPIRES _____

LAND SURVEYOR'S CERTIFICATE:

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE SURVEY RECORDING ACT AT THE REQUEST OF CAL HEARTHSTONE LOT OPTION POOL 05, L.P., IN OCTOBER, 2024. I HEREBY CERTIFY THAT THIS MAP FOR "CAMAS HEIGHTS" IS BASED UPON AN ACTUAL SURVEY OF THE PROPERTY HEREIN DESCRIBED; THAT THE BEARINGS AND DISTANCES ARE CORRECTLY SHOWN; THAT ALL INFORMATION REQUIRED BY THE WASHINGTON UNIFORM COMMON INTEREST OWNERSHIP ACT IS SUPPLIED HEREIN; AND THAT ALL HORIZONTAL AND VERTICAL BOUNDARIES OF THE UNITS, (1) TO THE EXTENT DETERMINED BY THE WALLS, FLOORS, OR CEILINGS THEREOF, OR OTHER PHYSICAL MONUMENTS, ARE SUBSTANTIALLY COMPLETED IN ACCORDANCE WITH SAID MAP, OR (2) TO THE EXTENT SUCH BOUNDARIES ARE NOT DEFINED BY PHYSICAL MONUMENTS, SUCH BOUNDARIES ARE SHOWN ON THE MAP.

_____
JAMES O. HANNON
PROFESSIONAL LAND SURVEYOR
LICENSE NO. 54200

3/12/25

REVIEW COPY

ACKNOWLEDGMENT

STATE OF WASHINGTON)
) SS
COUNTY OF CLARK)

SIGNED OR ATTESTED BEFORE ME ON _____ BY JAMES O. HANNON.

_____
NOTARY SIGNATURE

DATED: _____

PRINTED NAME: _____

NOTARY PUBLIC IN AND FOR THE STATE OF WASHINGTON

MY COMMISSION EXPIRES _____

CITY OF CAMAS MAYOR

_____ _____
CITY OF CAMAS MAYOR DATE

CITY OF CAMAS FINANCE DIRECTOR

THERE ARE NO DELINQUENT SPECIAL ASSESSMENTS, AND ALL SPECIAL ASSESSMENTS ON ANY OF THE PROPERTY THAT IS DEDICATED AS STREETS, ALLEYS OR FOR OTHER PUBLIC USE ARE PAID IN FULL AT THE DATE OF CERTIFICATION.

ATTESTED BY: _____
CITY OF CAMAS FINANCE DIRECTOR DATE

CITY OF CAMAS COMMUNITY DEVELOPMENT

APPROVED BY: _____ _____
CITY OF CAMAS COMMUNITY DEVELOPMENT DIRECTOR OR DESIGNEE DATE

CITY OF CAMAS PUBLIC WORKS DEPARTMENT

A) ALL IMPROVEMENTS HAVE BEEN INSTALLED OR FINANCIALLY SECURED IN ACCORDANCE WITH THE REQUIREMENTS OF CMC TITLE 17 AND THE PRELIMINARY PLAT APPROVAL;

B) ALL IMPROVEMENTS CAN OR WILL MEET CURRENT PUBLIC WORKS DRAWING STANDARDS FOR ROAD, UTILITY AND DRAINAGE CONSTRUCTION PLANS;

C) ORIGINAL AND REPRODUCIBLE MYLAR OR ELECTRONIC RECORDS OF INSTALLED IMPROVEMENTS IN A FORMAT APPROVED BY THE PUBLIC WORKS DIRECTOR OR DESIGNEE AND CERTIFIED BY THE DESIGNING ENGINEER AS BEING "AS CONSTRUCTED" HAVE BEEN SUBMITTED OR FINANCIALLY SECURED FOR CITY RECORDS.

_____ _____
CITY OF CAMAS ENGINEER OR DESIGNEE DATE

CAMAS-WASHOUGAL FIRE DEPARTMENT

APPROVED BY: _____ _____
CAMAS-WASHOUGAL FIRE CHIEF OR DESIGNEE DATE

CLARK COUNTY ASSESSOR

THIS PLAT MEETS THE REQUIREMENTS OF RCW 58.17.170, LAWS OF WASHINGTON, 1981, TO BE KNOWN AS "CAMAS HEIGHTS SUBDIVISION PHASE 3" PLAT NO. _____
CLARK COUNTY, WASHINGTON

_____ _____
CLARK COUNTY ASSESSOR DATE

CLARK COUNTY AUDITOR

FILED FOR RECORD THIS _____ DAY OF _____, 2024,

AT _____ AM/PM IN BOOK _____ OF PLATS, AT PAGE _____, AT THE REQUEST OF AKS ENGINEERING AND FORESTRY, LLC.

AUDITOR'S FILE NUMBER _____

COUNTY AUDITOR _____

JOB NAME:	CAMAS HEIGHTS PH2
JOB NUMBER:	8468
DRAWN BY:	CJC
CHECKED BY:	JOH
DRAWING NO.:	8468CPLAT PH3

AKS ENGINEERING & FORESTRY, LLC
9600 NE 126TH AVE, STE 2520
VANCOUVER, WA 98682
360.882.0419
WWW.AKS-ENG.COM

AKS

ENGINEERING · SURVEYING · NATURAL RESOURCES
FORESTRY · PLANNING · LANDSCAPE ARCHITECTURE

CAMAS HEIGHTS SUBDIVISION PHASE 3

A REPLAT OF A PORTION OF LOT 16 OF THE PLAT "COUNTRY VIEW ESTATES II" (H-345)
LOCATED IN THE NORTHEAST, NORTHWEST, SOUTHEAST, AND SOUTHWEST QUARTERS OF
THE NORTHEAST QUARTER OF SECTION 21,
TOWNSHIP 2 NORTH, RANGE 3 EAST, WILLAMETTE MERIDIAN,
CITY OF CAMAS, CLARK COUNTY, WASHINGTON
CITY FILE NO. SUB21-01
MARCH 2025

T2N, R3E, W.M.

CURVE TABLE				
CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	13.00'	90°00'00"	20.42'	S46°17'17"W 18.38'
C2	13.00'	90°00'00"	20.42'	N43°42'43"W 18.38'
C3	13.00'	90°00'00"	20.42'	S46°17'17"W 18.38'
C4	13.00'	90°00'00"	20.42'	N43°42'43"W 18.38'

LAND INVENTORY

TOTAL ACREAGE: 11.93 ACRES

TOTAL DEVELOPED ACREAGE: 8.74 ACRES

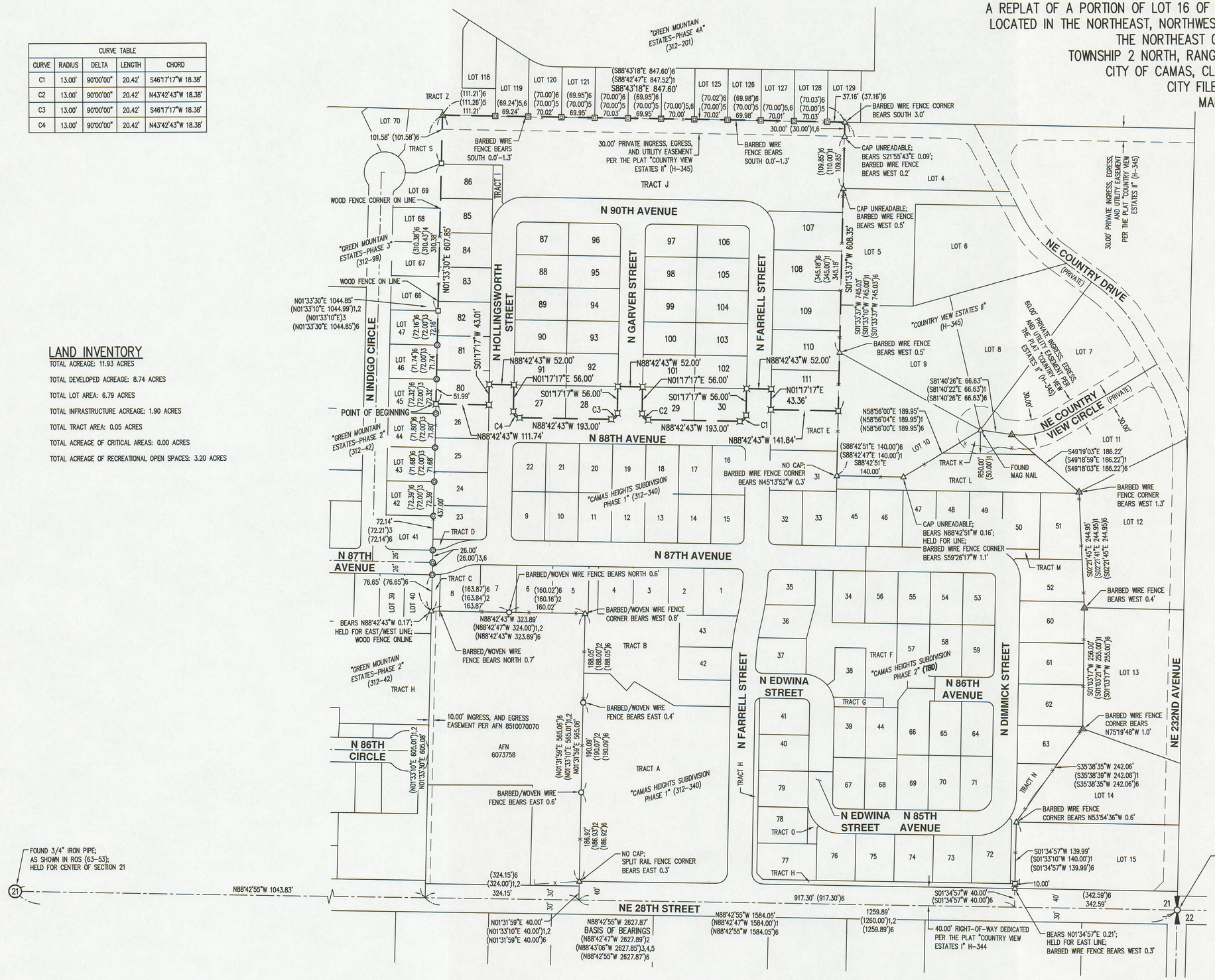
TOTAL LOT AREA: 6.79 ACRES

TOTAL INFRASTRUCTURE ACREAGE: 1.90 ACRES

TOTAL TRACT AREA: 0.05 ACRES

TOTAL ACREAGE OF CRITICAL AREAS: 0.00 ACRES

TOTAL ACREAGE OF RECREATIONAL OPEN SPACES: 3.20 ACRES



LEGEND

- ▲ FOUND 1/2" REBAR W/YPC INSCRIBED "AKS ENGR 54200";PER ROS (73-47); HELD
- ○ FOUND 5/8" REBAR W/OPC INSCRIBED "AKS ENGR 34127"; PER ROS (63-53); HELD UNLESS NOTED OTHERWISE
- △ FOUND 1/2" REBAR W/YPC INSCRIBED "LAWSON WA 11989", UNLESS NOTED OTHERWISE; PER THE PLAT "COUNTRY VEW ESTATES II" (H-345); HELD UNLESS NOTED OTHERWISE
- ◎ FOUND 1/2" REBAR W/YPC INSCRIBED "OLSON ENG PLS 42667"; PER THE PLAT "GREEN MOUNTAIN ESTATES-PHASE 2" (312-42); HELD UNLESS NOTED OTHERWISE
- □ FOUND 1/2" REBAR W/YPC INSCRIBED "OLSON ENG PLS 42624"; PER THE PLAT "GREEN MOUNTAIN ESTATES-PHASE 3" (312-99); HELD UNLESS NOTED OTHERWISE
- ▣ FOUND 1/2" REBAR W/YPC INSCRIBED "OLSON ENG PLS 42624"; PER THE PLAT "GREEN MOUNTAIN ESTATES-PHASE 4A" (312-201); HELD UNLESS NOTED OTHERWISE
- ⌑ FOUND 1/2" REBAR W/YPC INSCRIBED "AKS ENGR 54200" UNLESS NOTED OTHERWISE; PER THE PLAT "CAMAS HEIGHTS SUBDIVISION PHASE 1" (312-340); HELD

*** FOUND MONUMENTS WERE TIED JUNE, 2021 - JUNE, 2023 ***

AFN	AUDITORS FILE NUMBER
LCR	LAND CORNER RECORD
ROS	RECORD OF SURVEY
W/OPC	WITH AN ORANGE PLASTIC CAP
W/YPC	WITH A YELLOW PLASTIC CAP

REFERENCES

( )1 RECORD INFORMATION PER THE PLAT "COUNTRY VIEW ESTATES II" (H-345)
( )2 RECORD INFORMATION PER ROS (63-53)
( )3 RECORD INFORMATION PER THE PLAT "GREEN MOUNTAIN ESTATES-PHASE 2" (312-42)
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( )7 RECORD INFORMATION PER THE PLAT "CAMAS HEIGHTS SUBDIVISION PHASE 1" (312-340)
( )8 RECORD INFORMATION PER THE PLAT "CAMAS HEIGHTS SUBDIVISION PHASE 2" **(TBD)**

*** ALL DATA PER THE PLAT "CAMAS HEIGHTS SUBDIVISION PHASE 1" (312-340) AND THE PLAT "CAMAS HEIGHTS SUBDIVISION PHASE 2" **(TBD)** WERE HELD ***

REVIEW COPY

3/12/25

JAMES O. HANNON — STATE OF WASHINGTON — 54000 — REGISTERED PROFESSIONAL LAND SURVEYOR

JOB NAME:	CAMAS HEIGHTS PH2
JOB NUMBER:	8468
DRAWN BY:	CJC
CHECKED BY:	JOH
DRAWING NO.:	8468CPLAT PH3

AKS ENGINEERING & FORESTRY, LLC
9600 NE 126TH AVE, STE 2520
VANCOUVER, WA 98682
360.882.0419
WWW.AKS-ENG.COM

AKS

ENGINEERING · SURVEYING · NATURAL RESOURCES
FORESTRY · PLANNING · LANDSCAPE ARCHITECTURE

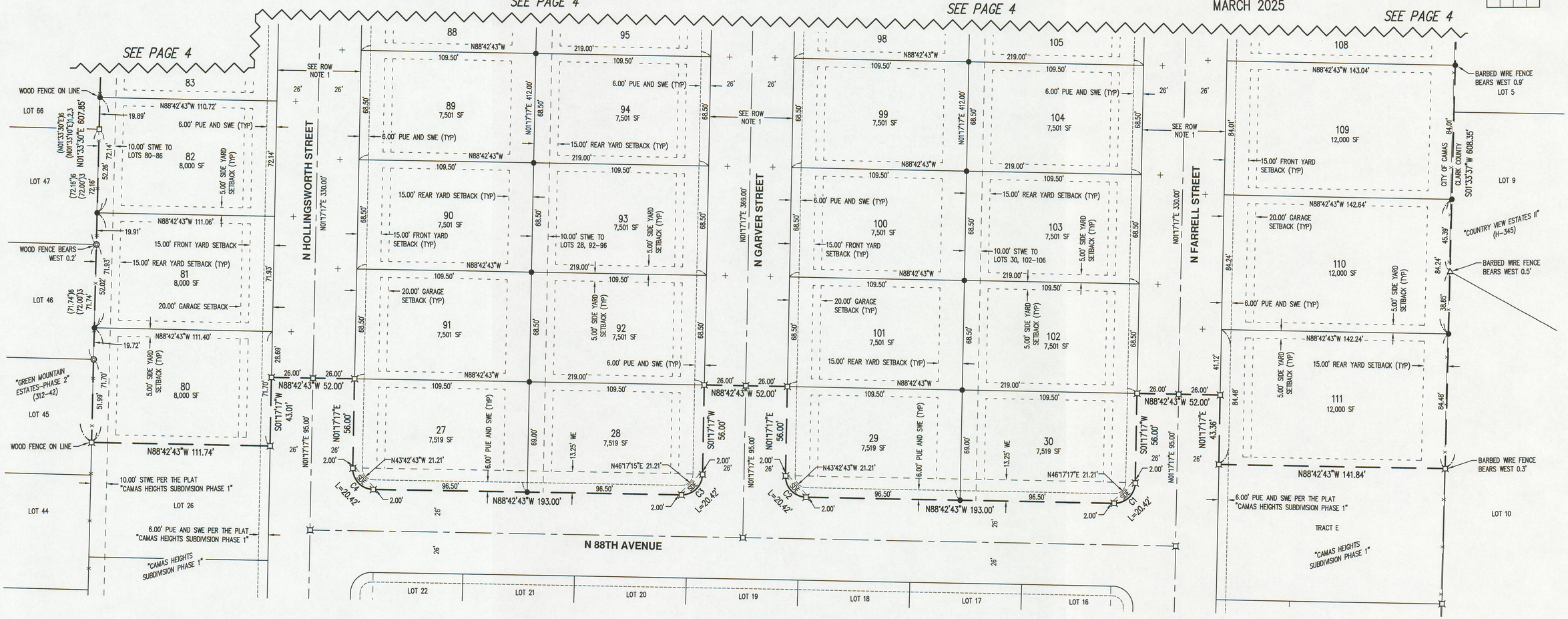
CAMAS HEIGHTS SUBDIVISION PHASE 3

A REPLAT OF A PORTION OF LOT 16 OF THE PLAT "COUNTRY VIEW ESTATES II" (H-345)
LOCATED IN THE NORTHEAST, NORTHWEST, SOUTHEAST, AND SOUTHWEST QUARTERS OF
THE NORTHEAST QUARTER OF SECTION 21,
TOWNSHIP 2 NORTH, RANGE 3 EAST, WILLAMETTE MERIDIAN,
CITY OF CAMAS, CLARK COUNTY, WASHINGTON
CITY FILE NO. SUB21-01
MARCH 2025

T2N, R3E, W.M.

RIGHT-OF-WAY NOTE

1. 52.00 FOOT RIGHT-OF-WAY DEDICATED TO CITY OF CAMAS WITH THIS PLAT.



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( )7 RECORD INFORMATION PER THE PLAT "CAMAS HEIGHTS SUBDIVISION PHASE 1" (312-340)
( )8 RECORD INFORMATION PER THE PLAT "CAMAS HEIGHTS SUBDIVISION PHASE 2" **(TBD)**

*** ALL DATA PER THE PLAT "CAMAS HEIGHTS SUBDIVISION PHASE 1" (312-340) AND THE PLAT "CAMAS HEIGHTS SUBDIVISION PHASE 2" **(TBD)** WERE HELD ***

LEGEND

- ● SET 1/2" X 24" REBAR W/YPC INSCRIBED "AKS ENGR 54200" ON **(TBD DATE)**
- \+ SET BRASS SCREW WITH BRASS WASHER INSCRIBED "AKS ENGR 54200" IN CURB ON PROJECTION OF THE LINE AT A DISTANCE OF 11.80' FROM THE FRONT LOT CORNER ON **(TBD DATE)**
- ▲ SET BRASS SCREW WITH BRASS WASHER INSCRIBED "AKS ENGR 54200" ON **(TBD DATE)**
- △ FOUND 1/2" REBAR W/YPC INSCRIBED "LAWSON WA 11989", UNLESS NOTED OTHERWISE; PER THE PLAT "COUNTRY VIEW ESTATES II" (H-345); HELD UNLESS NOTED OTHERWISE
- ◎ FOUND 1/2" REBAR W/YPC INSCRIBED "OLSON ENG PLS 42667"; PER THE PLAT "GREEN MOUNTAIN ESTATES-PHASE 2" (312-42); HELD UNLESS NOTED OTHERWISE
- ⌑ FOUND 1/2" REBAR W/YPC INSCRIBED "AKS ENGR 54200" UNLESS NOTED OTHERWISE; PER THE PLAT "CAMAS HEIGHTS SUBDIVISION PHASE 1" (312-340); HELD

*** FOUND MONUMENTS WERE TIED JUNE, 2021 - JUNE, 2023 ***

AFN	AUDITORS FILE NUMBER
LCR	LAND CORNER RECORD
HOA	HOME OWNERS ASSOCIATION
PUE	PUBLIC UTILITY EASEMENT (SEE PLAT NOTE 5)
ROS	RECORD OF SURVEY
ROW	RIGHT-OF-WAY
SDE	SITE DISTANCE EASEMENT TO CITY OF CAMAS
STWE	PRIVATE STORMWATER EASEMENT (SEE PLAT NOTE 6)
SWE	SIDEWALK EASEMENT TO CITY OF CAMAS
TYP	TYPICAL
WE	WALL EASEMENT TO HOA
W/YPC	WITH A YELLOW PLASTIC CAP

CURVE TABLE				
CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	13.00'	90°00'00"	20.42'	S46°17'17"W 18.38'
C2	13.00'	90°00'00"	20.42'	N43°42'43"W 18.38'
C3	13.00'	90°00'00"	20.42'	S46°17'17"W 18.38'
C4	13.00'	90°00'00"	20.42'	N43°42'43"W 18.38'

LAND INVENTORY

TOTAL ACREAGE: 11.93 ACRES
TOTAL DEVELOPED ACREAGE: 8.74 ACRES
TOTAL LOT AREA: 6.79 ACRES
TOTAL INFRASTRUCTURE ACREAGE: 1.90 ACRES
TOTAL TRACT AREA: 3.24 ACRES
TOTAL ACREAGE OF CRITICAL AREAS: 0.00 ACRES
TOTAL ACREAGE OF OPEN SPACES: 3.19 ACRES

MINIMUM BUILDING SETBACKS	
FRONT YARD	15'
GARAGE	20'
SIDE YARD	5'
STREET SIDE YARD	10'
REAR YARD	15'
MAXIMUM LOT COVERAGE	50%

*SETBACKS MAY BE MODIFIED AS APPROVED BY THE CITY OF CAMAS.
**UNLESS SHOWN OTHERWISE HEREON

REVIEW COPY
3/13/25

JAMES D. HANNUM
STATE OF WASHINGTON
54200
REGISTERED
PROFESSIONAL LAND SURVEYOR

JOB NAME:	CAMAS HEIGHTS PH2
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CAMAS HEIGHTS SUBDIVISION PHASE 3

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CITY OF CAMAS, CLARK COUNTY, WASHINGTON
CITY FILE NO. SUB21-01
MARCH 2025

T2N, R3E, W.M.
21

RIGHT-OF-WAY NOTE

1. 52.00 FOOT RIGHT-OF-WAY DEDICATED TO CITY OF CAMAS WITH THIS PLAT.

N

SCALE: 1"=30 FEET
30 0 6 15 30

LAND INVENTORY

TOTAL ACREAGE: 11.93 ACRES
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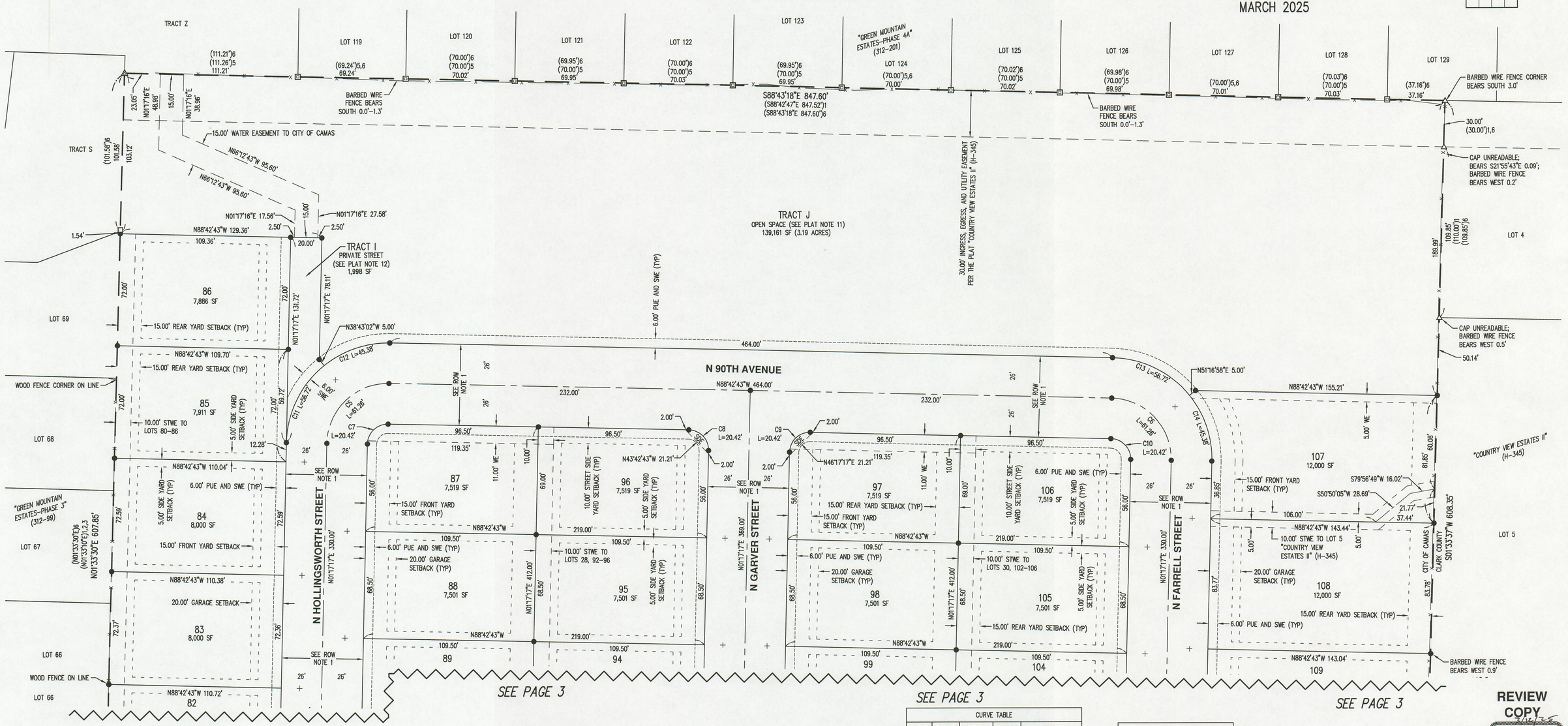

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( )8 RECORD INFORMATION PER THE PLAT "CAMAS HEIGHTS SUBDIVISION PHASE 2" **(TBD)**

*** ALL DATA PER THE PLAT "CAMAS HEIGHTS SUBDIVISION PHASE 1" (312-340) AND THE PLAT "CAMAS HEIGHTS SUBDIVISION PHASE 2" **(TBD)** WERE HELD ***

LEGEND

- ● SET 1/2" X 24" REBAR W/YPC INSCRIBED "AKS ENGR 54200" ON **(TBD DATE)**
- \+ SET BRASS SCREW WITH BRASS WASHER INSCRIBED "AKS ENGR 54200" IN CURB ON PROJECTION OF THE LINE AT A DISTANCE OF 11.80' FROM THE FRONT LOT CORNER ON **(TBD DATE)**
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- ⌑ FOUND 1/2" REBAR W/YPC INSCRIBED "AKS ENGR 54200" UNLESS NOTED OTHERWISE; PER THE PLAT "CAMAS HEIGHTS SUBDIVISION PHASE 1" (312-340); HELD

*** FOUND MONUMENTS WERE TIED JUNE, 2021 - JUNE, 2023 ***

LEGEND

AFN	AUDITORS FILE NUMBER
LCR	LAND CORNER RECORD
HOA	HOME OWNERS ASSOCIATION
PUE	PUBLIC UTILITY EASEMENT (SEE PLAT NOTE 5)
ROS	RECORD OF SURVEY
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SDE	SITE DISTANCE EASEMENT TO CITY OF CAMAS
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SWE	SIDEWALK EASEMENT TO CITY OF CAMAS
TYP	TYPICAL
WE	WALL EASEMENT TO HOA
W/YPC	WITH A YELLOW PLASTIC CAP

CURVE TABLE				
CURVE	RADIUS	DELTA	LENGTH	CHORD
C5	39.00'	90°00'00"	61.26'	S46°17'17"W 55.15'
C6	39.00'	90°00'00"	61.26'	N43°42'43"W 55.15'
C7	13.00'	90°00'00"	20.42'	S46°17'17"W 18.38'
C8	13.00'	90°00'00"	20.42'	N43°42'43"W 18.38'
C9	13.00'	90°00'00"	20.42'	S46°17'17"W 18.38'
C10	13.00'	90°00'00"	20.42'	N43°42'43"W 18.38'
C11	65.00'	49°59'41"	56.72'	S26°17'07"W 54.94'
C12	65.00'	40°00'19"	45.38'	S71°17'07"W 44.47'
C13	65.00'	49°59'41"	56.72'	N63°42'53"W 54.94'
C14	65.00'	40°00'19"	45.38'	N18°42'53"W 44.47'

MINIMUM BUILDING SETBACKS	
FRONT YARD	15'
GARAGE	20'
SIDE YARD	5'
STREET SIDE YARD	10'
REAR YARD	15'
MAXIMUM LOT COVERAGE	50%

*SETBACKS MAY BE MODIFIED AS APPROVED BY THE CITY OF CAMAS.
**UNLESS SHOWN OTHERWISE HEREON

REVIEW COPY
3/26/25

JAMES O. HANNAH
STATE OF WASHINGTON
54200
REGISTERED PROFESSIONAL LAND SURVEYOR

PAGE 4 OF 4

JOB NAME:	CAMAS HEIGHTS PH2
JOB NUMBER:	8468
DRAWN BY:	CJC
CHECKED BY:	JOH
DRAWING NO.:	8468CPLAT PH3

AKS ENGINEERING & FORESTRY, LLC
9600 NE 126TH AVE., STE 2520
VANCOUVER, WA 98682
360.882.0419
WWW.AKS-ENG.COM

AKS
ENGINEERING · SURVEYING · NATURAL RESOURCES
FORESTRY · PLANNING · LANDSCAPE ARCHITECTURE

Citywide Horizontal Curve Safety Improvements

Project Type: Safety Improvements
Total Project Cost: $196,485
Project Timeline: March 2023-December 2025

Project Description

An engineering study commissioned by City of Camas identified roadway curves that did not meet current standards for signage. Federal funding for engineering design and construction of roadway sign improvements was obtained through the WSDOT Highway Safety Improvement Program. Work included installation of 101 new signs at fifteen roadway curves throughout the city.

Project Details and Benefits

- Installed 101 new signs at fifteen curves throughout the city
- Increased safety for drivers, bicyclists and pedestrians
- A total of $360,000 in Federal funds was awarded to cover 100% of design and construction cost, minus minor expenses

Project Funding

Project Phase	Year	Federal Grant	Local Funds	Total
Design	2023	$108,192	$5,000	$113,192
Construction	2025	$83,293	$0	$83,293
Total		**$191,485**	**$5,000**	**$196,485**
Original Budget Estimate		$360,000	$5,000	$365,000

Docusign Envelope ID: C1F88A21-7814-45B4-8DF3-FF2FCFE4F2DE

CITY OF CAMAS
PROJECT NO. STR23007
Citywide Horizontal Curve Safety Improvements

PAY ESTIMATE: THREE
PAY PERIOD: 11/1/2025 Through 12/31/2025

ORIGINAL CONTRACT AMOUNT: $ 96,998.00

Vertex Contracting LLC
24503 NE 162nd Ave.
Battle Ground , WA 98604
markc@vertexcontracting.net
360-949-5564

ITEM NO.	DESCRIPTION	UNIT	ORIGINAL QUANTITY	UNIT PRICE	CONTRACT TOTAL	QUANTITY PREVIOUS	TOTAL PREVIOUS	QUANTITY THIS EST.	TOTAL THIS EST.	QUANTITY TO DATE	TOTAL TO DATE
1	Mobilization	LS	1	$7,500.00	$7,500.00	1.00	$7,500.00		$0.00	1.00	$7,500.00
2	SPCC Plan	LS	1	$750.00	$750.00	0.00	$0.00	1.00	$750.00	1.00	$750.00
3	Traffic Control Supervisor	LS	1	$19,000.00	$19,000.00	1.00	$19,000.00		$0.00	1.00	$19,000.00
4	Flaggers	HR	500	$20.00	$10,000.00	90.00	$1,800.00		$0.00	90.00	$1,800.00
5	Other Traffic Control Labor	HR	100	$20.00	$2,000.00	0.00	$0.00		$0.00	0.00	$0.00
6	Other Traffic Control Devices	LS	1	$1,500.00	$1,500.00	1.00	$1,500.00		$0.00	1.00	$1,500.00
7	Work Zone Safety Contingency (Estimated)	FA	1	$3,500.00	$3,500.00	0.00	$0.00		$0.00	0.00	$0.00
8	Roadside Cleanup	LS	1	$2,500.00	$2,500.00	1.00	$2,500.00		$0.00	1.00	$2,500.00
9	Permanent Signing	LS	1	$45,248.00	$45,248.00	1.00	$45,248.00		$0.00	1.00	$45,248.00
10	Minor Change	CALC	1	$5,000.00	$5,000.00	0.00	$0.00		$0.00	0.00	$0.00
	MC1- Force Account	CALC	1	$4,995.96	$0.00	0.00	$0.00	1.00	$4,995.96	1.00	$4,995.96
	SUBTOTAL:				**$96,998.00**		**$77,548.00**		**$5,745.96**		**$83,293.96**
	Sales Tax (Exempt):				$0.00		$0.00		$0.00		$0.00
	Total:				$96,998.00		$77,548.00		$5,745.96		$83,293.96

	CONTRACT TOTAL	TOTAL PREVIOUS	**TOTAL THIS EST.**	TOTAL TO DATE
ORIGINAL CONTRACT SUBTOTAL	$96,998.00	$77,548.00	$5,745.96	$83,293.96
ADDITIONS / DELETIONS	$0.00	$0.00	$0.00	$0.00
SUBTOTAL	$96,998.00	$77,548.00	$5,745.96	$83,293.96
SALES TAX (EXEMPT)	$0.00	$0.00	$0.00	$0.00
TOTAL CONTRACT	$96,998.00	$77,548.00	$5,745.96	$83,293.96
NO RETAINAGE		$0.00	$0.00	$0.00
TOTAL		**$77,548.00**	**$5,745.96**	**$83,293.96**

THIS PAY EST: **$5,745.96**

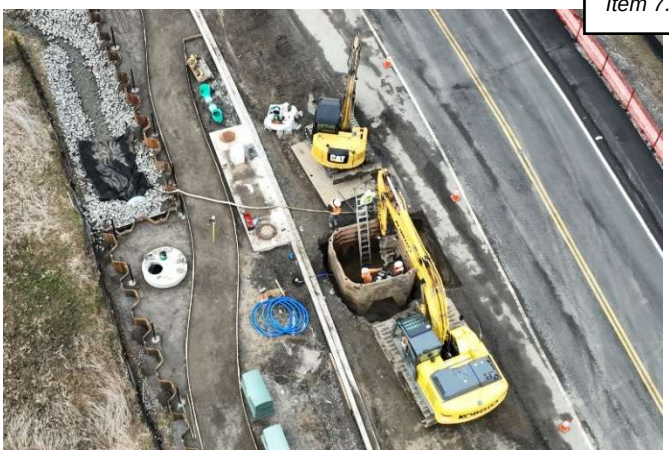
F.I.

Signed by: Allen Westersund D155FED19FD94D8...
1/12/2026
Project Engineer — Date

Signed by: Mark Charlson 819F49051D364F8...
1/12/2026
Contractor — Date

Signed by: James E. Carothers 222ADA9D2B934F1...
1/12/2026
Project Manager — Date

NW 38th Avenue Improvements Phase 3



Project Type: Street Improvements
Total Project Cost: $8,141,681
Project Timeline: June 2020 - July 2025

Project Description

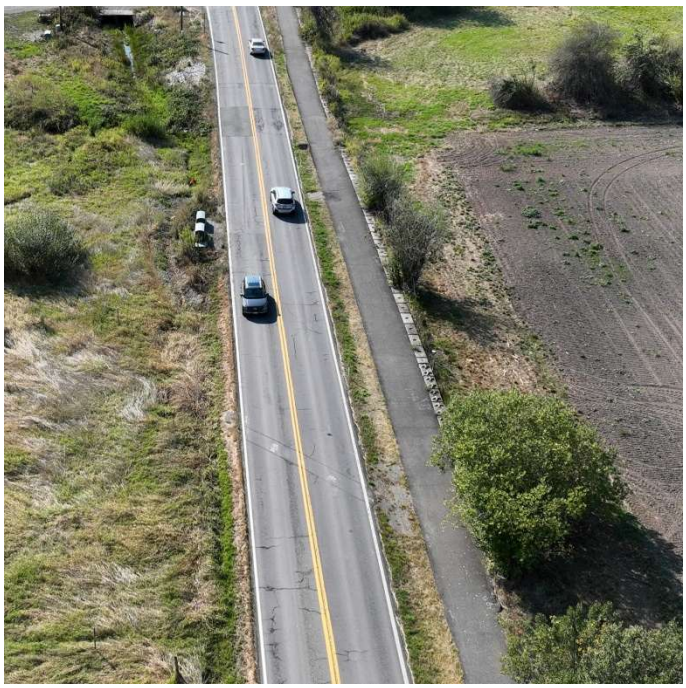
Grant funding for engineering design, right-of-way and construction was obtained through the WSDOT Surface Transportation Program (STPUL) and the Washington State Transportation Improvement Board. The project reconstructed a minor arterial roadway and constructed pedestrian and bicycle safety improvements between NW Parker Street and Grass Valley Park.

Project Details and Benefits

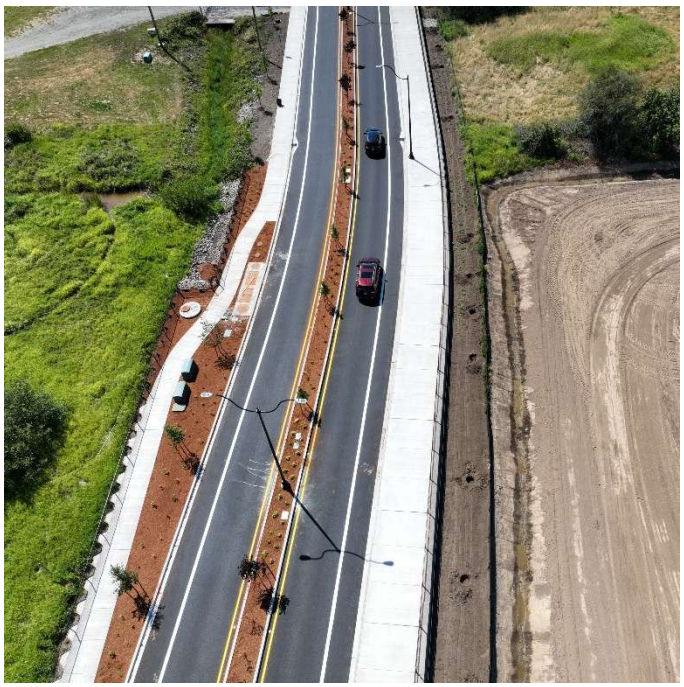
- Reconstructed 2,400 feet of minor-arterial roadway
- Constructed sidewalk, multi-use path, lighted pedestrian crossing, bicycle lanes, curb ramps, landscaping and irrigation, signing, striping, street lighting and stormwater improvements
- Completed the final section in the NW 38th Ave. corridor between Camas and Vancouver

Project Funding

Project Phase	Year	Grant Funds	Local Funds	Total
Design	2020-2024	$335,700	$130,300	$466,000
Right-of-Way	2021	$142,927	$24,308	$167,235
Construction	2024-2025	$7,384,226	$124,220	$7,508,446
Total		**$7,862,853**	**$278,828**	**$8,141,681**
Original Budget Estimate		$2,913,100	$4,197,494	$7,110,594



BEFORE



AFTER

PBS

Pay Estimate No. 14 - FINAL
Pay Period 11/1/2025 2/1/2026

CITY OF CAMAS - NW 38TH AVENUE IMPROVEMENTS, PHASE 3
PROJECT NUMBER: T1024 STR23003

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total to Date
SCHEDULE A	$189,564.84	$1,177,132.65	$626,986.44	$343,596.49	$874,704.55	$316,879.69	$341,867.43	$600,138.89	$465,243.66	$642,721.61	$843,934.46	$35,912.50	$1,350.00	$70,000.00	$6,530,033.22
SCHEDULE A - CHANGES	$0.00	$0.00	$0.00	$0.00	-$450.00	$0.00	$0.00	$0.00	$0.00	$0.00	$11,637.99	$0.00	$38,094.05	$1,300.00	$50,582.04
SCHEDULE B	$0.00	$0.00	$0.00	$0.00	$0.00	$14,380.00	$0.00	$14,380.00	$0.00	$0.00	$8,075.00	$0.00	$0.00	$0.00	$36,835.00
SCHEDULE B - CHANGES	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
SCHEDULE B - SALES TAX (8.5%)	$0.00	$0.00	$0.00	$0.00	$0.00	$1,222.30	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$1,222.30
SCHEDULE B - SALES TAX (8.6%)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$1,236.68	$0.00	$0.00	$694.45	$0.00	$0.00	$0.00	$1,931.13
SCHEDULE C	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$90,000.00	$90,000.00
SCHEDULE C - CHANGES	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
MATERIAL ON HAND	$8,928.00	$140,366.40	$8,862.00	$60,683.08	$0.00	-$175,394.10	$116,245.00	$0.00	$38,006.31	$0.00	-$197,696.69	$0.00	$0.00	$0.00	$0.00
SUBTOTAL	$198,492.84	$1,317,499.05	$635,848.44	$404,279.57	$874,254.55	$157,087.89	$458,112.43	$615,755.57	$503,249.97	$642,721.61	$666,645.21	$35,912.50	$39,444.05	$161,300.00	$6,710,603.69
PAY ESTIMATE	**$198,492.84**	**$1,317,499.05**	**$635,848.44**	**$404,279.57**	**$874,254.55**	**$157,087.89**	**$458,112.43**	**$615,755.57**	**$503,249.97**	**$642,721.61**	**$666,645.21**	**$35,912.50**	**$39,444.05**	**$161,300.00**	**$6,710,603.69**

CHANGE ORDER SUMMARY

	Schedule A	Schedule B	Schedule C	Tax	Total	Running Total	% INCREASE
Original Contract	**$6,515,175.40**	**$42,295.00**	**$90,000.00**	**$3,595.08**	**$6,651,065.48**	**$6,651,065.48**	
Change Order # 01	$0.00	$0.00	$0.00	$0.00	$0.00	$6,651,065.48	0.00%
Change Order #02	-$1,300.00	$0.00	$0.00	$0.00	-$1,300.00	$6,649,765.48	-0.02%
Change Order #03	$0.00	$0.00	$0.00	$0.00	$0.00	$6,649,765.48	0.00%
Change Order #04	$850.00	$0.00	$0.00	$0.00	$850.00	$6,650,615.48	0.01%
Change Order #05	$5,900.00	$0.00	$0.00	$0.00	$5,900.00	$6,656,515.48	0.09%
Change Order #06	$0.00	$0.00	$0.00	$0.00	$0.00	$6,656,515.48	0.00%
Change Order #07	$0.00	$0.00	$0.00	$0.00	$0.00	$6,656,515.48	0.00%
Change Order #08	$11,637.99	$0.00	$0.00	$0.00	$11,637.99	$6,668,153.47	0.17%
Change Order #09	$11,726.93	$0.00	$0.00	$0.00	$11,726.93	$6,679,880.40	0.18%
Change Order #10	$8,861.80	$0.00	$0.00	$0.00	$8,861.80	$6,688,742.20	0.13%
Change Order #11	$5,438.42	$0.00	$0.00	$0.00	$5,438.42	$6,694,180.62	0.08%
Change Order #12	$4,466.21	$0.00	$0.00	$0.00	$4,466.21	$6,698,646.83	0.07%
Change Order #13	$2,155.81	$0.00	$0.00	$0.00	$2,155.81	$6,700,802.64	0.03%
Change Order #14	$2,704.79	$0.00	$0.00	$0.00	$2,704.79	$6,703,507.43	0.04%
Change Order #15	$2,740.09	$0.00	$0.00	$0.00	$2,740.09	$6,706,247.52	0.04%
Change Order #16	$0.00	$0.00	$0.00	$0.00	$0.00	$6,706,247.52	0.00%

Approvals:

Signed by: Dale Stacks — 2/5/2026
PBS Construction Manager — Date

Signed by: James E. Carothers — 2/5/2026
City of Camas Engineering Manager — Date

Signed by: Allen Westersund — 2/5/2026
City of Camas Project Manager — Date

Michael McBride — 2/4/26
Contractor — Date

MATERIAL ON HAND:	**$0.00**
MATERIAL ON HAND TO DATE:	$0.00
TOTAL DUE THIS ESTIMATE:	**$161,300.00**
CONTRACT TOTAL:	$6,651,065.48
TOTAL PAID TO DATE:	$6,710,603.69
CHANGE ORDERS:	$55,182.04
CONTRACT BALANCE	-$4,356.17

COUNCIL APPOINTMENTS

Board/Committee/Commission	Full Name	Position
Washington State Energy Facility Site Evaluation Council (EFSEC)	Jennifer Senescu	Representative

Staff Report

February 17, 2026, Council Regular Meeting

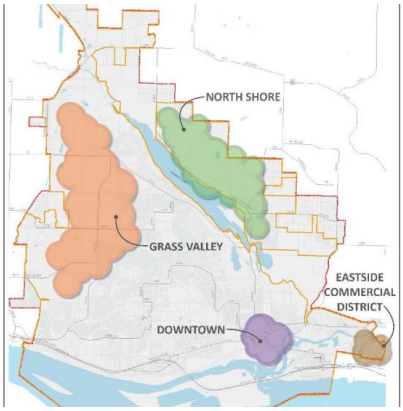
Public Hearing – SunCal Development Agreement and Master Plan
Presenter: Robert Maul, Planning Manager
Time Estimate: 30 minutes

Phone	Email
360.817.7255	rmaul@cityofcamas.us

BACKGROUND: In 2019 the Camas City Council directed staff to engage in a subarea planning process for the North Shore area as allowed for in the adopted comprehensive plan, Camas 2035 (see fig1). Subarea planning is an optional element that cities can elect to include in their respective comprehensive plans with the goal of providing a more area-specific level of master planning to encourage more intense level of development, well served by transportation options, and includes facilities for pedestrian and bicycle travel, a range of housing choices and a mix of shops, services and public spaces.

The North Shore subarea planning process was a two-part public engagement focused effort that spanned from 2020-2022 with final adoption in November 2022. The first year was largely public engagement with a series of open houses, surveys, first Friday events, participation at farmer's markets, Camas Days, and listening sessions with Camas High School students which resulted in a vision statement. The second phase of the subarea plan was taking the vision statement and shaping it into the plan that is now adopted today. Phase 2 was not only well vetted with the community, it was also informed by stakeholder groups and citizen advisory committee work. The North Shore subarea plan is specific to the area north of Lacamas Lake and encompasses over 900 acres of land, including the city owned legacy lands for preservation and recreation. The adopted subarea plan provides flexibly zoning standards, a variety of density and housing types, jobs lands, commercial center and public trails and multi-model transportation elements throughout. There are also specific architectural design standards for residential and commercial developments.

Fig 1



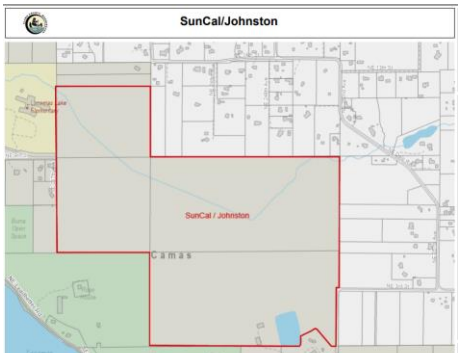
SUMMARY: Since its adoption in 2022, the subarea plan has incentivized several developments within the plan boundary, which includes two recently approved subdivisions north of Camas High School, three other subdivisions submitted for entitlements just north of Lacamas Lake, and staff's recent negotiations with SunCal

development for a master plan development agreement, which is before council for a workshop.

Development agreements (DA) are authorized by RCW36.70B.170, and can be used as an effective tool with larger scale development as a voluntary agreement between the city and a developer/owner. Development agreements allow for flexibility in design, details and development standards beyond what is currently allowed for in adopted city code. It provides increased regulatory certainty, vesting standards, makes clear financial obligation, and can be more ideal for larger projects to create continuity and ensuring vision implementation. What is proposed is a master plan and development agreement similar to what was done for Green Mountain PRD and Hills at Round Lake PRD. Given the large scale of the development, it will take years to build out, which is where a DA can provide regulatory certainty for a longer period of time beyond normal vesting rights which currently range from 2 years to 7 under normal enlistment regulations. Typical timelines for DAs can range from 10-15 years, which is what is proposed for this project. The two documents of the DA and the master plan act as one adopted agreement.

SunCal has a development proposal for the approximate 300 acres of land currently owned by the Johnston family farm (see Fig 2). Within the proposed development area are several zoning designations as assigned by the adopted plan that do not follow property lines. As proposed, SunCal wants to shift the zoning around a bit to help create a neighborhood that designates several housing types for detached and attached single family residential, as well as higher density apartment units closer to the commercial village. The adopted commercial zoning in this section is 15 acres, and the applicant is proposing to maintain a minimum 15-acre commercial center, albeit shifted to the west a bit for design purposes. Included in the proposal is the construction of North Shore Boulevard from the existing terminus at the western boundary all the way through he site to connect to neighboring developments to the south (please refer to the master plan in the packet).

Fig 2



All major utilities will also be installed with this development and there is a proposed stormwater conveyance to the west at the Rose property where natural drainage has flowed historically. Additionally, SunCal has designed the required public plaza that will be adjacent to the Rose legacy lands near the storm conveyance. Other private open space, trails, and neighborhood pocket parks are proposed as well.

Staff has held two workshops with Council on this matter and were directed by Council to schedule a public hearing, which is February 17th, 2026.

Aside from the standard recitals and terms of a DA, the following are the project specific elements within the DA:

- Vesting
- Master Plan
- State Environmental Policy Act (SEPA) review and vesting
- Phasing
- Transportation
- Design Standards for public and private facilities
- Commitment to commercial development
- Maintenance responsibilities
- Stormwater conveyance
- Impact and SDC credits
- Process

BENEFITS TO THE COMMUNITY: The approval of this Development Agreement serves the community in several ways. It implements the vision from the adopted North Shore Subarea Plan as well as the adopted Comprehensive Plan. The development of the new neighborhoods provides a mix of housing types as supported by the housing action plan, subarea plan and comprehensive planning goals. This development will also provide needed infrastructure to serve not only the subject properties, but the surrounding region as well as envisioned by the adopted capital facilities plans.

STRATEGIC PLAN: This item supports several strategic plan priorities, including Economic Prosperity, Safe and Accessible Community, and Vibrant Community Amenities. The development agreement will ensure development of both housing and employment growth with predictable outcomes for the City and development community. The agreement also will provide for a significant portion of the new North Shore Boulevard alignment, providing a new east-west complete street connection with modern bicycle and pedestrian facilities. The proposal also will include new public spaces, including a new civic plaza, neighborhood park spaces, and connections to the planned Legacy Lands park.

This development agreement also implements the adopted North Shore Subarea Plan, which was developed in support of the City of Camas 2018-2020 strategic plan, Priority 4 to proactively manage growth in line with our vision and decision principles and to protect the backdrop of Lacamas Lake on North Shore.

BUDGET IMPACT: There are no anticipated budget impacts with the adoption of the development agreement. Future costs to the city will be with maintenance and service to the new development once completed. Any future capital improvement project from the city will need Council approval and will be an agenda item in the future, if needed.

RECOMMENDATION: Staff recommends that Council conduct a public hearing, take testimony, and direct the City Attorney to prepare an adoptive Ordinance, with or without changes, and schedule the adoption for a meeting in March.

After recording, return to:

Keenan Ordon-Bakalian
Jordan Ramis PC
1211 SW 5th Ave, Ste. 2700
Portland, OR 97204

Space Above for Recording Information Only

DEVELOPMENT AGREEMENT

This Development Agreement (the "Agreement") is made and entered into by and between the CITY OF CAMAS, a Washington municipality (hereinafter referred to as the "City") and SUNCAL ACQUISITIONS, LLC, a California limited liability company; and LACAMAS HERITAGE PROPERTIES LLC, a Washington limited liability company, (hereinafter referred to as the "Developer") (and collectively referred to as "Parties").

RECITALS

WHEREAS, Developer owns or controls certain real property that is located within the City's municipal boundary with the following tax identification numbers: 175747000, 175733000, 175726000, and 175727000, and that is more particularly described in **Exhibit A** and incorporated by reference herein (together, the "Property");
and,

WHEREAS, the City and the Developer recognize this area will develop with multiple uses and wish to provide predictability about the development standards that will apply to the Property over the course of its full development in order to increase efficient use of urban services and land, and provide compatibility amongst the various phases of the Property as they develop, including planning for advance funding for transportation improvements, predictable infrastructure and regulations, parks, trails and open spaces; and,

WHEREAS, the City is a Washington municipality with land use planning and permitting authority over all land within its limits; and,

WHEREAS, pursuant to RCW 36.70B.170, a Development Agreement may set forth the development standards and other provisions that shall apply to, govern and vest the development, use and mitigation of the development of real property for the duration specified in the agreement; which statute provides:

> (1) A local government may enter into a Development Agreement with a person having ownership or control of real property within its jurisdiction. A city may enter into a

development agreement for real property outside its boundaries as part of a proposed annexation or a service agreement. A development agreement must set forth the development standards and other provisions that shall apply to and govern and vest the development, use, and mitigation of the development of the real property for the duration specified in the agreement. A development agreement shall be consistent with applicable development regulations adopted by a local government planning under chapter 36.70A RCW; and

WHEREAS, the legislative findings supporting the enactment of this section provide: The legislature finds that the lack of certainty of the approval of development projects can result in a waste of public and private resources, escalate housing costs for consumers and discourage the commitment to comprehensive planning that would make maximum efficient use of resources at the least economic cost to the public. Assurance to a development project applicant that upon government approval the project may proceed in accordance with existing policies and regulations, and subject to conditions of approval, all as set forth in a development agreement, will strengthen the public planning process, encourage private participation and comprehensive planning, and reduce the economic cost of development. Further, the lack of public facilities and services is a serious impediment to development of new housing and commercial uses. Project applicants and local governments may include provisions and agreements whereby applicants are reimbursed over time for financing public facilities. It is the intent of the legislature by RCW 36.70B.170 through 36.70B.210 to allow local governments and developers of real property to enter into development agreements; and,

WHEREAS, for the purposes of this Agreement, "Development Standards" includes, but is not limited to, all of the standards listed in the Master Plan attached hereto as **Exhibit B**, RCW 36.70B.170(3); and CMC 18.55.340; and,

WHEREAS, the City will be making necessary updates to its Capital Facilities Plan (CFP) and Transportation Improvement Project (TIP) list, of which Northshore Boulevard is a transportation corridor of regional importance; and,

WHEREAS, Developer has agreed to place the road alignment for Developer's responsible portion of Northshore Boulevard at the City's preferred location as will be set forth in the CFP, City's circulation plan documents, and TIP list; and,

WHEREAS, certain offsite transportation improvements are located in unincorporated Clark County and will require cooperation and agreement with that jurisdiction.

NOW, THEREFORE, THE PARTIES HERETO AGREE AS FOLLOWS:

Section 1. Development Agreement. This Agreement is a Development Agreement to be implemented under the authority of and in accordance with RCW 36.70B.170 through RCW 36.70B.210. It shall become a contract between the Developer and the City upon its approval by ordinance or resolution following a public hearing as provided for in RCW 36.70B.170; and upon execution by all parties. The City is authorized to enter into this Agreement pursuant to CMC 18.55.340.

Section 2. Term of Agreement. This Agreement shall commence upon the Effective Date, and shall be valid for a period of Fifteen (15) years; unless extended or terminated by mutual consent of the Parties; provided however, if this Agreement or any initial land use applications related to the Property and filed within one year of the effective date of this Agreement, are appealed, the term of this Agreement shall be tolled for the time during which the appeal is pending or 18 months, whichever is less. The "Effective Date" shall be the date of recording, which shall occur within thirty (30) days of the date of the adopting Resolution.

Section 3. Vesting. Any land use applications submitted with respect to the Property during the term of this Agreement, shall be vested to the following land use regulations and Development Standards in effect on the Effective Date of this Agreement CMC Title 16.01-16.19; CMC 16.31; CMC Title 17 and CMC Title 18 (through Ordinance 24-007), unless otherwise provided for within the Master Plan. Any land use approvals affecting the Property issued after the Effective Date of this Agreement shall remain in effect during the term of this Agreement; provided however, that preliminary plat approvals shall be valid for a period of ten (10) years from the date of the approval, regardless of whether the end of such ten years occurs during or after the term of this Agreement and Developer shall have the right to seek extensions to such preliminary plat approvals pursuant to the relevant provisions of the CMC. The vesting provided for under this Agreement shall not apply to System Development Charges, Impact Fees or application or review fees, which shall be assessed at the then-current rates.

The City shall have no liability for any damages or losses suffered by the Developer or the Developer's successors if a federal or state agency takes action that voids, nullifies or preempts the City's agreement to permit vesting under this Agreement. Developer and Developer's successors shall further indemnify and hold harmless the City from any and all liability, including third party liability, under any applicable state or federal regulations including, but not limited to, the Clean Water Act, for any actual or alleged violation of said regulations arising from the City's agreement to allow the vesting described in this section, or in the event said third party or agency challenges the adoption of this Agreement within the applicable timeframes. In such event, the City, in its sole discretion, may require the Developer or the Developer successors to post a bond in an amount deemed reasonably sufficient to cover all costs and expenses associated with any claim or action for liability as described herein, including reasonable attorney's fees to be incurred by the City in defending any third party claim.

Upon notice of any claim or action for liability against City relating to this Section, the City shall timely notify Developer or Developer's successors of their duties for indemnification of the City. Within ten (10) days of such notice, Developer may, at Developer's sole discretion, revoke its vested rights to the City's current standards arising under this section by giving written notice of such revocation to the City. Upon such revocation, the Developer shall have no further liability to the City or obligation to indemnify the City, including any obligation to post the bond described in this Section. The Developer may choose to waive the vesting provided for in this Section, if it notifies the City in writing. In that event, any fully complete development application submitted to the City and relating to the property, shall vest to the rules and regulations in effect at the time such application is submitted to the City. If the Developer

chooses to waive the vesting provided for in this Section, then all vested rights created in this Section shall become null and void.

Section 4. Master Plan. Attached as Exhibit B and incorporated by reference herein is the Master Plan for the development of the Property. The Master Plan provides for a variety of housing types and lot sizes, as well as a unique and innovative plaza in the North Shore Town Center designation. The Master Plan provides the Parties with predictability regarding certain aspects of the future development of the Property, including access locations on to public streets and any associated offsite improvements related to transportation. The standards within the Master Plan, or those substantially similar to the standards in the Master Plan, shall be controlling on the future development of the Property.

Section 4.1 Environmental Review. Pursuant to the State Environmental Policy Act (SEPA), piecemeal environmental review is to be discouraged. As such, the Parties wish for SEPA review to be accomplished as part of the Agreement for as many of the Property's potential adverse environmental impacts as can be reasonably analyzed, based upon current information contained within the SEPA checklist submitted with this Agreement, including, but not limited to, a Traffic Impact Analysis, Critical Areas Report, and GIS data as to off-site storm water impacts. This review is done under the Consolidated Review provisions of SEPA. The SEPA Checklist attendant with this Agreement identifies various potential adverse impacts including transportation, wetlands, sewer, water, and storm water. The Checklist also identifies a variety of technical reports or information that provides a basis for the proposed mitigation or partial mitigation of these impacts. It is the intent of this Agreement and its attendant SEPA process, to have the City issue a Threshold Determination (as that term is utilized in RCW 43.21C) on the identified conceptually proposed impacts of the development of the Property. Uses and impacts that are identified at future stages of the development, including but not limited to, Site Plan approval, Preliminary Plat approval, Short Plat approval or building permit approvals that have been previously analyzed through this or other SEPA processes, shall not be re-analyzed on the condition that the future identified adverse impacts, in the sole discretion of the City, are substantially similar to and of the same or less intensity as those previously analyzed under this or other SEPA processes. Nothing in this Section shall preclude the City from requesting information, at the cost of the Developer, on the potential adverse environmental impacts associated with a specific land use application that have not been previously identified or analyzed as required under the State Environmental Policy Act.

Section 4.2 Phasing.

4.2.1 Description of Phasing within the Master Plan. The Parties agree that site development at buildout will occur consistent with the phasing depicted in the Master Plan and the City's preliminary plat procedures set forth in CMC 17.11.030. Site development at buildout is expected to include a mix of residential, commercial retail and employment lands. The Parties agree that the initial phases of the Master Plan (Phases 1, and 2) will include townhouses, duplexes, and single family residences. The Parties further agree that Developer may complete the full buildout of the residential Phases 1 and 2 of

the Master Plan prior to the completion of the connection of Northshore Boulevard with SR 500. Phase 1 shall include the completion of the East/West section of Northshore Boulevard as depicted in the Master Plan. Phase 2 will include the completion of the North/South section of Northshore Boulevard as depicted in the Master Plan, and Phase 2 can be phased as required to deliver access to the residential lots. Phases 3 and 4 will occur subsequent to the residential phases as set forth in the phasing of the Master Plan. For the avoidance of doubt, the Public Plaza as depicted on the Master Plan, and described in the Master Plan's Design Guidelines, will be included in Phase 3.

4.2.2 Development of the Project in Sub-Phases is Permitted. The City also agrees to allow final engineering and final plat recordation by phases in accordance with the Master Plan, provided that for each unconstructed sub-phase within the approved Master Plan phase, Developer shall provide assurance adequate to the City, such as a performance bond that shall be released as each subsequent sub-phase is constructed. The Parties agree that the final plat for Phase 1 may be recorded for all the sub-phases; however, Developer will be allowed to construct sub-phases A & B while a performance bond will be required to secure the remaining work in sub-phases C, D, & E or any other variation chosen by Developer. Developer will be allowed to continue to build-out each Phase 1 sub-phase consistent with the terms of this Agreement, provided the performance bond remains for each unconstructed sub-phase. The Parties also agree that Developer shall be similarly permitted to record final plats and develop each subsequent phase of the Master Plan in sub-phases, as described previously within this Section.

4.2.3 Timing for Final Plats. Developer shall have until the expiration of the Agreement to record any Final Plat for the Project, subject to the City's preliminary plat procedures. Developer may also record final plats for the phases depicted in the Master Plan without the completion of all required infrastructure improvements, provided that Developer submits a subdivision improvement bond or other financial security and all relevant improvements are engineered, pursuant to CMC 17.21.

4.2.4 At-Risk Plan Check. Developer and City agree that Developer may pursue independent plan review and engineering for any public infrastructure improvements identified within the Master Plan prior to securing preliminary plat approval or other relevant approvals for the phases depicted within the Master Plan. All aforementioned plan review and engineering approvals shall be subject to the sole discretion and approval by the City's Community Development Director. The City shall not be responsible for any costs associated with Developer submitting for plan review and, or, engineering approvals prior to securing preliminary plat approval or any other required approval for the relevant phase of the Master Plan.

Section 4.3 Transportation. Kittelson and Associates, Inc. (Developer's transportation engineers, "Kittelson") and the City have analyzed the transportation impacts of the full development (based upon the Master Plan in Exhibit B) of the Property as identified in the transportation impact analysis attached hereto as **Exhibit C** and incorporated by reference. Based upon the Kittelson transportation impact analysis, the Property at full development will increase the existing number of vehicle trips on the transportation system by 908 net new weekday AM peak hour, 1,544 net new weekday PM peak hour and 16,704 net new average daily trips. Based upon Kittelson's and the City's analysis as well as Clark County and WSDOT feedback, the future development of the Property will be conditioned upon the reasonable funding within six (6) years of, the critical links and intersections provided for in the Comprehensive Plan and the other mitigation measures provided for in Exhibit C. The City agrees to consider and use best efforts, as a part of the 2025 annual review process, to include the Northshore Boulevard onto the City of Camas six (6) year transportation improvement project list within the CFP as a reasonably funded project. The Parties agree that Developer's obligation to construct critical links and intersections depicted in Exhibit B shall be limited to Developer's construction of Developer's proportional share of extending Northshore Boulevard and providing right of way dedication to 3rd Street and 252nd Avenue.

The Property shall be vested during the term of this Agreement with 1,544 net new weekday PM peak hour, 908 net new weekday AM peak hour and 16,704 net new average daily trips and no additional off site transportation mitigation or analysis will be required during the term of this Agreement; provided, however, that in the event Developer proposes uses or intensities of uses that would cause the total number of weekday AM, PM Peak, or Average Daily trips to exceed the number of trips analyzed as part of this Agreement, then the City may require, and Developer shall provide, additional transportation analysis and lawful mitigation for those increased trips. The transportation vesting provided for in this Section shall be subject to the mitigation measures and the timing provided for in the Master Plan and Exhibit C. Some of the transportation improvements may be on the City's Transportation Capital Facility Plan. Developer or its successor in interest to the Property, upon construction of such qualifying transportation improvement, shall be eligible to apply for Transportation Impact Fee Credits pursuant to CMC Chapter 3.88, but only if such improvements are eligible for Credits under the City's applicable Capital Facilities Plan and Transportation Impact Fee programs.

The City and Developer also acknowledge that there may be offsite intersection improvements needed at NE 28th Street and NW 232nd Avenue in accordance with the Kittelson transportation impact analysis. The land surrounding this inter area lies within the jurisdiction of unincorporated Clark County. The City has an interest in ensuring that this development can be fully realized and will therefore use best efforts to enter into a interlocal agreement with Clark County after the execution of this Agreement to ensure that the completion of the intersection improvements will happen so that certificates of occupancies can be issued for each home, building, or improvement within the development on the Property.

Section 4.4 Specific Design Standards.

4.4.1 Streetscape. Developer agrees to incorporate into its development application submittal package streetscape standards for primary streets within the Property addressing street specifications, tree spacing and species, sidewalk separation, trash receptacles, benches and other street amenities that will create an inviting, safe passage for not only vehicular but pedestrian and bicycle traffic. Streetscape standards will be consistent with the streetscape standards identified in the Master Plan. During the land use application phase subsequent to the adoption of this Agreement, proposed streetscape standards that are not substantially similar to those standards within the Master Plan may be adopted upon mutual agreement of the Parties.

4.4.2 Master Plan Design Standards. The Parties hereby agree that the design standards, guidelines, and processes set forth in the Master Plan shall apply to the development of the Property. Design standards that are inconsistent with the design standards set forth in the Master Plan shall only be incorporated into the project upon mutual agreement of the Parties, consistent with the terms of this Agreement. In the event the design standards within the Master Plan and North Shore Subarea Design Manual conflict, the design standards within the Master Plan shall control.

4.4.3 Lighting. This Project uses dark sky compatible street lights and LED lamps.

4.4.4 Development of Commercial Lands. The development of the commercial lands within the Property shall be consistent with the standards and provisions identified in the Master Plan. During the land use application phase subsequent to the adoption of this Agreement, proposed development standards that are not substantially similar to those standards within the Master Plan may be adopted upon mutual agreement of the Parties.

4.4.5 M*aintenance of Northshore Boulevard.* The City and Developer agree that the North-South section of Northshore Boulevard park strip and planted median as depicted in the Master Plan shall be maintained by the Home Owners Association that shall be established in conjunction with the development of the residential phases of the Master Plan. All other sections of Northshore Boulevard shall be maintained by the City pursuant to dedication by Developer or Developer's successors in interest.

4.4.6 Public Art. Developer agrees to install five permanent public art installations as part of the Project. All public art installations must be publicly visible and accessible. The general location, type, and timing of each installation shall be governed by the phasing plan depicted in the Master Plan and the associated applicable approval processes for each phase.

Section 4.5 Stormwater. As identified and described in the Stormwater Memorandum and Concept Plan which is attached hereto and incorporated herein as **Exhibit D**, there are three primary stormwater discharge locations from the Property, including a depression in the southwest portion of the Property with an off-site discharge in a shallow and very flat drainage that crosses the City's Legacy Lands Park, Parcel Number 175721000 ("City Parcel"), to the west of the Property before dropping steeply to Lacamas Lake. This shallow and flat drainage across the City Parcel poses an issue to both the Project and to the City. The lack of elevation change across the localized on-site depression and adjacent City Parcel prior to the drop off to Lacamas Lake create the following issues:

- Excess fill on the Property to enable collection, routing, treatment and detention of onsite runoff.

- Surface discharge of concentrated flow onto the adjacent City Parcel. Since the drainage route across the City Parcel is flat and shallow, managing the drainage in the existing condition and for any development is problematic.

Exhibit D proposes a piped discharge to address the foregoing constraints and appropriately manage stormwater for the Project. The Parties acknowledge the foregoing and agree that the final stormwater design and any proposed discharge method shall be based on the findings and recommendations of the Project's Technical Information Report (TIR), to be reviewed and approved by the City. If the TIR determines that a piped stormwater discharge across the City Parcel is the preferred and necessary option, the Parties agree to work cooperatively to evaluate, design, and construct a discharge system with the following characteristics:

- The piped discharge across the City Parcel shall be designed to remove any surficial flow on the City Parcel and provide a much more manageable subsurface system;

- The sizing of the piped discharge will include capacity for future development of the City Parcel;

- The piped discharge shall be designed with the objective of reducing fill on the Property.

If the Parties agree upon the piped discharge design depicted in Exhibit D or a similar piped design as set forth in the TIR, Developer agrees to retain the existing drainage channel across the Legacy Lands Property for stormwater conveyance at flow rates substantially similar to existing conditions at the time that this Agreement is adopted. Retention of the existing drainage on the Legacy Lands Property has the benefit of providing capacity for the required discharge, based off the TIR, and maintaining flows so the existing water course can be incorporated into future park design.

Therefore, the Parties shall collaborate to determine the most advantageous route for the aforementioned stormwater line, discharge point, and sizing of the line, subject to City

review and approval through the standard stormwater permitting process. Any such stormwater line constructed across the City Parcel shall be owned, operated, and maintained by the Developer (or successor in interest), unless otherwise agreed to in writing by the City.

Section 4.6 Temporary Grading Easement on City Parcel. The City Parcel southwest of the Property has a rolling and hummocky topography. Several of the hummocks are located on the property line between the City Parcel and Property. The varied topography along the property lines will result in cut and fill slopes to enable flatter areas to be graded onsite. When the City develops the City Parcel, it will be required to grade in similar cut and fill slopes resulting in peaks and valleys along the common property line between the City Parcel and the Property. Therefore, the Parties agree that it is mutually beneficial for the City to grant Developer a temporary grading easement ("TGE") to resolve the aforementioned topographical challenges that are present on the common property line between the City Parcel and the Property. The TGE will allow beneficial grading to occur on both parcels to maximize the Parties respective developable area, as well as allow a road being developed with Lacamas Northshore to directly serve the City Parcel. The TGE will include appropriate erosion control methods to be implemented in conjunction with grading. The Parties shall work together to determine area of the TGE as depicted in the Master Plan.

Section 4.7 City to Reimburse Developer for Upsizing Onsite Water Trunk Lines. A water trunk line is identified within the City's Water System Plan ("WSP"), incorporated hereto by reference, as being located on the Property. The City is specifying that a 24-inch water trunk line is needed to be constructed with the Project. The Parties agree that Developer shall be reimbursed by the City through SDC credits, at the time improvements are accepted by City inspector, for the costs associated with upsizing any onsite water lines.

Section 4.8 Impact Fee Credits and Reimbursement. Developer or successor in interest to the Property, upon construction of such qualifying improvements, shall be eligible to apply for impact fee credits, including for schools, traffic, fire, parks, stormwater, sanitary and water. The Parties agree that the City shall include Developer's design of its proportional share of Northshore Boulevard (as depicted in the Master Plan) within the City's Transportation System Plan ("TSP") and that Developer will be eligible for all available impact fee credits upon completion of Developer's proportional share of Northshore Boulevard.

Section 4.9 Dedication and Management of Public Amenities. Developer will dedicate and convey ownership of the parks identified in the Master Plan as shown on the Master Plan's open space sheet and consistent with the phasing depicted in the Master Plan. Developer shall be responsible for the establishment of vegetation and landscape maintenance for the parks depicted in the Master Plan a period of two (2) years from the time of construction for each relevant park. Developer agrees to use best efforts to coordinate with Legacy Lands on its design of the entrance to Legacy Lands, parks, the plaza, trails, and public and open space amenities for the deeded open space as depicted in

the Master Plan, so that the City will use best efforts and take substantial steps toward the inclusion of these regional public spaces on the next update to the City's six (6) year parks, recreation and open space plan ("PROS").

Section 4.10 Land Use Designations. The Parties agree that the Property shall develop consistent with the land use designations and density set forth in the Master Plan depicted in Exhibit B. The allowed uses for the Property shall be those uses listed in the Master Plan's Design Guidelines and those uses permitted (outright, conditionally, or otherwise) within the base zone of any relevant portion of the Property. To the extent the allowed uses set forth in the Master Plan's Design Guidelines and the uses allowed under the base zoning for any relevant portion of the Property conflict, the uses set forth in the Master Plan's Design Guidelines shall control.

Section 5. Process. Subsequent to the approval of this Agreement, the Parties agree that subdivision and future development of the Property will be achieved through a subdivision application subject to the provisions in CMC Chapter 17.11. The subdivision application will be processed as a Type III decision subject to a hearing and city final decision by the hearings examiner pursuant to the provisions in CMC Chapter 18.55.030(C). The approval of any multi-family development will proceed forward through a Type II site plan review process under CMC Chapter 18.18 and Chapter 18.55. The entitlement of industrial and commercially zoned lands within the Property will be concurrently processed under the City's site plan review standards within CMC Chapter 18.18 and under Chapter 18.55. Design review for North Shore residential shall be processed as a Type I decision to be rendered by the City's Community Development Director or designee and be approved consistent with the design standards set forth in the Master Plan. The application shall be substantially similar to the Master Plan. Any aspects of a land use application relating to the Property that are not substantially similar to the Master Plan shall be reviewed under the applicable regulations as if no Master Plan had been approved.

Section 6. Remedies. Should a disagreement arise between the City and Developer regarding the interpretation and application of this Agreement, the Parties agree to attempt to resolve the disagreement by first meeting and conferring. If such meeting proves unsuccessful to resolve the dispute, the disagreement may be resolved by judicial action filed in the Clark County Superior Court in the State of Washington consistent with the terms in Section 8, below.

Section 7. Performance. Failure by either party at any time to require performance by the other party of any of the provisions hereof shall in no way affect the parties' rights hereunder to enforce the same, nor shall any waiver by a party of the breach hereof be held to be a waiver of any succeeding breach or a waiver of this non-waiver clause.

Section 8. Governing Law and Venue. This Agreement shall be construed in accordance with, and governed by the laws of the State of Washington. The parties agree to venue in the Superior Court for Clark County, State of Washington, to resolve any disputes that may arise under this Agreement.

Section 9. Severability. This Agreement does not violate any federal or state statute, rule, regulation or common law known; but if any provision is found to be invalid or in violation of

any statute, rule, regulation or common law, it shall be considered null and void, with the remaining provisions remaining viable and in effect.

Section 10. Inconsistencies. If any provisions of the Camas Municipal Code or Master Plan are deemed inconsistent with the provisions of this Agreement, the provisions of this Agreement shall prevail.

Section 11. Binding on Successors and Recording. The rights and obligations created by this Agreement are assignable and shall be binding upon and inure to the benefit of Developer, the City, and their respective heirs, successors and assigns. Only Developer and the City or their successors and assigns shall have the right to enforce the terms of this Agreement. This Agreement shall be recorded against the real property indicated in the Master Plan with the Clark County Auditor.

Section 12. Recitals. Each of the recitals contained herein are intended to be, and are incorporated as, covenants between the parties and shall be so construed.

Section 13. Amendments. This Agreement may only be amended by mutual, written agreement of the Parties that is approved by the City pursuant to a Type IV legislative process as set forth in the CMC. While nothing contained herein shall be construed to obligate either party to amend the Master Plan, it is recognized that future evolution of the Project and the City may warrant consideration of such issues. The City reserves the authority to impose new or different regulations to the extent required by a serious threat to public health and safety pursuant to RCW 36.70B.

Section 14. Agreement to Run with the Land. For the term of this Agreement, the benefits and obligations of this Agreement shall run with the land and continue following the completion of the Project or transfer of ownership to Developer's successors and assigns.

Section 15. Recording. This Agreement shall be recorded with the Clark County Auditor's Office.

Section 16. Notices. All notices, requests, demands, and other communications called for or contemplated by this Agreement shall be in writing, and shall be duly given by mailing the same by certified mail, return receipt requested; or by delivering the same by hand, to the following addresses, or to such other addresses as the Parties may designate by written notice in the manner aforesaid:

SunCal Acquisitions, LLC
Attn: Matthew Keenen & Matthew Vissotzky
2646 Dupont Drive, Ste. 60-520
Irvine, CA 92612

And to its Attorney:
Jordan Ramis PC
Attn: Jamie Howsley & Keenan Ordon-Bakalian
Jamie.Howsley@Jordanramis.com
Keenan.Ordon-Bakalian@Jordanramis.com
1211 SW Fifth Ave, Ste. 2700
Portland, OR 97204

City of Camas
Community Development Department
Communitydevelopment@cityofcamas.us
616 NE 4th Avenue,
Camas, WA 98607

Section 17. Interpretation. This Agreement has been reviewed and revised by legal counsel for both Parties, and no presumption or rule construing ambiguity against the drafter of the document shall apply to the interpretation or enforcement of this Agreement. Nothing herein shall be construed as a waiver of the City's constitutional and statutory powers. Nothing herein shall be construed or implied that the City is contracting away its constitutional and statutory powers, except as otherwise authorized by law.

Section 18. Authority. Each signatory to this Agreement represents and warrants that he or she has full power and authority to execute and deliver this Agreement on behalf of the Party for which he or she is signing, and that he or she will defend and hold harmless the other Parties and signatories from any claim that he or she was not fully authorized to execute this Agreement on behalf of the person or entity for whom he or she signed. Upon proper execution and delivery, this Agreement will have been duly entered into by the Parties, will constitute as against each Party a valid, legal and binding obligation that shall run with the land, and will be enforceable against each Party in accordance with the terms herein.

Section 19. Delays. If either Party is delayed in the performance of its obligations in this Agreement due to Force Majeure, then performance of such obligation shall be excused for the period of delay. Force Majeure means extraordinary natural events or conditions such as war, riot, labor disputes, or other causes beyond the reasonable control of the obligated party. The City's or Developer's inability to fund, or decision not to fund, any of its obligations shall not be an acceptable reason for delay.

Section 20. No Third Party Beneficiary. This Agreement is made and entered into for the sole protection and benefit of the parties hereto and their successors and assigns. No other person shall have any right of action based upon any provision of this Agreement.

Section 21. Attorneys' Fees. In any judicial action to enforce or determine a party's rights under this Agreement, the prevailing party (or the substantially prevailing party, if no one party prevails entirely) shall be entitled to reasonable attorneys' fees, expert witness fees, and costs, including fees and costs incurred in the appeal of any ruling of a lower court.

Section 22. Cooperation in Execution of Documents. The Parties agree to properly and promptly execute and deliver any and all additional documents that may be necessary to render this Agreement practically effective. This Paragraph shall not require the execution of any document that expands, alters or in any way changes the terms of this Agreement.

Section 23. Full Understanding. The Parties each acknowledge, represent and agree that they have read this Agreement; that they fully understand the terms thereof; that they have had the opportunity to be fully advised by their legal counsel and any other advisors with respect thereto; and that they are executing this Agreement after sufficient review and understanding of its contents.

Section 24. Final and Complete Agreement. This Agreement is integrated and constitutes the final and complete expression of the Parties on all subjects relating to the development of the Property. This Agreement may not be modified, interpreted, amended, waived or revoked orally, but only by a writing signed by all Parties. This Agreement supersedes and replaces all prior agreements, discussions and representations on all subjects discussed herein, without limitation. No Party is entering into this Agreement in reliance on any oral or written promises, inducements, representations, understandings, interpretations or agreements other than those contained in this Agreement and the exhibits hereto.

IN WITNESS WHEREOF, the parties hereto have caused this to be executed as of the dates set forth below:

CITY OF CAMAS

By _____
Print Name _____
Title _____

LACAMAS HERITAGE PROPERTIES, LLC

By _____
Print Name _____
Title _____

SUNCAL ACQUISITIONS, LLC

By _____
Print Name _____
Title _____

[Notary Acknowledgements Following on Next Pages]

STATE OF WASHINGTON)
) ss.
County of Clark)

I certify that I know or have satisfactory evidence that _____ is the Person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute this instrument and acknowledged it as the _____of the City of Camas, Washington, to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED: _____, 2026.

_____
NOTARY PUBLIC for Washington
My Commission Expires: _____

STATE OF WASHINGTON)
) ss.
County of Clark)

I certify that I know or have satisfactory evidence that _____ is the Person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute this instrument and acknowledged it as the _____of LaCamas Heritage Properties, LLC, to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED: _____, 2026.

_____
NOTARY PUBLIC for Washington
My Commission Expires: _____

STATE OF WASHINGTON)
) ss.
County of Clark)

I certify that I know or have satisfactory evidence that _____ is the Person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute this instrument and acknowledged it as the _____of SunCal Acquisitions, LLC, to be free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED: _____, 2026.

_____
NOTARY PUBLIC for Washington
My Commission Expires: _____

Exhibit A

Legal Description

MacKay Sposito

P00002.026
2/10/2026
SPD

Vancouver Office

18405 SE Mill Plain Boulevard, Suite 100, Vancouver, WA 98683
360-695-3411 | www.mackaysposito.com

EXHIBIT "A"

LEGAL DESCRIPTION

A OF TRACT OF LAND LOCATED IN SECTION 27, TOWNSHIP 2 NORTH, RANGE 3 EAST OF THE WILLAMETTE MERIDIAN IN CLARK COUNTY, WASHINGTON, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 27, TOWNSHIP 2 NORTH, RANGE 3 EAST OF THE WILLAMETTE MERIDIAN IN CLARK COUNTY, WASHINGTON AS DESCRIBED AND RECORDED UNDER CLARK COUNTY, WASHINGTON AUDITOR'S FILE NUMBER 5023963.

EXCEPT THE NORTHERLY 330.00 FEET AS DESCRIBED AND RECORDED UNDER CLARK COUNTY, WASHINGTON AUDITOR'S FILE NUMBER 5168666D AND 53376106DT.

TOGETHER WITH THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 27, TOWNSHIP 2 NORTH, RANGE 3 EAST OF THE WILLAMETTE MERIDIAN IN CLARK COUNTY, WASHINGTON AS DESCRIBED AND RECORDED UNDER CLARK COUNTY, WASHINGTON AUDITOR'S FILE NUMBER 5023967.

EXCEPT THEREFROM COUNTY ROAD KNOW AS MARTHEN ROAD.

TOGETHER WITH THE SOUTHEAST QUARTER OF SECTION 27, TOWNSHIP 2 NORTH, RANGE 3 EAST OF THE WILLAMETTE MERIDIAN IN CLARK COUNTY, WASHINGTON. AS DESCRIBED AND RECORDED UNDER CLARK COUNTY, WASHINGTON AUDITOR'S FILE NUMBER 5023968 AND DECLARATION OF BLA RECORDED UNDER CLARK COUNTY WASHINGTON AUDITOR'S FILE NUMBER 6176319.

EXCEPT FOR THE FOLLOWING DESCRIBED PARCEL OF LAND: BEGINNING AT A POINT THAT BEARS NORTH 88° 55'50" WEST, ALONG THE SOUTH LINE OF SAID SOUTH HALF FOR A DISTANCE OF 100.00 FEET FROM THE SOUTHEAST CORNER OF SAID SOUTH HALF; THENCE NORTH 40° 40'54" WEST, LEAVING SAID SOUTH LINE, FOR A DISTANCE OF 296.24 FEET TO THE BEGINNING OF A TANGENT 40.00-FOOT RADIUS CURVE TO THE LEFT; THENCE ALONG THE ARC OF A TANGENT 40.00-FOOT RADIUS CURVE TO THE LEFT, THE CHORD OF WHICH BEARS NORTH 78° 38'52" WEST FOR A CHORD DISTANCE OF 49.22 FEET, THROUGH A CENTRAL ANGLE OF 75° 55'57", FOR AN ARC DISTANCE OF 53.01 FEET; THENCE SOUTH 63° 23'09" WEST, FOR A DISTANCE OF 199.68 FEET; THENCE SOUTH 03° 35'24" EAST, FOR A DISTANCE OF 62.75 FEET TO THE BEGINNING OF A TANGENT 90.00-FOOT RADIUS

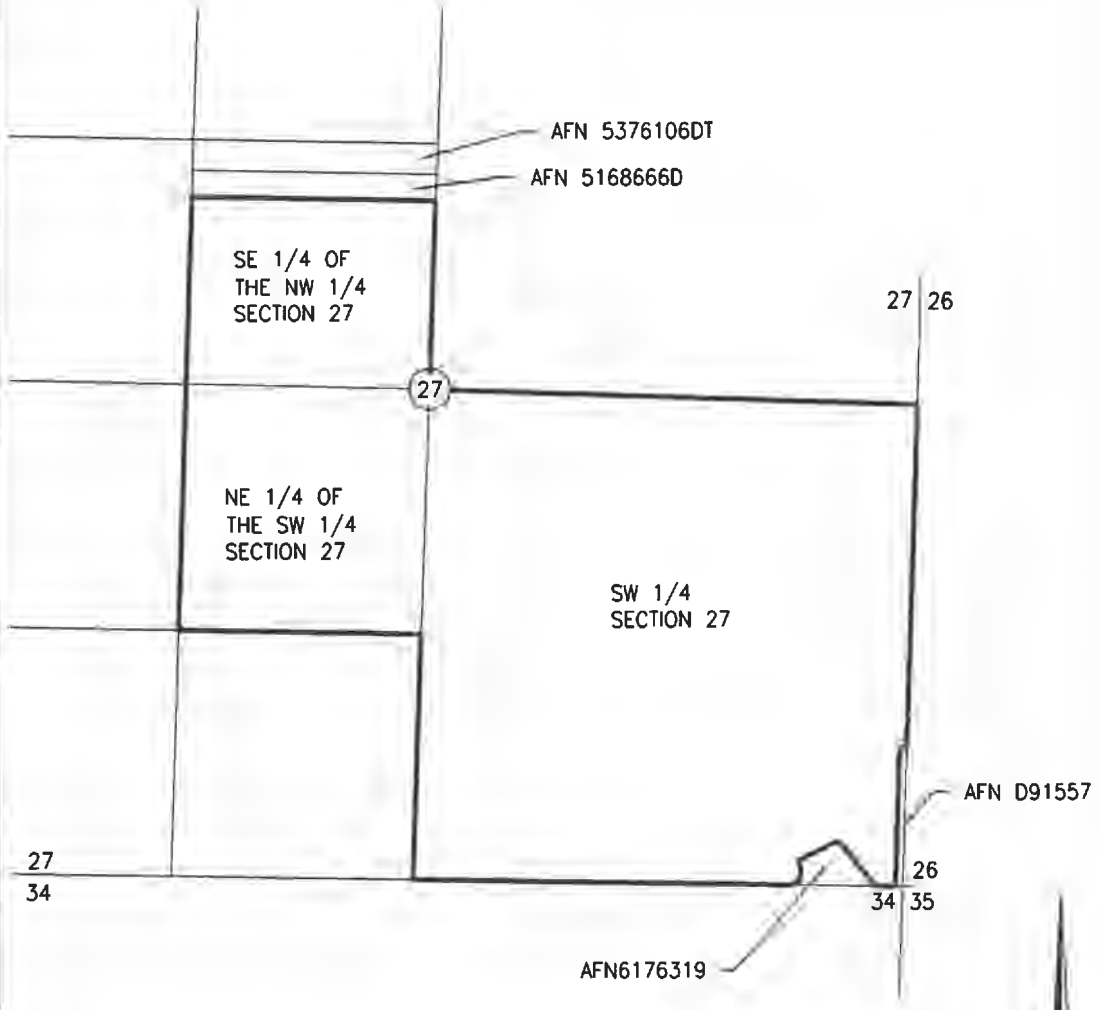
CURVE TO THE RIGHT; THENCE ALONG THE ARC OF A TANGENT 90.00-FOOT RADIUS CURVE TO THE RIGHT, THE LONG CHORD OF WHICH BEARS SOUTH 22° 52'39" WEST, FOR A CHORD DISTANCE OF 80.22 FEET, THROUGH A CENTRAL ANGLE OF 52° 56'06", FOR AN ARC DISTANCE OF 83.15 FEET TO THE SOUTH LINE; THENCE SOUTH 88° 55'50" EAST, ALONG SAID SOUTH LINE, FOR A DISTANCE OF 447.21 FEET TO THE POINT OF BEGINNING.

ALSO EXCEPT FOR ROAD PURPOSES THE EAST 40 FEET OF THE SOUTH 762 FEET OF THE SOUTH HALF AS DESCRIBED AND RECORDED UNDER CLARK COUNTY, WASHINGTON, AUDITOR'S FILE NUMBER D91557.

CONTAINS 9,939,956 OR 228.190 ACRES, MORE OR LESS.

EXHIBIT "B"

CLARK COUNTY WASHINGTON



SATHOR P. DOMINGO
STATE OF WASHINGTON
22010870
REGISTERED
PROFESSIONAL LAND SURVEYOR

1" = 1000'

MacKay Sposito

ENERGY PUBLIC WORKS LAND DEVELOPMENT

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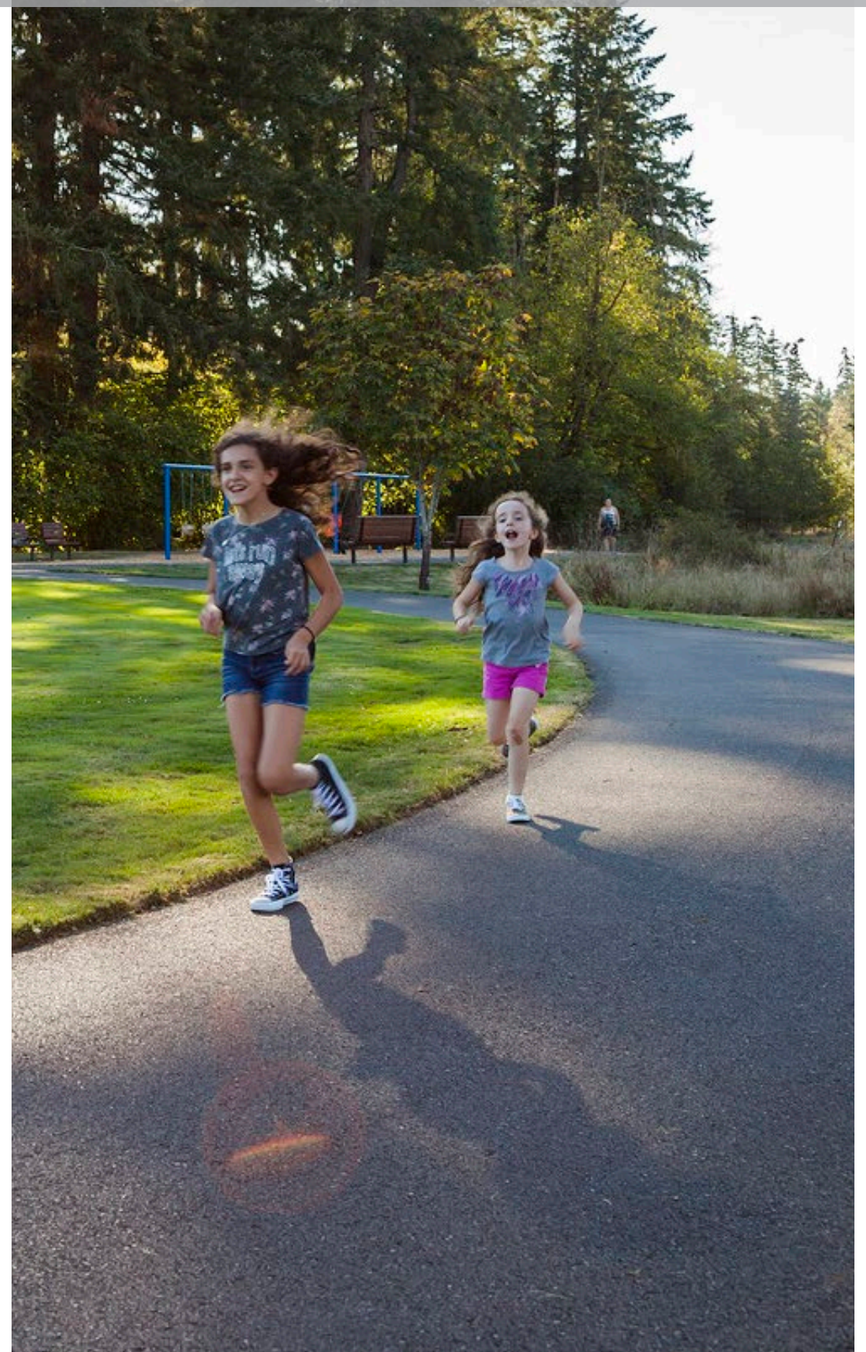
VANCOUVER, WA 98683
PHONE: (360) 695-3411

SunCal

LACAMAS NORTH SHORE
MASTER PLAN



TEAM

SUNCAL
DEVELOPER

Nick Pappas
Matt Keenen
Matthew Vissotzky

GBD ARCHITECTS
ARCHITECT

Mark Raggett

WALKER MACY
LANDSCAPE ARCHITECT

Mike Zilis
Brian Bishop
Cameron Blakely

MACKAY SPOSITO
ENGINEER

Lindsey Perticone
Peter Tuck
Taylor Wilson

CAMAS
CITY

James Carothers
Rob Charles
Robert Maul
Alan Peters
Chris Witkowski

SETTING

OPPORTUNITIES AND CONSTRAINTS

LACAMAS LAKE

LEGACY LANDS

Mature Tree Groves & Significant Rock Outcroppings

Connections to Legacy Lands

Connection to Lacamas Elementary School

Heritage Dairy Farm Structures

Connections to Open Space

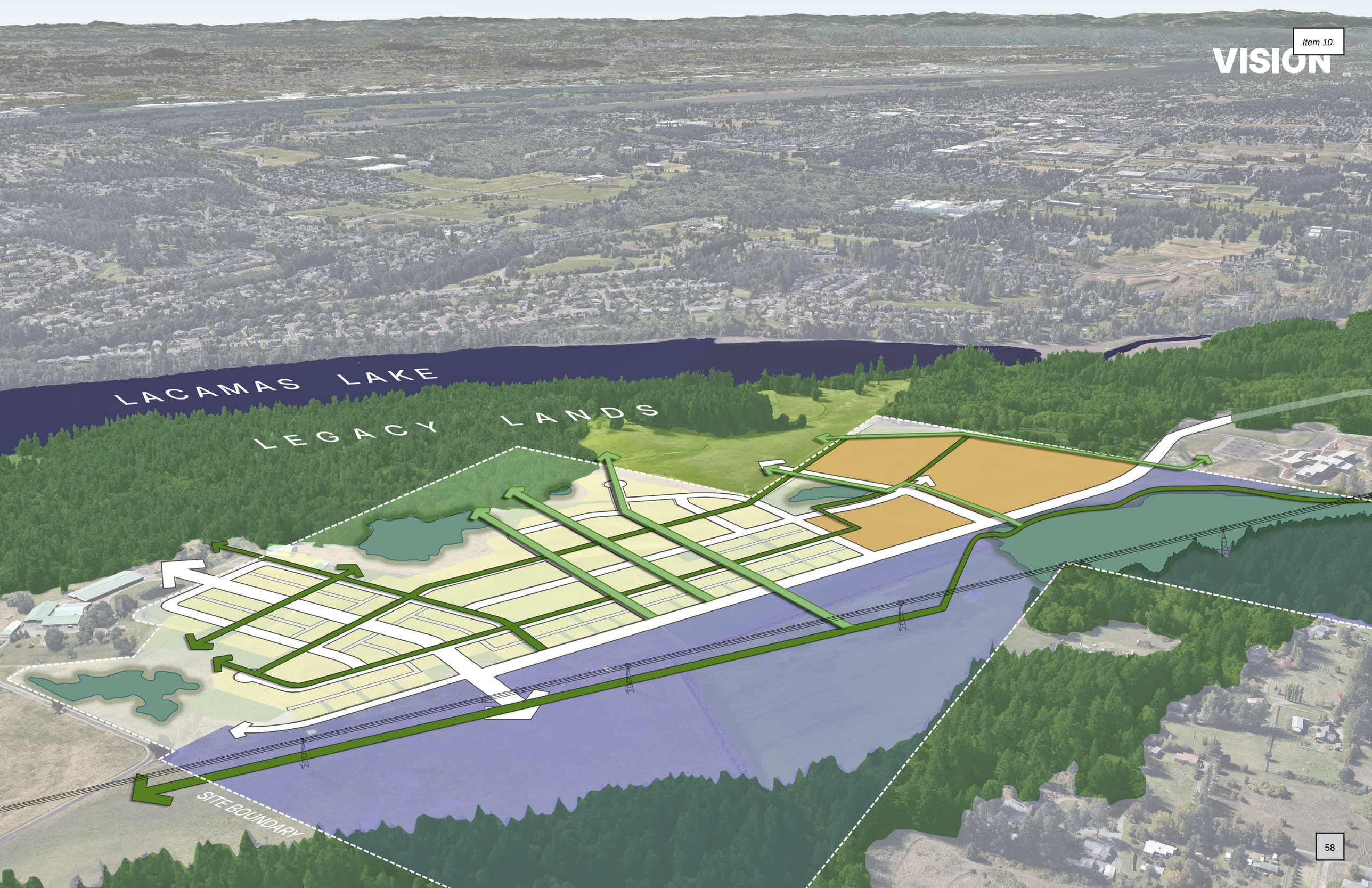
Views to Mount Hood

Power line easement

Forested Edge

SITE BOUNDARY

VISION



SITE MASTER PLAN

Lacamas Elementary School

Private Residences

TOWN CENTER

EMPLOYMENT

North Shore Boulevard

North Shore Boulevard

Plaza and Festival Street

Parking and Trailhead to Legacy Lands

LEGACY LANDS

Existing Forest

SINGLE FAMILY
TOWN CENTER
EMPLOYMENT

OPEN SPACE

The open space vision is anchored by the park spaces of Legacy Lands and extends green into the site through features such as natural wooded areas, improved wetlands, pocket parks, mid-block greenways, special streets, and trails.

Connection to Elementary School

Trail connection under BPA Lines

2.5 AC

1.75 AC

Plaza and Festival Street

Pocket Parks

.25 AC

.5 AC

Soft Surface Trail

Open stormwater facility

1.5 AC

2 AC

4 AC

1.5 AC

Park over stormwater

21 AC

Existing Forest

Mid-Block Greenways

LEGACY LANDS

NATURAL AREA *(25 AC)*
COMMUNITY OPEN SPACE *(12 AC)*
POCKET PARK *(5.5 AC)*
PRIMARY PEDESTRIAN ROUTES
- Shared Use Paths
- Mid-Block Connection
- Soft surface trails
- Sidewalk

POTENTIAL PUBLIC ART

DEEDED OPEN SPACE

Open space lands built as part of development and then handed back for city ownership and management.

Plaza and Festival Street

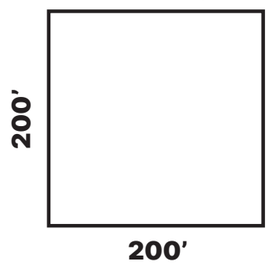
Existing Forest

PLAZA EXAMPLES

There are a wide variety of potential plazas that could be developed. Examples below show how other communities have addressed this need. Please see following page for our proposed approach.

PIONEER SQUARE

PORTLAND, OR



- **Concerts**
- **Festivals**
- **Temporary Markets**
- **Water feature**
- **Cafe**
- **Food Carts**

CENTENNIAL PLAZA

REDMOND, OR

- **Splash Pad**
- **Shade Structure**
- **Restrooms**
- **Concession Stand**
- **Flexible Lawn**
- **Temporary Markets**

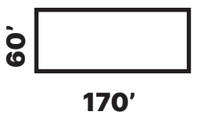
FEDERAL STREET PLAZA

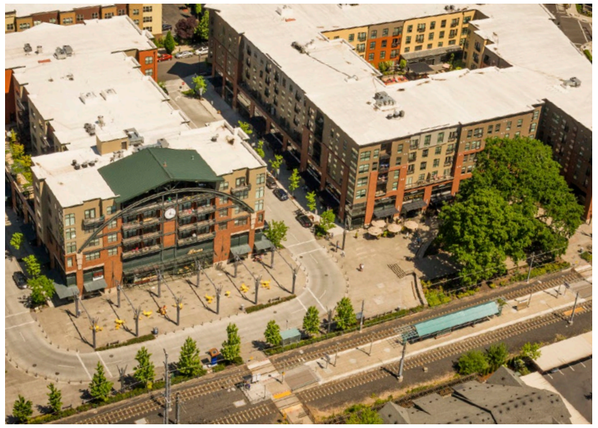
THE DALLES, OR

- **Splash Pad**
- **Shaded Seating**
- **Restrooms**
- **Temporary Markets**

JERRY WILEY PLAZA

HILLSBORO, OR





- **Overhead structure**
- **Seating**
- **Temporary Markets**

PLAZA

Plaza and park deeded to city (~1.5 acres)
Shared-Use Pathway between Legacy Lands and North Shore Blvd
Event / Interpretive Space
Traffic turnaround for event days
< Town Center Access
City-Owned Legacy Lands Property
To Legacy Lands Park
Wetland
Pocket Park
Event Lawn
Plaza
Festival Street

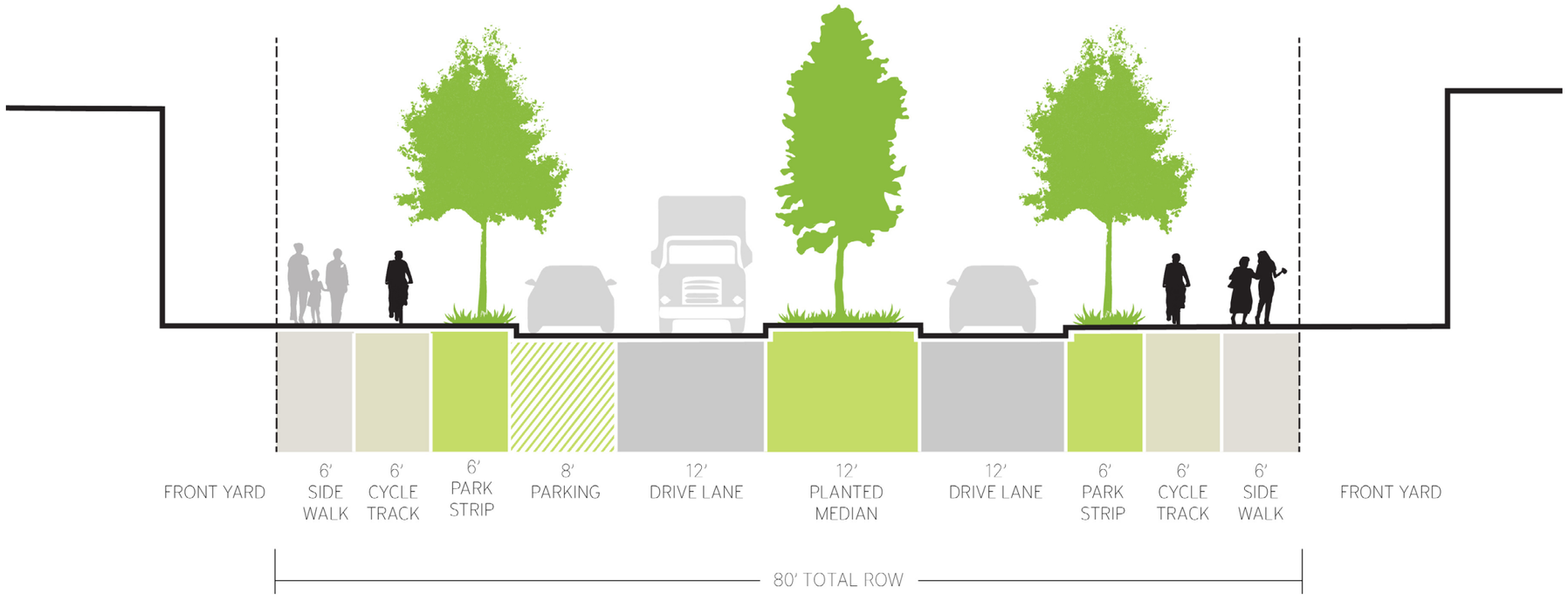
CIRCULATION

ROW Dedication

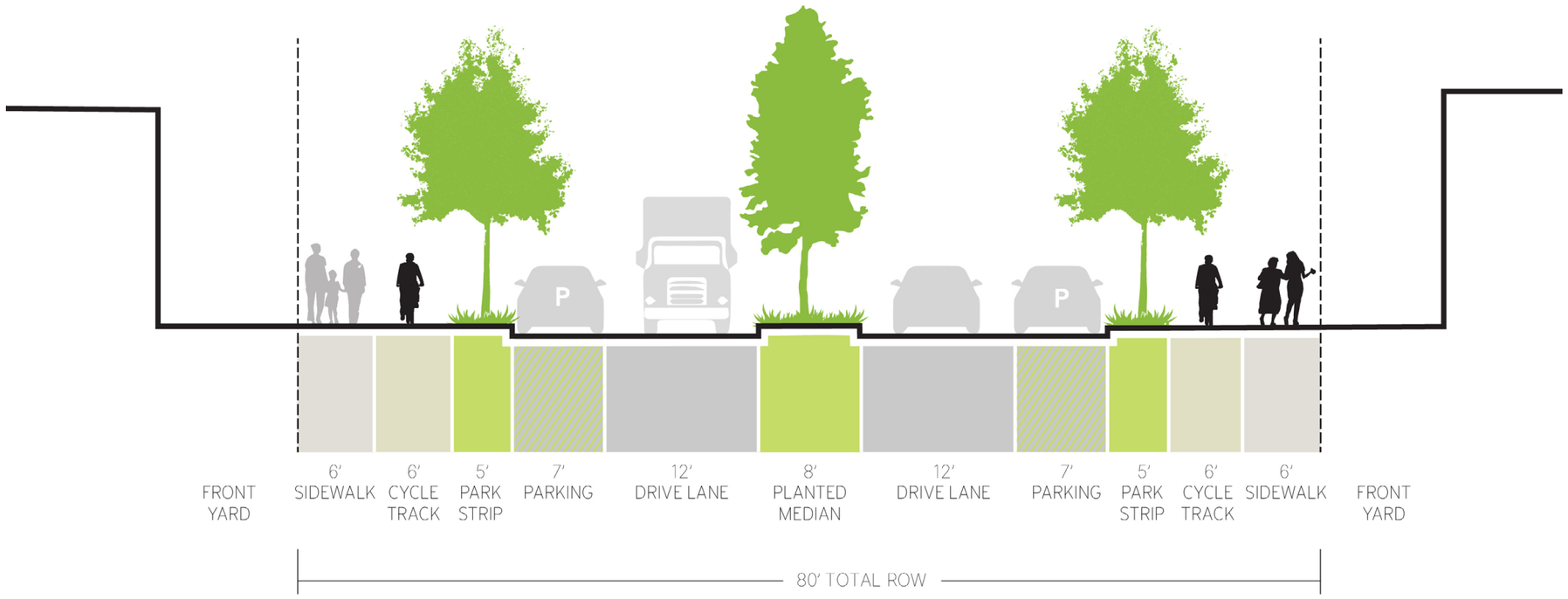
NORTHSHORE BLVD
Minor Arterial
ALLEY
(Per City Code)
LOCAL STREET
(Per City Code)
GATEWAY TO LEGACY LANDS
FESTIVAL STREET
PRIMARY PEDESTRIAN ROUTES

CIRCULATION

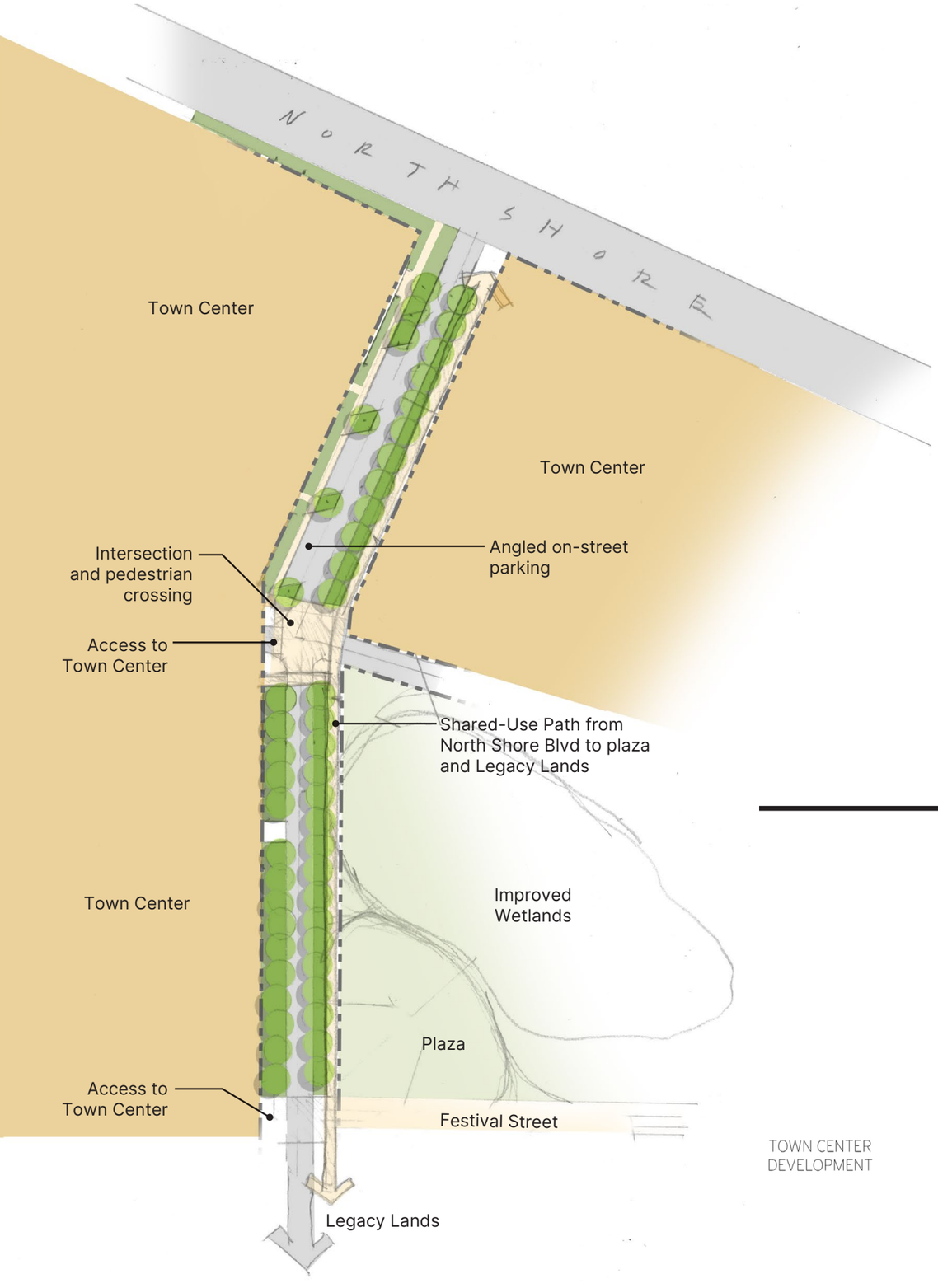
NORTH SHORE BOULEVARD (EAST WEST)

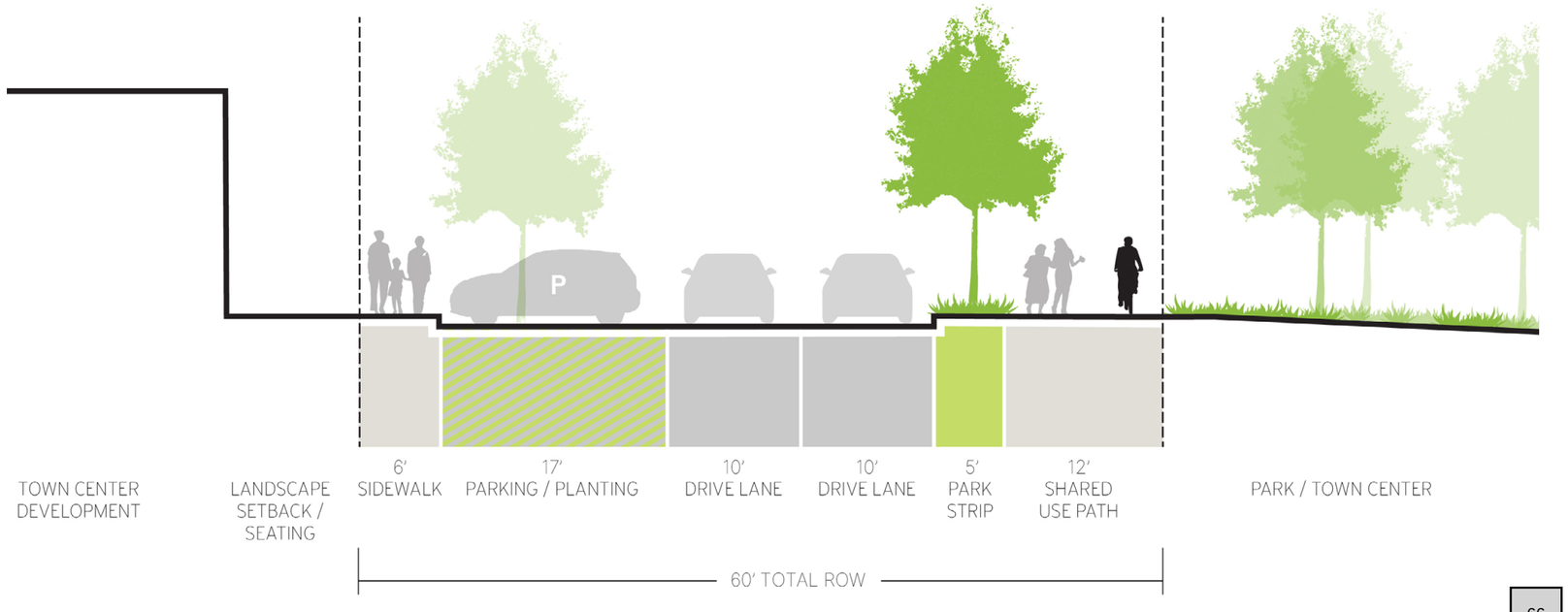


NORTH SHORE BOULEVARD (NORTH SOUTH)

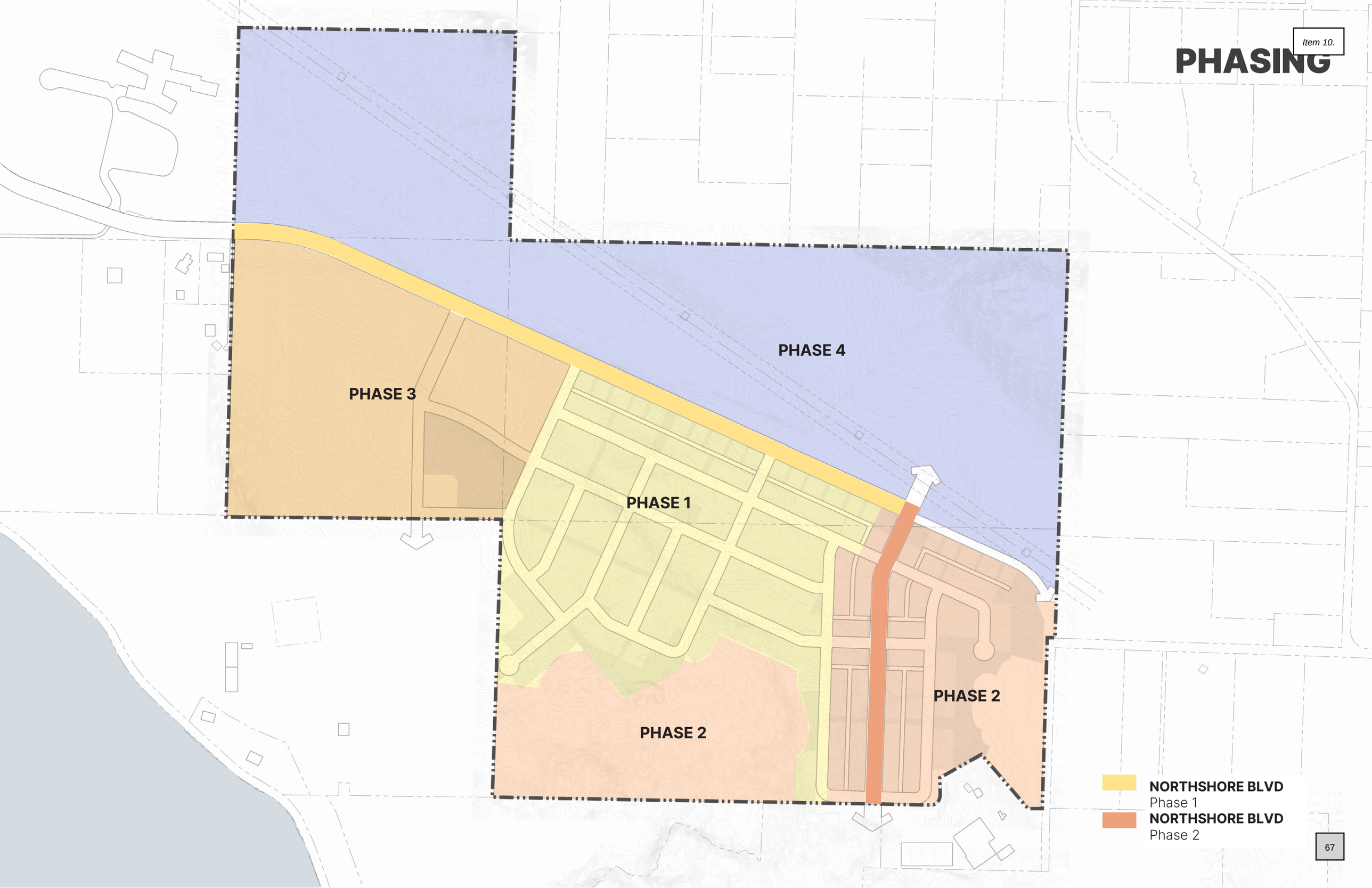


GATEWAY TO LEGACY LANDS





PHASING


PHASE 4
PHASE 3
PHASE 1
PHASE 2
PHASE 2
NORTHSHORE BLVD
Phase 1
NORTHSHORE BLVD
Phase 2

OFFSITE GRAVITY CONNECTION TO 232ND STREET PUMP STATION PER CITY OF CAMAS DIRECTION

TOWN CENTER PARCEL 1

TOWN CENTER PARCEL 2

TOWN CENTER PARCEL 3

NORTHSHORE BOULEVARD

PROPOSED FORCEMAIN

PROPOSED SANITARY PUMP STATION - EXACT LOCATION TO BE DETERMINED

SANITARY SEWER NOTES:

1. ONSITE AREA TO BE SERVED BY GRAVITY LINE EXTENDED ONTO SITE FROM NW CORNER MAXIMIZED BASED ON MAXIMUM DEPTH OF 16FT.
2. FOR PORTION OF SITE THAT CANNOT BE SERVED BY GRAVITY LINE FROM NW CORNER, REMAINDER TO BE SERVED BY PROPOSED SANITARY PUMP STATION LOCATION IN THE CENTRAL SOUTH AREA OF THE PROJECT.
3. FORCE MAIN FROM PUMP STATION TO DISCHARGE TO GRAVITY LINE FROM NW CORNER FO THE SITE.

0 150 300
SCALE: 1" = 150'

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10/13/2025

LACAMAS NORTH SHORE MIXED-USE DEVELOPMENT
CAMAS

UTILITY PLAN - SANITARY

REVISIONS:

JOB NO.:	008973
DATE:	OCTOBER 2025
DESIGNED BY:	PT/GO
DRAWN BY:	GO/MD
CHECKED BY:	CONCEPTUAL

CONCEPTUAL

C1.0

FILE: W:\008973 Lacamas North Shore Camas\500 Design\502 Drawings\01 Conceptural\05 Sheets\Utility Layouts.dwg PLOTSTYLE: Gradersolan.stb

STORM FACILITY DISCHARGE TO STREAM

PROPOSED BELOW GROUND TREATMENT VAULT AND ABOVE GROUND DETENTION POND TO MEET REQUIRED QUALITY AND QUANTITY CONTROL. FACILITY TO PROVIDE BASIC TREATMENT PLUS PHOSPHORUS CONTROL.

WETLAND (TYP)

WETLAND BUFFER (TYP)

TOWN CENTER PARCEL 1

PROPOSED UNDERGROUND STORMWATER FACILITY FOR QUALITY AND QUANTITY CONTROL. TREATMENT FACILITY TO PROVIDE ENHANCED TREATMENT PLUS PHOSPHOROUS CONTROL

TOWN CENTER PARCEL 3

TOWN CENTER PARCEL 2

NORTHSHORE BOULEVARD

PROPOSED STORMWATER DISCHARGE LINE ACROSS CITY PARCEL

PROPOSED UNDERGROUND STORMWATER FACILITY FOR QUALITY CONTROL. TREATMENT FACILITY TO PROVIDE BASIC TREATMENT PLUS PHOSPHOROUS CONTROL.

PROPOSED LARGE WETPOND FOR QUANTITY AND QUALITY CONTROL

STORM NOTES:

1. ALL RUNOFF FROM THE SITE WILL BE COLLECTED AND ROUTED TO A STORMWATER FACILITY.
2. STORMWATER FACILITY TO PROVIDE THE REQUIRED QUALITY AND QUANITITY CONTROL PRIOR TP DISCHARGE FROM THE SITE
3. ALL RUNOFF FROM THE SITE DRAINS TO LACAMAS LAKE AND THEREFORE REQUIRES PHOSPHOROUS TREATMENT.
4. RUNOFF FROM ROADS AND AREAS OF THE SITE WITH SINGLE FAMILY HOMES WILL HAVE BASIC TREATMENT IN ADDITION TO PHOSPHOROUS CONTROL.
5. RUNOFF FROM OTHER AREA WILL HAVE ENHANCED TREATMENT IN ADDITION TO PHOPHOROUS CONTROL
6. STORMWATER DISCHARGE FROM THE SW CORNER OF THE SITE WILL BE IN AN OFFSITE PIPE INSTALLED ACROSS CITY PROPERTY. DETAILS OF THE LOCATION AND SIZE TO BE DETERMINED.

0 150 300
SCALE: 1" = 150'

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EXPIRES: 6/30/2026
PROFESSIONAL ENGINEER

2/2/2026

LACAMAS NORTH SHORE MIXED-USE DEVELOPMENT
CAMAS

UTILITY PLAN - STORM

REVISIONS:

JOB NO.:	8973
DATE:	2/2/2026
DESIGNED BY:	PT/GO
DRAWN BY:	GO/MD
CHECKED BY:	PT

CONCEPTUAL

C1.1

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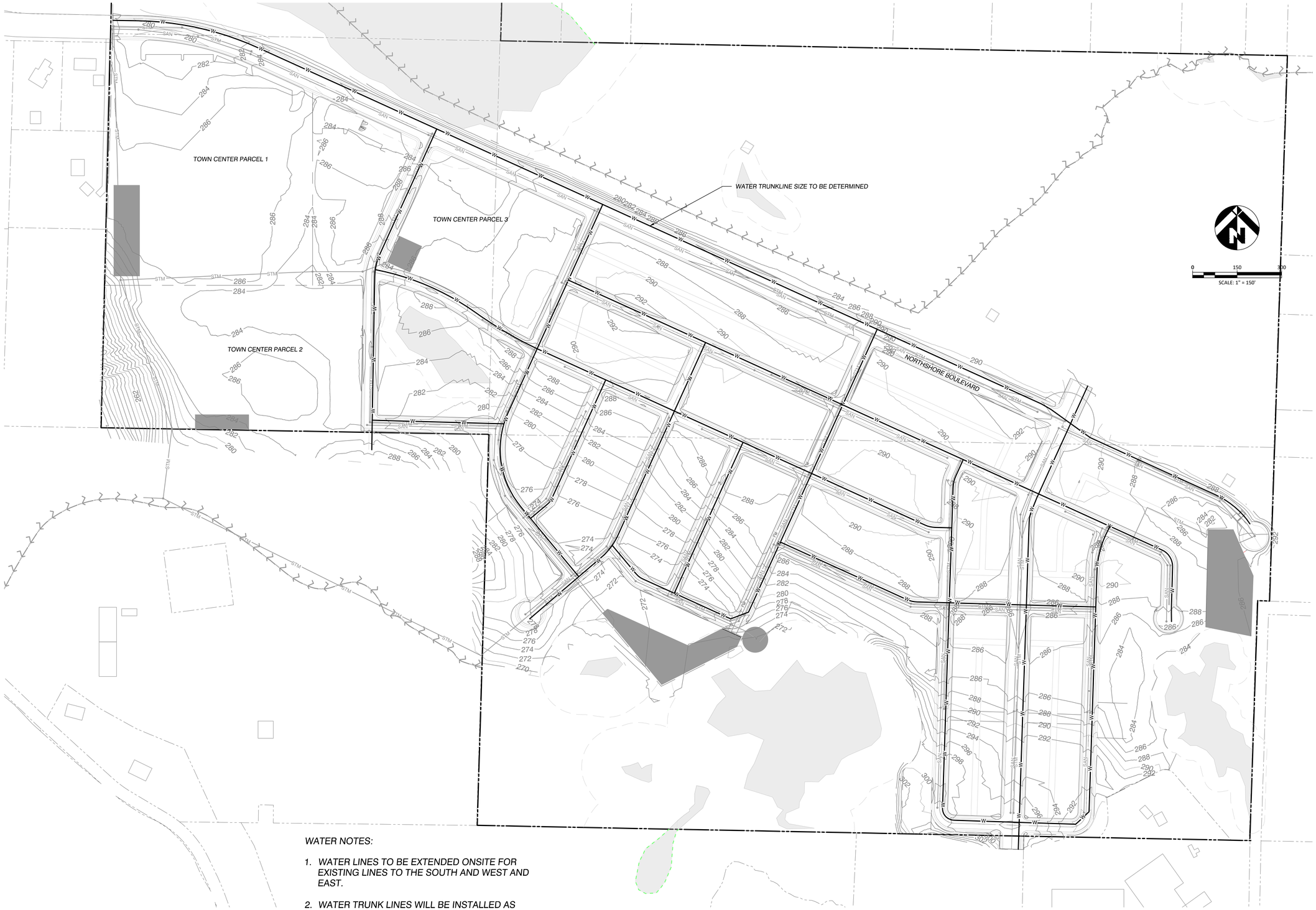

WATER NOTES:

1. WATER LINES TO BE EXTENDED ONSITE FOR EXISTING LINES TO THE SOUTH AND WEST AND EAST.
2. WATER TRUNK LINES WILL BE INSTALLED AS REQUIRED BY THE CITY. EXACT LOCATION AND SIZES ARE CURRENTLY UNKNOWN.
3. ALL OTHER ONSITE LINES LOOPED THROUGH THE SITE WILL BE 8" DIP

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LACAMAS NORTH SHORE MIXED-USE DEVELOPMENT
CAMAS

UTILITY PLAN - WATER

REVISIONS:

JOB NO.:	008973
DATE:	OCTOBER 2025
DESIGNED BY:	PT/GO
DRAWN BY:	GO/MD
CHECKED BY:	PT

CONCEPTUAL

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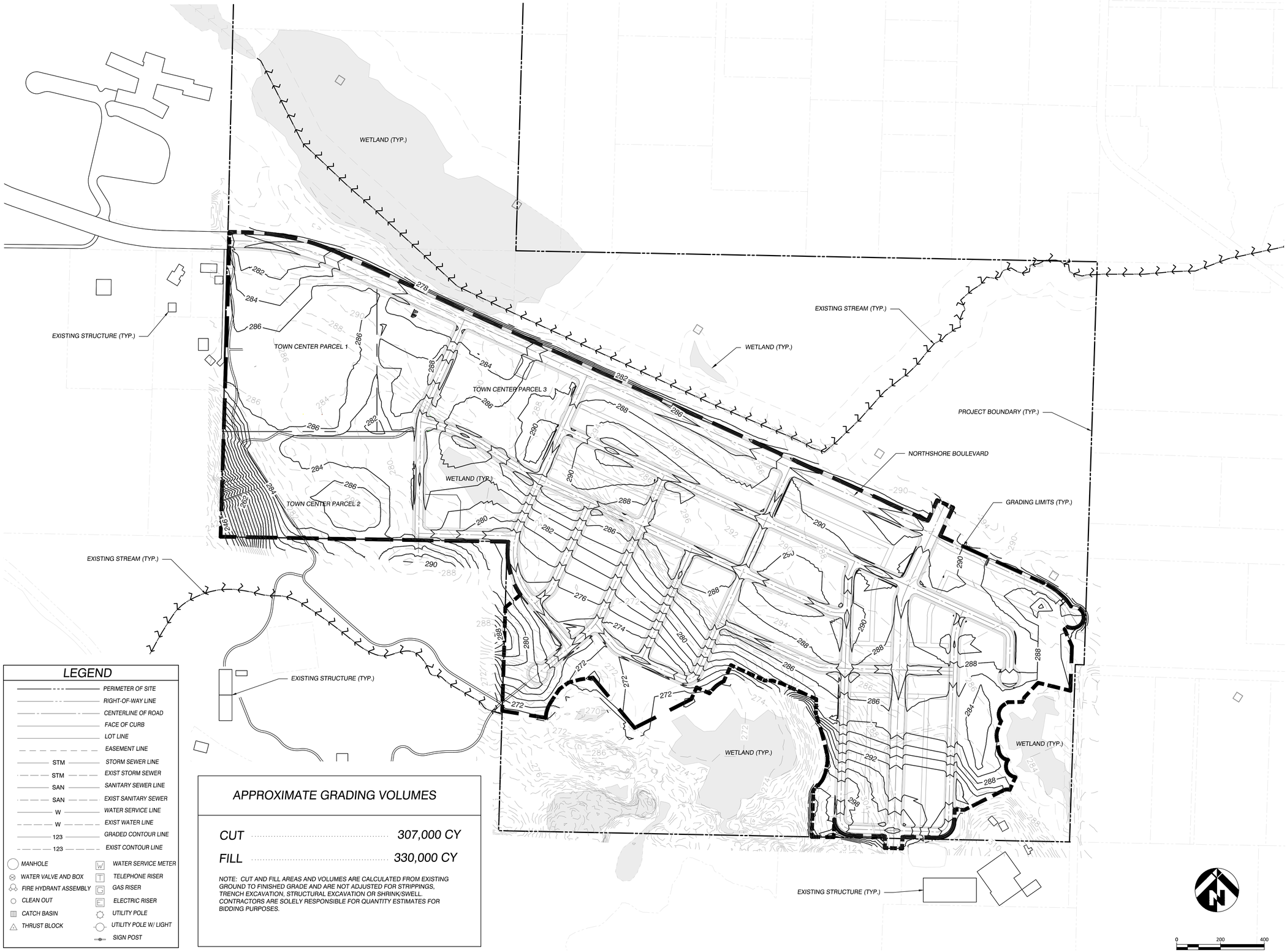

LEGEND

- PERIMETER OF SITE
- RIGHT-OF-WAY LINE
- CENTERLINE OF ROAD
- FACE OF CURB
- LOT LINE
- EASEMENT LINE
- STM — STORM SEWER LINE
- STM — EXIST STORM SEWER
- SAN — SANITARY SEWER LINE
- SAN — EXIST SANITARY SEWER
- W — WATER SERVICE LINE
- W — EXIST WATER LINE
- 123 — GRADED CONTOUR LINE
- 123 — EXIST CONTOUR LINE
- MANHOLE
- WATER VALVE AND BOX
- FIRE HYDRANT ASSEMBLY
- CLEAN OUT
- CATCH BASIN
- THRUST BLOCK
- WATER SERVICE METER
- TELEPHONE RISER
- GAS RISER
- ELECTRIC RISER
- UTILITY POLE
- UTILITY POLE W/ LIGHT
- SIGN POST

APPROXIMATE GRADING VOLUMES

CUT	307,000 CY
FILL	330,000 CY

NOTE: CUT AND FILL AREAS AND VOLUMES ARE CALCULATED FROM EXISTING GROUND TO FINISHED GRADE AND ARE NOT ADJUSTED FOR STRIPPINGS, TRENCH EXCAVATION, STRUCTURAL EXCAVATION OR SHRINK/SWELL. CONTRACTORS ARE SOLELY RESPONSIBLE FOR QUANTITY ESTIMATES FOR BIDDING PURPOSES.

0 200 400
SCALE: 1" = 200'

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10/13/2025

LACAMAS NORTH SHORE MIXED-USE DEVELOPMENT
CAMAS

GRADING CONTOUR PLAN

REVISIONS:

JOB NO.: 0089
DATE: OCTOBER 20
DESIGNED BY: PT/(
DRAWN BY: GO/M
CHECKED BY:

CONCEPTUAL

G1.0

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North Shore Area Design Guidelines

North Shore Area Vision Statement

Northshore will be a vibrant, walkable community rooted in its connection to Lacamas Lake, the Legacy Lands, and surrounding natural areas. Anchored by an active public plaza, the neighborhood will offer a mix of residential, commercial, and employment uses connected by multimodal streets, trails, and parks. Architecture will reflect Pacific Northwest character while encouraging variety, creativity, and a strong sense of place—building on Camas' small-town feel.

General Development and Design Requirements for the North Shore Area

- **Architectural Character**

  Developments must include a cohesive mix of high-quality architectural styles that promote variation, pedestrian orientation, and compatibility with the natural and enhanced setting throughout the North Shore Area.

- **Pedestrian Safety, and Comfort**

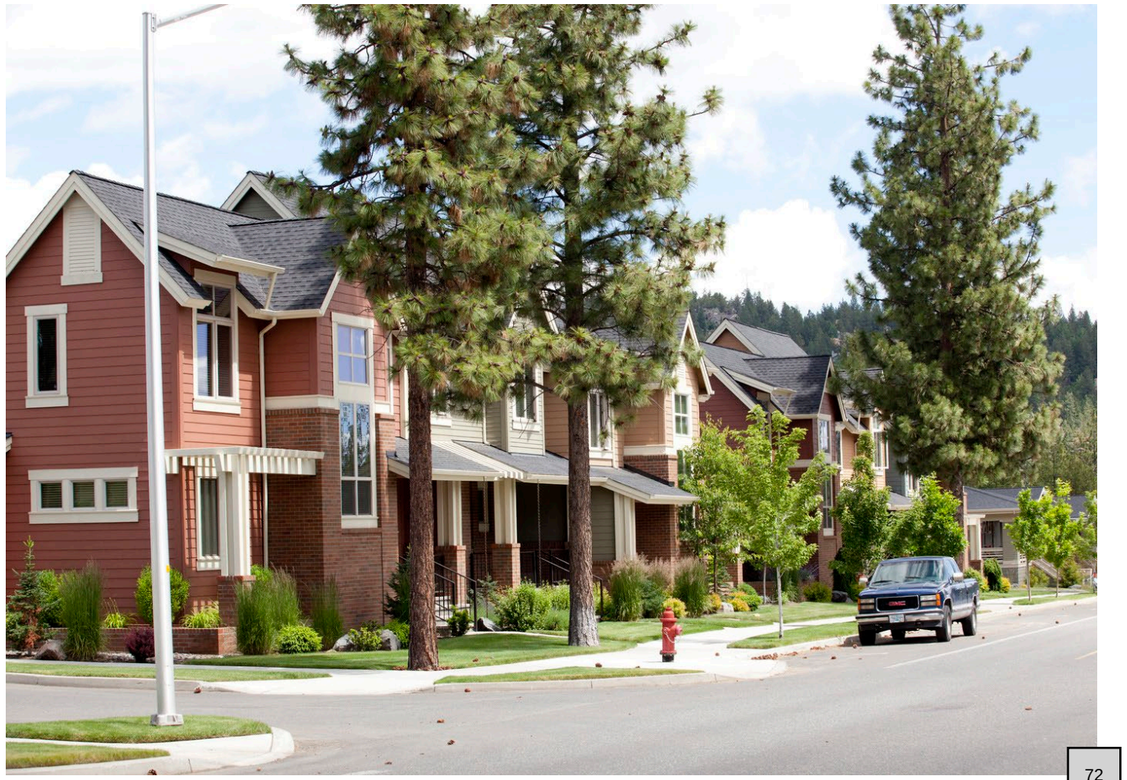
  - Principal entries must face public streets or common open spaces
  - Weather protection (awnings, overhangs, or canopies) shall be provided at entries
  - A combination of sidewalks, trails, and multimodal paths are required throughout the North Shore Area
  - Safe intersections, crossings, and traffic calming measures are required throughout the North Shore Area to promote a walkable environment

- **Public Spaces, Parks, and Trails**

  - Wayfinding and Signage is required throughout the North Shore Area and to guide users to key areas, including the Legacy Lands, public plaza, and commercial areas
    - Signage shall be integrated into the streetscape (trails and links), pocket parks and overall open space design
  - Landscaping/Plaza/Open Space (Plantings, native plantings, etc.)
  - Local Streets and Alleys are required to be built to City standards North Shore Blvd will be designed in accordance with the cross sections in the Master Plan

- **Environment**

  - All outdoor lighting must be dark-sky compliant and downward facing fixtures are required
  - On-site stormwater management (retention and treatment) is required.
  - Wetland and natural area enhancements are required
  - Native species and plantings are required, and non-native species are not permitted



DESIGN GUIDELINES

North Shore Residential

Intent:

To support a variety of housing types at a density of 6–24 units per acre, encouraging homeownership opportunities, family-style housing, and neighborhood diversity at a more compact density. Housing types include rowhouses, duplexes, and single-family detached.

The following Design Elements are required in North Shore Residential Area:

- **Façade and Materials**
  - Sloped roofs are required
  - Front façade must include windows
  - Durable building materials are required
  - Garage architecture must match the primary structure
  - Fencing in front yards must be visually permeable
  - In front-loaded homes, the front door of the house must be proud of the garage by a minimum of 2 feet
  - Porches are encouraged, but not required
- **Entry and Connections**
  - Main entrances must face the street (applicable to single-family detached only)
  - Main entrances must be covered
  - All homes must have direct pedestrian access from the main entrance to the sidewalk
  - Residential lots must be connected to common open spaces, natural areas and/or pocket parks, etc., via trails (this can include sidewalks)
- **Variety**
  - To ensure visual diversity and avoid monotony throughout the North Shore Residential Area rooflines, façades, and color schemes must vary:
    - A minimum of 3 different building elevations and a minimum of 3 different color schemes will meet this requirement
    - Identical roofline, façade, or color scheme may not be repeated on adjacent lots or directly across the street (only applicable to single-family detached)
    - Neighborhoods shall include a range of lot sizes and home types, as illustrated in the Potential Lot Mix diagrams (see following page), to promote visual diversity and avoid uniform streetscapes. Detached lots shall vary in width and depth, allowing for a variety of building forms and the accommodation of single-level homes. Attached housing shall incorporate architectural and material variation to reinforce neighborhood character and ensure a cohesive, high-quality appearance. The lot types shown are illustrative only and do not represent specific quantities or locations within the NS-Residential Area.

North Shore Residential Development Standards:

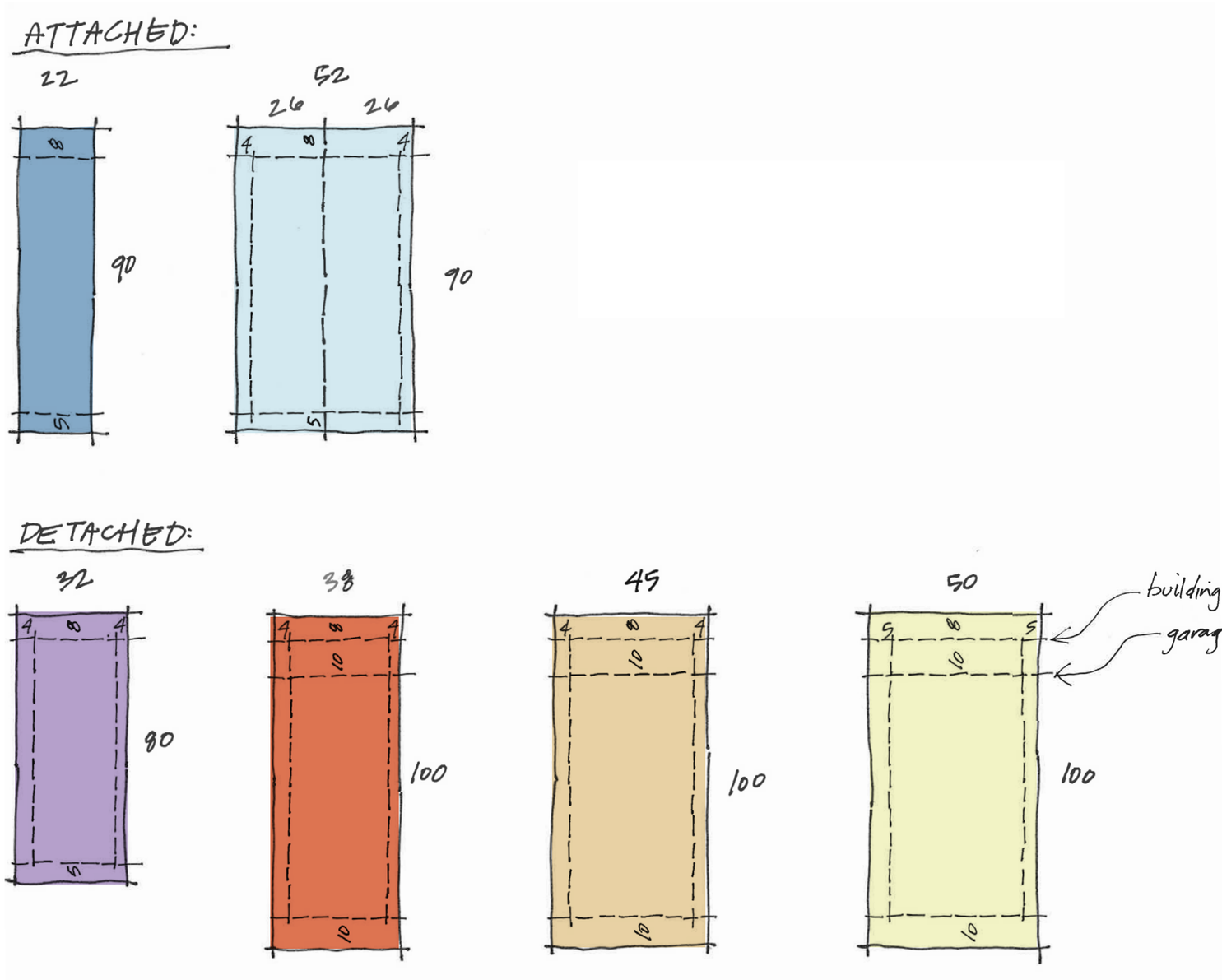
Item	Standard
Density Minimum/Maximum Dwelling Units/ Acre	6 / 24
Minimum Lot Size	1,800 SF
Minimum Lot Width	18’
Minimum Lot Depth	60’
Maximum Building Lot Coverage	75%*
Maximum Building Height	50’
Maximum Gross Floor Area	None
Front Setback / Garage Setback (Front Load)	8’ / 18’
Front Setback (Alley Load)	8’
Side Setback / Zero Lot Line	3’ / 0’
Street Side Setback	8’
Rear Setback (Front Load)	10’
Rear Setback (Alley Load)	5’

*This percentage does not include drive aisles, surface parking areas, or pedestrian pathways

Setback Exceptions:

- Porches/Patios may extend up to 6’ into front or rear yards, as long as they are not in conflict with public utility easements
- Overhangs may extend up to 3’ into any setback

Potential Lot Mix Diagram



DESIGN GUIDELINES

Architectural Styles and Elements Allowed in the North Shore Residential Area

To create an organic, visually interesting community that reflects the values and aesthetics of the Pacific Northwest, a range of permitted architectural styles are allowed within North Shore Residential Area:

1. Pacific Northwest Inspired

- Natural materials: wood, stone, concrete, mass timber
- Large windows and extended roof overhangs
- Low-slope or shed roofs
- Earth-tone or neutral color palettes

2. Craftsman / Northwest Craftsman

- Deep eaves with exposed rafters
- Covered porches with stone or tapered columns
- Horizontal lap or shingle siding
- Gabled or cross-gabled roofs
- Earth-tone color schemes
- Double-hung or multi-pane windows

3. Cottage / Storybook

- Steeply pitched roofs and asymmetrical massing
- Arched entries or windows
- Multi-pane windows, wood shutters
- Combination of wood, brick, or stucco siding
- Front stoops or porches
- Compact scale and playful detailing

4. Modern Farmhouse

- Gabled rooflines and simple massing
- Vertical board-and-batten or lap siding
- Black-framed windows and light-colored exteriors
- Wood or rustic metal accents
- Covered porches or stoops
- Minimalist detailing

5. Transitional

- Blends modern and traditional forms
- Simple hipped or gabled roofs
- Balanced façades and neutral color palettes
- Mix of traditional materials with modern detailing
- Trimmed or untrimmed windows depending on application
- Flexible use across housing types

North Shore Town Center

Intent:

To enable compact, walkable mixed-use development that integrates residential and non-residential uses, fostering connection and activation of a public plaza, the Legacy Lands, and Lacamas Lake through strategic placement of uses, trails, circulation, and enhancement of critical areas. Residential types may include multifamily apartments.

The following Design Elements are required in North Shore Town Center Area:

A Public Plaza

- Minimum Size: 1 acre
- A Woonerf or Festival Street is permitted to further activate the plaza for public market, festivals, and similar uses and count towards size requirements
    - Food Carts, Public Markets, and other seasonal events or festival uses are permitted on the plaza and woonerf or festival street
- Location: Nearby or adjacent to enhanced critical wetland area, Legacy Lands and connected to residential and non-residential uses via streets and trail systems
- Pedestrian Amenities: Must include bike racks, seating, signage, expanded streetscapes.
- Landscaping: native plantings, spacing, etc.
- Materials: Can include landscaped areas, paved areas, or other materials

Grocery Anchored Retail Center

- Parking shall be landscaped or screened to minimize view from North Shore Boulevard
- Drive-through facilities shall be allowed for all permitted uses, provided such facilities are developed consistent with applicable landscaping, architectural, and setback standards contained within these Design Guidelines
- Main entrances must face a sidewalk or street
- Main entrances must be covered
- Architectural Elements
    - Large Blank walls facing streets are not permitted. Break up large blank walls through material changes, murals, landscaping, or modulation, or other architectural design elements
    - Natural and/or neutral color scheme is required
    - Natural materials (such as timber) as accents are encouraged, but not required

Retail / Commercial Area

- Fuel station is an allowed use as part of grocery-anchored retail center ONLY
- Parking shall be landscaped or screened to minimize view from North Shore Boulevard and other adjacent public streets
- A minimum of 10% of total parking spaces shall be provided with EV charging stations, consistent with the standards set forth in WAC 51-50-0429.
- Pedestrian entrances must be covered
- Outdoor lighting must be at pedestrian scales
- Outdoor areas that support uses are encouraged but not required (i.e., covered and outdoor seating for restaurants)

  Architectural Elements
    - Durable building materials are required
    - Natural and/or neutral color scheme is required
    - Natural materials (such as timber) as accents are encouraged, but not required

Minimum Retail Requirement

- Within the North Shore Town Center, a minimum of 15 acres of retail use shall be provided. The required retail acreage may be broken into multiple smaller sites and may be located in various places throughout the North Shore Town Center

Multifamily Areas

- Garden Style or Low-Rise are buildings permitted
- Multifamily can be located in one or more area within the North Shore Town Center
- Ground-Floor Privacy is required for residential units. The use of privacy screens, landscaping, or design features for window privacy meet this requirement
- Parking shall be landscaped and located internal to the multifamily site(s)
- Architectural Elements:
    - A sloped roof is required
    - Patios/balconies are required
    - All units must have a covered entrance
    - All units must have direct pedestrian access from the main entrance to the sidewalk
    - All buildings must be a neutral or natural color palette
    - Materials must be durable
    - Multifamily buildings must be connected to open spaces and pocket parks, etc., via trails, (this can include sidewalks)
    - A minimum of 10% of total parking spaces shall be provided with EV charging stations, consistent with the standards set forth in WAC 51-50-0429.

North Shore Town Center Development Standards:

Item	Standard
Density Minimum/Maximum Dwelling Units/Acre	10 / 40
Minimum Lot Size	None
Maximum Building Lot Coverage	75%*
Maximum Building Height	100’
Front Yard Setback	10’
Side Yard	10’
Street Side Yard	10’
Rear Yard	10’

*This percentage does not include drive aisles, surface parking areas, or pedestrian pathways

DESIGN GUIDELINES

North Shore Employment

Intent:

To accommodate a range of employment-generating uses, including office, retail, light manufacturing, and warehouse, providing opportunity for people to live near where they work, complimenting the amenities of the North Shore Town Center and supported by the North Shore Residential Area.

Permitted Uses:

- Grocery, retail, restaurants
- Offices and flex spaces
- Warehousing and light industrial
- Electrical substation for Clark PUD

North Shore Employment Development Standards:

Item	Standard
Minimum Lot Size, Width, Depth	None
Maximum Building Height	100’
Maximum Building Lot Coverage	None
Usable Open Space	5% of net acreage
Setbacks (Front, Side, Street)	None

Usable Open Space Definition:
Areas planned for recreation, relaxation, or community use, accessible to residents, workers, or customers. May include plazas, sport courts, or viewpoints.

The following Design Elements are required in North Shore Employment Area:

- Primary entrances must face public streets
- Main entrances must be covered
- Rooftop equipment must be screened from view (from public right-of-way) through landscaping, or other screening/fencing, or architectural design features
- Parking areas must be behind or beside buildings and screened with landscaping
- Office elements of warehouses should front public streets
- A natural or neutral color palette is required

KITTELSON & ASSOCIATES
851 SW 6th Avenue, Suite 600
Portland, OR 97204
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TRANSPORTATION IMPACT STUDY

October 9, 2025 Project# 31612

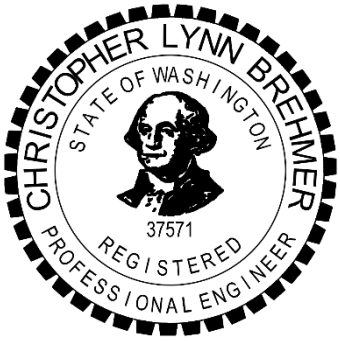
To: James E Carothers, PE & Anita Ashton
City of Camas Community Development Engineering
616 NE 4th Avenue
Camas, WA 98607

Dylan Bass, Jason Lugo, & Courtney Hajda
Washington State Department of Transportation (WSDOT)

Craig Kathol & David Jardin
Clark County Public Works Community Development

From: Chris Brehmer, PE, Claire Dougherty, PE, & Sutapa Banerjee

CC: Matthew Vissotzky, Matt Keenan & Nick Pappas, SunCal



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RE: Lacamas North Shore (Johnston Dairy) Transportation Impact Study

SunCal proposes to develop a mixed use community generally located east of NE 232nd Avenue and west of NE 252nd Avenue, on a portion of the existing Johnston Dairy property. A Transportation Impact Study (TIS) is required per City of Camas Municipal Code (CMC) Section 17.11.030.B.12 as part of the land use approvals and is provided to inform on-going development agreement coordination between SunCal and the City. This memorandum documents the TIS analysis, findings, and recommendations. Subject to City, Clark County and WSDOT review and direction, the following recommendations were identified to be implemented in conjunction with site development:

- Subject to Clark County approval, install a traffic signal with permissive left-turn phasing on all approaches at the existing NE 232nd Avenue/NE 28th Street intersection in conjunction with Phase 1 residential site development.
- Make a proportional financial mitigation contribution to the City of Camas' planned NW Sierra Street/NW Lake Road roundabout project with each phase of site development.
  - The City is currently assessing a fee of $1,423 per PM peak hour trip added to this intersection for developments in the Traffic Impact Fee (TIF) North District. Accordingly, the resulting fee estimate for buildout of this development totals $136,608 estimated as follows:
    - Residential uses: $65,458 based on 46 PM peak hour trips added
    - Commercial retail uses: $41,267 based on 29 PM peak hour trips added
    - Employment uses: $29,883 based on 21 PM peak hour trips added

  The City of Camas will determine the final contribution amount.
- Collaborate with WSDOT and the City of Camas to implement capacity mitigation at the SR 500 (NE 242nd Avenue)/NE 28th Street intersection in the form of all-way stop control if required in conjunction with Phase 1 site development (or with subsequent phases as determined by WSDOT).
- Coordinate with the City of Camas to establish and implement a school zone along North Shore Boulevard at Lacamas Lake Elementary School in conjunction with the North Shore Boulevard extension west with site development.

- Subject to City of Vancouver concurrence and final residential unit count confirmation, pay the following proportional share intersection fees as identified per City of Vancouver requirements:

Mitigation Location	Mitigation Cost/Peak Hour Trip	Residential Uses		Retail Uses		Employment Uses	
		Peak Hour Trips Added	Estimated Mitigation Cost	Peak Hour Trips Added	Estimated Mitigation Cost	Peak Hour Trips Added	Estimated Mitigation Cost
192nd Avenue & NE 13th Street	$400/PM	66	$26,400	0	$0	31	$12,400
NE 172nd Avenue & NE 18th Street	$300/PM	46	$13,800	0	$0	22	$6,600
NE 179th Place & NE 18th Street	$900/PM	46	$41,400	0	$0	22	$19,800
NE 187th Avenue & NE 18th Street	$1,200/PM	53	$63,600	0	$0	25	$30,000
NE 192nd Avenue & NE 9th Street	$1,100/PM	7	$7,700	0	$0	3	$3,300
Total Proportional Share Cost by Land Use			$152,900		$0		$72,100
Grand Total Proportional Share Cost							*$225,000*

- Locate and maintain site landscaping, above-ground utilities, and site signage at all local street intersections within and adjacent to the site to provide adequate intersection sight distance per applicable City and County requirements.

- Submit a Transportation Compliance Letter (TCL) prepared by a licensed professional engineer with each future site development application. Subject to City direction, the future TCL could document:
  - The number of site-generated trips (daily, weekday AM peak hour, and weekday PM peak hour) estimated to be used by the then-current proposed development application.
  - The number of site-generated trips (daily, weekday AM peak hour, and weekday PM peak hour) allocated to previously approved site development applications on the project site.
  - A tabular accounting of the number of site-generated trips (daily, weekday AM peak hour, weekday PM peak hour) remaining assuming approval of the then-current proposed development application.
    - In the event that a future site development application is projected to use more trips than were assumed through this traffic study and the number of additional trips needed exceeds the City of Camas traffic study threshold, additional transportation capacity/concurrency analysis shall be triggered (unless a traffic count cordon-study of the project site demonstrates the number of site-generated trips is less than or equal to the number of trips assumed in this study).
  - The number of weekday PM peak hour site-generated trips associated with the then-current proposed development projected to travel through NW Sierra Street/NW Lake Road intersection (to inform the City of Camas proportional share fee mitigation contribution for the intersection).
  - An update of Table 13 of this study to document the number of site-generated trips associated with the then-current proposed development application (to inform the required City of Vancouver proportional share intersection mitigation fee contributions).
  - Evaluation of outstanding mitigation needs (as appropriate consistent with this study unless otherwise mitigated) including:
    - Collaboration with WSDOT and the City of Camas to determine whether implementation of all-way stop control at the SR 500 (NE 242nd Avenue)/NE 28th Street intersection is required in conjunction with site development.

- Whether there is adequate capacity at the SR 500/SE Leadbetter Road intersection (assess until North Shore Boulevard is extended between the project site and SR 500).

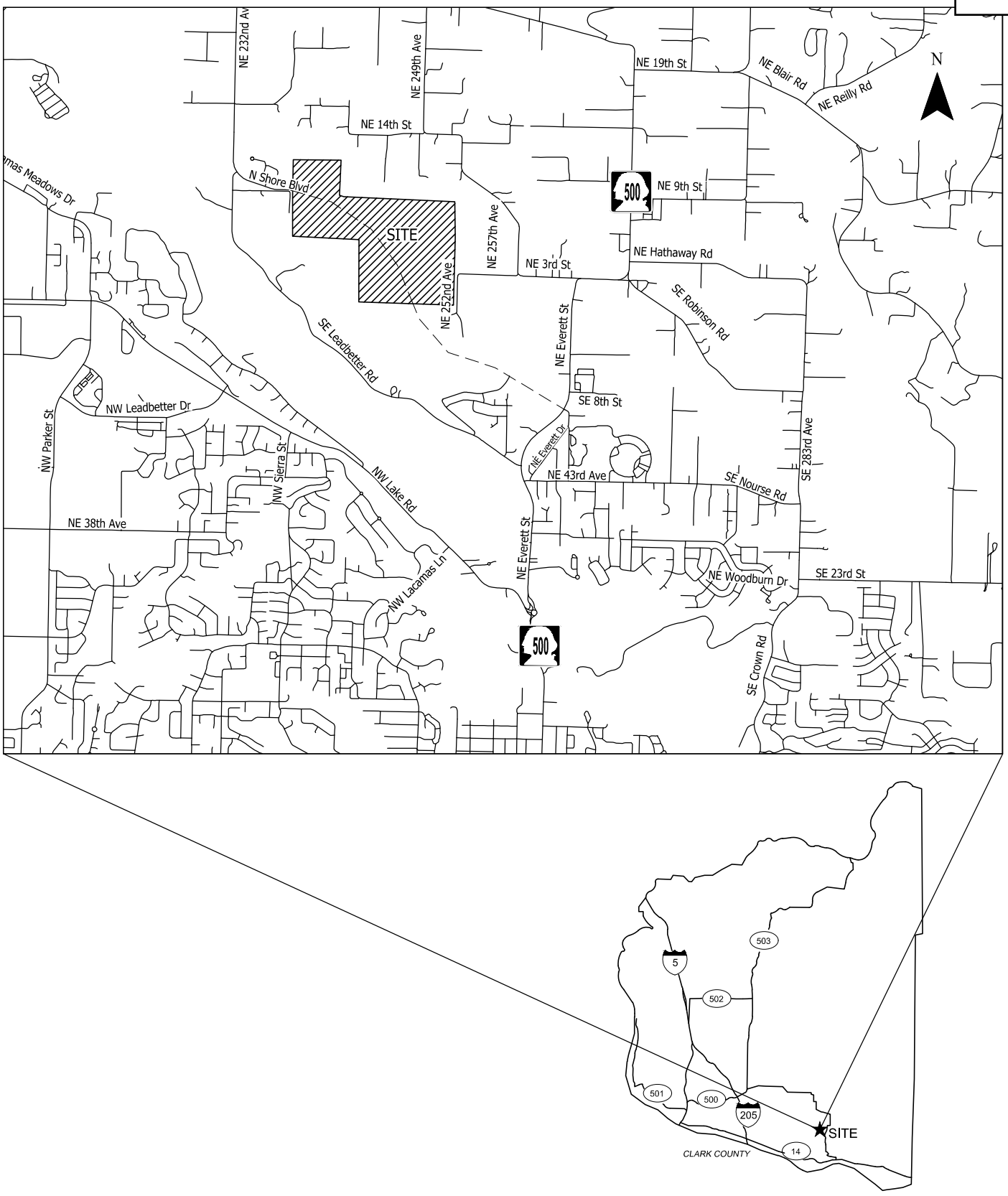
The details of the study methodology, findings, and recommendations are summarized herein.

INTRODUCTION

SunCal proposes to develop a mixed-use community located east of NE 232nd Avenue and west of NE 252nd Avenue, on a portion of the existing Johnston Dairy property. The initial residential phases of the project would include up to 387 detached single family homes and 209 attached homes, with construction and full occupancy anticipated by 2030. Up to 167,505 square-feet of commercial retail space, up to 380 multi-family apartment units, and up to 580,000 square-feet of manufacturing/warehouse distribution development is also anticipated and could also be completed by 2030, pending market conditions.

Primary access to the project site is anticipated via North Shore Boulevard, a portion of which would be extended from the current termination near Lacamas Lake Elementary School east through the site in conjunction with site development. We understand the City plans to construct North Shore Boulevard east to the planned SR 500/SE Everett Drive roundabout in the near-term. Accordingly, this TIS assumes that North Shore Boulevard is fully constructed between NE 232nd Avenue and SR 500 by the year 2030, and that SE Leadbetter Road is converted to use by people walking and cycling as well as for local vehicle access (no through vehicle traffic between North Shore Boulevard and SR 500).

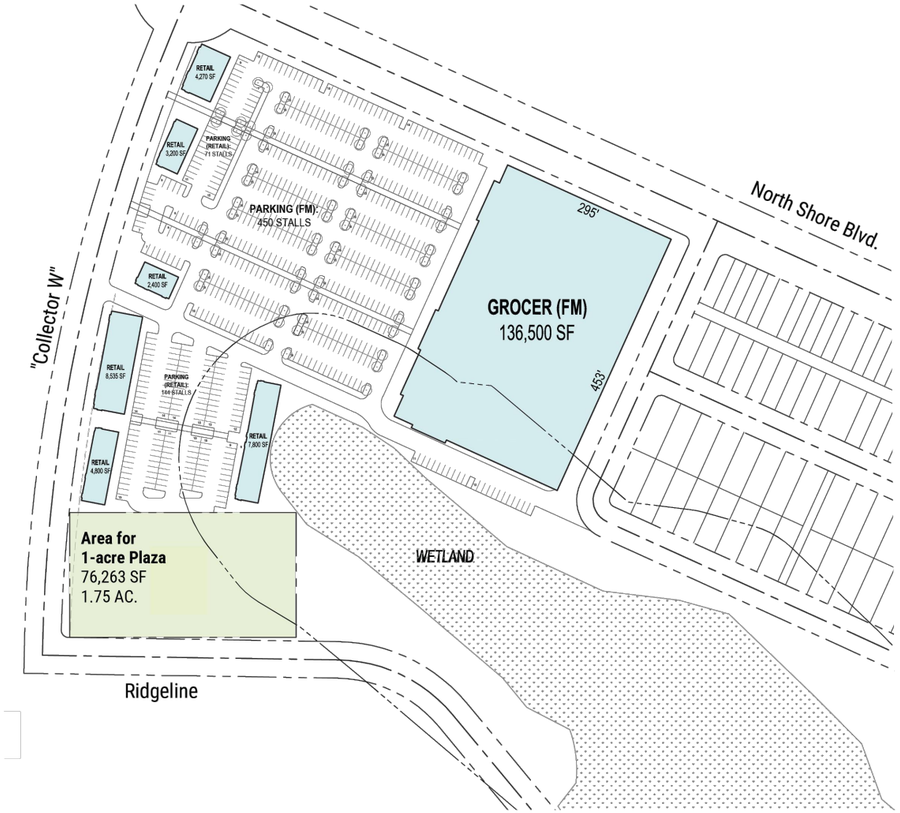
Figure 1 shows the site vicinity map, and Figure 2 shows a current conceptual site plan.



Site Vicinity Map
Camas, Washington

Figure
1

C:\Users\sbanerjee\appdata\local\temp\AcPublish_8028\31612_TIS Figs.dwg Oct 02, 2025 - 10:49am - sbanerjee Layout Tab: Fig1 Site Vicinity Map



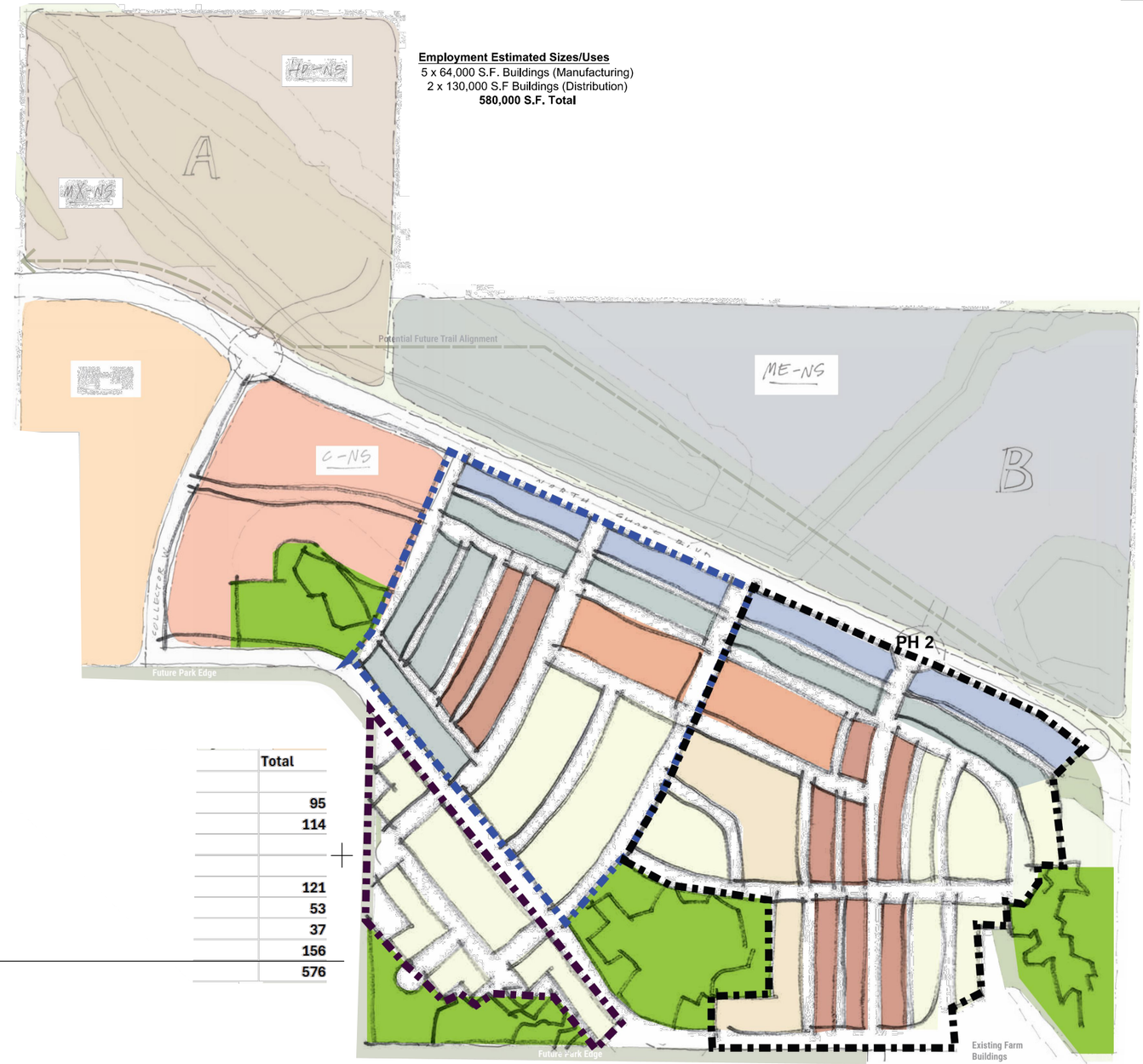
RETAIL PARCEL:

GROCERY (SF)	136,500 SF
RETAIL (NORTH)	9,870 SF
RETAIL (SOUTH)	21,135 SF
TOTAL RETAIL AREA (SF)	**167,505 SF**

PARKING:

TOTAL STALLS PROVIDED:	665
PARKING RATIO *(PER 1,000 SF)*:	3.97

			Total
Single Family Attached			
Town House			**95**
Duplex			**114**
Single Family Detached			
30x75			**121**
38x100			**53**
45x100			**37**
50x100			**156**
		Total	**576**



Employment Estimated Sizes/Uses
5 x 64,000 S.F. Buildings (Manufacturing)
2 x 130,000 S.F Buildings (Distribution)
580,000 S.F. Total

CONCEPTUAL SITE PLAN PROVIDED BY SUNCAL ON JULY 11 2025
NOT TO SCALE

Preliminary Site Plan
Camas, Washington

Figure
2

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STUDY METHODOLOGY

The City of Camas' *Transportation Impact Study Guidelines* (TIS, Reference 1) require preparation and submittal of a TIS for each proposed development that generates 200 or more daily vehicle trips. The 200 daily trip threshold is met for the Lacamas North Shore development, triggering a TIS.

The study intersections were determined through a scoping process involving staff from the City of Camas, WSDOT and Clark County. The final study intersection list reflects a combination of City of Camas trip thresholds, the anticipated site trip distribution pattern and trip assignment, and scoping correspondence with agency staff. Of note, Clark County requires consideration of regionally significant intersections within a 3-mile radius for a project that generates more than 251 new peak hour trips per Clark County Code Section 40.350.020.D.5.b.[1]

Appendix A includes documentation from the scoping process.

Analysis Scenarios

Weekday morning (7-9 AM) and weekday afternoon commuter peak period (4-6 PM) traffic conditions were assessed for the following analysis scenarios:

- Year 2025 existing traffic conditions;
- Year 2030 background traffic conditions (including background growth and identified in-process developments, but not including any site-generated traffic volumes related to the proposed development);
- Year 2030 total traffic conditions (including site-generated traffic volumes to the proposed development); and,
- Year 2027 background and total traffic conditions prior to completion of North Shore Boulevard between the project site and SR 500.

Study Intersections

The study intersections and existing traffic control configurations are identified in Table 1. The intersection numbers listed in Table 1 correspond with the analysis figures in this report.

[1] Clark County staff identified the NE Reily Road/NE Blair Road as a regionally significant intersection within a three mile radius of the site. The site-generated trip distribution pattern and trip assignment shown in the project scoping documentation (and at Intersection "A" in Figures 9 and 10 herein) found fewer than 5 peak hour site-generated trips projected to use the stop controlled intersection approach. Accordingly, site trips were documented at the location but it was not analyzed as a study intersection.

Table 1. Study Intersections

ID	Study Intersection	Traffic Control
1	NW Friberg-Strunk Street/NE 13th Street-NE Goodwin Road	Signalized
2	NE Camas Medows Drive/NE Goodwin Road	Stop
3	NE Ingle Road/NE 28th Street-NE Goodwin Road	Signalized
4	NE 232nd Avenue/NE 28th Street	Stop
5	SR 500/NE 28th Street	Stop
6	NE 232nd Avenue/North Shore Boulevard-NE Leadbetter Road	Stop
7	SR 500/NE Everett Drive	Stop (Future Roundabout)
8	SR 500/SE Leadbetter Road	Stop
9	SR 500/NE 43rd Avenue	Signalized
10	SR 500/NW Lake Road	Roundabout
11	SR 500/NE 17th Avenue	Stop
12	SR 500/NE 15th Avenue	Stop
13	SR 500/NE 14th Avenue	Stop
14	NE Dallas Street/NW 6th Avenue	Stop
15	Division Street/NW 6th Avenue	Stop
16	NW 6th Avenue/NW Norwood Street - SR 14 Ramps	Roundabout
17	NW Lacamas Lane/NW Lake Road	Stop
18	NW Sierra Street/NW Lake Road	Stop (Future Roundabout)
19	NW Leadbetter Road/NW Lake Road	Stop
20	NW Parker Street/NW Lake Road	Signalized
21	NW Friberg-Strunk Street/NW Lake Road-SE 1St Street	Signalized
22	NW Parker Street/NW Leadbetter Road	Stop
23	NW Parker Street/NE 38th Avenue	Signalized
24	SE 283rd Avenue/SE Nourse Road	Stop
25	SE 283rd Avenue/SE 23rd Street	Stop
26	SE 283rd Avenue/NE Woodburn Drive	Stop
27	SE Crown Road/NE 3rd Avenue	Signalized

Capacity Analysis Methodology

Intersection level-of-service and volume-to-capacity (v/c) analyses described in this report were performed at signalized and unsignalized intersections in accordance with the procedures stated in the *Highway Capacity Manual, 7th Edition* (Reference 2) methodology using Synchro 12 software. Roundabouts were analyzed using Sidra and incorporate Sidra Policy Settings per WSDOT requirements (Reference 3)[2].

Level of Service Standards

City of Camas

Camas uses level of service (LOS) for traffic operations. Minor and local streets must meet LOS C standards, and collector and arterial streets must meet LOS D standards. If site traffic contributes to traffic operations that exceed the LOS D standard, then the TIS recommendations need to include mitigations or roadways improvements.

SR 500 (NE Everett Street)

Chapter 320 of WSDOT's *Design Manual* (Reference 4) covers traffic impact analysis on state facilities.

The Urban non-National Highway System facilities (non-HSS standard) established by the Southwest Washington RTC for Clark County is LOS E and applies to Study Intersections 7 through 13[3]. The Rural non-HSS standard is LOS C, which based on WSDOT mapping applies to intersection 5. WSDOT also specifies a LOS threshold D for urban non-NHS facilities, which is applicable to Study Intersection 16.

Clark County

Clark County Code (CCC) 40.350.020.G specifies that the LOS standard is LOS E if warrants are not met. If warrants are met, unsignalized intersections of regional significance shall be LOS D or better. This standard is applicable to Study Intersections 4, 6, 24 and 25.

Table 2 summarizes the applicable intersection performance metrics at each study intersection.

[2] https://wsdot.wa.gov/sites/default/files/2021-03/TrafficOps-WSDOTSidraPolicyAndSettings.pdf

[3] Regional Transportation Planning Organizations (RTPOs) have the authority to set LOS thresholds for non-Highways of Statewide Significance (HSS). The Urban non-HSS standard established by RTC for Clark County is LOS E, and the Rural non-HSS standard is LOS C. https://geo.wa.gov/datasets/WSDOT::wsdot-roadway-data-urban-rural/

Table 2. Study Intersection Performance Metrics

ID	Potential Study Intersection	Traffic Control	Jurisdictional Authority	Facility Designation	Operating Requirement
1	NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd	Signalized	City of Camas	City Arterial	LOS D
2	NE Camas Meadows Dr/ NE Goodwin Rd	Stop	City of Camas	City Arterial	LOS D
3	NE Ingle Rd/NE 28th St-NE Goodwin Rd	Signalized	City of Camas	City Arterial	LOS D
4	NE 232nd Ave/NE 28th St	Stop	Clark County	Rural Major Collector	LOS E
5	SR 500/NE 28th St	Stop	RTC[1]	Rural non-HSS	LOS C
6	NE 232nd Ave/North Shore Blvd-NE Leadbetter Rd	Stop	City of Camas	City Arterial	LOS D
7	SR 500/NE Everett Dr	Stop (Future Roundabout)	RTC[1]	Urban non-HSS	LOS E
8	SR 500/ SE Leadbetter Rd	Stop	RTC[1]	Urban non-HSS	LOS E
9	SR 500/NE 43rd Ave	Signalized	RTC[1]	Urban non-HSS	LOS E
10	SR 500/NW Lake Rd	Roundabout	RTC[1]	Urban non-HSS	LOS E
11	SR 500/NE 17th Ave	Stop	RTC[1]	Urban non-HSS	LOS E
12	SR 500/NE 15th Ave	Stop	RTC[1]	Urban non-HSS	LOS E
13	SR 500/NE 14th Ave	Stop	RTC[1]	Urban non-HSS	LOS E
14	NE Dallas St/NW 6th Ave	Stop	City of Camas	City Arterial	LOS D
15	Division St/NW 6th Ave	Stop	City of Camas	City Arterial	LOS D
16	NW 6th Ave/NW Norwood St-SR 14 Ramps	Roundabout	WSDOT	Urban HSS	LOS D
17	NW Lacamas Ln/ NW Lake Rd	Stop	City of Camas	City Arterial	LOS D
18	NW Sierra St/ NW Lake Rd	Stop (Future Roundabout)	City of Camas	City Arterial	LOS D
19	NW Leadbetter Rd/ NW Lake Rd	Stop	City of Camas	City Arterial	LOS D
20	NW Parker St/ NW Lake Rd	Signalized	City of Camas	City Arterial	LOS D
21	NW Friberg-Strunk St/ NW Lake Rd-SE 1St St	Signalized	City of Camas	City Arterial	LOS D
22	NW Parker St/ NW Leadbetter Dr	Stop	City of Camas	City Arterial	LOS D
23	NW Parker St/NE 38th Ave	Signalized	City of Camas	City Arterial	LOS D

ID	Potential Study Intersection	Traffic Control	Jurisdictional Authority	Facility Designation	Operating Requirement
24	SE 283rd Ave/ SE Nourse Rd	Stop	Clark County	Urban Major Collector	LOS E
25	SE 283rd Ave/SE 23rd St	Stop	City of Camas	City Collector	LOS D
26	SE 283rd Ave/ NE Woodburn Dr	Stop	City of Camas	City Arterial	LOS D
27	SE Crown Rd/NE 3rd Ave	Signalized	City of Camas	City Arterial	LOS D

[1]RTPOs have the authority to set LOS thresholds for non-Highways of Statewide Significance (HSS). The Urban non-HSS standard established by RTC for Clark County is LOS E.

REPORT FORMAT

This report addresses the following transportation topics:

- Existing land use and transportation system conditions within the site vicinity, including facilities for people walking, bicycles or taking transit, as well as traffic safety and intersection operations;
- Planned developments and transportation improvements within the study area;
- Forecast year 2030 background traffic conditions during the weekday AM and PM peak hours;
- Weekday AM and PM peak hour site trip generation and distribution estimates;
- Forecast year 2030 total traffic conditions with site development during the weekday AM and PM peak hours, including vehicle queueing and turn lane considerations at study intersection closest to the site;
- School proximity considerations;
- City of Vancouver proportionate share contributions; and,
- Conclusions and recommendations.

EXISTING CONDITIONS

The existing conditions analysis identifies site conditions and the current operational and geometric characteristics of streets within the study area. The purpose of this section is to set the stage for a basis of comparison to future conditions. The study intersections were inventoried in the spring and summer of 2025.

Site Conditions and Adjacent Land Uses

The proposed development project is located east of the existing NE 232nd Avenue terminus and west of NE 252nd Avenue, on the existing Johnston Dairy property. The approximately 230-acre site is comprised of 4 separate taxlots that are proposed to include a residential area, commercial area and a mixed-use area.

A few structures and agricultural uses occupy the site today. The site currently accesses the public roadway system via NE 252nd Avenue which connects to NE 3rd Street. North Shore Boulevard currently terminates at the western limit of the site, near Lacamas Elementary School, and does not provide access to the site today.

This site is bordered to the west by Lacamas Elementary school. To the southeast, this site is bordered by properties owned by others that are anticipated to be re-developed as residential homes over the next few years. These adjacent developments are the North Shore Village and Mills Parcel projects.

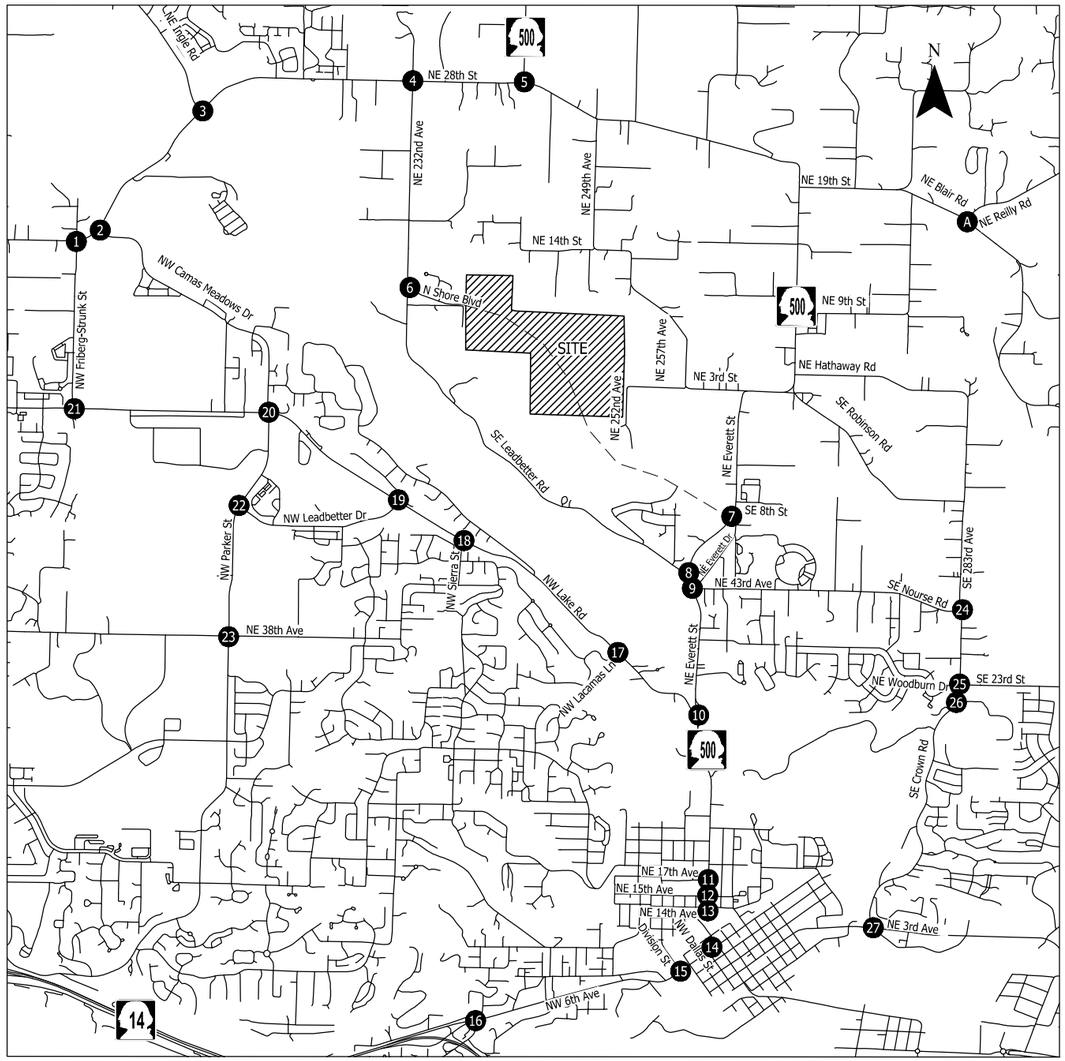
Transportation Facilities

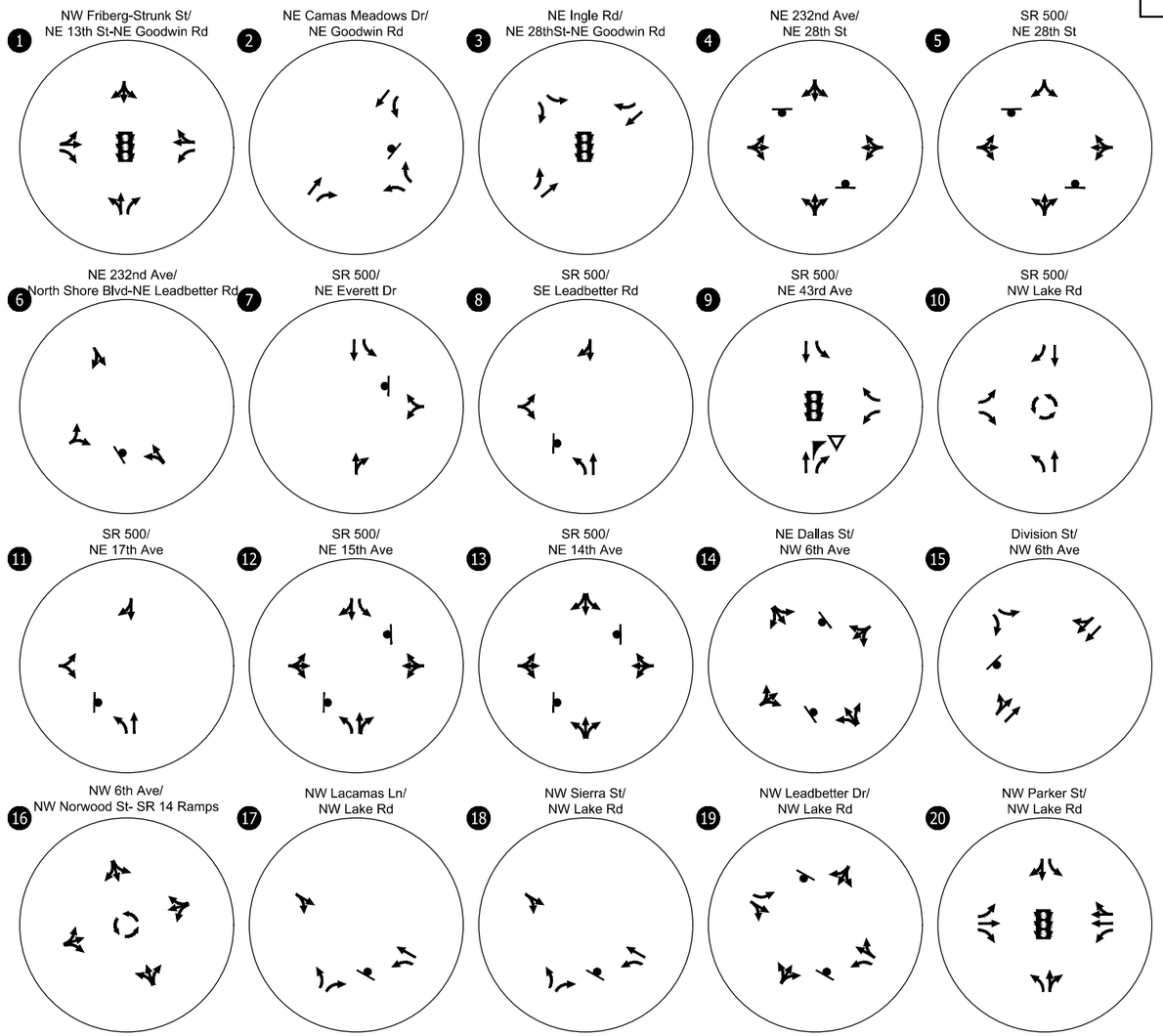
Table 3 provides a summary of the existing streets closest to the site. Figure 3 illustrates the existing lane configurations and traffic control devices at the study intersections.

Table 3. Existing Transportation Facilities

Street	Jurisdiction	Classification	Cross-Section	Posted Speed	Sidewalks Present?	Bike Lanes Present?
NE 232nd Avenue	Clark County	Major Rural Collector (R-2)[1]	2-lane	45 mph	No	No
NE Everett Street (SR 500)	WSDOT	Rural Major Collector / Urban Minor Arterial[3]	2-lane	45 mph[4]	No	No
SE Leadbetter Road	City	Local[5]	2-lane	40 mph	No	No
North Shore Boulevard	City	Proposed Arterial[5]	TBD	TBD	TBD	TBD

[1]Clark County Arterial Atlas (References 5 and 6)
[2]WSDOT Functional Classification (Reference 7)
[3]North of Robinson Road, SR 500 is classified as a Rural Major Collector. South of Robinson Road, SR 500 is classified as an Urban Minor Arterial.
[4]Along SR 500, lower advisory speeds are posted at roadway curves. As SR 500 approaches downtown Camas, the posted speed is reduced to 25 mph.
[5] 2035 *City of Camas 2035 Comprehensive Plan (Transportation Element,* Reference 8*)*. The lane configuration, posted speed and cross-sectional elements are still to be determined (TBD).





- SITE
- # - STUDY INTERSECTION
- TRAFFIC SIGNAL
- STOP SIGN
- YIELD SIGN
- ROUNDABOUT

Existing Lane Configurations & Traffic Control Devices
Camas, Washington

Figure 3

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Facilities for Non-Motorized Users

As shown in Table 3, given the rural nature of the surrounding roadways, there are limited sidewalks and bike lanes present near the project site today. A north side separated pathway is provided on North Shore Boulevard along the Lacamas Elementary School frontage. It is anticipated that new sidewalks will be constructed on-site with project development, and that when built-out as an arterial, North Shore Boulevard will include facilities for people walking and biking.

Transit Facilities

C-Tran provides transit service within the City of Camas. There are no fixed-route transit services currently operated in the site vicinity. The nearest fixed-route service provides east-west service along NE 3rd Avenue in the downtown Camas area and is located over two miles south of the project site.

Given the lack of transit service within a convenient ½ mile walking distance today and for the foreseeable future, no transit-related trip reductions were assumed in this study and no transit-related mitigation measures are recommended as part of the proposed development.

TRAFFIC SAFETY

WSDOT provided crash records for the five-year period from January 1, 2020 to December 31, 2024. The data was reviewed to identify potential crash trends or safety needs at the study intersection. Table 4 summarizes the reported crash type, severity and calculated crash rate by intersection. *Appendix B contains the WSDOT provided crash data*.

Table 4. Intersection Crash Frequency and Severity (January 2020 through December 2024)

#	Intersection	Agency	Collision Type								Crash Severity			Total Number of Crashes	Crash Rate[2]
			Rear-end	Turning	Angle	Side Swipe	Backing	Fixed Object	Ped/Bike	Other	PDO[1]	Injury	Fatality		
1	NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd	City	-	-	-	-	-	1	-	-	1	-	-	1	0.04
2	NE Camas Meadows Dr/ NE Goodwin Rd	City	-	-	-	-	-	-	-	-	-	-	-	0	0.00
3	NE Ingle Rd/NE 28th St-NE Goodwin Rd	City	-	1	5	-	-	-	1	-	4	3	-	7	0.31
4	NE 232nd Ave/NE 28th St	County	1	1	3	-	-	2	1	-	6	2	-	8	0.71
5	SR 500/NE 28th St	WSDOT	-	1	2	-	-	-	-	-	3	-	-	3	0.24
6	NE 232nd Ave/North Shore Blvd-NE Leadbetter Rd	City	-	-	-	-	-	1	-	-	1	-	-	1	0.33
7	SR 500/NE Everett Dr	WSDOT	-	-	1	-	-	2	-	-	2	1	-	3	0.36
8	SR 500/SE Leadbetter Rd	WSDOT	1	-	1	-	-	-	-	-	2	-	-	2	0.19
9	SR 500/NE 43rd Ave	WSDOT	1	2	-	-	-	-	-	-	2	1	-	3	0.15
10	SR 500/NW Lake Rd	WSDOT	2	-	4	1	-	2	-	-	6	3	-	9	0.28
11	SR 500/NE 17th Ave	WSDOT	-	-	-	-	-	-	-	-	-	-	-	0	0.00

#	Intersection	Agency	Collision Type								Crash Severity			Total Number of Crashes	Crash Rate[2]
			Rear-end	Turning	Angle	Side Swipe	Backing	Fixed Object	Ped/Bike	Other	PDO[1]	Injury	Fatality		
12	SR 500/NE 15th Ave	WSDOT	-	1	1	-	-	-	-	-	1	1	-	2	0.11
13	SR 500/NE 14th Ave	WSDOT	1	1	1	-	-	1	-	-	4	-	-	4	0.27
14	NE Dallas St/NW 6th Ave	City	-	-	8	-	-	2	-	-	5	5	-	10	0.91
15	Division St/NW 6th Ave	City	2	1	1	-	-	1	1	-	4	2	-	6	0.21
16	NW 6th Ave/NW Norwood St-SR 14 Ramps	WSDOT	1	-	3	-	-	3	-	1	8	-	-	8	0.25
17	NW Lacamas Ln/NW Lake Rd	City	-	-	-	-	-	1	-	-	1	-	-	1	0.05
18	NW Sierra St/NW Lake Rd	City	-	-	1	-	-	-	-	-	1	-	-	1	0.04
19	NW Leadbetter Dr/ NW Lake Rd	City	-	-	1	-	-	-	-	-	-	1	-	1	0.05
20	NW Parker St/NW Lake Rd	City	5	1	1	1	-	-	-	-	5	3	-	8	0.30
21	NW Friberg-Strunk St/ NW Lake Rd-SE 1st St	City	1	1	-	-	-	-	-	-	1	1	-	2	0.07
22	NW Parker St/ NW Leadbetter Dr	City	-	-	-	-	-	-	-	-	-	-	-	0	0.00
23	NW Parker St/NE 38th Ave	City	1	1	-	-	-	1	-	-	2	1	-	3	0.10
24	SE 283rd Ave/SE Nourse Rd	County		1						1	2			2	0.31
25	SE 283rd Ave/SE 23rd St	County	-	-	-	-	-	2	-	-	1	1	-	2	0.26
26	SE 283rd Ave/ NE Woodburn Dr	City	-	-	-	-	-	1	-	-	-	1	-	1	0.10
27	SE Crown Rd/NE 3rd Ave	City	-	1	1	-	-	3	-	-	3	2	-	5	0.17

[1] PDO = Property Damage Only
[2] Crash rate is calculated as the number of crashes per million entering vehicles.

The sections that follow provide identification of crash types and/or factors contributing to the reported crashes.

Walking and Biking Related Crashes

As shown in Table 4, there were three reported crashes involving people riding bikes, one each at intersections #3, #4, and #16. Details include:

- **NE Ingle Road/NE 28th Street-NE Goodwin Road (Intersection #3):** One suspected minor-injury bicycle-related crash was reported at this intersection. The incident involved a northbound vehicle making a left turn that failed to yield the right-of-way to a bicyclist, resulting in a collision.
- **NE 232nd Avenue/NE 28th Street (Intersection #4):** One property damage only (PDO) crash was reported where a westbound panel/pick-up truck struck a bicyclist also traveling westbound through the intersection. The incident report noted the bicyclist making an improper turn/merge maneuver.
- **Division Street/NW 6th Ave (Intersection #15):** A single suspected minor-injury bicycle-related crash was reported at this intersection. The incident involved a bicyclist who struck a stationary pickup/ panel truck waiting at a stop sign.

No pedestrian-involved crashes were reported at the study intersections.

Crash Severity

There were no reported fatal crashes at the study intersections. There was one reported fatal collision that occurred in the vicinity of the NW Lacamas Lane/NW Lake Road intersection. This head-on collision involved two passenger cars and resulted in one fatality and four injuries. This collision occurred during daylight and dry conditions while one vehicle was negotiating a curve south of the intersection and was attributed to an unknown distraction.

None of the study intersections experienced a crash rate greater than 1.0 crashes per million entering vehicles (i.e., the metric used by the City to assess whether further analyses are warranted).

Further review of individual intersection crash patterns at WSDOT-maintained intersections is summarized below.

SR 500/NE 28th Street (Intersection #5)

Of the three reported crashes at the SR 500/NE 28th Street intersection:

- All occurred during daylight conditions.
- One involved a southbound through movement to the private driveway (south approach) that did not grant the right-of-way to a westbound through movement.
- One involved a northbound through movement from the private driveway that did not grant the right-of-way to a southbound left-turn movement.
- The third involved an eastbound through movement that made an improper turn/merge with an eastbound left-turn vehicle.

No crash trends requiring mitigation were identified at this intersection through the crash data review.

SR 500/NE Everett Drive (Intersection #7)

Of the three reported crashes at the NE Everett Street/NE Everett Drive intersection:

- All three crashes occurred during daylight conditions.
- Of the two single vehicle fixed object collisions, one was attributed to a driver under the influence of alcohol in which the vehicle drove into a ditch while the other was attributed to distracted driving in which the vehicle struck a streetlight pole. Neither crash involved an injury.
- The injury crash involved a southbound left-turn and a northbound through movement in which the left-turn did not yield.

This intersection is planned to be reconstructed as a single lane roundabout in conjunction with the approved Camas Woods development project as will be described further later in this report.

SR 500/SE Leadbetter Road (Intersection #8)

Of the two reported crashes at the NE Everett Street/SE Leadbetter Road intersection:

- Both occurred during daylight hours.
- One involved an eastbound rear-end collision and one was an angle crash involving an eastbound left-turn and a northbound through movement. No injuries were reported with either crash.

Though SE Leadbetter Road currently connects to NE 232nd Avenue, longer-term the City envisions SE Leadbetter Road being disconnected to the west and converted to a walking/bicycling trail along Lacamas Lake. This change is not currently expected until after North Shore Boulevard is built-out, connecting NE 232nd Avenue to SR 500, but would be anticipated to change travel patterns through this intersection.

SR 500/NE 43rd Avenue (Intersection #9)

Of the three reported crashes at the SR 500/SE Leadbetter Road intersection:

- One crash was a rear-end collision that occurred during dark conditions and two were angle crashes that occurred during daylight.
- The two angle crashes involved southbound left-turning vehicles. The southbound left-turn movement is currently controlled by a protected green arrow and a permissive Flashing Yellow Arrow.

The City of Camas is currently in the process of designing a roundabout to replace the existing traffic signal, though roundabout construction is not programmed or financed at the time this report was prepared. No crash trends requiring mitigation were identified at this intersection through the crash data review.

SR 500/NW Lake Road (Intersection #10)

Of the nine reported crashes at the SR 500/NW Lake Road roundabout intersection:

- Four occurred during daylight conditions.
- Three were described as circulating the roundabout (one side swipe, two fixed object), five entering the roundabout, and one rear-end at the intersection but not related.

The roundabout was constructed in 2020. One crash was reported in 2020, one in 2021, two in 2023, and five in 2024 (one of which involved a driver under the influence of alcohol who hit a fixed object).

Roundabouts are considered a proven safety countermeasure by the Federal Highway Administration (FHWA), offering benefits such as slower travel speeds, fewer conflict points, and reduced crash severity compared to other intersection types. There was no pattern apparent amongst the crashes and no crash trends requiring mitigation were identified at this intersection through the crash data review.

SR 500/NE 15th Avenue (Intersection #12)

Of the two reported crashes at the SR 500/NE 15th Avenue intersection:

- Both occurred during daylight hours.
- One involved an eastbound right turn that did not signal being struck by an eastbound through movement while the other angle crash resulted in a minor injury attributed to a vehicle that failed to grant the right-of-way.

No crash trends requiring mitigation were identified at this intersection through the crash data review.

SR 500/NE 14th Avenue (Intersection #13)

Of the four reported non-injury crashes at the NE Everett Street/NE 14th Avenue intersection:

- A single vehicle fixed object crash occurred during daylight hours and involved a fire hydrant.

- The turning crash involved a speeding vehicle making a left-turn making contact with a legally parked unoccupied vehicle in the dark at 5:30 AM.
- One rear-end crash involved two southbound vehicles on SR 500, with one vehicle noted as following too closely under dark conditions.
- One involved a school bus making a northbound right-turn around 4:22 PM struck by a westbound vehicle that did not grant the right-of-way in 2021.

No crash trends requiring mitigation were identified at this intersection through the crash data review, though it is noted that the existing two-way stop control configuration (eastbound and westbound are stop controlled, northbound and southbound operate uncontrolled) functionally operates more like a three-way stop control, as the northbound private driveway approach crosses a sidewalk. Observations of the intersection showed a tendency for many westbound drivers on NE 14th Avenue to slow, but not fully stop at the intersection.

No safety-based mitigation needs were identified for implementation in conjunction with the proposed development based on the crash data review.

NW 6th Avenue/NW Norwood Street-SR 14 Ramps (Intersection #16)

This intersection was reconstructed with a roundabout in 2017. Roundabouts are considered a proven safety countermeasure by the Federal Highway Administration (FHWA) with benefits that include but are not limited to comparatively slower travel speeds, fewer number of conflicts and lower severities compared to other intersection control forms. None of the eight reported crashes resulted in any injuries and six of the eight occurred under daylight conditions. One of crashes was attributed to the driver being under the influence of alcohol. One crash was related to a driver that struck a deer. Given the configuration as a roundabout, no further analyses were prepared.

Traffic Volumes and Peak Hour Operations

Vehicle turning movement, pedestrian and bicycle counts were collected at the study intersections on a mid-weekday during the months of April or June 2025 during the morning (7:00 – 9:00 AM) and evening (4:00 - 6:00 PM) hours when local schools were in-session and there were no adverse weather conditions. *Appendix C contains the traffic count sheets used in this study.*

The weekday AM and PM peak hour traffic volumes and the associated intersection operations are shown in Figures 4 and 5. As shown, all study intersections satisfy the applicable LOS standards under existing weekday AM peak hour conditions. During weekday PM peak hour conditions, all but one study intersection satisfy the applicable LOS standards today. The one study intersection that does not satisfy the LOS standards during PM peak hour conditions is discussed further below.

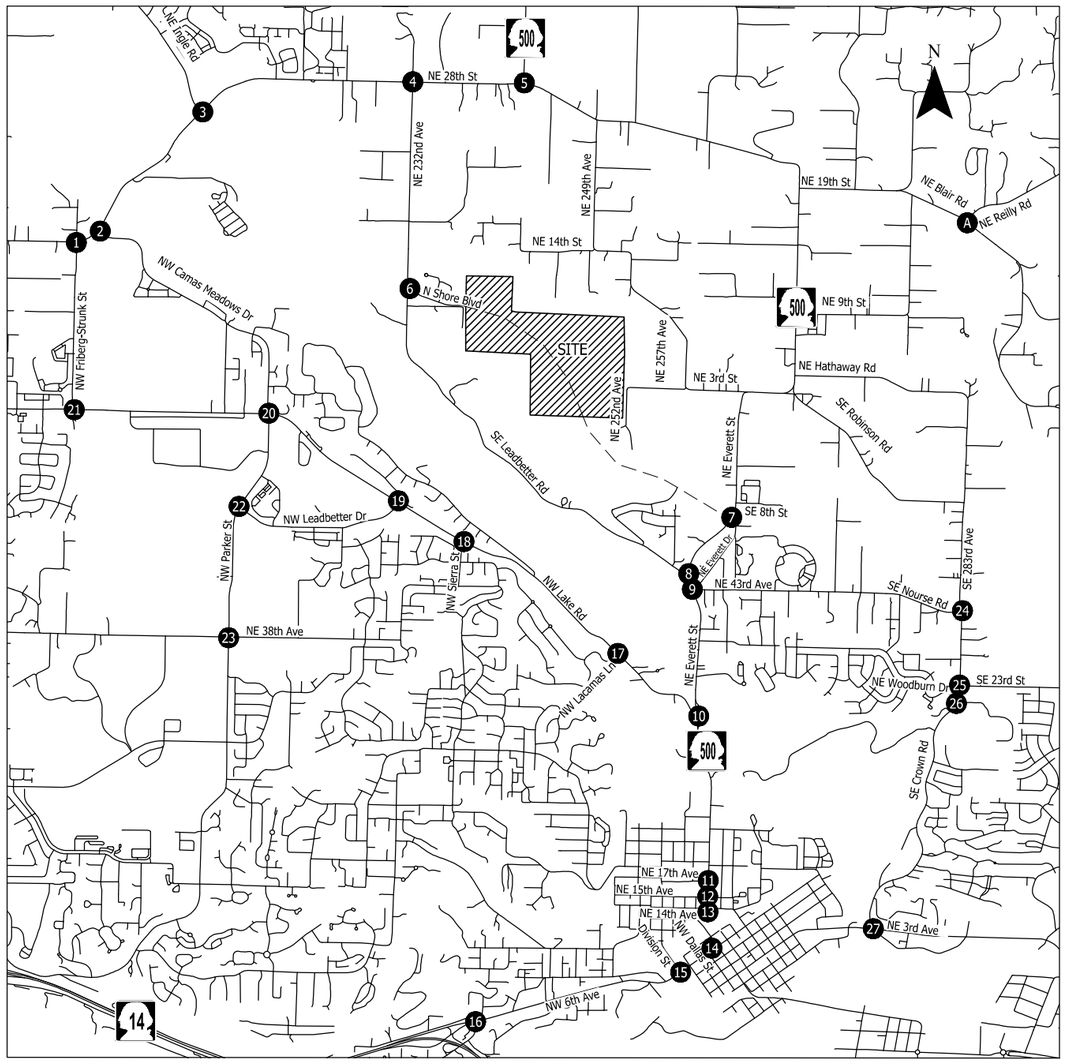
SR 500 (NE Everett Street)/NE 14th Avenue (Intersection #13)

Delay experienced on the eastbound stop-controlled approach results in LOS F operations (exceed LOS E requirement) during the weekday PM peak hour with a V/C ratio of 0.61. Although both the eastbound and westbound approaches are stop controlled, observation of the intersection indicates that drivers making the higher volume westbound right-turn movement at times create "courtesy gaps" for the occasional eastbound left-turn drivers to enter the intersection.

Other Observations

While the respective agency LOS standards are satisfied, field observations identified notable delay and queueing on SR 500 near Everrett Drive, and the northbound NE 232nd Avenue approach to NE 28th Street during the weekday morning and afternoon dismissal periods of the nearby schools. These peak queues were observed to last for approximately 15 minutes and were associated with school-related trips at the start and end of the school classroom day.

Appendix D includes the existing conditions level-of-service worksheets.



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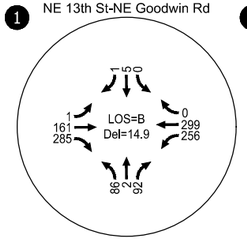
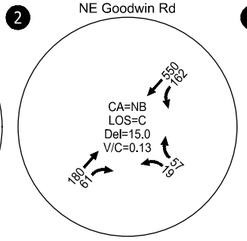


2 NE Camas Meadows Dr/ NE Goodwin Rd



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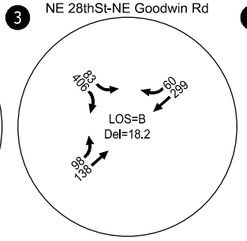

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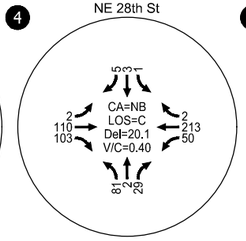

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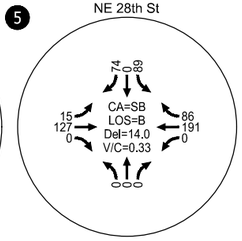
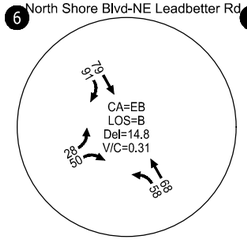
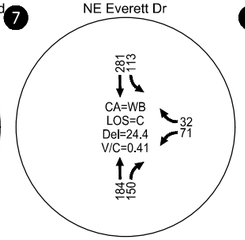


6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd



7 SR 500/ NE Everett Dr



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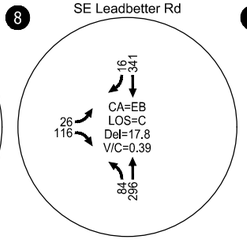

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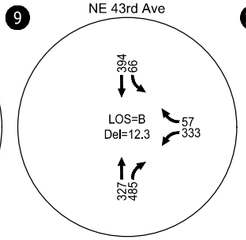

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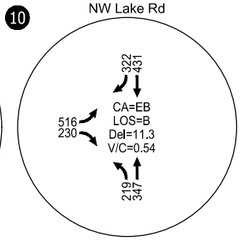

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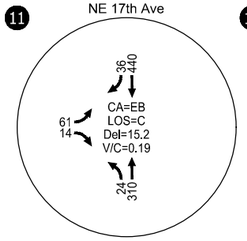

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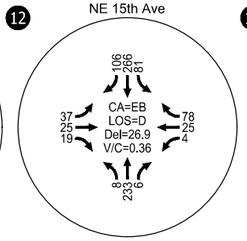

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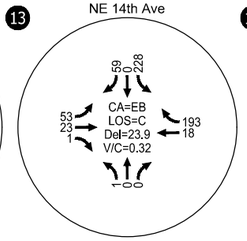

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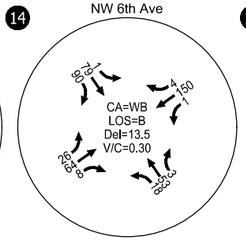

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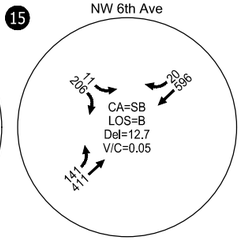

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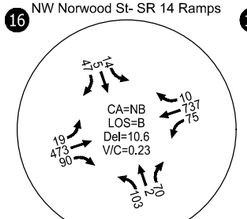

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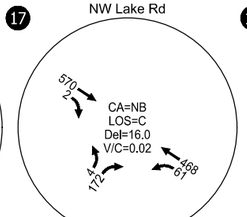

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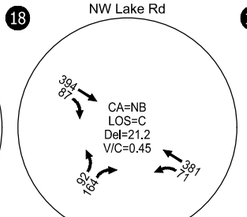

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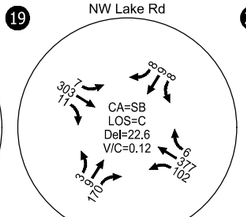

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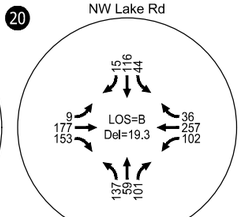

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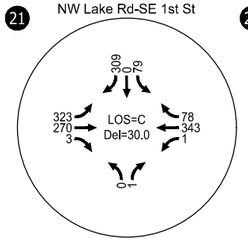

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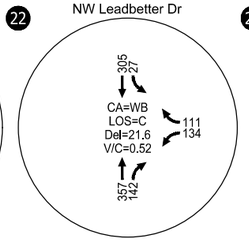

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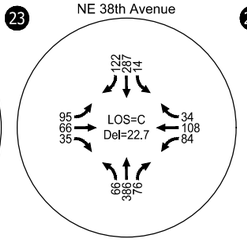

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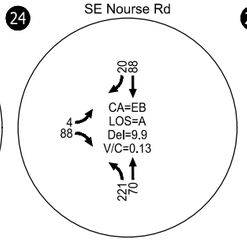

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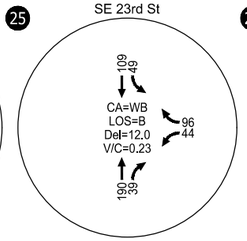

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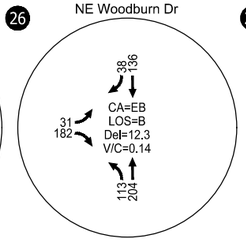

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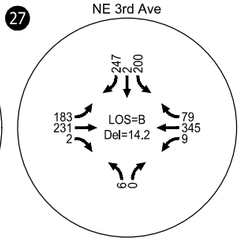

- SITE

(#) - STUDY INTERSECTION

CA = CRITICAL APPROACH (TWSC / ROUNDABOUT)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/ CRITICAL APPROACH LEVEL OF SERVICE (TWSC / ROUNDABOUT)
V/C = VOLUME-TO-CAPACITY RATIO
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/ CRITICAL APPROACH DELAY (UNSIGNALIZED)
TWSC = TWO-WAY STOP CONTROL

2025 Existing Traffic Conditions Weekday AM Peak Hour Camas, Washington

Figure 4

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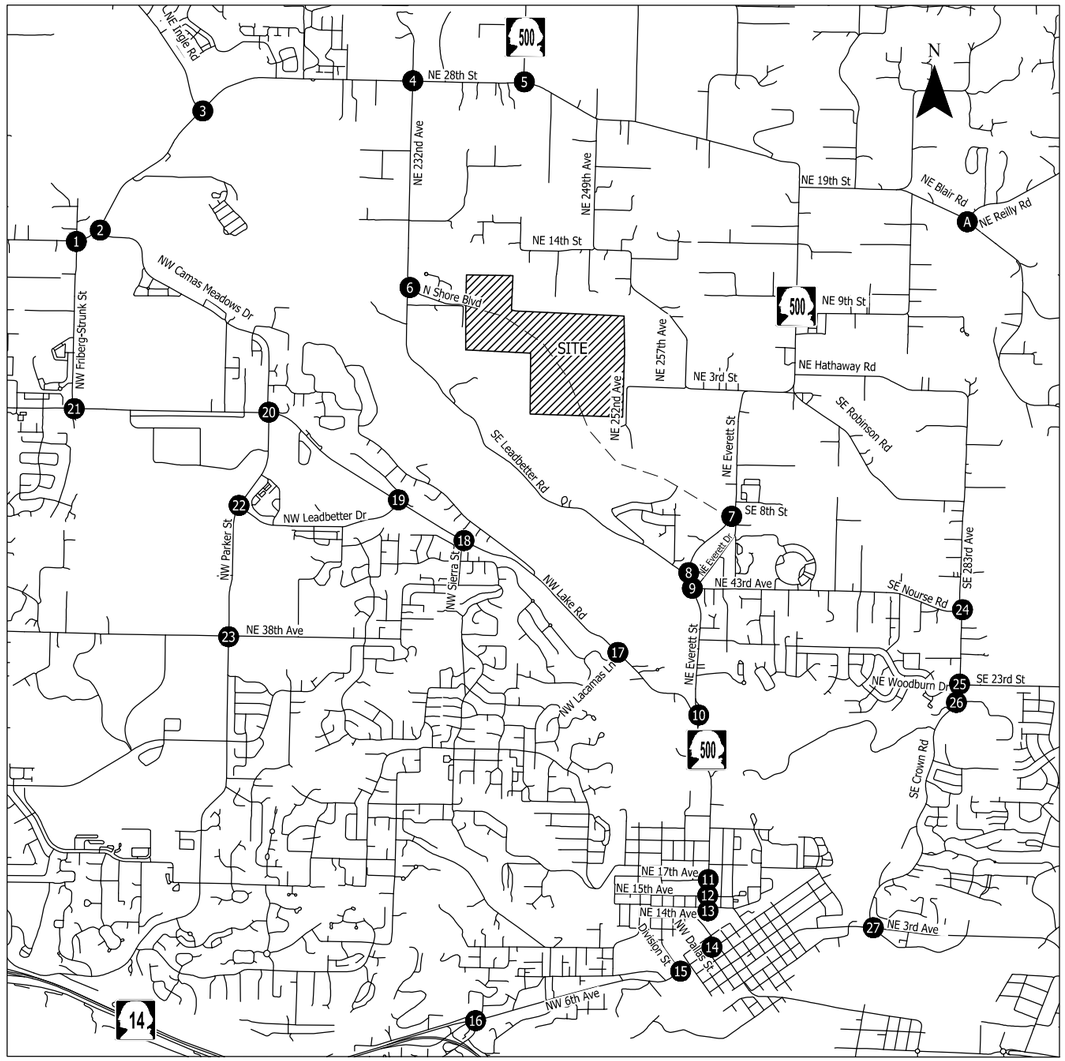

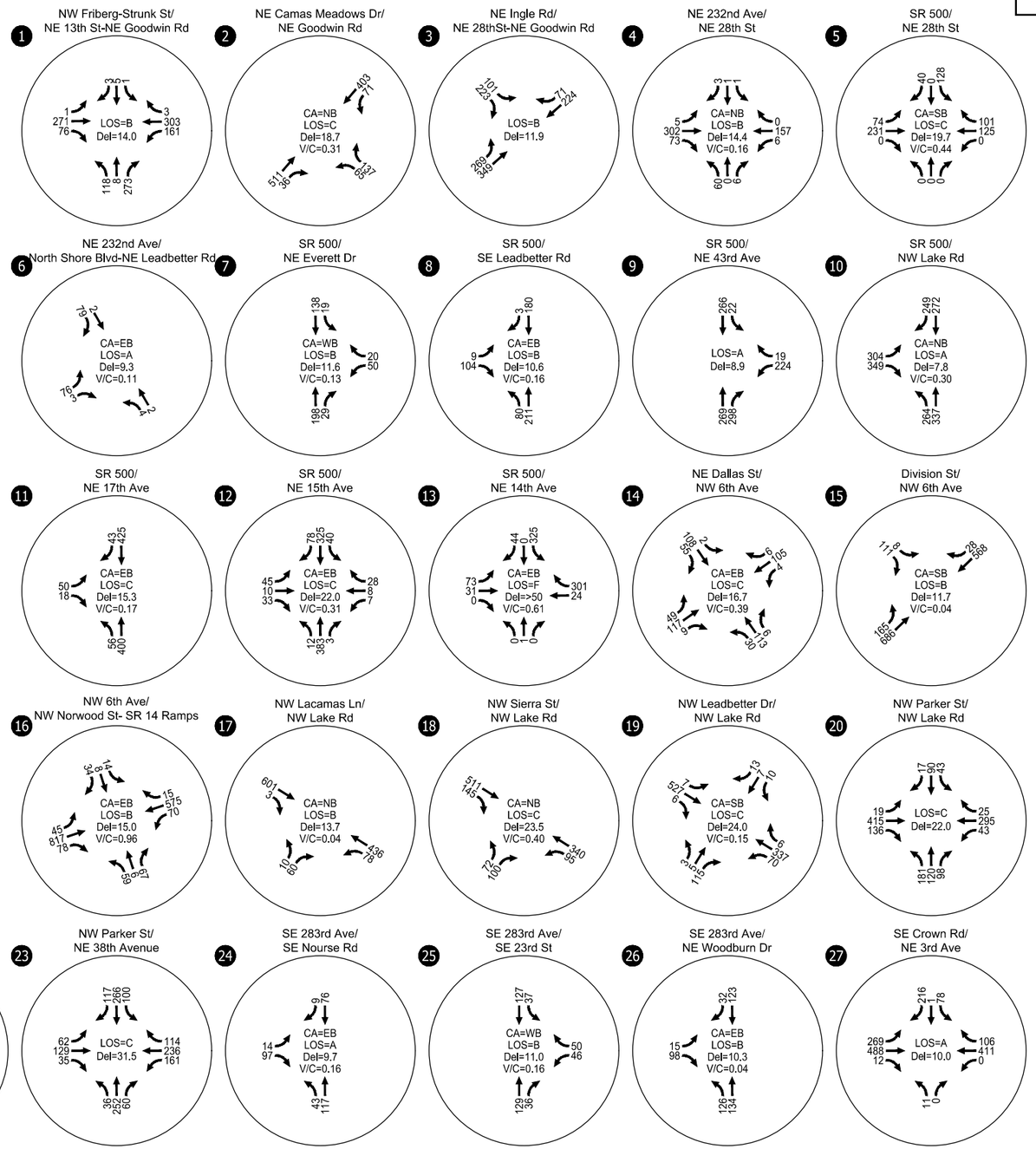

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(#) - STUDY INTERSECTION

CA =CRITICAL APPROACH (TWSC / ROUNDABOUT)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/ CRITICAL APPROACH LEVEL OF SERVICE (TWSC / ROUNDABOUT)
V/C = VOLUME-TO-CAPACITY RATIO
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/ CRITICAL APPROACH DELAY (UNSIGNALIZED)
TWSC = TWO-WAY STOP CONTROL

2025 Existing Traffic Conditions Weekday PM Peak Hour Camas, Washington

Figure 5

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2030 BACKGROUND TRAFFIC CONDITIONS

The year 2030 background traffic analysis identifies how the study intersections will operate prior to the construction and occupancy of the Lacamas North Shore development. This analysis includes traffic attributed to planned developments within the study area and to general growth in the region but does not include traffic from the proposed development.

Planned Developments & Transportation Improvements

City staff identified the following previously approved developments to include in the traffic forecasts for the year 2030:

- North Shore Village, located east of NE 252nd Avenue and south of SE 3rd Street;
- Camas Woods and Camas Woods 2, located east of SR 500 between Everett Drive and NE 8th Street;
- Camas Heights, located on the north side of NE 28th Street at and west of NE 232nd Avenue;
- Green Mountain Estates, located on the north side of NE 28th Street, east of NE 222nd Avenue;
- Green Mountain Planned Residential Development (PRD), located east of NE Ingle Road and north of NE 28th Street;
- Lacamas Hills, located on the north side of Leadbetter Road west of Everett Road (formerly known as CJ Dens East Subdivision);
- Monte Verde Subdivision, located on the south side of NE 28th Street, west of NE 232nd Avenue; and,
- Stella Ridge residential development, located north of NW 18th Avenue and west of NE Brady Road[4].

In addition to the "in-process" development traffic, a two percent growth rate was also applied to intersections 4, 5, and 24, to account for continued growth in regional traffic along SR 500 north of Everett Drive and at Clark County intersections. *In-process traffic details as provided by the City plus two additional recent Kittelson TIS (North Shore Village and Stella Ridge) are included in Appendix E*.

Per City staff, there are no funded changes to the study intersections and/or streets within the next six years that will materially affect traffic volumes. There is a planned near-term roundabout project at the SR 500/NE Everett Drive intersection to be delivered in conjunction with private development (Camas Woods) that is anticipated to be completed by 2030 and is therefore considered in-place for the background analyses. If the roundabout is not constructed by the development, then a traffic signal will be installed per the conditions of approval.

Additionally, we understand the City plans to construct North Shore Boulevard from the existing terminus near NE 232nd Avenue east to the planned SR 500/SE Everett Drive roundabout in the near-term. Therefore, the background analysis assumes North Shore Boulevard is fully constructed between NE 232nd Avenue and SR 500, and that SE Leadbetter Road is severed (no longer connecting NE 232nd Avenue to SR 500). With these assumptions, the background analysis includes traffic volume re-assignments as follows:

- In-process development trip re-assignments for North Shore Village, Camas Woods, Camas Woods 2 and Lacamas Hills, assuming development trips previously assumed to use SE Leadbetter Road would instead use North Shore Boulevard;

[4] This project's land use application and TIS is expected to be submitted to the City of Camas in August 2025 and impacts some study intersections so the site trips volumes have been included as in-process.

- Existing regional traffic currently traveling through the area via SE Leadbetter Road to NE 232nd Avenue that would instead use North Shore Boulevard; and,
- Re-assignment of approximately 30 percent of Lacamas Elementary school traffic from the north-easternly areas of the school boundary area who are currently using the NE 232nd Avenue/NE 28th Street intersection who may instead take SR 500 south to the new SR 500/NE Everett Drive roundabout intersection to then access Lacamas Elementary school from North Shore Boulevard.

Figures F-1 and F-2, located in Appendix F, detail the background traffic re-assignments described above.

Although the City of Camas is currently planning for and designing a roundabout at the NW Sierra Street/NW Lake Road intersection, the construction funding and timing is uncertain at this time. Therefore, this roundabout is not considered in-place for the background analyses but is further discussed in the following sections relating to mitigations and associated fees.

With these background changes to the roadway network and regional volumes at the NE 232nd Avenue/NE 28th Street intersection, the forecast future peak hour factor (PHF) was assumed to increase from 0.72 to 0.85 during the AM peak hour, similar to the nearby NE SR 500/NE 28th Street intersection existing PHF. Additional, turning movement heavy vehicle percentages were reduced considering existing number of heavy vehicles observed and forecast volumes. No adjustments to the PM peak hour PHF or heavy vehicles percentages were made.

Figures 6 and 7 show the projected 2030 background turning movement volumes and associated intersection analyses during weekday AM and PM peak hour periods. As shown, two intersections were found to experience delays that do not satisfy the LOS standards during the future peak hour analysis periods including the single intersection whose performance levels don't satisfy the LOS standard today These intersections are:

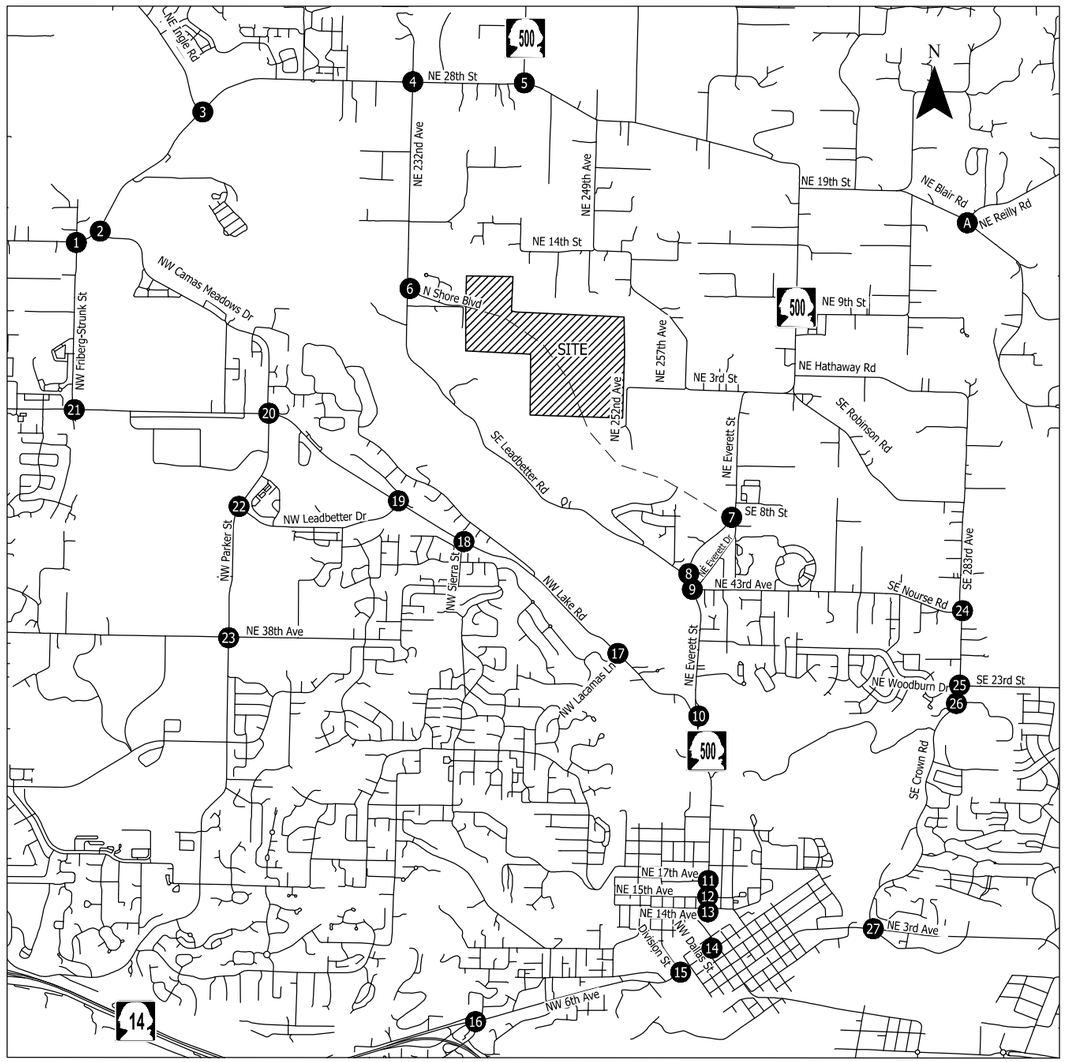
- SR 500 (NE Everett Street)/NE 28th Street (Intersection #5): PM peak hour
- NE Everett Street/NE 14th Avenue (Intersection #13): PM peak hour

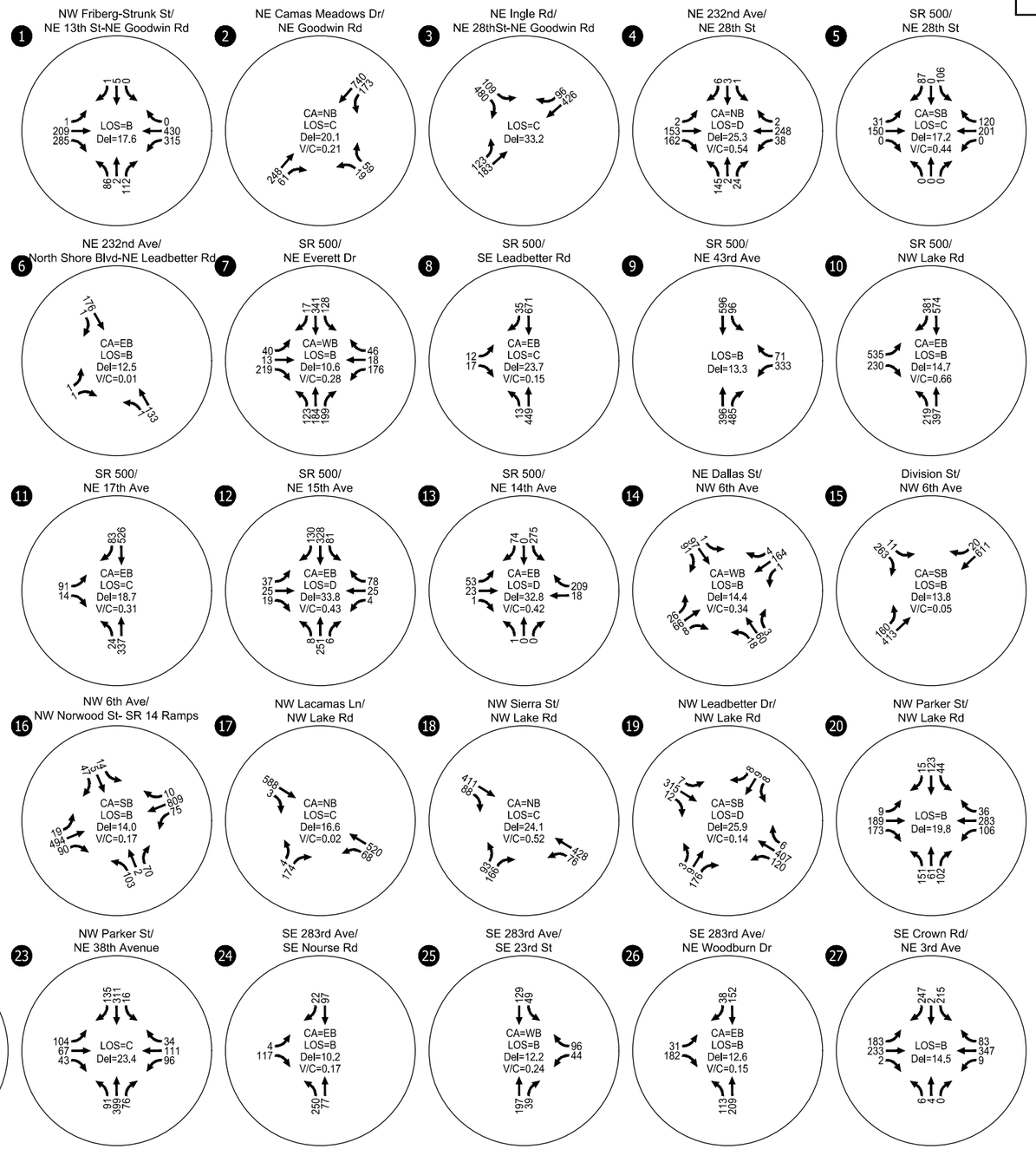
SR 500 (NE Everett Street)/NE 28th Avenue (Intersection #5)

Forecast delay for the southbound stop-controlled approach results in LOS E operations (exceeding LOS requirements) during the weekday PM peak hour with a V/C ratio of 0.73. This finding is consistent with past studies and the City of Camas, Clark County and WSDOT are coordinating regarding the potential to implement all-way stop control. Potential implementation of all-way stop control is currently a condition of approval of the Camas Woods 2 in-process development, subject to WSDOT direction.

SR 500 (NE Everett Street)/NE 14th Avenue (Intersection #13)

Consistent with existing conditions, delay experienced on the eastbound stop controlled approach results in LOS F operations (exceed LOS E requirement) during the weekday PM peak hour with a V/C ratio of 0.75.





- SITE

(#) - STUDY INTERSECTION

CA =CRITICAL APPROACH (TWSC / ROUNDABOUT)
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V/C = VOLUME-TO-CAPACITY RATIO
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/ CRITICAL APPROACH DELAY (UNSIGNALIZED)
TWSC = TWO-WAY STOP CONTROL

2030 Background Traffic Conditions Weekday AM Peak Hour Camas, Washington

Figure 6

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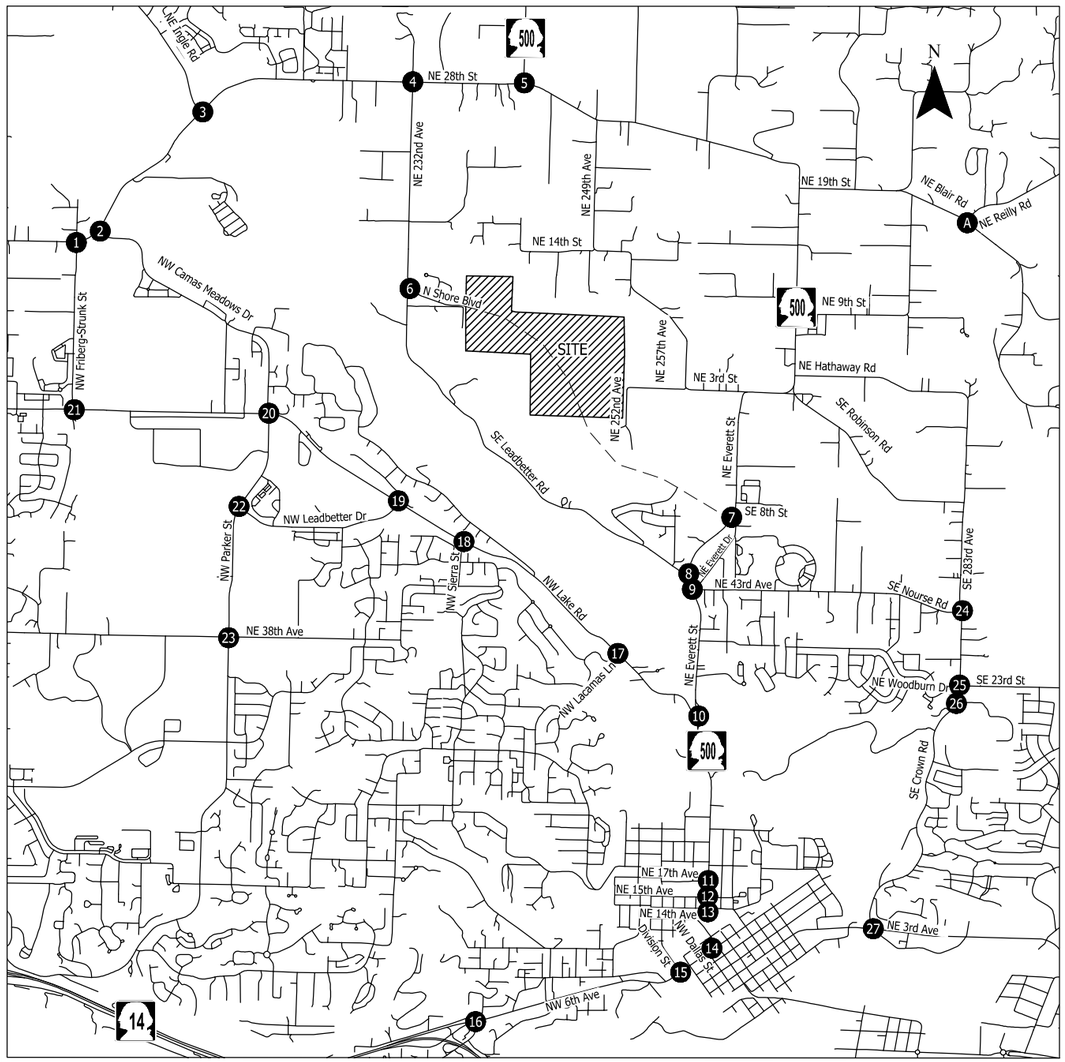
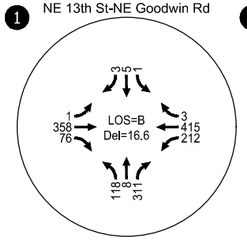
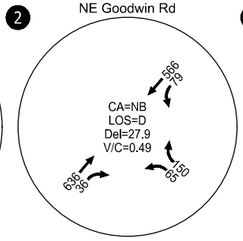


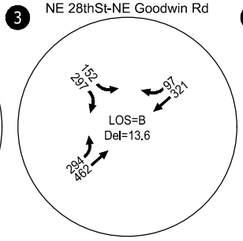
1 NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd



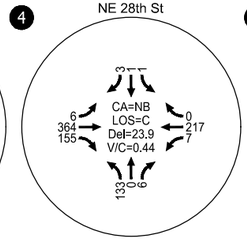
2 NE Camas Meadows Dr/ NE Goodwin Rd



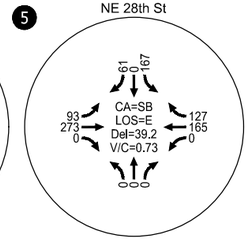
3 NE Ingle Rd/ NE 28thSt-NE Goodwin Rd



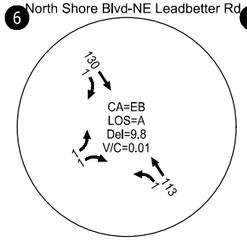
4 NE 232nd Ave/ NE 28th St



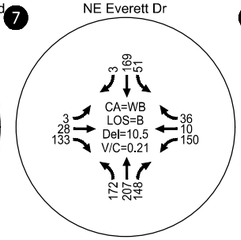
5 SR 500/ NE 28th St



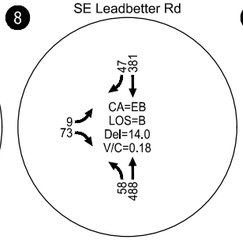
6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd



7 SR 500/ NE Everett Dr



8 SR 500/ SE Leadbetter Rd



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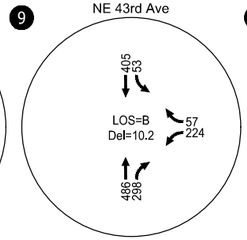
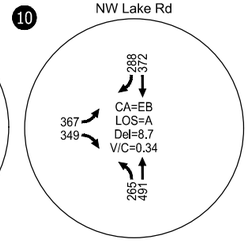
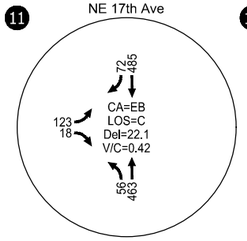


10 SR 500/ NW Lake Rd



11 SR 500/ NE 17th Ave



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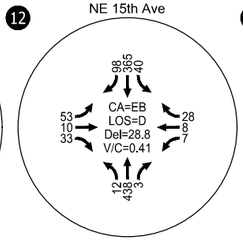
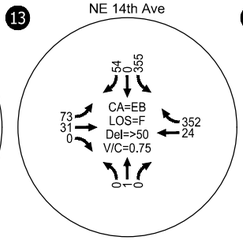
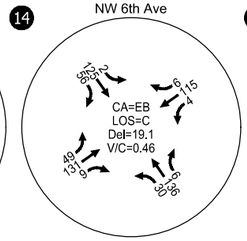


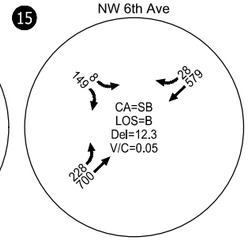
13 SR 500/ NE 14th Ave



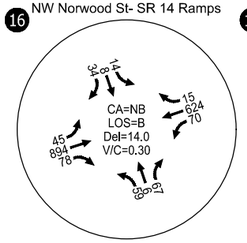
14 NE Dallas St/ NW 6th Ave



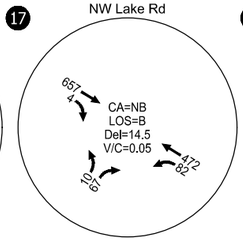
15 Division St/ NW 6th Ave



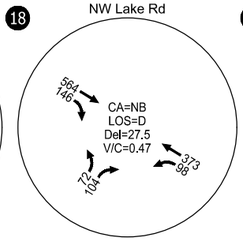
16 NW 6th Ave/ NW Norwood St- SR 14 Ramps



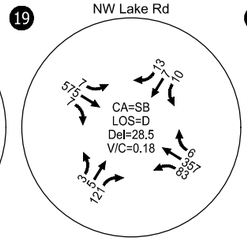
17 NW Lacamas Ln/ NW Lake Rd



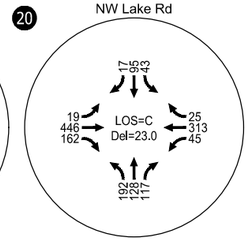
18 NW Sierra St/ NW Lake Rd



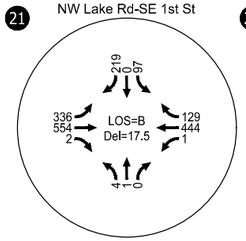
19 NW Leadbetter Dr/ NW Lake Rd



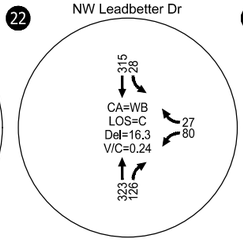
20 NW Parker St/ NW Lake Rd



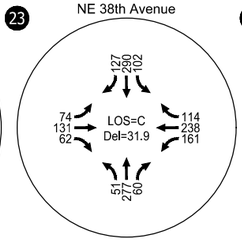
21 NW Friberg-Strunk St/ NW Lake Rd-SE 1st St



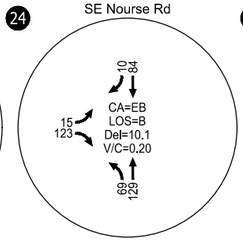
22 NW Parker St/ NW Leadbetter Dr



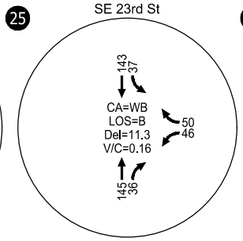
23 NW Parker St/ NE 38th Avenue



24 SE 283rd Ave/ SE Nourse Rd



25 SE 283rd Ave/ SE 23rd St



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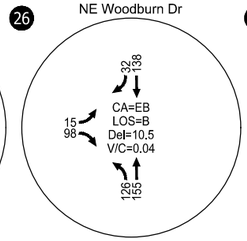
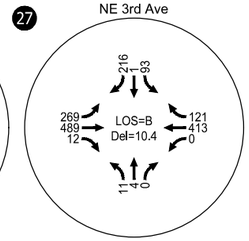


27 SE Crown Rd/ NE 3rd Ave



- SITE

(#) - STUDY INTERSECTION

CA =CRITICAL APPROACH (TWSC / ROUNDABOUT)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/ CRITICAL APPROACH LEVEL OF SERVICE (TWSC / ROUNDABOUT)
V/C = VOLUME-TO-CAPACITY RATIO
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/ CRITICAL APPROACH DELAY (UNSIGNALIZED)
TWSC = TWO-WAY STOP CONTROL

2030 Background Traffic Conditions Weekday PM Peak Hour Camas, Washington

Figure 7

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PROPOSED DEVELOPMENT

SunCal proposes to construct up to 387 detached single family homes and 209 attached homes, with construction and full occupancy anticipated by 2030. Up to 167,505 square-feet of commercial retail space, as well as up to 380 multi-family apartment units, and up to 580,000 square-feet of manufacturing/distribution employment development is also anticipated and could also be completed by 2030, pending market conditions.

Primary access to the project site is anticipated via North Shore Boulevard, a portion of which would be extended from the current termination near Lacamas Lake Elementary School east through the site in conjunction with site development. As previously noted, it is assumed that by 2030, North Shore Boulevard is built out from the current terminus near NE 232nd Avenue east to the planned SE Everett Street/SE Everett Drive roundabout by others.

Trip Generation Estimates

Weekday daily, AM, and PM peak hour vehicle trips for the proposed development were estimated using data from the *Trip Generation Manual, 11th Edition*, published by the Institute of Transportation Engineers (ITE, Reference 9). Table 5 summarizes the residential development phase trip generation estimate, reflecting fitted equation trip rates[5]. Table 6 summarizes the commercial retail development phase trip generation estimate, reflecting fitted equation trip rates. Table 7 summarizes the employment development trip generation estimate, reflecting fitted equation trip rates for *Manufacturing* and average trip rates for *High-Cube Fulfillment Center Warehouse Non-Sort*[6].

Table 5. Estimated Site Trip Generation (Residential Phases)

Land Use	ITE Code	Size (units)	Daily Trips	Weekday AM Peak			Weekday PM Peak		
				Total	In	Out	Total	In	Out
Single-Family Detached Housing	210	387	3,504	255	64	191	355	224	131
Single Family Attached Housing	215	209	1,542	103	26	77	121	71	50
Multi-Family Low-Rise	220	380	2,511	141	34	107	184	116	68
		Total Trips	**7,557**	**499**	**124**	**375**	**660**	**411**	**249**

Table 6. Estimated Site Trip Generation (Commercial Phases)

Land Use	ITE Code	Size (SF)	Daily Trips	Weekday AM Peak			Weekday PM Peak		
				Total	In	Out	Total	In	Out
Shopping Center (>150K)	820	167,505	10,237	232	144	88	818	393	425
		Less 29% Pass-by	(2,969)	(67)	(41)	(26)	(237)	(114)	(123)
		Total Net New Trips	**7,268**	**165**	**103**	**62**	**581**	**279**	**302**

[5] Note that though the current conceptual site plan indicates 367 single family detached units, this TIA accounts for an additional 20 single family detached units (387 total) as site plan refinement is on-going.

[6] Average rates are used because the *Trip Generation Manual* does not have published fitted equation AM or PM peak hour rates for this land use code.

Table 7. Estimated Site Trip Generation (Employment Phases)

Land Use	ITE Code	Size (SF)	Daily Trips	Weekday AM Peak			Weekday PM Peak		
				Total	In	Out	Total	In	Out
Manufacturing	140	320,000	1,408	205	156	49	261	81	180
High-Cube Fulfillment Center Warehouse (Non-Sort)	155	260,000	471	39	32	7	42	16	26
		Total Trips	**1,879**	**244**	**188**	**56**	**303**	**97**	**206**

Table 8. Cumulative Site Trip Generation (All Phases)

Land use	Daily Trips	Weekday AM Peak			Weekday PM Peak		
		Total	In	Out	Total	In	Out
Overall Development	**16,704**	**908**	**415**	**493**	**1,544**	**787**	**757**

Trip Distribution and Assignment

This TIS assumes that the site residential, commercial and employment land uses each have different trip distribution patterns based on the anticipated range of potential future commercial and employment opportunities and site location. Derivation of the trip distribution patterns is described below. In each case, the distribution pattern is predicated in part on and Southwest Washington Regional Transportation Council (RTC) travel demand modeling of nearby TAZs. Further, the trip assignments for each land use assume 1) the North Shore Boulevard extension east to SR 500 is in place, and 2) that SE Leadbetter Road no longer serves through vehicle travel between NE 232nd Avenue and SR 500.

Figures 8 and 9 display the cumulative site trip assignment during the AM and PM peak hours, respectively. *Appendix G includes more detailed figures that show each land use type trip distribution pattern and resulting trip assignment.*

Residential Pattern

The residential trip distribution pattern combines RTC modeling, review of the existing and planned roadway network in the North Shore area[7] and *Google Maps'* route planning. Specifically, *Google Maps'* mapping and route planning suggestions were reviewed during peak hour time frames to better understand this tool's recommended travel routes, route travel time and route distances. Specifically, routing between the proposed site and nearby key destinations including Harmony Sports Complex, the NE 192nd Avenue and SE Mill Plain Boulevard retail corridors, and the Vancouver Mall area were reviewed during AM and PM peak hour time frames.

[7] We note that RTC does not currently have a model fully reflective of the adopted North Shore Plan and companion roadway network as of March 2025. RTC staff indicate they will create model updates upon the City's adoption of a new Growth Management Area (GMA) and road network and completion of the County's Regional Transportation Plan updates in collaboration with communities across the County. The schedule for completion of these changes is unknown as of time this scoping memo was prepared.

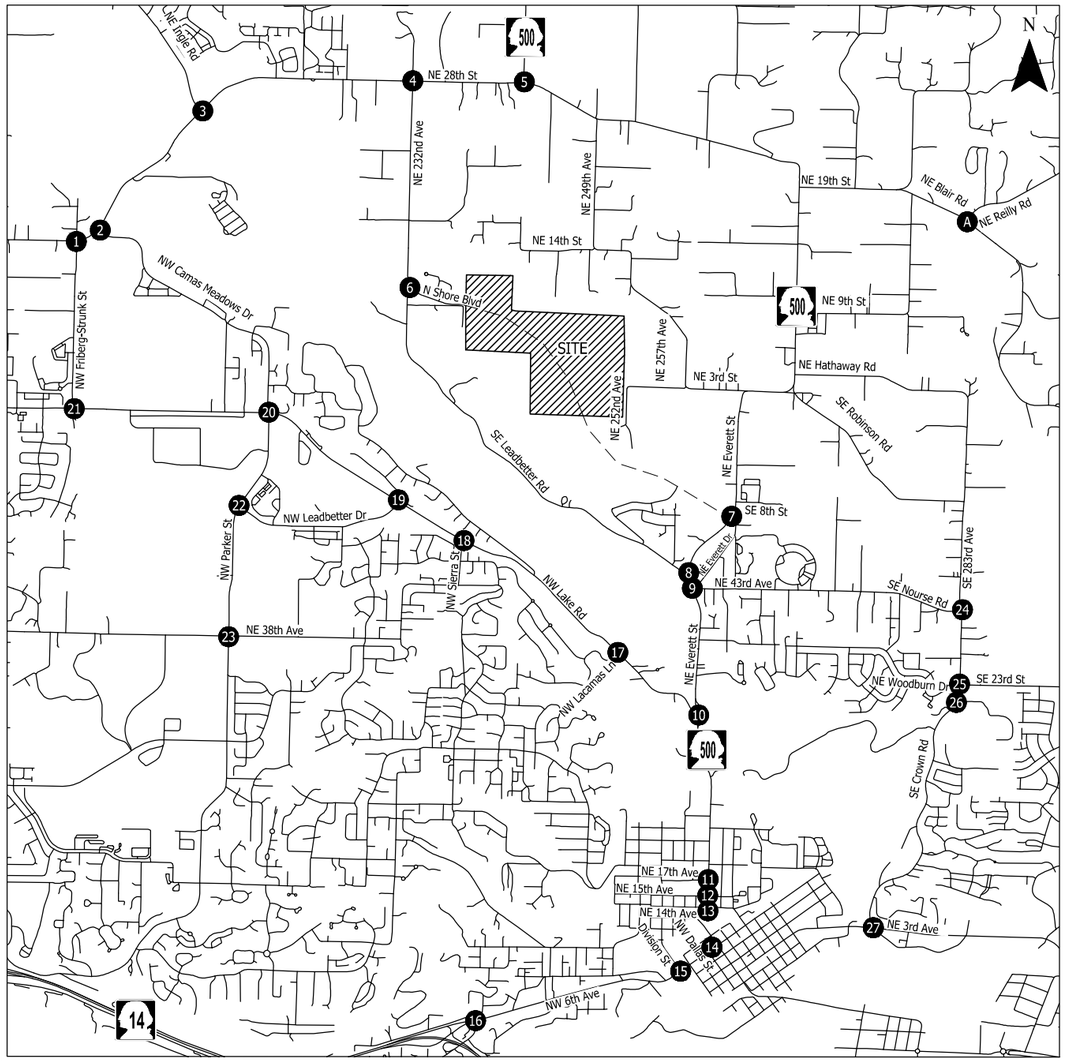
Commercial Retail Pattern

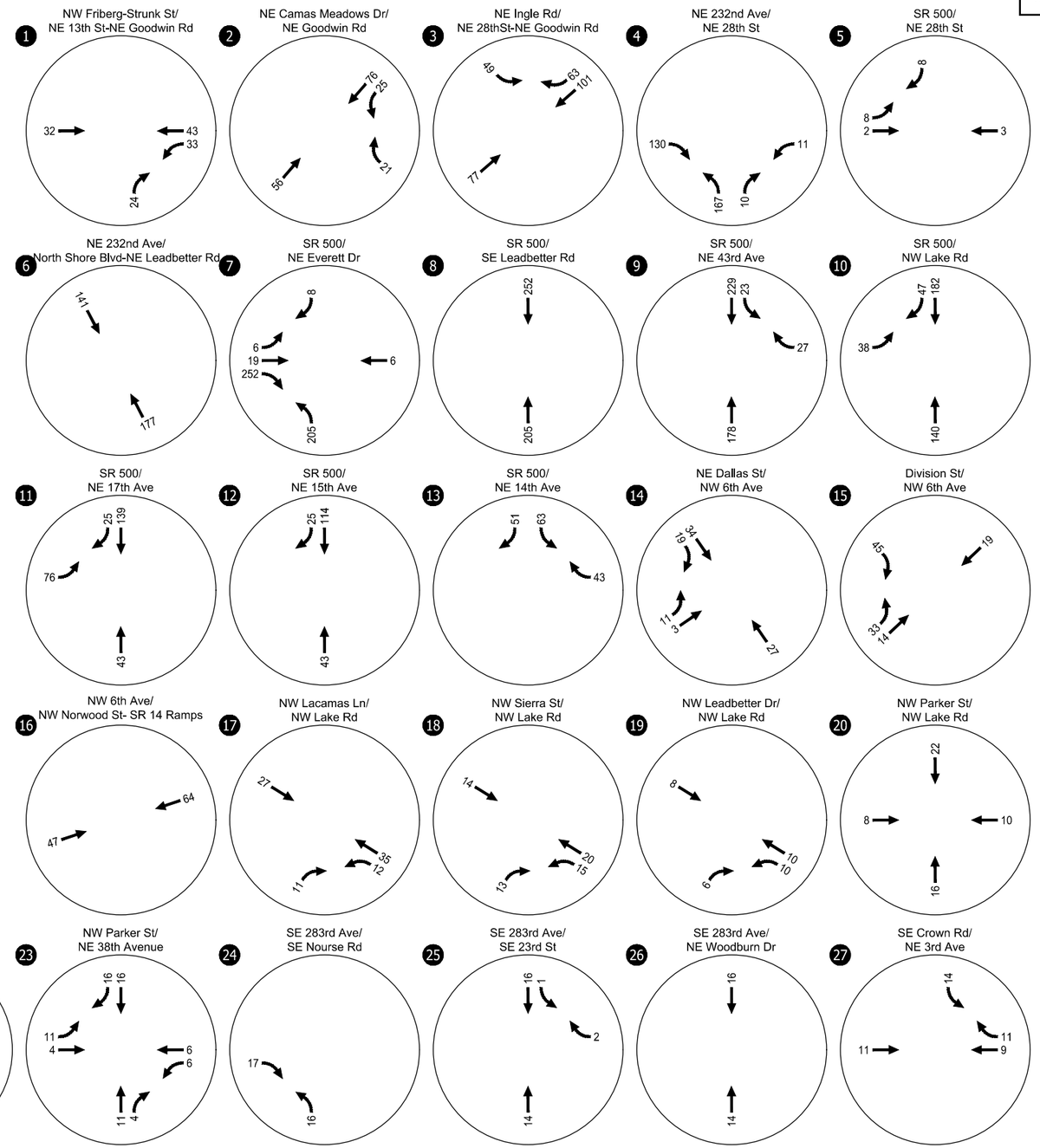
The commercial retail land use estimated trip distribution pattern was developed based on the available RTC modeling, existing and approved residential areas, and consideration of the locations of similar competing retail developments. The commercial land uses are anticipated to primarily serve the North Shore area and other Camas residents rather than attracting regional trips from the west, especially considering the regional commercial uses available along the NE 164th Avenue and SE 192nd Avenue corridors in Vancouver. The anticipated market area is consistent with the *Camas North Shore Subarea Plan* market analysis[8]. All pass-by trips are assumed to travel to/from North Shore Boulevard, and are therefore not assigned to the external network intersections.

Employment Pattern

An estimated trip distribution pattern for the planned employment land uses was developed based on RTC modeling, review of existing residential areas in the area, and proximity to other employment land uses.

[8] Refer to the market analysis at *City of Camas North Shore Subarea Plan* which states in part "Due to its location on the urban edge of the metropolitan region, lack of visibility and challenging access, lack of existing households, and prominent retail services nearby to the west, the North Shore is not likely to be a major retail center, but retail at a more neighborhood scale. There will be demand for small-scale retail along the perimeter arterial to serve new development and the adjoining neighborhood."





Study Intersections

Weekday AM Peak Hour Cumulative Net New Site Trips Camas, Washington

Figure 8

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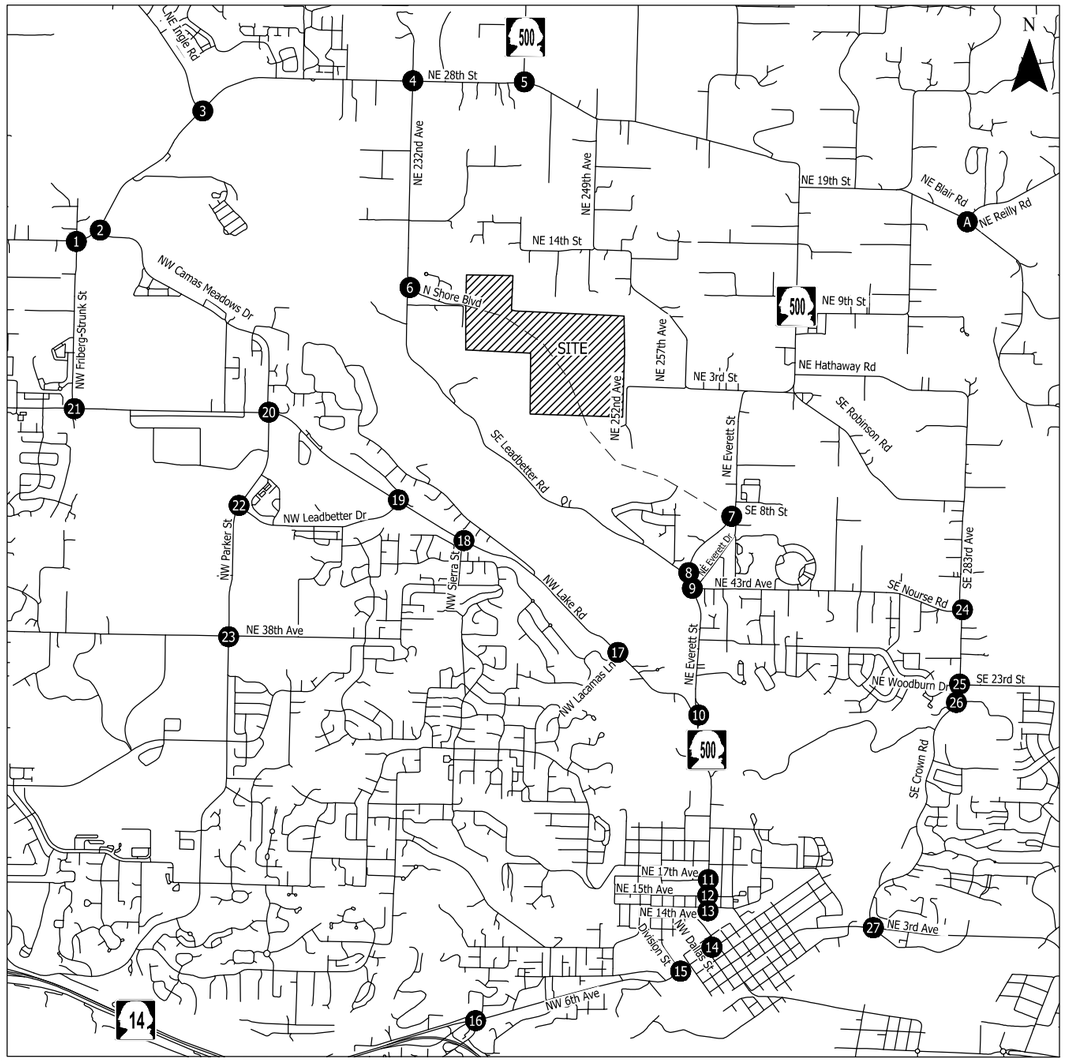

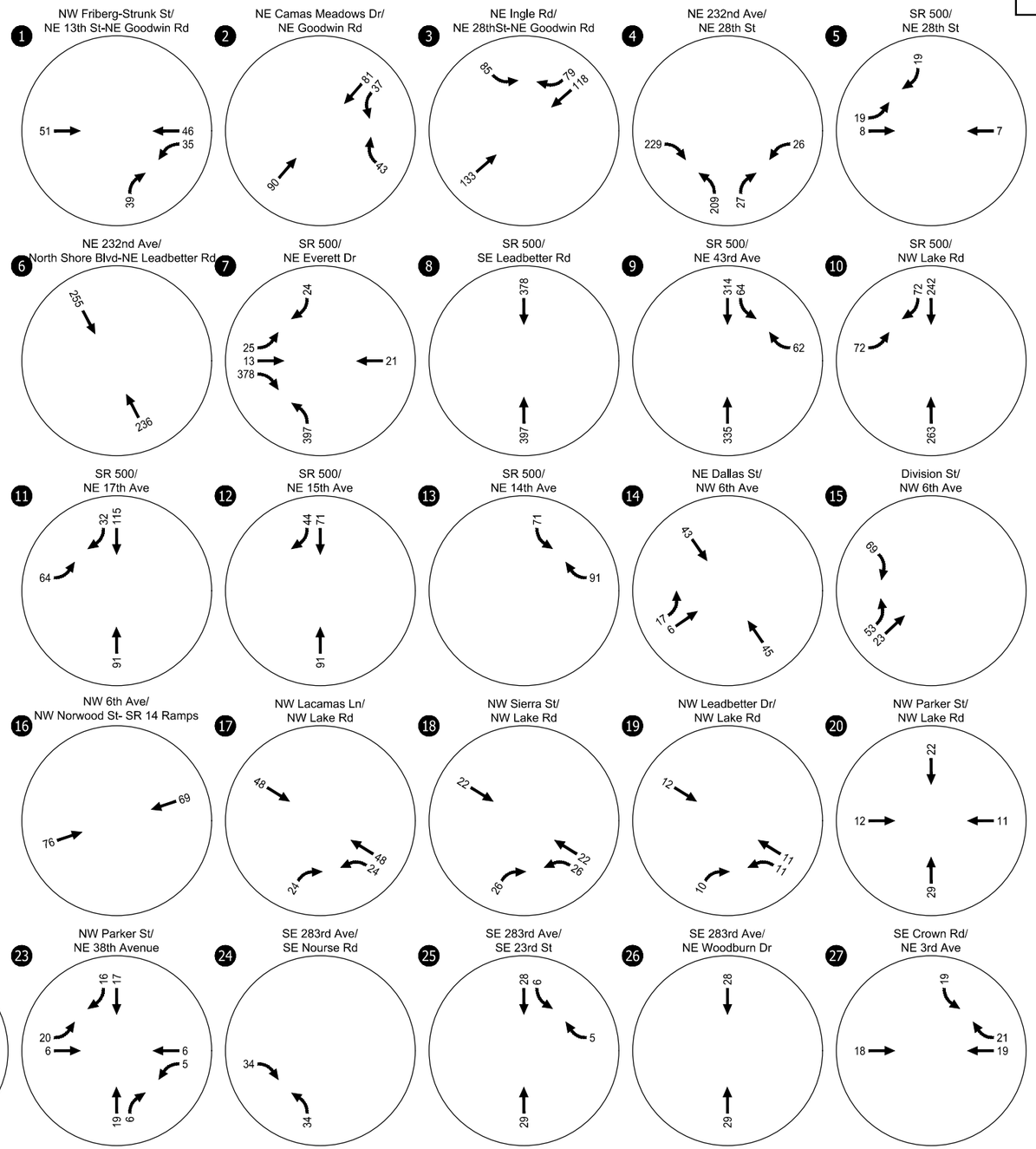

Study Intersections

Weekday PM Peak Hour Cumulative Net New Site Trips Camas, Washington

Figure 9

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2030 TOTAL TRAFFIC CONDITIONS

The total traffic conditions analysis forecasts how the study intersections will operate with the traffic associated with full occupancy of the proposed development. The site-generated trips shown in Figures 8 and 9 were added to the 2030 background traffic volumes reflected in Figures 6 and 7 to arrive at the 2030 total traffic volumes shown in Figures 10 and 11. Figures 10 and 11 also include the resulting intersection operations under total traffic conditions.

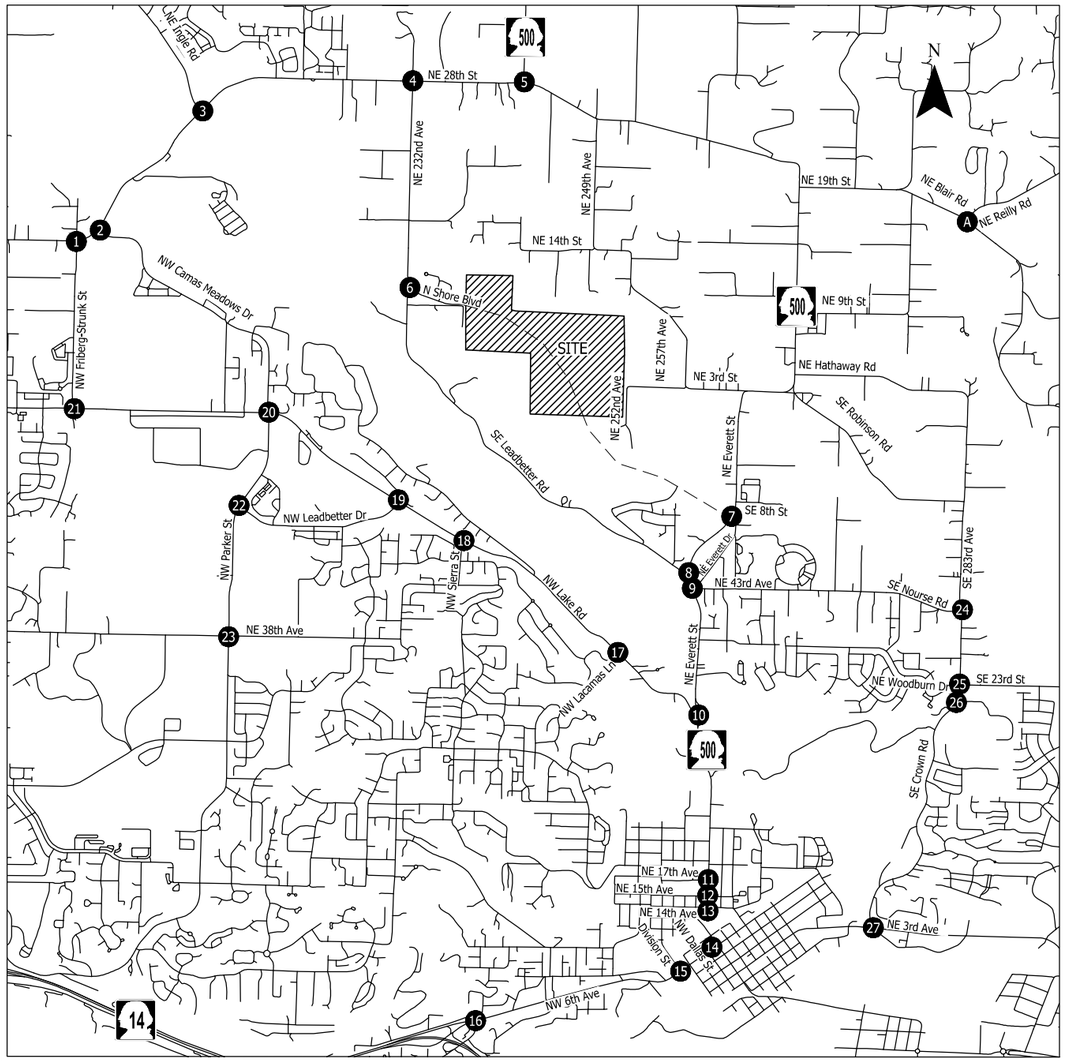
Those intersections that did not satisfy the applicable performance metrics under background conditions each are projected to experience an incremental increase in delay/degradation in operations with the addition of site trips.

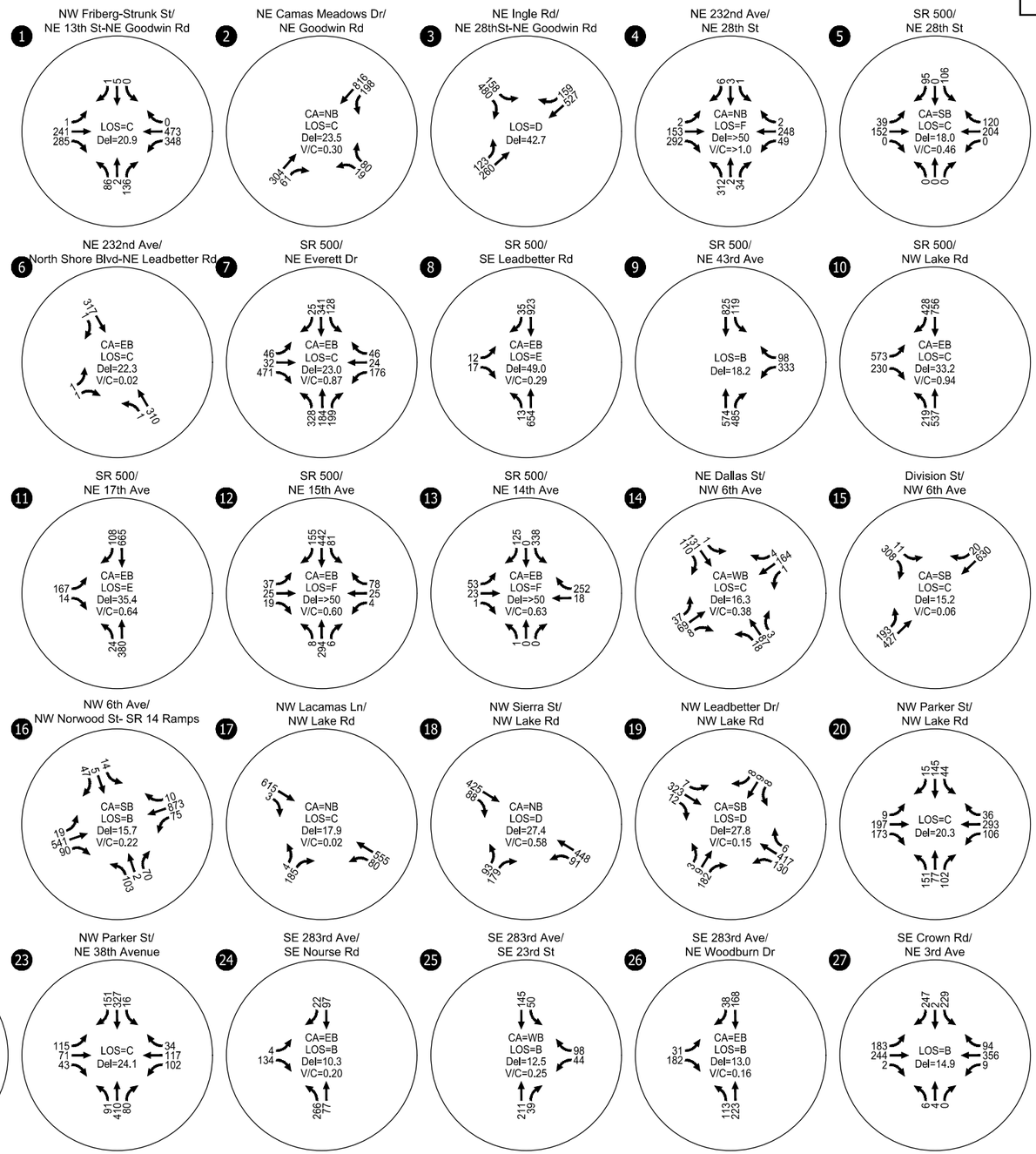
The following intersections are forecast to not meet the applicable agency LOS standard:

- NE Camas Meadows Drive/NE Goodwin Road (Intersection #2): PM peak hour
- NE 232nd Ave/NE 28th Street (Intersection #4): AM and PM peak hours
- SR 500 (NE Everett Street)/NE 28th Street (Intersection #5): PM peak hour
- SR 500 (NE Everett Street)/ NE 15th Street (Intersection #12): AM peak hour
- SR 500 (NE Everett Street)/NE 14th Avenue (Intersection #13): AM and PM peak hour

For ease of comparison, Tables 9 and 10 summarize intersection operations for the AM and PM peak hour analysis periods, respectively. Operations findings at intersections that don't satisfy the applicable performance requirements are then presented individually including recommended mitigation measures where appropriate. Per the City of Camas *Transportation Impact Study Guidelines*, mitigation measures are to be identified at locations where site traffic contributes to traffic operations that exceed the City's LOS performance standard.

Appendix H contains the year 2030 total traffic analysis worksheets.





- SITE

(#) - STUDY INTERSECTION

CA =CRITICAL APPROACH (TWSC / ROUNDABOUT)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/ CRITICAL APPROACH LEVEL OF SERVICE (TWSC / ROUNDABOUT)
V/C = VOLUME-TO-CAPACITY RATIO
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/ CRITICAL APPROACH DELAY (UNSIGNALIZED)
TWSC = TWO-WAY STOP CONTROL

2030 Total Traffic Conditions Weekday AM Peak Hour Camas, Washington

Figure 10

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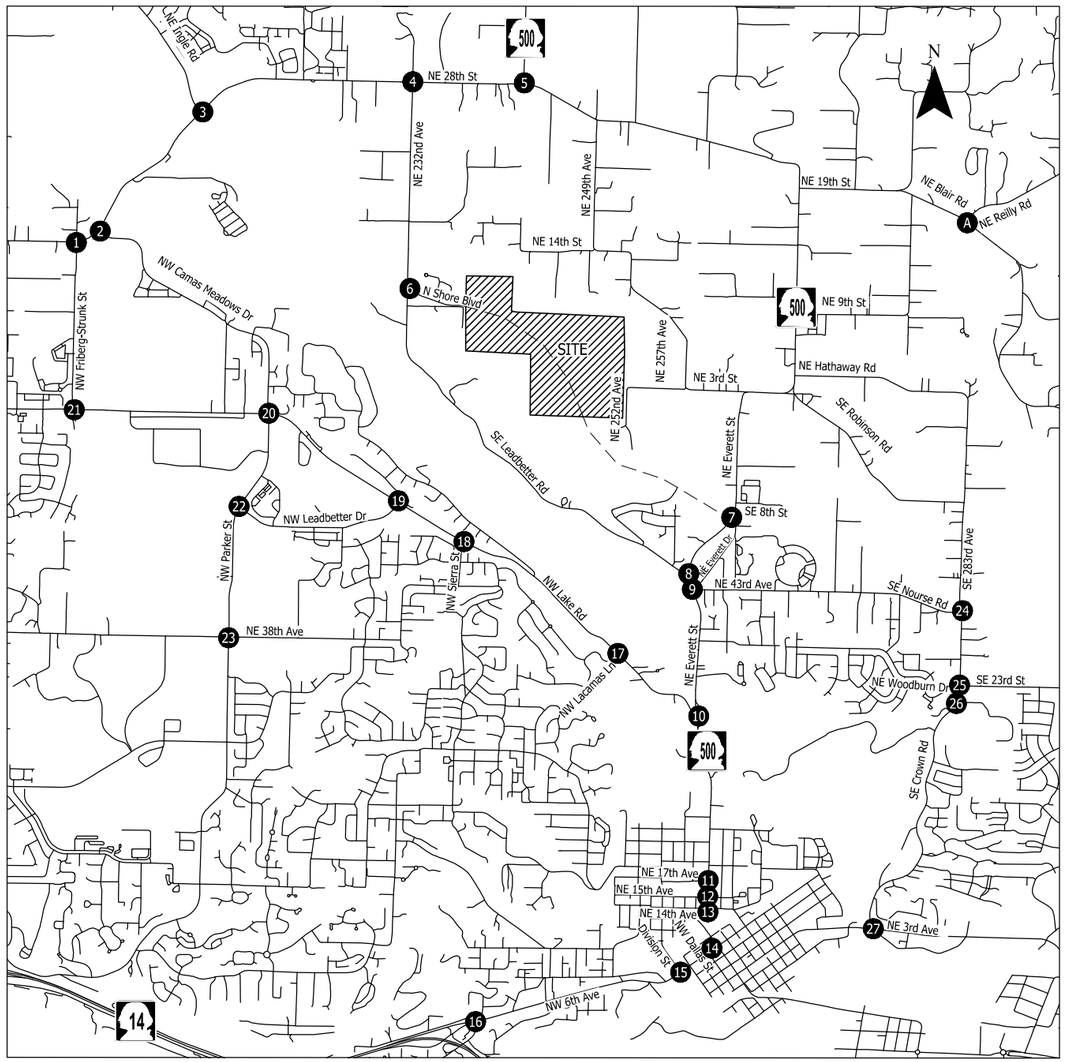
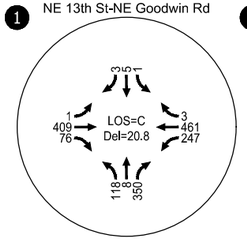
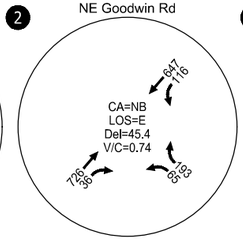


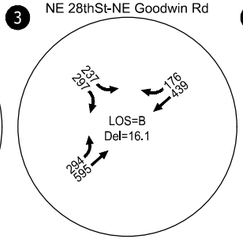
1 NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd



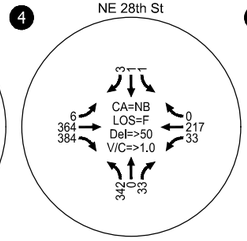
2 NE Camas Meadows Dr/ NE Goodwin Rd



3 NE Ingle Rd/ NE 28thSt-NE Goodwin Rd



4 NE 232nd Ave/ NE 28th St



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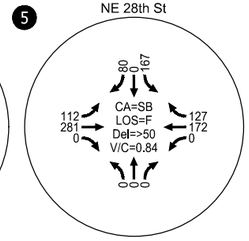
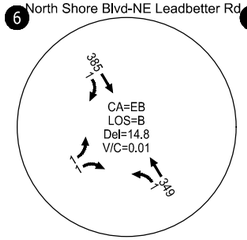
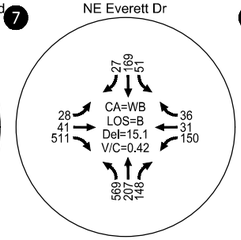


6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd



7 SR 500/ NE Everett Dr



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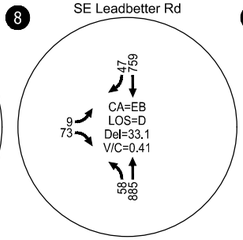

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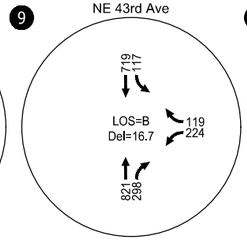

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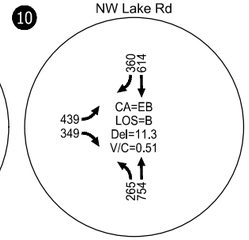
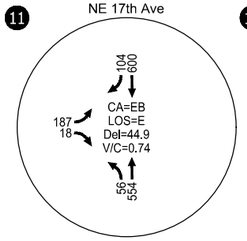


11 SR 500/ NE 17th Ave



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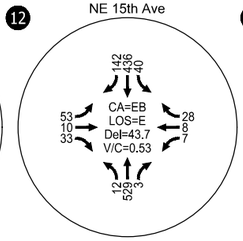

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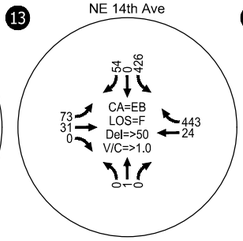

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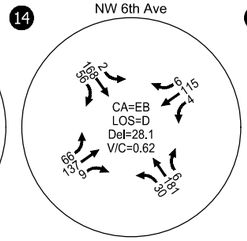

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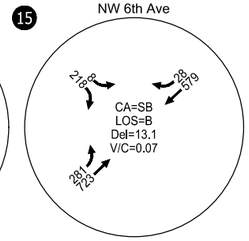

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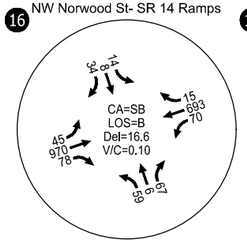

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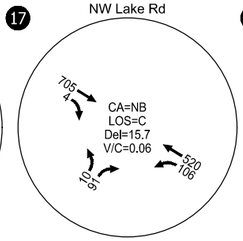

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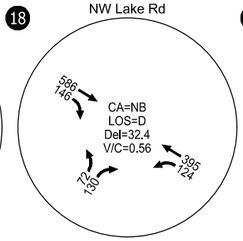

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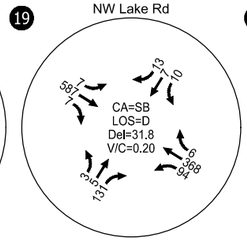

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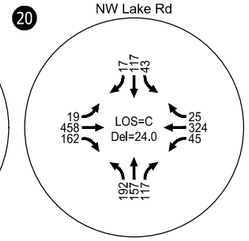
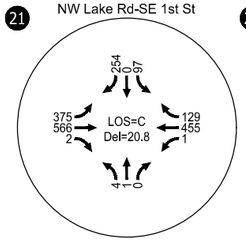


21 NW Friberg-Strunk St/ NW Lake Rd-SE 1st St



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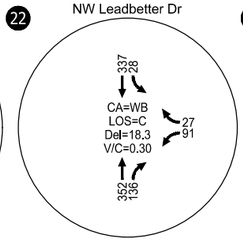
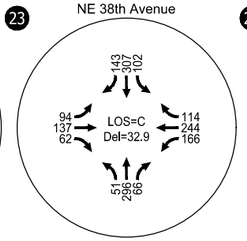
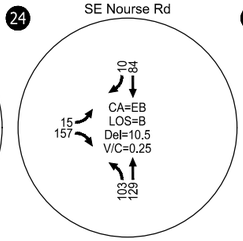


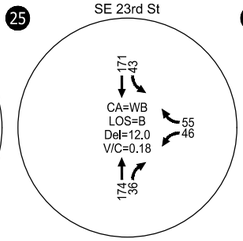
23 NW Parker St/ NE 38th Avenue



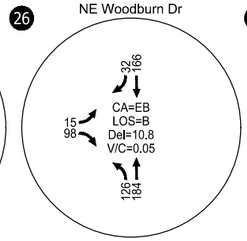
24 SE 283rd Ave/ SE Nourse Rd



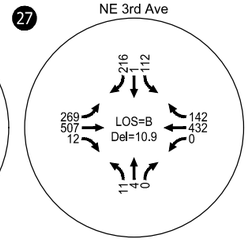
25 SE 283rd Ave/ SE 23rd St



26 SE 283rd Ave/ NE Woodburn Dr



27 SE Crown Rd/ NE 3rd Ave



- SITE

(#) - STUDY INTERSECTION

CA =CRITICAL APPROACH (TWSC / ROUNDABOUT)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/ CRITICAL APPROACH LEVEL OF SERVICE (TWSC / ROUNDABOUT)
V/C = VOLUME-TO-CAPACITY RATIO
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/ CRITICAL APPROACH DELAY (UNSIGNALIZED)
TWSC = TWO-WAY STOP CONTROL

2030 Total Traffic Conditions Weekday PM Peak Hour Camas, Washington

Figure 11

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Table 9. Projected Weekday AM Peak Hour Study Intersection Operations Summary

ID	Study Intersection	Traffic Control	LOS Standard	Existing Conditions	2030 Background Traffic	2030 Total Traffic
1	NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd	Signalized	LOS D	LOS B, 14.9 sec	LOS B, 17.6 sec	LOS C, 20.9 sec
2	NE Camas Meadows Dr/ NE Goodwin Rd	Stop	LOS D	CA = NB LOS C, 15.0 sec V/C = 0.13	CA = NB LOS C, 20.1 sec V/C = 0.21	CA = NB LOS C, 23.5 sec V/C = 0.30
3	NE Ingle Rd/NE 28th St-NE Goodwin Rd	Signalized	LOS D	LOS B, 18.2 sec	LOS C, 33.2 sec	LOS D, 42.7 sec
4	NE 232nd Ave/ NE 28th St	Stop	LOS E	CA = NB LOS C, 20.1 sec V/C = 0.40	CA = NB LOS D, 25.3 sec V/C = 0.54	**CA = NB LOS F, >50 sec V/C > 1.0**
5	SR 500/NE 28th St	Stop	LOS C	CA = SB LOS B, 14.0 sec V/C = 0.33	CA = SB LOS C, 17.2 sec V/C = 0.44	CA = SB LOS C, 18.0 sec V/C = 0.46
6	NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd	Stop	LOS D	CA = EB LOS B, 14.8 sec V/C = 0.31	CA = EB LOS B, 12.5 sec V/C = 0.01	CA = EB LOS C, 22.3 sec V/C = 0.02
7	SR 500/NE Everett Dr	Stop (Future Roundabout)	LOS E	CA = WB LOS C, 24.4 sec V/C = 0.41	CA = WB LOS B, 10.6 sec V/C = 0.28	CA = EB LOS C, 23.0 sec V/C = 0.87
8	SR 500/ SE Leadbetter Rd	Stop	LOS E	CA = EB LOS C, 17.8 sec V/C = 0.39	CA = EB LOS C, 23.7 sec V/C = 0.15	CA = EB LOS E, 49.0 sec V/C = 0.29
9	SR 500/NE 43rd Ave	Signalized	LOS E	LOS B, 12.3 sec	LOS B, 13.3 sec	LOS B, 18.2 sec
10	SR 500/NW Lake Rd	Roundabout	LOS E	CA = EB LOS B, 11.3 sec V/C = 0.54	CA = EB LOS B, 14.7 sec V/C = 0.66	CA = EB LOS C, 33.2 sec V/C = 0.94
11	SR 500/NE 17th Ave	Stop	LOS E	CA = EB LOS C, 15.2 sec V/C = 0.19	CA = EB LOS C, 18.7 sec V/C = 0.31	CA = EB LOS E, 35.4 sec V/C = 0.64
12	SR 500/NE 15th Ave	Stop	LOS E	CA = EB LOS D, 26.9 sec V/C = 0.36	CA = EB LOS D, 33.8 sec V/C = 0.43	**CA = EB LOS F, >50 sec V/C = 0.60**
13	SR 500/NE 14th Ave	Stop	LOS E	CA = EB LOS C, 23.9 sec V/C = 0.32	CA = EB LOS D, 32.8 sec V/C = 0.42	**CA = EB LOS F, >50 sec V/C = 0.63**
14	NE Dallas St/ NW 6th Ave	Stop	LOS D	CA = WB LOS B, 13.5 sec V/C = 0.30	CA = WB LOS B, 14.4 sec V/C = 0.34	CA = WB LOS C, 16.3 sec V/C = 0.38
15	Division St/ NW 6th Ave	Stop	LOS D	CA = SB LOS B, 12.7 sec	CA = SB LOS B, 13.8 sec	CA = SB LOS C, 15.2 sec

ID	Study Intersection	Traffic Control	LOS Standard	Existing Conditions	2030 Background Traffic	2030 Total Traffic
				V/C = 0.05	V/C = 0.05	V/C = 0.06
16	NW 6th Ave/NW Norwood St-SR 14 Ramps	Roundabout	LOS D	CA = NB LOS B, 10.6 sec V/C = 0.23	CA = SB LOS B, 14.0 sec V/C = 0.17	CA = SB LOS B, 15.7 sec V/C = 0.22
17	NW Lacamas Ln/ NW Lake Rd	Stop	LOS D	CA = NB LOS C, 16.0 sec V/C = 0.02	CA = NB LOS C, 16.6 sec V/C = 0.02	CA = NB LOS C, 17.9 sec V/C = 0.02
18	NW Sierra St/ NW Lake Rd	Stop (Future Roundabout)	LOS D	CA = NB LOS C, 21.2 sec V/C = 0.45	CA = NB LOS C, 24.1 sec V/C = 0.52	CA = NB LOS D, 27.4 sec V/C = 0.58
19	NW Leadbetter Dr/ NW Lake Rd	Stop	LOS D	CA = SB LOS C, 22.6 sec V/C = 0.12	CA = SB LOS D, 25.9 sec V/C = 0.14	CA = SB LOS D, 27.8 sec V/C = 0.15
20	NW Parker St/ NW Lake Rd	Signalized	LOS D	LOS B, 19.3 sec	LOS B, 19.8 sec	LOS C, 20.3 sec
21	NW Friberg-Strunk St/ NW Lake Rd-SE 1St St	Signalized	LOS D	LOS C, 30.0 sec	LOS D, 39.1 sec	LOS D, 50.5 sec
22	NW Parker St/ NW Leadbetter Dr	Stop	LOS D	CA = WB LOS C, 21.6 sec V/C = 0.52	CA = WB LOS D, 26.5 sec V/C = 0.63	CA = WB LOS D, 32.4 sec V/C = 0.71
23	NW Parker St/NE 38th Ave	Signalized	LOS D	LOS C, 22.7 sec	LOS C, 23.4 sec	LOS C, 24.1 sec
24	SE 283rd Ave/ SE Nourse Rd	Stop	LOS E	CA = EB LOS A, 9.9 sec V/C = 0.13	CA = EB LOS B, 10.2 sec V/C = 0.17	CA = EB LOS B, 10.3 sec V/C = 0.20
25	SE 283rd Ave/SE 23rd St	Stop	LOS D	CA = WB LOS B, 12.0 sec V/C = 0.23	CA = WB LOS B, 12.2 sec V/C = 0.24	CA = WB LOS B, 12.5 sec V/C = 0.25
26	SE 283rd Ave/ NE Woodburn Dr	Stop	LOS D	CA = EB LOS B, 12.3 sec V/C = 0.14	CA = EB LOS B, 12.6 sec V/C = 0.15	CA = EB LOS B, 13.0 sec V/C = 0.16
27	SE Crown Rd/NE 3rd Ave	Signalized	LOS D	LOS B, 14.2 sec	LOS B, 14.5 sec	LOS B, 14.9 sec

Table 10. Projected Weekday PM Peak Hour Study Intersection Operations Summary

ID	Study Intersection	Traffic Control	LOS Standard	Existing Conditions	2030 Background Traffic	2030 Total Traffic
1	NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd	Signalized	LOS D	LOS B 14.0 sec	LOS B, 16.6 sec	LOS C, 20.8 sec
2	NE Camas Meadows Dr/ NE Goodwin Rd	Stop	LOS D	CA = NB LOS C, 18.7 sec V/C = 0.31	CM = NBL LOS D, 27.9 sec V/C = 0.49	**CA = NB LOS E, 45.4 sec V/C = 0.74**
3	NE Ingle Rd/NE 28th St-NE Goodwin Rd	Signalized	LOS D	LOS B, 11.9 sec	LOS B, 13.6 sec	LOS B, 16.1 sec
4	NE 232nd Ave/ NE 28th St	Stop	LOS E	CA = NB LOS B, 14.4 sec V/C = 0.16	CA = NB LOS C, 23.9 sec V/C = 0.44	**CA = NB LOS F, > 50 sec V/C > 1**
5	SR 500/NE 28th St	Stop	LOS C	CA = SB LOS C, 19.7 sec V/C = 0.44	**CA = SB LOS E, 39.2 sec V/C = 0.73**	**CA = SB LOS F, > 50 sec V/C = 0.84**
6	NE 232nd Ave/North Shore Blvd-NE Leadbetter Rd	Stop	LOS D	CA = EB LOS A, 9.3 sec V/C = 0.11	CA = EB LOS A, 9.8 sec V/C = 0.01	CA = EB LOS B, 14.8 sec V/C = 0.01
7	SR 500/NE Everett Dr	Stop/ Future Roundabout	LOS E	CA = WB LOS B, 11.6 sec V/C = 0.13	CA = WB LOS B, 10.5 sec V/C = 0.21	CA = WB LOS B, 15.1 sec V/C = 0.42
8	SR 500/ SE Leadbetter Rd	Stop	LOS E	CA = EB LOS B, 10.6 sec V/C = 0.16	CA = EB LOS B, 14.0 sec V/C = 0.18	CA = EB LOS D, 33.1 sec V/C = 0.41
9	SR 500/NE 43rd Ave	Signalized	LOS E	LOS A, 8.9 sec	LOS B, 10.2 sec	LOS B, 16.7 sec
10	SR 500/NW Lake Rd	Roundabout	LOS E	CA = NB LOS A, 7.8 sec V/C = 0.30	CA = EB LOS A, 8.7 sec V/C = 0.34	CA = NB LOS B, 11.3 sec V/C = 0.51
11	SR 500/NE 17th Ave	Stop	LOS E	CA = EB LOS C, 15.3 sec V/C = 0.17	CA = EB LOS C, 22.1 sec V/C = 0.42	CA = EB LOS E, 44.9 sec V/C = 0.74
12	SR 500/NE 15th Ave	Stop	LOS E	CA = EB LOS D, 22.0 sec V/C = 0.31	CA = EB LOS D, 28.8 sec V/C = 0.41	CA = EB LOS E, 43.7 sec V/C = 0.53
13	SR 500/NE 14th Ave	Stop	LOS E	**CA = EB LOS F, >50 sec V/C = 0.61**	**CA = EB LOS F, >50 sec V/C = 0.75**	**CA = EB LOS F, >50 sec V/C > 1.0**
14	NE Dallas St/ NW 6th Ave	Stop	LOS D	CA = EB LOS C, 16.7 sec V/C = 0.39	CA = EB LOS C, 19.1 sec V/C = 0.46	CA = EB LOS D, 28.1 sec V/C = 0.62

15	Division St/ NW 6th Ave	Stop	LOS D	CA = SB LOS B, 11.7 sec V/C = 0.04	CA = SB LOS B, 12.3 sec V/C = 0.05	CA = SB LOS B, 13.1 sec V/C = 0.07
16	NW 6th Ave/ NW Norwood St-SR 14 Ramps	Roundabout	LOS D	CA = EB LOS B, 15.0 sec V/C = 0.96	CA = NB LOS B, 14.0 sec V/C = 0.30	CA = SB LOS B, 16.6 sec V/C = 0.10
17	NW Lacamas Ln/ NW Lake Rd	Stop	LOS D	CA = NB LOS B, 13.7 sec V/C = 0.04	CA = NB LOS B, 14.5 sec V/C = 0.05	CA = NB LOS C, 15.7 sec V/C = 0.06
18	NW Sierra St/ NW Lake Rd	Stop/ Future Roundabout	LOS D	CA = NB LOS C, 23.5 sec V/C = 0.40	CA = NB LOS D, 27.5 sec V/C = 0.47	CA = NB LOS D, 32.7 sec V/C = 0.56
19	NW Leadbetter Dr/ NW Lake Rd	Stop	LOS D	CA = SB LOS C, 24.0 sec V/C = 0.15	CA = SB LOS D, 28.5 sec V/C = 0.18	CA = SB LOS D, 31.8 sec V/C = 0.20
20	NW Parker St/ NW Lake Rd	Signalized	LOS D	LOS C, 22.0 sec	LOS C, 23.0 sec	LOS C, 24.0 sec
21	NW Friberg-Strunk St/ NW Lake Rd-SE 1St St	Signalized	LOS D	LOS B, 15.4 sec	LOS B, 17.5 sec	LOS C, 20.8 sec
22	NW Parker St/ NW Leadbetter Dr	Stop	LOS D	CA = WB LOS B, 14.8 sec V/C = 0.20	CA = WB LOS C, 16.3 sec V/C = 0.24	CA = WB LOS C, 18.3 sec V/C = 0.30
23	NW Parker St/ NE 38th Ave	Signalized	LOS D	LOS C, 31.5 sec	LOS C, 31.9 sec	LOS C, 32.9 sec
24	SE 283rd Ave/ SE Nourse Rd	Stop	LOS E	CA = EB LOS A, 9.7 sec V/C = 0.16	CA = EB LOS B, 10.1 sec V/C = 0.20	CA = EB LOS B, 10.5 sec V/C = 0.25
25	SE 283rd Ave/ SE 23rd St	Stop	LOS D	CA = WB LOS B, 11.0 sec V/C = 0.16	CA = WB LOS B, 11.3 sec V/C = 0.16	CA = WB LOS B, 12.0 sec V/C = 0.18
26	SE 283rd Ave/ NE Woodburn Dr	Stop	LOS D	CA = EB LOS B, 10.3 sec V/C = 0.04	CA = EB LOS B, 10.5 sec V/C = 0.04	CA = EBL LOS B, 10.8 sec V/C = 0.05
27	SE Crown Rd/ NE 3rd Ave	Signalized	LOS D	LOS A, 10.0 sec	LOS B, 10.4 sec	LOS B, 10.9 sec

Total Traffic Intersection Operations Discussion

Considerations associated with each of the intersections not satisfying the applicable agency performance metrics during one or both of peak hour analysis periods are presented below. *Appendix I contains the year 2030 total traffic mitigation analysis worksheets.*

NE Camas Meadows Drive/NE Goodwin Road (Intersection #2)

The stop-controlled northbound approach is projected to operate at LOS E during the weekday PM peak hour with a V/C ratio of 0.74 during the PM peak, exceeding the City's LOS standard. The northbound approach is projected to operate at LOS C during the AM peak hour, meeting the City LOS standard. The high delay (LOS E) condition is due to the projected high delay (LOS F) for the northbound left-turn movement. The northbound right-turn movement is projected to operate at LOS C – The reported approach LOS is a weighted average of the delay of the northbound left-turn and right-turn movements. Notably, the intersection already provides separate left and right turn on the northbound approach. The proposed development is projected to add 21 northbound right turns during the AM peak hour and 43 during the PM peak hour; however, no site-generated trips are anticipated to be added to the critical northbound left-turn movement. As such, no mitigation measures were identified for this intersection in conjunction with the proposed site development.

NE 232nd Avenue/NE 28th Street (Intersection #4)

The northbound stop-controlled approach to NE 232nd Avenue/NE 28th Street (Intersection #4) is projected to operate with high delay (LOS F) during the AM and PM peak hours and with a V/C ratio over 1.0.

Given the Clark County LOS standard is exceeded and there is very limited right-of-way available on the northbound intersection approach, we recommend the Applicant collaborate with Clark County to install a traffic signal at the intersection as mitigation in conjunction with Phase 1 residential site development.

Traffic Signal Warrant Assessment

Chapter 4B of the *Manual on Uniform Traffic Control Devices* (MUTCD, Reference 10) provides guidance regarding the use of traffic signals, including nine warrants that define the minimum conditions under which installing a traffic control signal might be justified. Table 10 identifies the results of the traffic signal warrant analysis for the intersection considering the total traffic 2030 forecast volumes.

Table 11. NE 232nd Avenue/NE 28th Street Intersection Traffic Signal Warrant Analysis Results

Signal Warrant		Met?	Assessment
#1	8-Hour Volume	Yes	This warrant is intended for application where a large volume of intersecting traffic is the principal reason to consider a traffic control signal. Warrant 1 is met under projected 2030 total conditions analysis described in this report
#2	4-Hour Volume	Yes	This warrant is intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. Warrant 2 is met under projected 2030 total conditions analysis described in this report
#3	Peak Hour	No	This warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor street traffic suffers undue delay when entering or crossing the major street. This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time. Though the volume and delay component of the peak hour warrant is met, the peak hour warrant is not applicable to this location given the context.

Signal Warrant		Met?	Assessment
#4	Pedestrian Volume	No	This warrant is designed to be applied where pedestrians experience excessive delay trying to cross a street due to heavy traffic volumes. Pedestrian volumes alone are not expected to warrant signalization.
#5	School Crossing	No	This warrant is designed to be applied at locations where school children are trying to cross a major street and there are not adequate gaps in the major street traffic stream. There is no school in close proximity to justify signalization under this warrant.
#6	Coordinated Signal System	No	This warrant is intended to facilitate progressed traffic flow within a coordinated traffic signal system and allows for installation of traffic control signals at intersections where they would otherwise not be needed in order to maintain proper platooning of vehicles. Warrant 6 does not appear applicable at this time.
#7	Crash Experience	No	This warrant is intended for application where the severity and frequency of crashes are the principal reasons to consider traffic signal installation. The reported crash patterns did not identify a pattern of five or more crashes within a 12-month period that would warrant signalization.
#8	Roadway Network	No	This warrant involves installing a traffic signal at an intersection to encourage concentration and organization of traffic flow on a roadway network. The warrant requires the intersection of two or more major routes that serve as the principal roadway network for through traffic flow. NE 232nd Avenue north of the intersection is a private road that doesn't continue as a through street so the warrant doesn't apply.
#9	Intersection Near a Grade Crossing	No	This warrant is intended for use at a location where the proximity to the intersection of a railroad grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason to consider installing a traffic signal. The warrant requires, among other criteria, an at-grade crossing that is located within 140 feet of the intersection stop line. This warrant is not applicable.

As shown in Table 10, traffic volumes at the NE 232nd Avenue/NE 28th Street intersection were found to satisfy the 8-hour and 4-hour volumes warrants under 2030 total traffic conditions. While satisfaction of one or more signal warrants does not indicate a traffic signal is the most appropriate form of mitigation, it does offer a basis for signalization. *Appendix "J" includes the signal analysis worksheet*.

Signalized Operations Analysis

The operational performance associated with the installation of traffic signal was evaluated under year 2030 weekday AM and PM peak hour total traffic conditions assuming the existing single lane approaches with permissive left-turn phasing.

The resulting total traffic intersection operations are summarized in Table 11 below. As shown, signalization would provide sufficient capacity to satisfy Clark County Code requirements. In addition, project 95th percentile long-term vehicle queues rounded up to the nearest 25 feet are shown in Table 11. *Appendix "J" also contains the 2030 signalized intersection operations analysis worksheets.*

Table 12: NE 232nd Avenue/NE 28th Street Intersection Year 2030 Total Traffic Operations with Signalization

Performance Measure	AM Peak Hour	PM Peak Hour
Level of Service	A	B
Dealy	9.6 seconds	15.6 seconds
V/C Ratio	0.66	0.85
95th percentile Queue (feet)[1]		
Northbound	200	475
Southbound	25	25
Eastbound	175	450
Westbound	175	125

[1]Queue lengths rounded up to the nearest 25 feet, assuming 1 vehicle length is approximately equal to 25 feet.

It is noted that for the eastbound and westbound approaches, the nearest public road intersections are more than 800 feet away, and are therefore not anticipated to be impacted by the forecast eastbound and westbound queues. Field observations indicate the northbound approach experiences significant northbound queuing under existing, stop-controlled conditions. The forecast northbound approach queues in the signalized configuration are reduced from than the forecast future queues in a stop-control configuration (525 feet during the AM peak hour, 625 feet during the PM peak hour).

SR 500 (NE Everett Street)/NE 28th Street (Intersection #5)

Delay experienced on the southbound stop-controlled approach is projected to result in LOS F operations (exceed the LOS C requirement) during the weekday PM peak hour with a V/C ratio of 0.84. The intersection is projected to continue to operate acceptably during the weekday AM peak hour analysis period. We recommend the Applicant collaborate with WSDOT to determine if implementation of all-way stop control at the intersection is appropriate in conjunction with the proposed development and/or if it has already been provided prior to site development (potential implementation of all-way stop control is currently a condition of approval of the Camas Woods 2 in-process development, subject to WSDOT direction).

For context, implementation of interim all-way stop control at the intersection would provide for acceptable operations during the weekday PM peak hour (overall intersection LOS C, all movements LOS C or better).

SR 500 (NE Everett Street)/NE 15th Avenue (Intersection #12)

During the weekday AM peak hour, the stop-controlled eastbound approach is forecast to experience high delay resulting in LOS F operations (exceeding the LOS E requirements). The eastbound approach V/C ratio is projected at 0.60 during the weekday AM peak hour.

No site-generated trips are projected to use the eastbound approach given there are alternative travel routes available eastbound within the downtown urban grid that drivers can use as a route alternative to the project site (including but not limited to NE 17th Avenue, NE 19th Avenue and NE 21st Avenue to the north). Regional trips traveling between NW 6th Avenue west of NE Dallas Street and points north along SR 500 today have the option to re-route to Division Street to travel north parallel to NE Everett Street and use NE 17th Avenue, NE 19th Avenue, or NE 21st Avenue to access NE Everett Street. As such, no mitigation is recommended in conjunction with site development.

SR 500 (NE Everett Street)/NE 14th Avenue (Intersection #13)

Consistent with existing and forecast background conditions, delay experienced on the eastbound stop controlled approach results in LOS F operations (exceeds LOS E requirement) during the weekday PM peak hour and the eastbound approach V/C ratio is projected to exceed 1.0. During the weekday AM peak hour, the eastbound approach also results in LOS F, with a V/C ratio of 0.63.

No site-generated trips are projected to use the eastbound approach given there are alternative travel routes available eastbound within the downtown urban grid that drivers can use as a route alternative to the project site (including but not limited to NE 17th Avenue, NE 19th Avenue and NE 21st Avenue to the north). Regional trips traveling between NW 6th Avenue west of NE Dallas Street and points north along SR 500 today have the option to re-route to Division Street to travel north parallel to NE Everett Street and use NE 17th Avenue, NE 19th Avenue, or NE 21st Avenue to access NE Everett Street. Further, we note the City's Traffic Impact Fee program identifies the anticipated long-term need to restrict access from the south and

west intersection approaches (Table 9, Camas UGA TIF Improvements North Intersection Project #12)[9]. As such, no mitigation is recommended in conjunction with site development.

NW Sierra Street/NW Lake Road (Intersection #18)

The City of Camas is preparing design plans to construct a roundabout at this intersection and has begun collection of proportional share mitigation fees at the intersection[10]. We recommend the Applicant make a proportional financial mitigation contribution to the City of Camas' planned NW Sierra Street/NW Lake Road intersection improvement project.

Based on a recent land use decision, the City is currently assessing a fee of $1,423 per PM peak hour trip added to this intersection, but may switch to a future Traffic Impact Fee (TIF) as part of the on-going TIF Update program which is anticipated to be completed in late 2025. Assuming the $1,423 per PM peak trip remains in effect for this development application, the resulting fee for this development is estimated to total $136,608 estimated as follows:

- Residential uses: $65,458 based on 46 PM peak hour trips added
- Commercial retail uses: $41,267 based on 29 PM peak hour trips added
- Employment uses: $29,883 based on 21 PM peak hour trips added

The City will determine the final contribution amount required.

NEARBY SCHOOL CONSIDERATIONS

Lacamas Elementary School is located immediately west of the Lacamas North Shore site, north of the existing North Shore Boulevard terminus. The proposed Lacamas North Shore development (and the future extension of North Shore Boulevard east to SR 500) will add vehicle trips to North Shore Boulevard along the school frontage. Accordingly, it is recommended that the Applicant coordinate with the City of Camas to establish and implement a school zone along North Shore Boulevard at Lacamas Lake Elementary School in conjunction with the North Shore Boulevard extension west with Phase 1 residential site development.

[9] Source: City of Camas Traffic Impact Fee Update May 2012

[10] Though the traffic operations analysis in the report forecasts the stop-controlled northbound approach to satisfy the City LOS D requirement, the northbound left-turn movement experiences long delays (LOS F) before and with site development. Prior City modeling efforts to assess intersection traffic control determined the northbound approach operates at LOS E and requires mitigation (we note higher northbound left-turn volumes in the City study from 2023 than were counted for this current study).

PROPORTIONATE SHARE CONTRIBUTIONS

The City of Vancouver collects proportionate share fee contributions from all future developments that add one or more site-generated trips to an adopted list of intersections that require mitigation. Table 13 provides a summary of the current proportional share fee intersections, the mitigation cost per trip, the estimated number of site-generated trips added based on the current site plan by land use type as well as the corresponding mitigation fee anticipated. We anticipate the final fee amount due will be determined at the time of site plan application and payment will be paid prior to building permit issuance.

Table 13. City of Vancouver Proportionate Share Fee Summary

Mitigation Location	Mitigation Cost/Peak Hour Trip	Residential Uses		Retail Uses		Employment Uses	
		Peak Hour Trips Added	Estimated Mitigation Cost	Peak Hour Trips Added	Estimated Mitigation Cost	Peak Hour Trips Added	Estimated Mitigation Cost
137th Ave: 49th St to Fourth Plain Blvd	$3,000/PM	0	$0	0	$0	0	$0
Fourth Plain Blvd & 152nd Ave Signal	$333/PM	0	$0	0	$0	0	$0
Lieser/St. Helens/MacArthur	$2,000/PM	0	$0	0	$0	0	$0
176th Ave & SE 20th St	$400/PM	0	$0	0	$0	0	$0
192nd Avenue & NE 13th Street	$400/PM	66	$26,400	0	$0	31	$12,400
192nd Ave & SE 34th St	$150/PM	0	$0	0	$0	0	$0
192nd Ave & SR-14 ramps	$2,000/PM	0	$0	0	$0	0	$0
MacArthur & Andresen Roundabout	$2,285/PM	0	$0	0	$0	0	$0
MacArthur & Devine Roundabout	$2,226/PM	0	$0	0	$0	0	$0
Grove St/Columbia House Blvd/SR-14 WB Ramp	$600/AM	0	$0	0	$0	0	$0
NE 172nd Avenue & NE 18th Street	$300/PM	46	$13,800	0	$0	22	$6,600
NE 179th Place & NE 18th Street	$900/PM	46	$41,400	0	$0	22	$19,800
NE 187th Avenue & NE 18th Street	$1,200/PM	53	$63,600	0	$0	25	$30,000
NE 162nd Avenue & NE 9th Street	$1,500/PM	0	$0	0	$0	0	$0
NE 172nd Avenue & NE 9th Street	$4,100/PM	0	$0	0	$0	0	$0
NE 192nd Avenue & NE 9th Street	$1,100/PM	7	$7,700	0	$0	3	$3,300
NE 187th Avenue & SE 1st Street	$1,100/PM	0	$0	0	$0	0	$0
Total Proportional Share Cost by Land Use			$152,900		$0		$72,100
						Grand Total Proportional Share Cost	*$225,000*

TRANSPORTATION COMPLIANCE LETTER

This traffic study documents the transportation implications of the proposed development upon assumed residential buildout in 2027 and at full buildout in 2030. The presence or absence of the off-site extension of North Shore Boulevard east to SR 500 will have a substantial impact on local and regional trips. Absence of the planned roadway extension will impact all of the year 2030 analysis findings. There are also on-site access, circulation, turn lane, and access location considerations that will need to be addressed when specific site plan applications are made. Further, the phasing and timing of site buildout is likely to evolve over time to adapt to evolving market conditions.

Given the considerations noted above, preparation of a Transportation Compliance Letter (TCL) is recommended for each future preliminary plat or site plan application to address on-site transportation, access and pedestrian standards and to confirm that the mitigation measures identified in this report are applied at the appropriate development phased. The TCL can also serve as a tool to document the trip generation of each phase of development to ensure that the total number of trips generated from future development does not exceed the number of trips vested under the Development Agreement to be prepared based on this report.

Subject to City direction, we recommend future TCL document:

- The number of site-generated trips (daily, weekday AM peak hour, weekday PM peak hour) estimated to be used by the then-current proposed development application.
- The number of site-generated trips (daily, weekday AM peak hour, weekday PM peak hour) allocated to previously approved site development applications on the project site.
- A tabular accounting of the number of site-generated trips (daily, weekday AM peak hour, weekday PM peak hour) remaining assuming approval of the then-current proposed development application.
  - In the event that a future site development application is projected to use more trips than were assumed through this traffic study and the number of additional trips needed exceeds the City of Camas traffic study threshold, additional transportation capacity/concurrency analysis shall be triggered (unless a traffic count cordon-study of the project site demonstrates the number of site-generated trips is less than or equal to the number of trips assumed in this study).
- The number of weekday PM peak hour site-generated trips associated with the then-current proposed development projected to travel through NW Sierra Street/NW Lake Road intersection (to inform the City of Camas proportional share fee mitigation contribution for the intersection).
- An update of Table 13 of this study to document the number of site-generated trips associated with the then-current proposed development application (to inform the required City of Vancouver proportional share intersection mitigation fee contributions).
- Evaluation of outstanding mitigation needs (as appropriate consistent with this study unless otherwise mitigated) including:
  - Collaboration with WSDOT and the City of Camas to determine whether implementation of all-way stop control at the SR 500 (NE 242nd Avenue)/NE 28th Street intersection is required in conjunction with site development.
  - Whether there is adequate capacity at the SR 500/SE Leadbetter Road intersection (assess until North Shore Boulevard is extended between the project site and SR 500).

SUMMARY FINDINGS & RECOMMENDATIONS

Based on the transportation impact analysis results, the proposed development can occur while maintaining acceptable operations at the study intersections assuming provision of the recommended mitigation measures in conjunction with site redevelopment.

Findings

- One study intersection experiences performance levels that don't satisfy the applicable operating parameters today (NE Everett Street/NE 14th Avenue).
- By future opening year 2030, the following study intersections are projected to not satisfy the applicable performance metrics:
  - NE Camas Meadows Drive/NE Goodwin Road (Intersection #2): PM peak hour LOS E
  - NE 232nd Avenue/NE 28th Street (Intersection #4): AM and PM peak hour LOS F operations with a V/C >1;
  - SR 500 (NE 242nd Avenue)/NE 28th Street (Intersection #5): PM peak hour LOS F operations with a V/C = 0.84;
  - SR 500 (NE Everett Street)/NE 15th Avenue (Intersection #12): AM peak hour LOS F operations with a V/C =0.60;
  - SR 500 (NE Everett Street)/NE 14th Avenue (Intersection #13): AM peak hour LOS F operations with v/c=0.63 and PM peak hour LOS F operations with a V/C >1;
- The proposed development adds one or more site-generated trip(s) to each of the study intersections listed above that do not satisfy the applicable performance metrics prior to site development. The following site development impacts and potential mitigation considerations were identified.
  - NE Camas Meadows Drive/NE Goodwin Road (Intersection #2): PM peak hour LOS E
    - No site-generated trips are projected to be added to the high delay critical northbound left-turn movement.
  - NE 232nd Avenue/NE 28th Street (Intersection #4): AM and PM peak hour LOS F operations with a V/C > 1.0.
    - Installation of a traffic signal in conjunction with site development would mitigate operations at this regionally significant Clark County intersection.
  - SR 500 (NE 242nd Avenue)/NE 28th Street (Intersection #5): PM peak hour LOS F operations with a V/C = 0.84.
    - Implementation of interim all-way stop control at the intersection would provide for acceptable operations during the weekday PM peak hour with site trips added (overall intersection LOS C, all movements LOS C or better).
  - SR 500 (NE Everett Street)/NE 15th Avenue (Intersection #12): AM peak hour LOS F operations with a V/C =0.60;
    - No inbound site-generated trips are projected to be added to the failing eastbound approach.
    - There are intersections further to the north that drivers can use as a route alternative (including but not limited to NE 17th Avenue, NE 19th Avenue and NE 21st Avenue to the north).

- SR 500 (NE Everett Street)/NE 14th Avenue (Intersection #13): AM peak hour LOS F operations with v/c=0.63 and PM peak hour LOS F operations with a V/C >1.
    - No inbound site-generated trips are projected to be added to the failing eastbound approach.
    - There are intersections further to the north that drivers can use as a route alternative (including but not limited to NE 17th Avenue, NE 19th Avenue and NE 21st Avenue to the north).

- The proposed development is projected to add weekday PM peak hour trips to the NW Sierra Street/NW Lake Road (Intersection #18).
    - The City of Camas is currently advancing design plans to construct a roundabout at the intersection but the funding for and timing of the roundabout construction was unknown at the time this report was prepared.
    - The City is currently assessing a fee of $1,423 per PM peak hour trip added to this intersection from development in the TIF North District. Assuming the $1,423 per PM peak trip remains in effect for this development application, the resulting fee for this development is estimated to total $136,608 (based on 96 PM peak hour trips added) through the intersection.

- The proposed site development is projected to add weekday PM peak hour trips to the following intersections where the City of Vancouver assesses proportional share mitigation payments:
    - NE 192nd Avenue/NE 13th Street
    - NE 172nd Avenue/NE 18th Street
    - NE 179th Place/NE 18th Street
    - NE 187th Avenue/NE 18th Street
    - NE 192nd Avenue/NE 9th Street

Recommendations

Based on the traffic operations analysis findings, we recommend the following in conjunction with the proposed site development.

- Subject to Clark County approval, install a traffic signal with permissive left-turn phasing on all approaches at the existing NE 232nd Avenue/NE 28th Street intersection in conjunction with Phase 1 residential site development.
- Make a proportional financial mitigation contribution to the City of Camas' planned NW Sierra Street/NW Lake Road roundabout project with each phase of site development.
    - The City is currently assessing a fee of $1,423 per PM peak hour trip added to this intersection for developments in the Traffic Impact Fee (TIF) North District. Accordingly, the resulting fee estimate for buildout of this development totals $136,608 estimated as follows:
        - Residential uses: $65,458 based on 46 PM peak hour trips added
        - Commercial retail uses: $41,267 based on 29 PM peak hour trips added
        - Employment uses: $29,883 based on 21 PM peak hour trips added

    The City of Camas will determine the final contribution amount.

- Collaborate with WSDOT and the City of Camas to implement capacity mitigation at the SR 500 (NE 242nd Avenue)/NE 28th Street intersection in the form of all-way stop control if required in conjunction with Phase 1 site development (or with subsequent phases as determined by WSDOT).
- Coordinate with the City of Camas to establish and implement a school zone along North Shore Boulevard at Lacamas Lake Elementary School in conjunction with the North Shore Boulevard extension west with site development.
- Subject to City of Vancouver concurrence and final residential unit count confirmation, pay the following proportional share intersection fees as identified per City of Vancouver requirements:

Mitigation Location	Mitigation Cost/Peak Hour Trip	Residential Uses		Retail Uses		Employment Uses	
		Peak Hour Trips Added	Estimated Mitigation Cost	Peak Hour Trips Added	Estimated Mitigation Cost	Peak Hour Trips Added	Estimated Mitigation Cost
192nd Avenue & NE 13th Street	$400/PM	66	$26,400	0	$0	31	$12,400
NE 172nd Avenue & NE 18th Street	$300/PM	46	$13,800	0	$0	22	$6,600
NE 179th Place & NE 18th Street	$900/PM	46	$41,400	0	$0	22	$19,800
NE 187th Avenue & NE 18th Street	$1,200/PM	53	$63,600	0	$0	25	$30,000
NE 192nd Avenue & NE 9th Street	$1,100/PM	7	$7,700	0	$0	3	$3,300
Total Proportional Share Cost by Land Use			$152,900		$0		$72,100
						Grand Total Proportional Share Cost	*$225,000*

- Locate and maintain site landscaping, above-ground utilities, and site signage at all local street intersections within and adjacent to the site to provide adequate intersection sight distance per applicable City and County requirements.
- Submit a Transportation Compliance Letter (TCL) prepared by a licensed professional engineer with each future site development application. Subject to City direction, the future TCL could document:
  - The number of site-generated trips (daily, weekday AM peak hour, and weekday PM peak hour) estimated to be used by the then-current proposed development application.
  - The number of site-generated trips (daily, weekday AM peak hour, and weekday PM peak hour) allocated to previously approved site development applications on the project site.
  - A tabular accounting of the number of site-generated trips (daily, weekday AM peak hour, weekday PM peak hour) remaining assuming approval of the then-current proposed development application.
    - In the event that a future site development application is projected to use more trips than were assumed through this traffic study and the number of additional trips needed exceeds the City of Camas traffic study threshold, additional transportation capacity/concurrency analysis shall be triggered (unless a traffic count cordon-study of the project site demonstrates the number of site-generated trips is less than or equal to the number of trips assumed in this study).
  - The number of weekday PM peak hour site-generated trips associated with the then-current proposed development projected to travel through NW Sierra Street/NW Lake Road intersection (to inform the City of Camas proportional share fee mitigation contribution for the intersection).
  - An update of Table 13 of this study to document the number of site-generated trips associated with the then-current proposed development application (to inform the required City of Vancouver proportional share intersection mitigation fee contributions).

- Evaluation of outstanding mitigation needs (as appropriate consistent with this study unless otherwise mitigated) including:
  - Collaboration with WSDOT and the City of Camas to determine whether implementation of all-way stop control at the SR 500 (NE 242nd Avenue)/NE 28th Street intersection is required in conjunction with site development.
  - Whether there is adequate capacity at the SR 500/SE Leadbetter Road intersection (assess until North Shore Boulevard is extended between the project site and SR 500).

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LIST OF APPENDICES

A. Traffic Study Scoping Documentation

B. WSDOT Crash Data

C. Traffic Count Data

D. Existing Conditions Analysis Worksheets

E. In-Process Data

F. Year 2030 Background Traffic Conditions Analysis Worksheets

G. Site-Generated Trip Assignment by Land Use

H. Year 2030 Total Traffic Conditions Analysis Worksheets

I. Year 2030 Mitigated Total Traffic Conditions Analysis Worksheets

J. NE 232nd Avenue/NE 28th Street Intersection Traffic Signal Warrant Analysis & 2030 Mitigated Operations Analysis Worksheets

Appendix A : Traffic Study Scoping Documentation

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SCOPING MEMORANDUM

July 23, 2025 Project# 31612

To: James E Carothers, PE & Anita Ashton
City of Camas Community Development Engineering

Dylan Bass, Jason Lugo, & Courtney Hajda
Washington State Department of Transportation (WSDOT) Southwest Region

Craig Kathol & David Jardin
Clark County Public Works

From: Chris Brehmer, PE, Claire Dougherty, PE, & Julia Kuhn, PE

CC: Matthew Vissotzky, Matt Keenen, & Nick Pappas; SunCal

RE: Lacamas North Shore (Johnston Dairy)

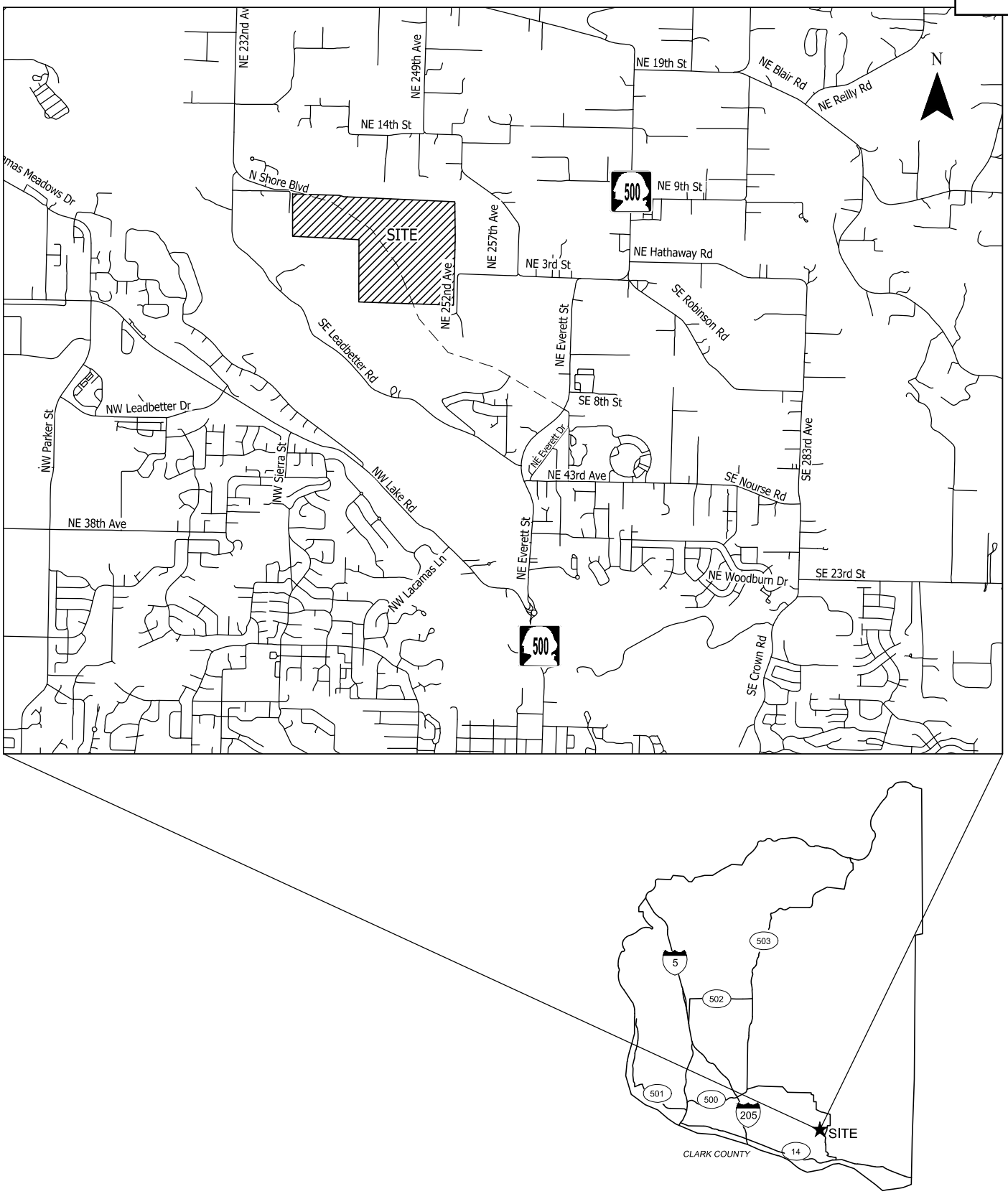
This scoping memorandum documents the project assumptions and methodology associated with preparing a transportation impact study (TIS) for the proposed Lacamas North Shore development in Camas, which is to be located on a portion of the existing Johnston Dairy site. Details of the TIS assumptions and methodology are documented herein based on guidance in the City of Camas *Transportation Impact Study Guidelines,* Clark County Code, and the Washington State Department of Transportation (WSDOT) *Design Manual – Chapter 320 Traffic Analysis*.

We request that you please review this material and provide us with your comments, suggestions and any questions. We will proceed with the TIS analysis once the path forward has been confirmed.

PROPOSED PROJECT

SunCal proposes to develop a mixed-use community located east of NE 232nd Avenue and west of NE 252nd Avenue, on the existing Johnston Dairy property. The initial residential phases of the project would include up to 387 detached single family homes and 209 attached homes, with construction and full occupancy anticipated by 2030. Up to 167,505 square-feet of commercial retail space, up to 380 multi-family apartment units, and up to 580,000 square-feet of manufacturing/warehouse distribution development is also anticipated and could also be completed by 2030, pending market conditions. Figure 1 is a site vicinity map, and Figure 2 shows a preliminary site plan.

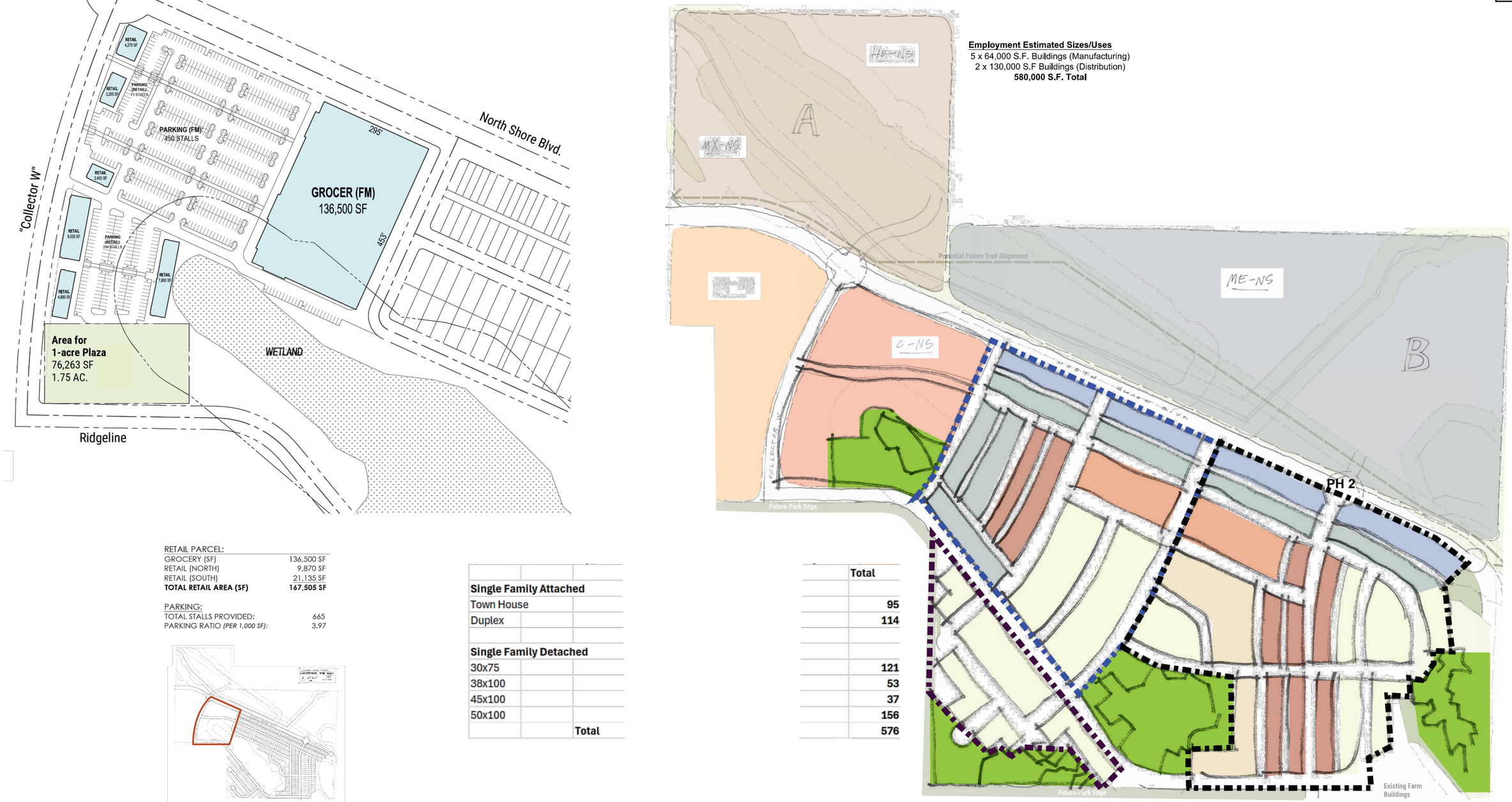
Primary access to the project site is anticipated via North Shore Boulevard, a portion of which would be extended from the current terminus near Lacamas Lake Elementary School east through the site in conjunction with site development. We understand the City plans to construct North Shore Boulevard east to the planned SR 500/SE Everett Drive roundabout in the near-term. The TIS analysis will assume North Shore Boulevard is fully constructed between NE 232nd Avenue and SR 500, and that SE Leadbetter Road is converted to use by people walking and cycling only.



Site Vicinity Map
Camas, Washington

Figure
1

H:\31\31612 - Johnston Dairy\report\figs\31612_Scoping Figs.dwg Jul 11, 2025 - 1:34pm - cdougherty Layout Tab: Fig1 Site Vicinity Map



Employment Estimated Sizes/Uses
5 x 64,000 S.F. Buildings (Manufacturing)
2 x 130,000 S.F Buildings (Distribution)
580,000 S.F. Total

RETAIL PARCEL:	
GROCERY (SF)	136,500 SF
RETAIL (NORTH)	9,870 SF
RETAIL (SOUTH)	21,135 SF
TOTAL RETAIL AREA (SF)	**167,505 SF**

PARKING:	
TOTAL STALLS PROVIDED:	665
PARKING RATIO *(PER 1,000 SF)*:	3.97

Single Family Attached		
Town House		
Duplex		
Single Family Detached		
30x75		
38x100		
45x100		
50x100		
		Total

	Total
	95
	114
	121
	53
	37
	156
	576

CONCEPTUAL SITE PLAN PROVIDED BY SUNCAL ON JULY 11 2025
NOT TO SCALE

Preliminary Site Plan
Camas, Washington

Figure
2

H:\31\31612 - Johnston Dairy\report\figs\31612_Scoping Figs.dwg Jul 21, 2025 - 1:42pm - cdougherty Layout Tab: Fig2 Proposed Site Plan

ESTIMATED TRIP GENERATION

Weekday daily, AM, and PM peak hour vehicle trips for the proposed development were estimated using data from the *Trip Generation Manual, 11th Edition*, published by the Institute of Transportation Engineers (ITE). Table 1 summarizes the residential development phase trip generation estimate, reflecting fitted equation trip rates[1]. Table 2 summarizes the commercial retail development phase trip generation estimate, reflecting fitted equation trip rates. Table 3 summarizes the employment development trip generation estimate, reflecting fitted equation trip rates for *Manufacturing* and average trip rates for *High-Cube Fulfillment Center Warehouse Non-Sort*[2]. Internal trips between uses will be accounted for through trip assignment, as documented in the trip assignment figures presented later in this memorandum.

Table 1. Estimated Site Trip Generation (Residential Phases)

Land Use	ITE Code	Size (units)	Daily Trips	Weekday AM Peak			Weekday PM Peak		
				Total	In	Out	Total	In	Out
Single-Family Detached Housing	210	387	3,504	255	64	191	355	224	131
Single Family Attached Housing	215	209	1,542	103	26	77	121	71	50
Multi-Family Low-Rise	220	380	2,511	141	34	107	184	116	68
TOTAL TRIPS			**7,577**	**499**	**124**	**375**	**660**	**411**	**249**

Table 2. Estimated Site Trip Generation (Commercial Phase)

Land Use	ITE Code	Size (SF)	Daily Trips	Weekday AM Peak			Weekday PM Peak		
				Total	In	Out	Total	In	Out
Shopping Center (>150K)	820	167,505	10,237	232	144	88	818	393	425
Less 29% pass-by			(2,969)	(67)	(41)	(26)	(237)	(114)	(123)
NET NEW TRIPS			**7,268**	**165**	**103**	**62**	**581**	**279**	**302**

Table 3. Estimated Site Trip Generation (Employment Phase)

Land Use	ITE Code	Size (SF)	Daily Trips	Weekday AM Peak			Weekday PM Peak		
				Total	In	Out	Total	In	Out
Manufacturing	140	320,000	1,408	205	156	49	261	81	180
High-Cube Fulfillment Center Warehouse (Non-Sort)	155	260,000	471	39	32	7	42	16	26
NET NEW TRIPS			**1,879**	**244**	**188**	**56**	**303**	**97**	**206**

[1] Note that though the current conceptual site plan indicates 367 single family detached units, the TIA will account for an additional 20 single family detached units (387 total) as site plan refinement is on-going.

[2] Average rates are used as ITE does not have published fitted equation AM or PM peak hour rates for this land use code.

ESTIMATED TRIP DISTRIBUTION PATTERNS

The TIS will assume that the site residential, commercial and employment land uses each have different trip distribution patterns based on the anticipated range of potential future commercial and employment opportunities and site location. Derivation of the trip distribution patterns is described below. In each case, the distribution pattern is predicated in part on and Southwest Washington Regional Transportation Council (RTC) travel demand modeling of nearby TAZs. Further, the trip assignments for each land use assume 1) the North Shore Boulevard extension east to SR 500 is in place, and 2) that SE Leadbetter Road no longer serves through vehicle travel between NE 232nd Avenue and SR 500.

Residential Pattern

The residential trip distribution pattern combines RTC modeling, review of the existing and planned roadway network in the North Shore area[3] and *Google Maps'* route planning. Specifically, *Google Maps*' mapping and route planning suggestions were reviewed during peak hour time frames to better understand this tool's recommended travel routes, route travel time and route distances. Specifically, routing between the proposed site and nearby key destinations including Harmony Sports Complex, the NE 192nd Avenue and SE Mill Plain Boulevard retail corridors, and the Vancouver Mall area were reviewed during AM and PM peak hour time frames. Figures 3 and 4 illustrate the estimated residential trip distribution pattern and corresponding new site-generated trip assignment to potential study intersections based on the trip estimates in Table 1.

Commercial Pattern

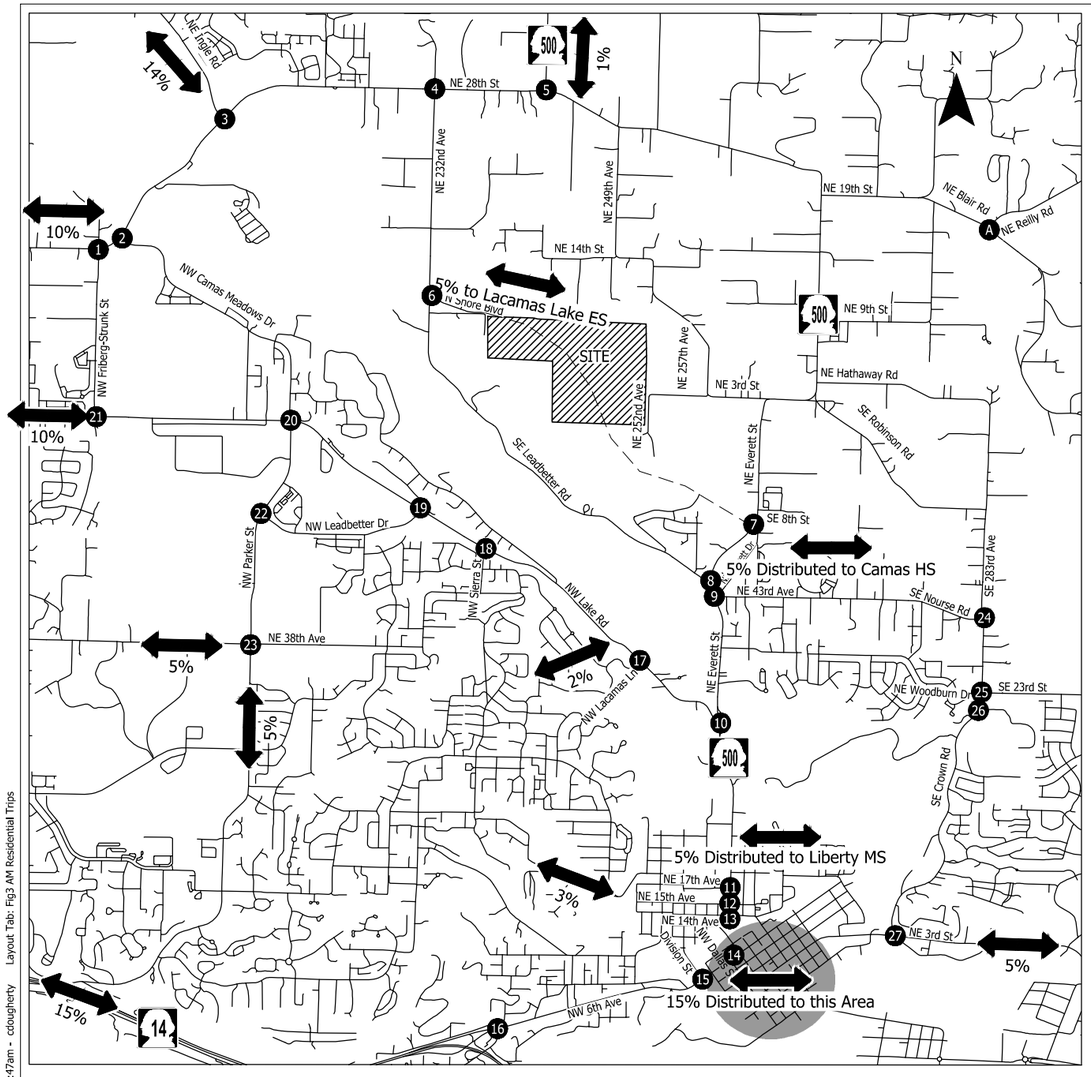
The commercial land use estimated trip distribution pattern was developed based on the available RTC modeling, existing and approved residential areas, and consideration of the locations of similar competing retail developments. The commercial land uses are anticipated to primarily serve the North Shore area and other Camas residents rather than attracting regional trips from the west, especially considering the regional commercial uses available along the NE 164th Avenue and SE 192nd Avenue corridors in Vancouver. The anticipated market area is consistent with the Camas North Shore Subarea Plan market analysis[4].

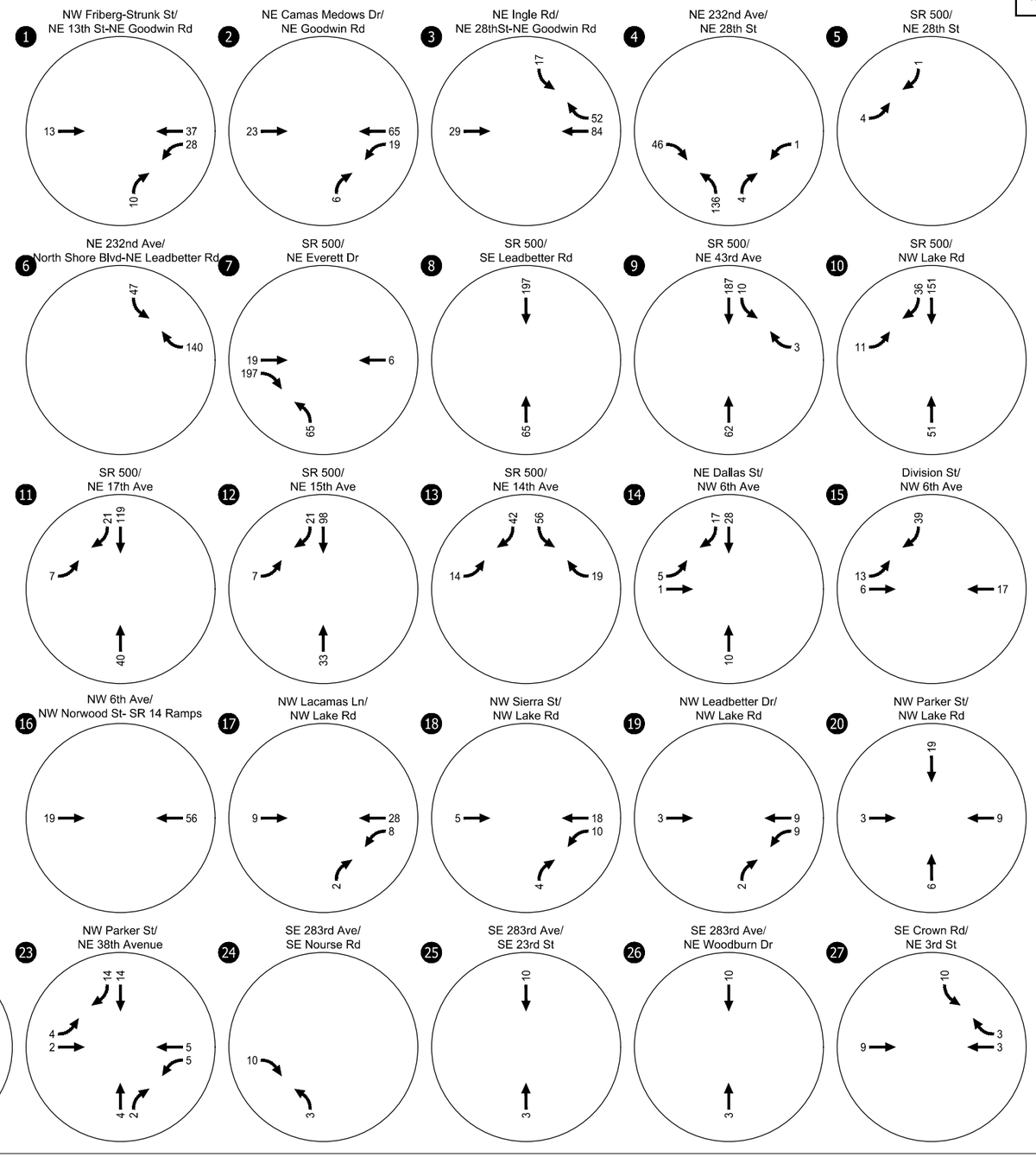
Figures 5 and 6 illustrate the estimated commercial trip distribution pattern and corresponding net new site-generated trip assignment to potential study intersections based on the commercial development trip estimates in Table 2. All pass-by trips will be assumed to travel to/from North Shore Boulevard.

[3] We note that RTC does not currently have a model fully reflective of the adopted North Shore Plan and companion roadway network as of March 2025. RTC staff indicate they will create model updates upon the City's adoption of a new Growth Management Area (GMA) and road network and completion of the County's Regional Transportation Plan updates in collaboration with communities across the County. The schedule for completion of these changes is unknown as of time this scoping memo was prepared.

[4] Refer to the market analysis at *City of Camas North Shore Subarea Plan* which states in part "Due to its location on the urban edge of the metropolitan region, lack of visibility and challenging access, lack of existing households, and prominent retail services nearby to the west, the North Shore is not likely to be a major retail center, but retail at a more neighborhood scale. There will be demand for small-scale retail along the perimeter arterial to serve new development and the adjoining neighborhood."

It is likely that some shopping related trips made by Camas residents to existing retail opportunities in Vancouver will re-orient to shop at the new site facilities and result in some trip reductions/reduced vehicle miles traveled given a more local shopping opportunity. No capture of existing retail trips made by Camas residents that shop in Vancouver today and re-orient to the new retail uses is proposed given the lack of tenant-specific information.

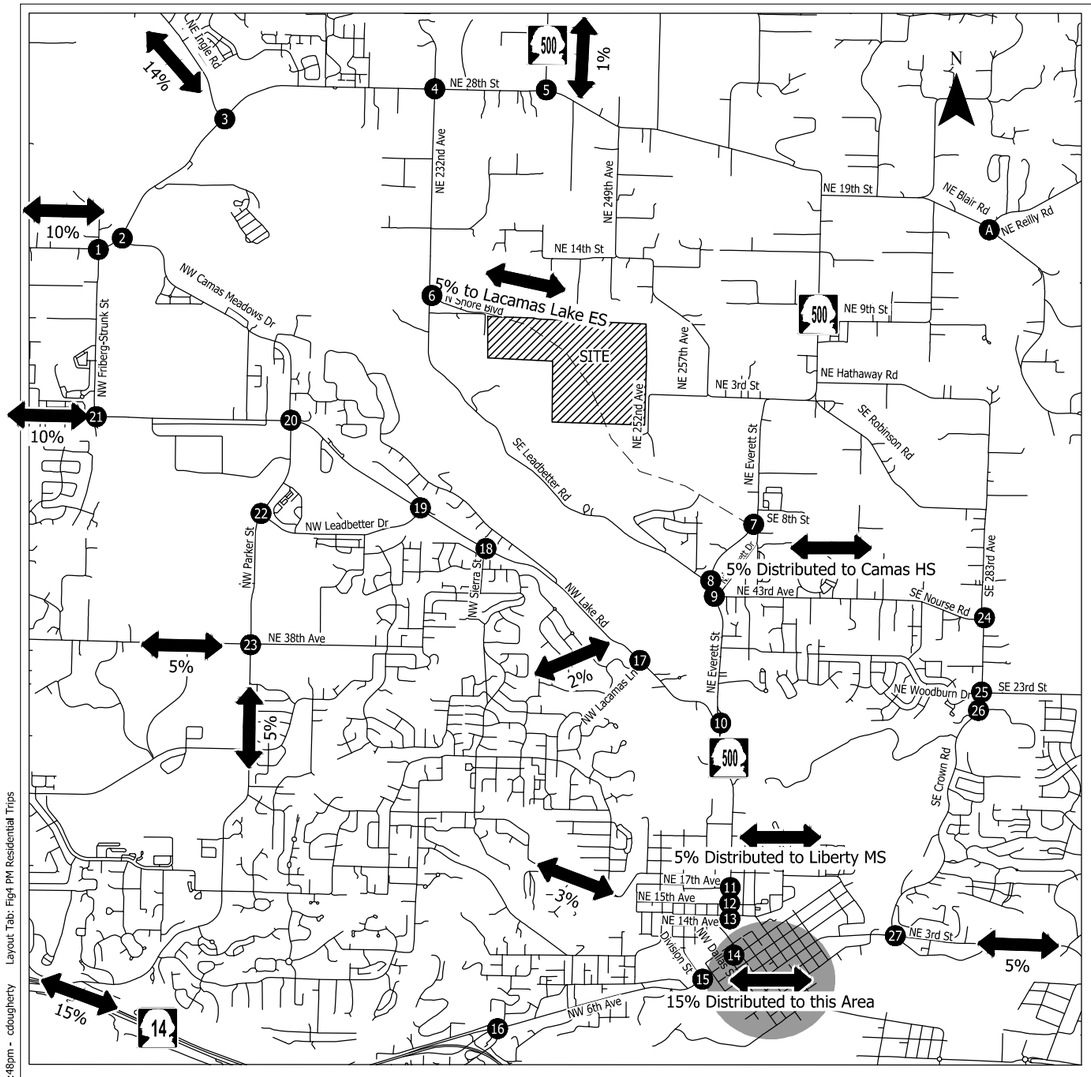




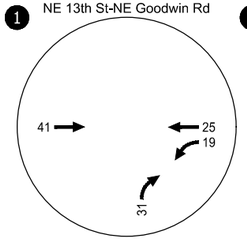
Study Intersections

Weekday AM Peak Hour Residential Trip Assignment Camas, Washington

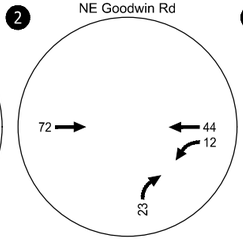
Figure 3



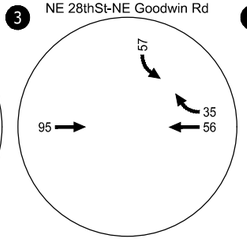
1 NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd



2 NE Camas Meadows Dr/ NE Goodwin Rd



3 NE Ingle Rd/ NE 28thSt-NE Goodwin Rd



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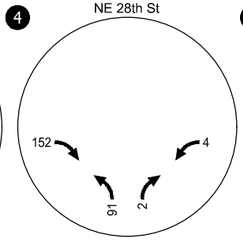
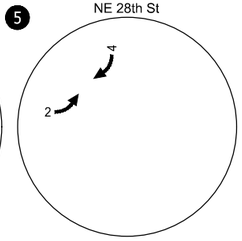
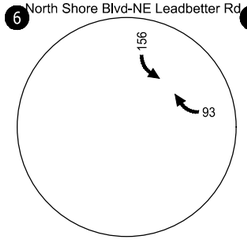


5 SR 500/ NE 28th St



6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd



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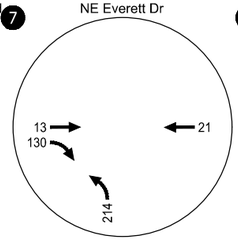
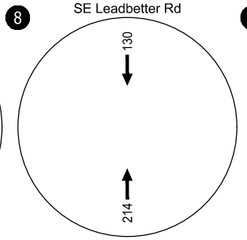
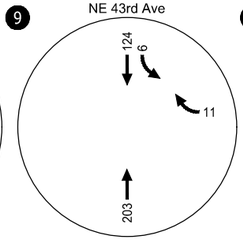


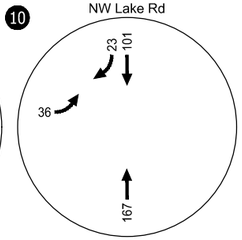
8 SR 500/ SE Leadbetter Rd



9 SR 500/ NE 43rd Ave



10 SR 500/ NW Lake Rd



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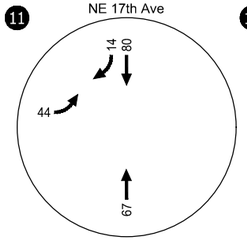

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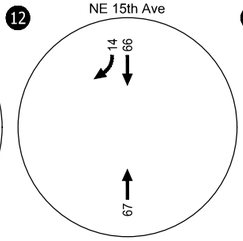

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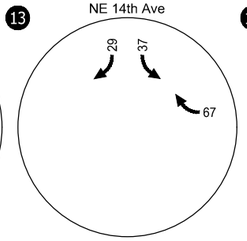

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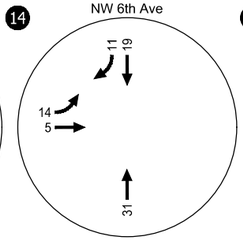

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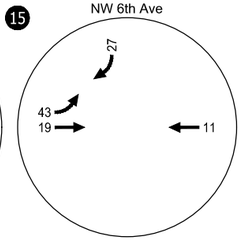
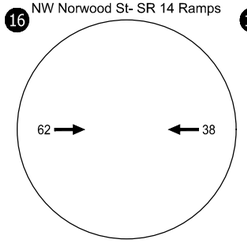
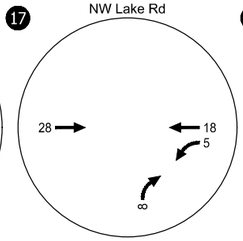


16 NW 6th Ave/ NW Norwood St- SR 14 Ramps



17 NW Lacamas Ln/ NW Lake Rd



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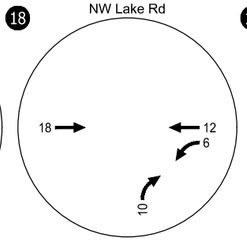

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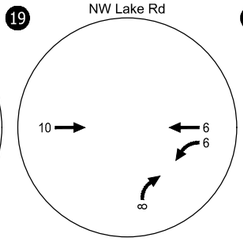
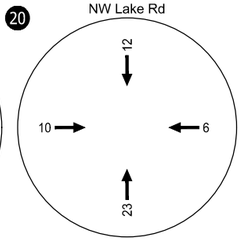


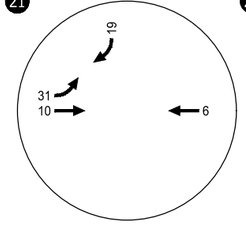
20 NW Parker St/ NW Lake Rd



A NE BLAIR RD/ NE REILLY RD

NO SITE TRIPS

21 NW Friberg-Strunk St/ NW Lake Rd-SE 1st St



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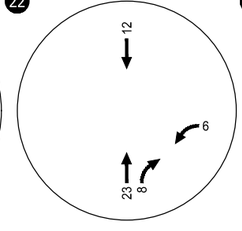
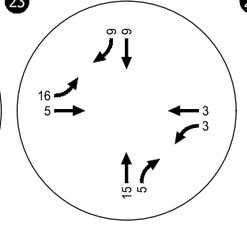


23 NW Parker St/ NW 38th Avenue



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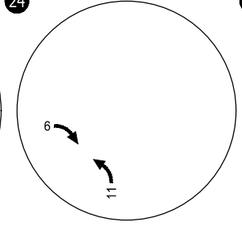

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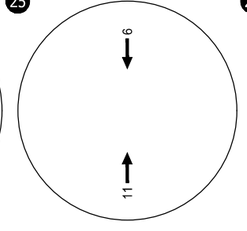

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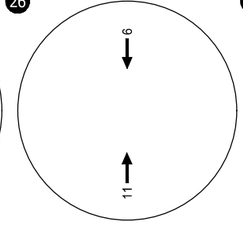

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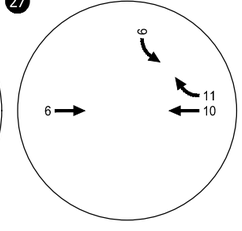
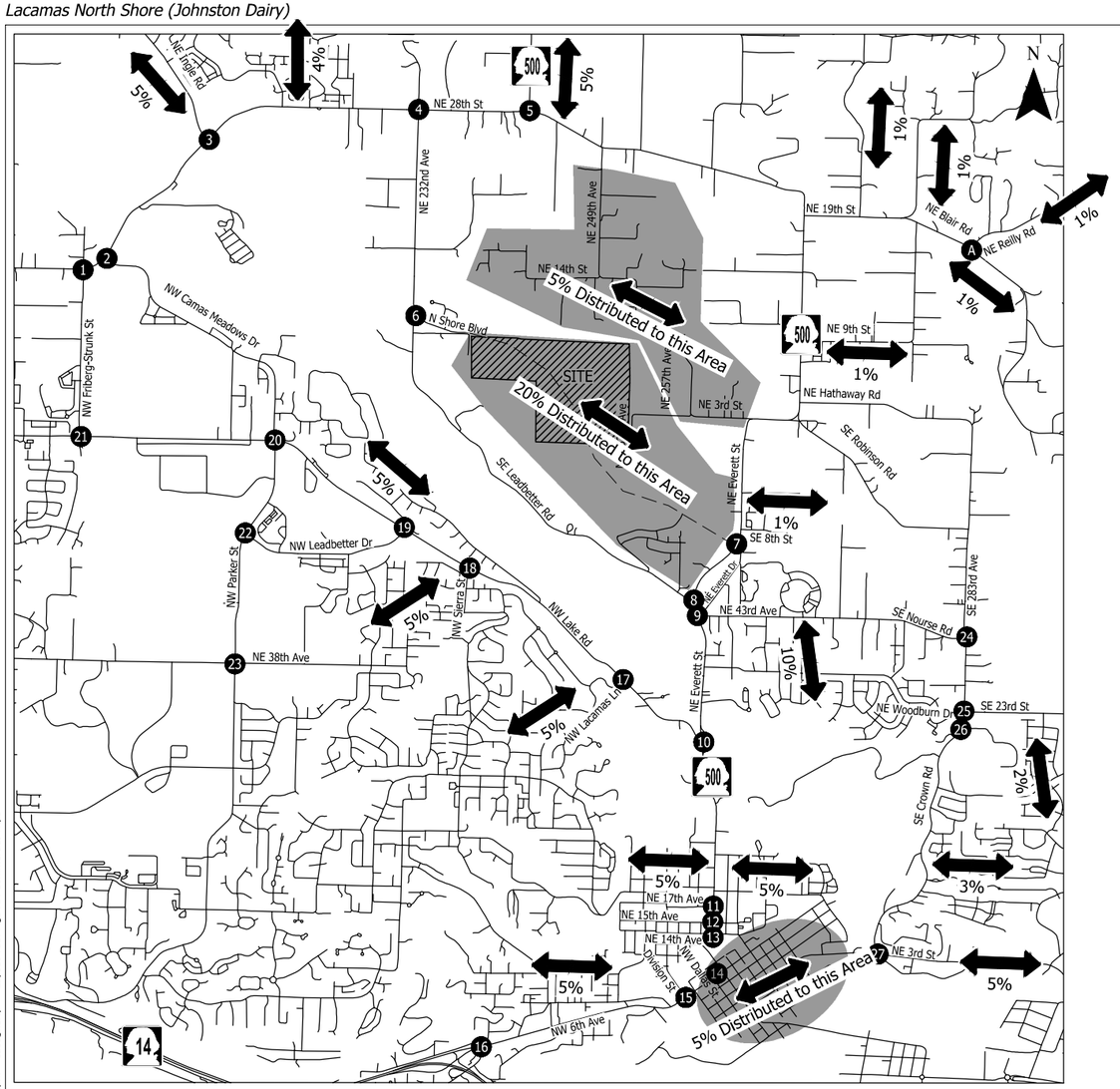


Study Intersections

Weekday PM Peak Hour Residential Trip Assignment Camas, Washington

Figure 4

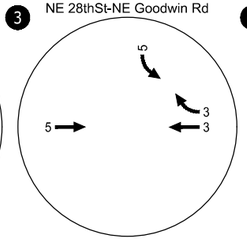


1 NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd

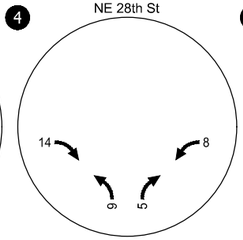
NO SITE TRIPS

2 NE Camas Meadows Dr/ NE Goodwin Rd

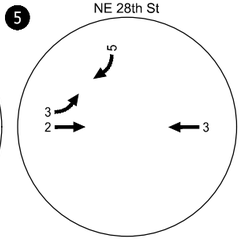
3 NE Ingle Rd/ NE 28thSt-NE Goodwin Rd



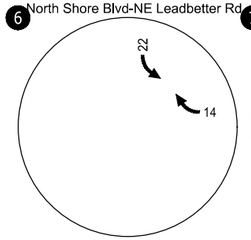
4 NE 232nd Ave/ NE 28th St



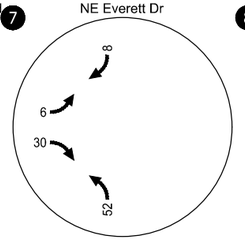
5 SR 500/ NE 28th St



6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd



7 SR 500/ NE Everett Dr



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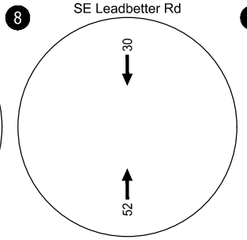

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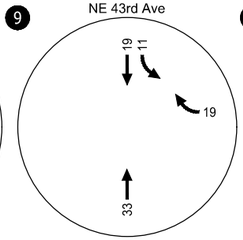

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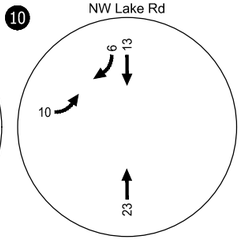

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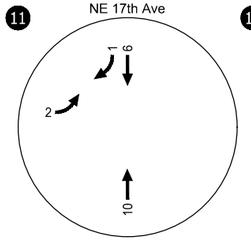

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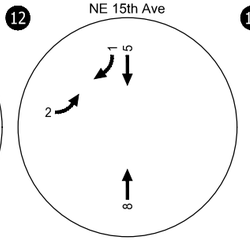

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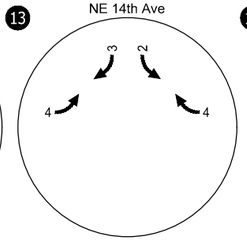

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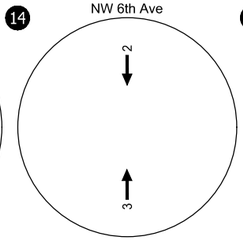


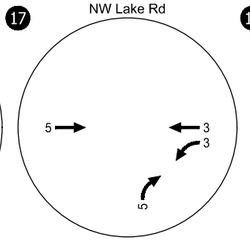
15 Division St/ NW 6th Ave

NO SITE TRIPS

16 NW 6th Ave/ NW Norwood St- SR 14 Ramps

NO SITE TRIPS

17 NW Lacamas Ln/ NW Lake Rd



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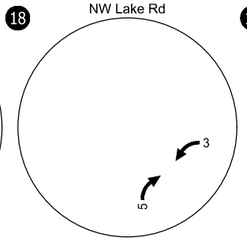


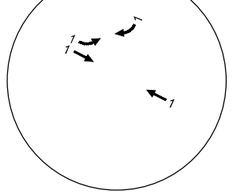
19 NW Leadbetter Dr/ NW Lake Rd

NO SITE TRIPS

20 NW Parker St/ NW Lake Rd

NO SITE TRIPS

A NE BLAIR RD/ NE REILLY RD



21 NW Friberg-Strunk St/ NW Lake Rd-SE 1st St

NO SITE TRIPS

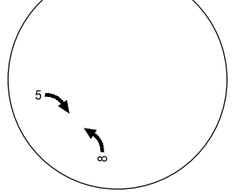
22 NW Parker St/ NW Leadbetter Dr

NO SITE TRIPS

23 NW Parker St/ NE 38th Avenue

NO SITE TRIPS

24 SE 283rd Ave/ SE Nourse Rd



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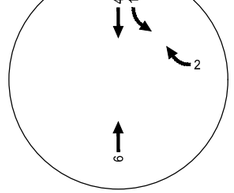

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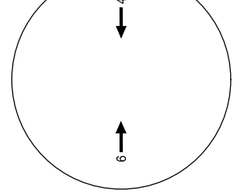

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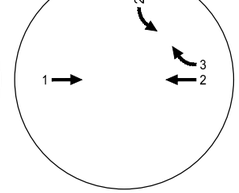
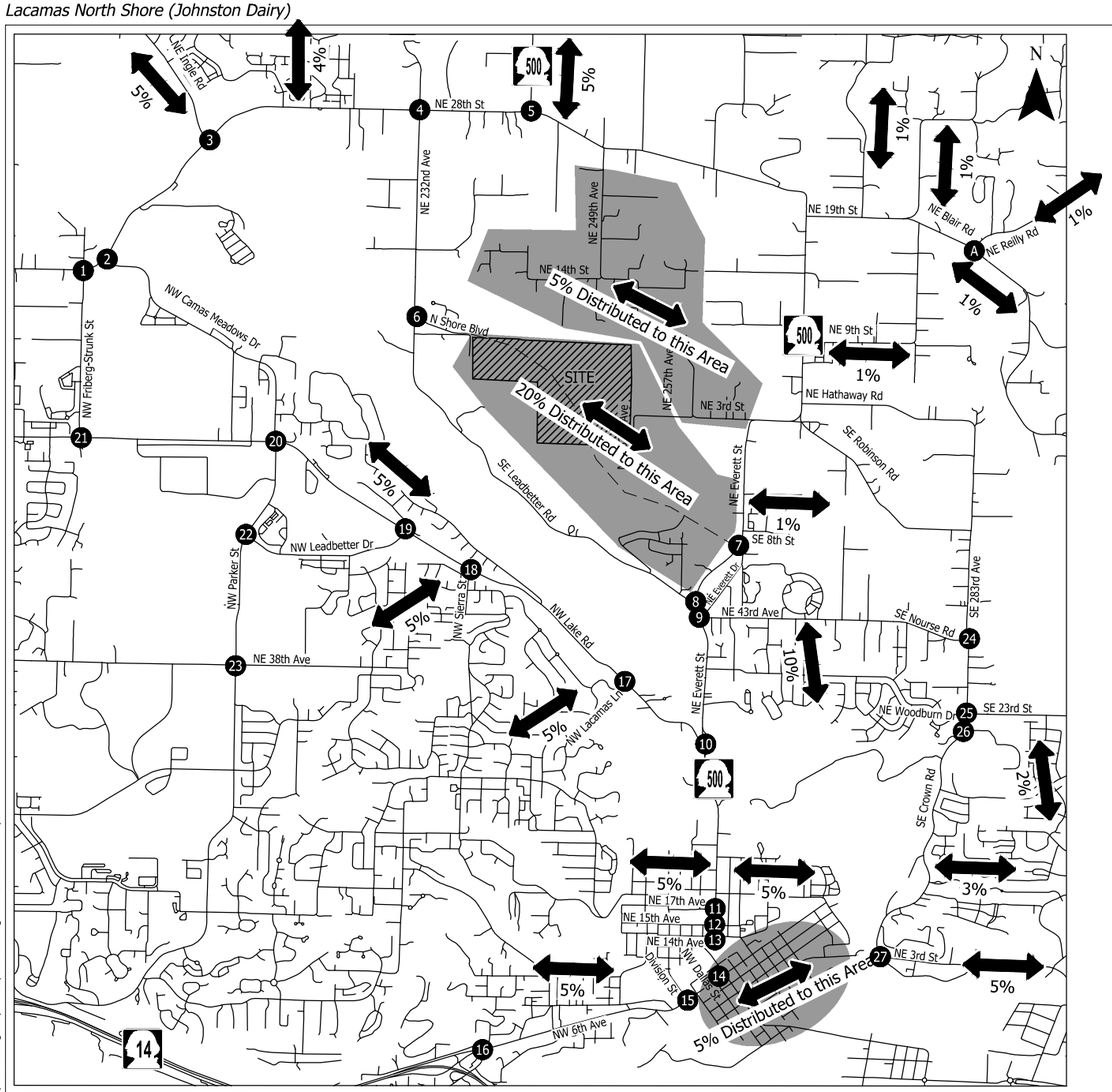


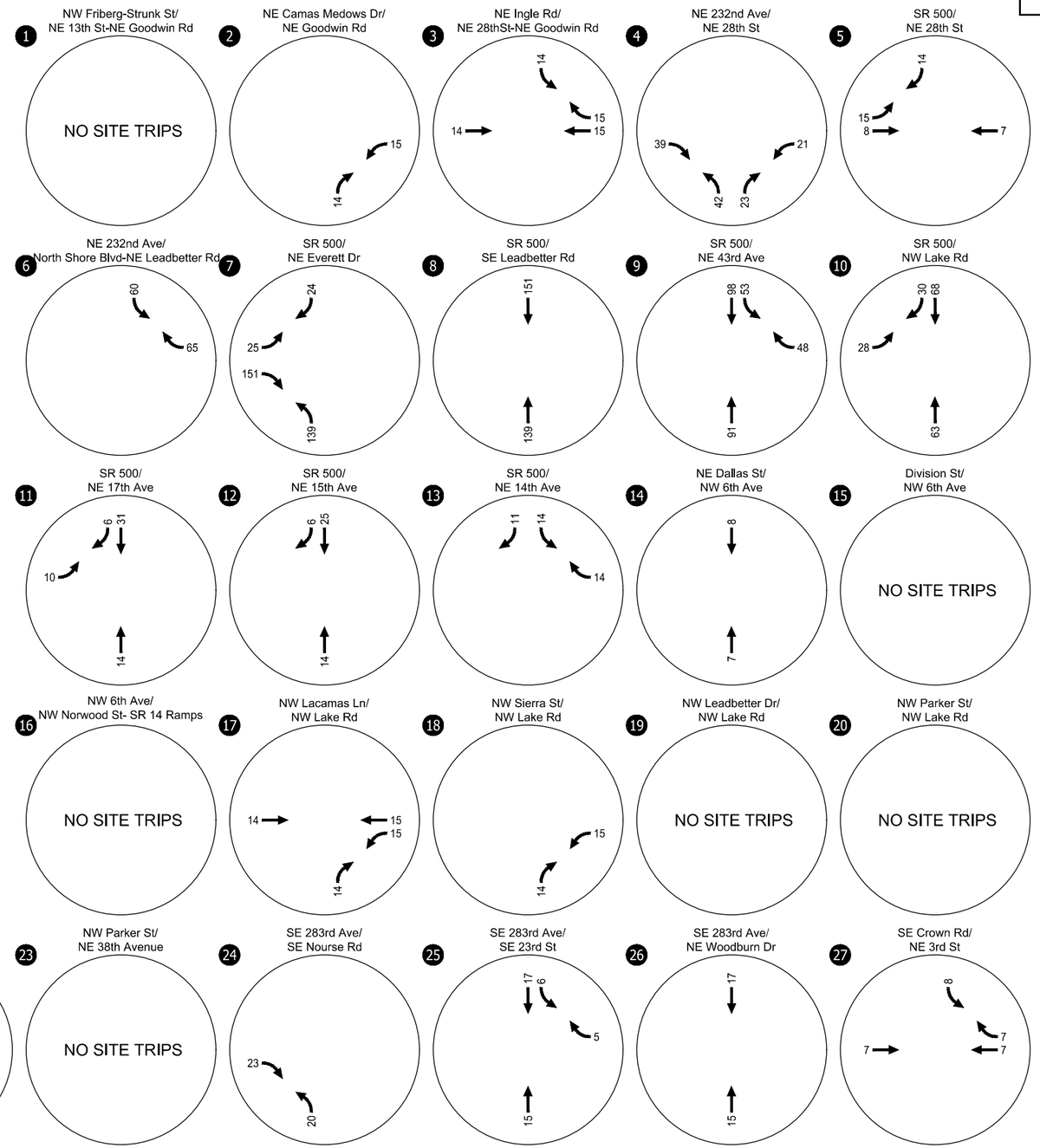
Study Intersections

Weekday AM Peak Hour Commercial Net New Trip Assignment Camas, Washington

Figure 5

H:\31\31612 - Johnston Dairy\report\Figs\31612_Scoping Figs.dwg Jul 11, 2025 - 1:41pm - cdougherty Layout Tab: Fig5 AM Commercial Trips





Study Intersections

Weekday PM Peak Hour Commercial Net New Trip Assignment Camas, Washington

Figure 6

Employment Pattern

An estimated trip distribution pattern for the planned employment land uses was developed based on RTC modeling, review of existing residential areas in the area, and proximity to other employment land uses. Figures 7 and 8 illustrate the estimated employment trip distribution pattern and corresponding net new site-generated trip assignment to potential study intersections based on the trip estimates in Table 3 for the industrial land use.

Total Site-Generated Trips

Figures 9 and 10 display the summation of residential, commercial and employment net new trips generated by the proposed development during the AM and PM peak hours, respectively.

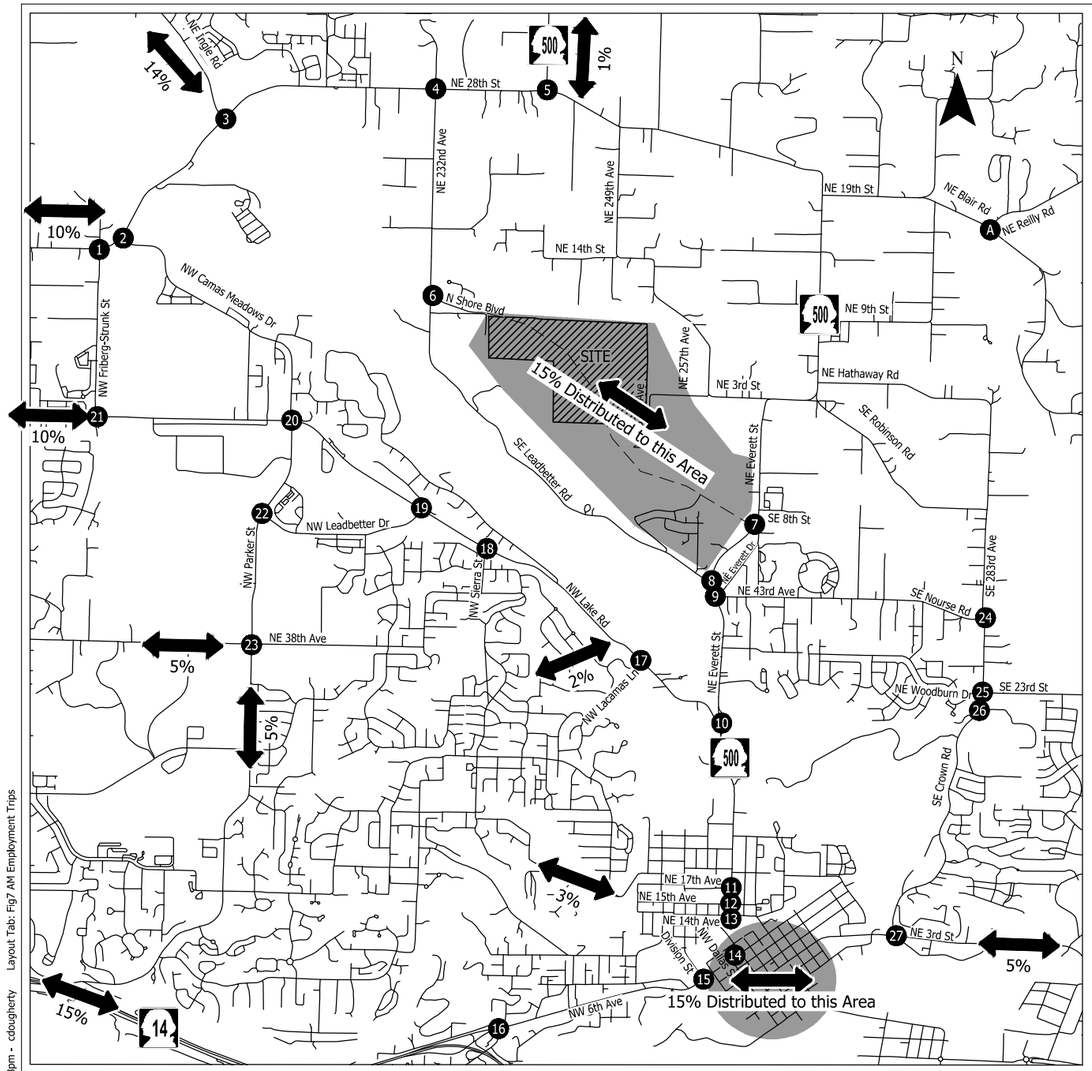
POTENTIAL STUDY INTERSECTIONS

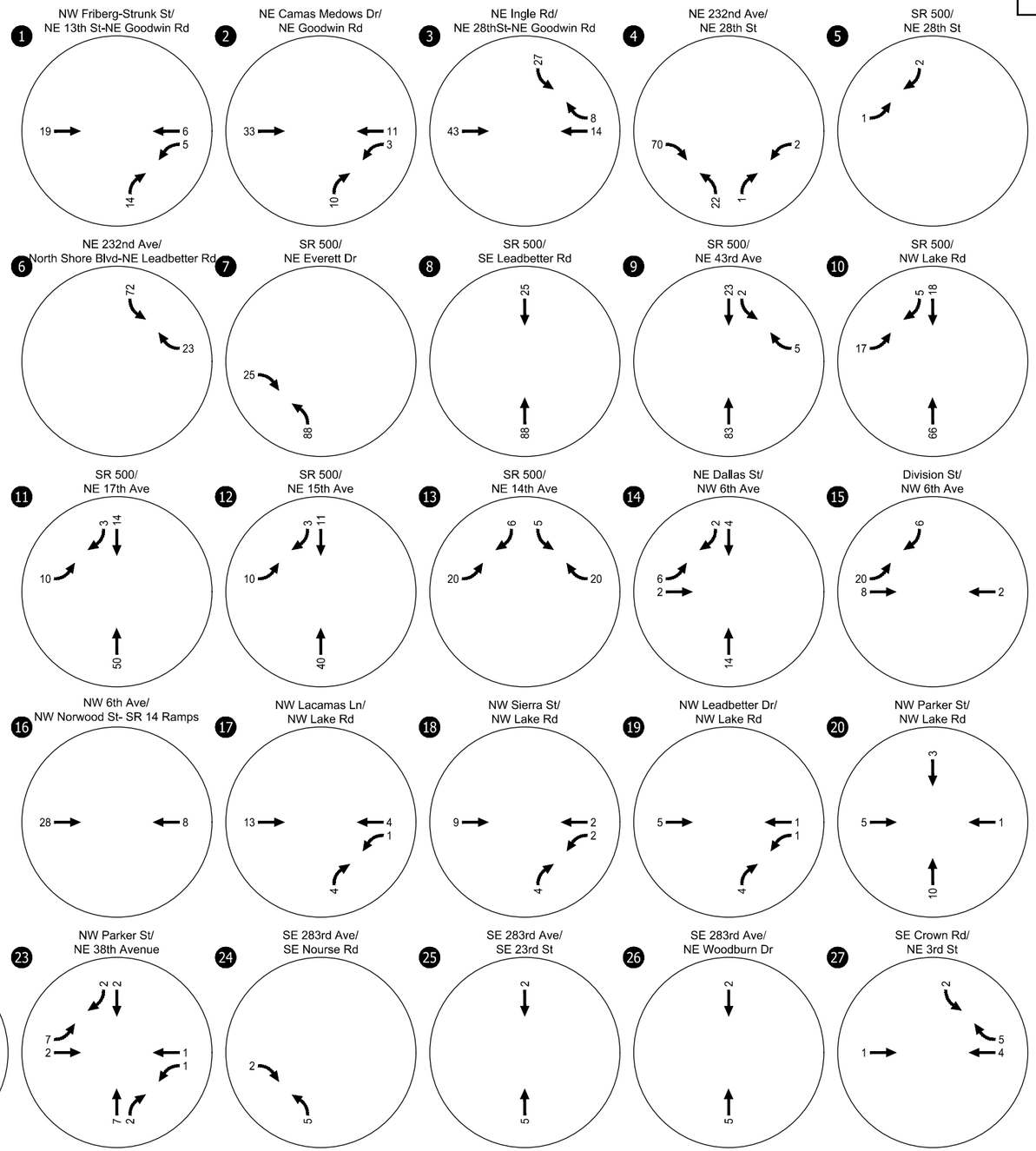
The City of Camas requires an intersection to be included in a TIS if 20 or more peak hour trips are added to the City intersection from the development. WSDOT generally requires WSDOT-maintained intersections be included in a TIS if 25 or more peak hour trips are added to the intersection or 10 or more trips are added to State highway approach. Clark County typically requires consideration of regionally significant intersections within a 3-mile radius for a project that generates more than 251 new peak hour trips per Clark County Code Section 40.350.020.D.5.b.

Based on the identified trip thresholds, the preliminary trip distribution pattern and trip assignment outlined above, the intersections listed in Table 4 have been identified for potential inclusion in the TIS[5]. We request City and partner agency staff review and confirm the proposed study intersections.

Weekday AM and PM peak hour counts were collected at all of the potential study intersections listed in Table 4 in either April or early June 2025, while area schools were in session, to inform this TIS analysis.

[5] Note that Table 4 excludes the NE Blair Road/NE Reilly Road intersection. While this County-maintained intersection is located within a 3-mile radius of the site, the total site-generated trips added to the STOP controlled approach are less than 5 during the AM and PM peak hours (refer to Figure 9 and 10). Per Clark County Code Section 40.350.020.G.1.c:, proposed developments shall not be required to mitigate their impacts in order to obtain a concurrency approval unless the proposed development adds at least five (5) peak hour trips to a failing intersection approach.

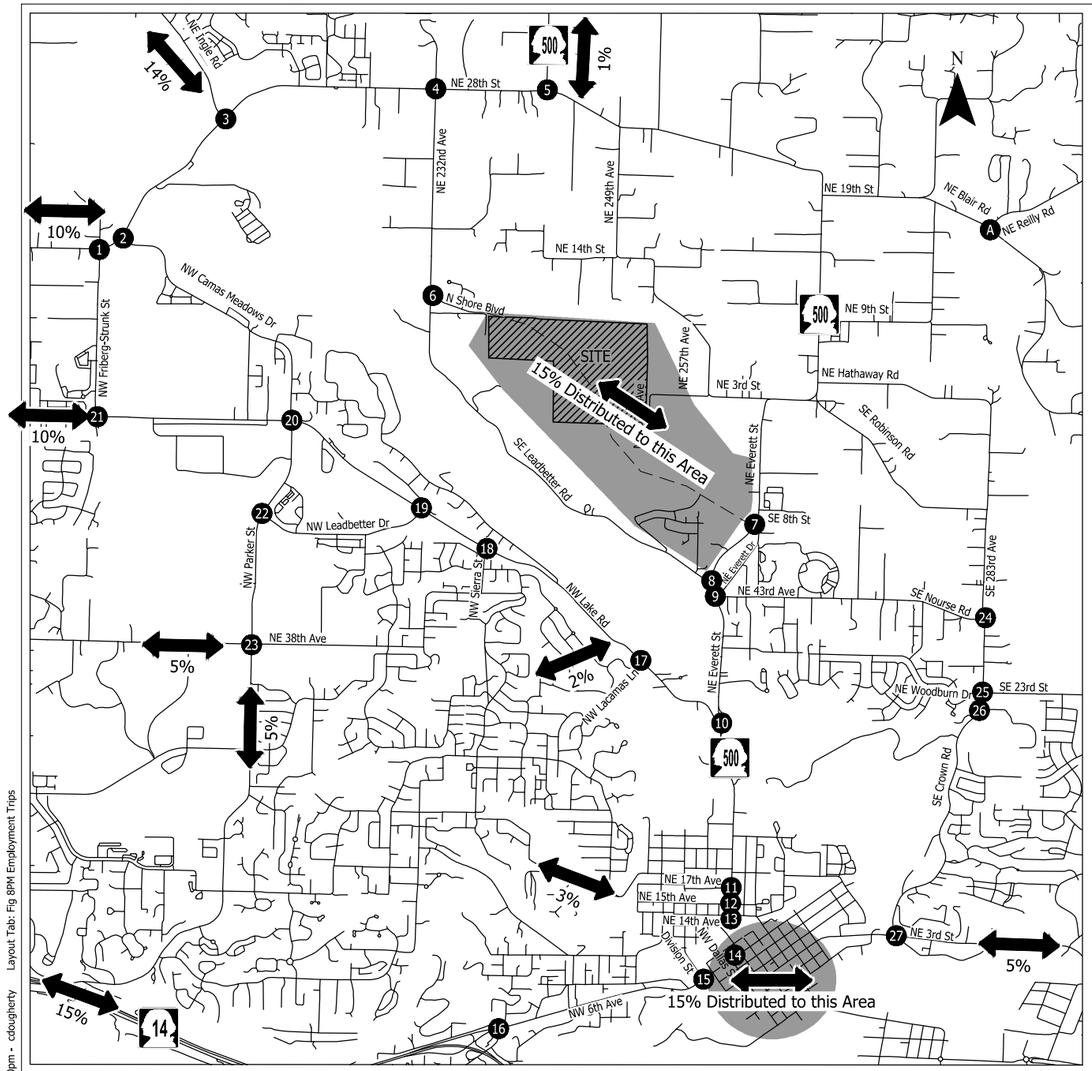




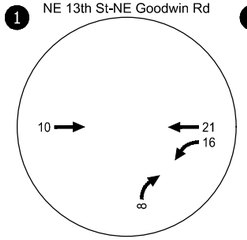
Study Intersections

Weekday AM Peak Hour Employment Trip Assignment Camas, Washington

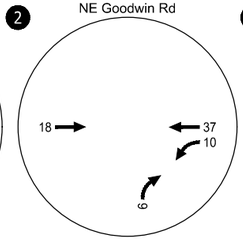
Figure 7



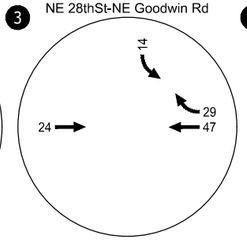
1 NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd



2 NE Camas Medows Dr/ NE Goodwin Rd



3 NE Ingle Rd/ NE 28thSt-NE Goodwin Rd



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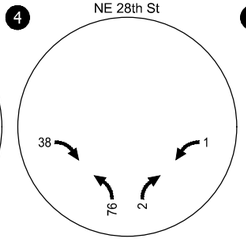

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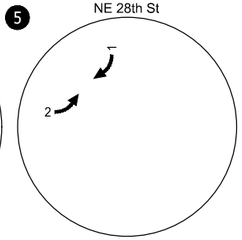
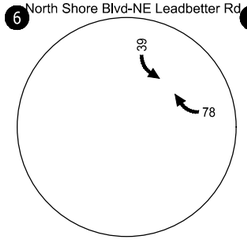


6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd



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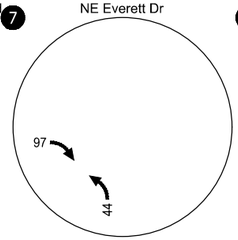

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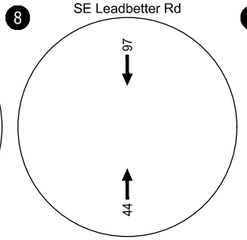
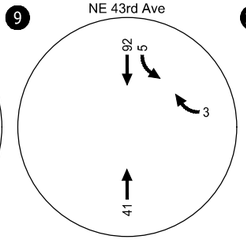


9 SR 500/ NE 43rd Ave



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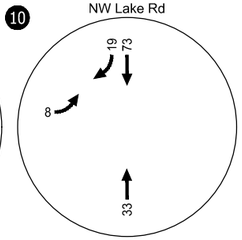

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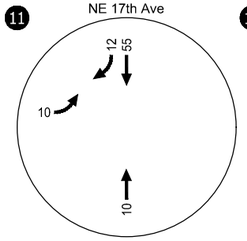

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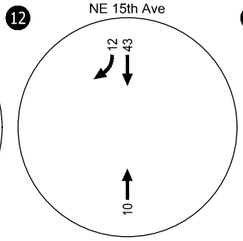

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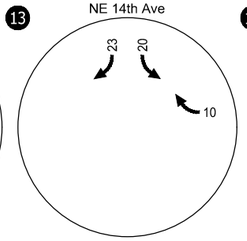
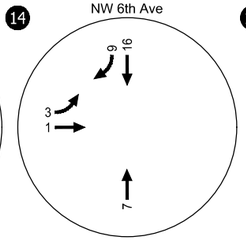


14 NE Dallas St/ NW 6th Ave



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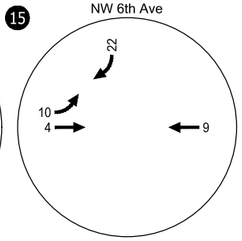
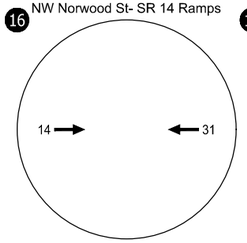


16 NW 6th Ave/ NW Norwood St- SR 14 Ramps



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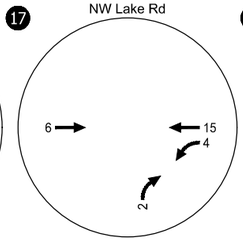
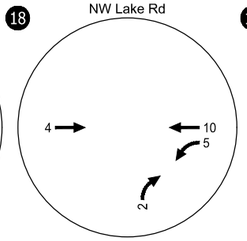
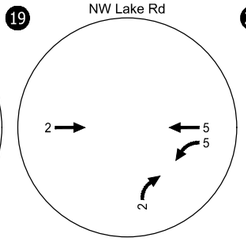


18 NW Sierra St/ NW Lake Rd



19 NW Leadbetter Dr/ NW Lake Rd



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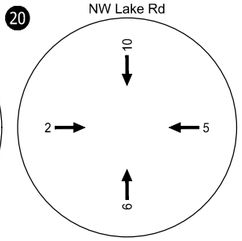
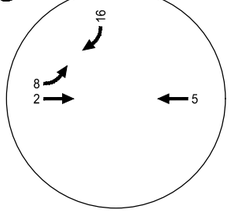


A NE BLAIR RD/ NE REILLY RD

NO SITE TRIPS

21 NW Friberg-Strunk St/ NW Lake Rd-SE 1st St



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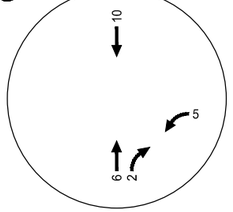

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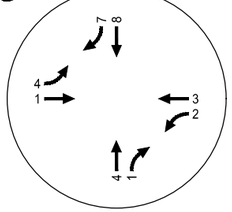

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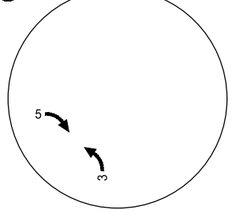

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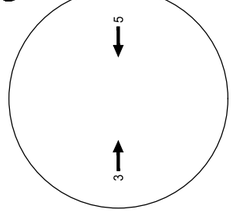
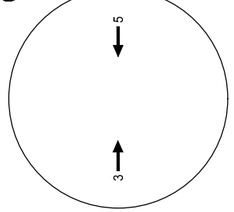


26 SE 283rd Ave/ NE Woodburn Dr



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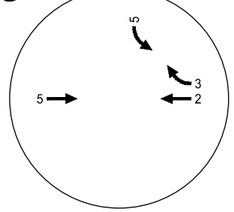
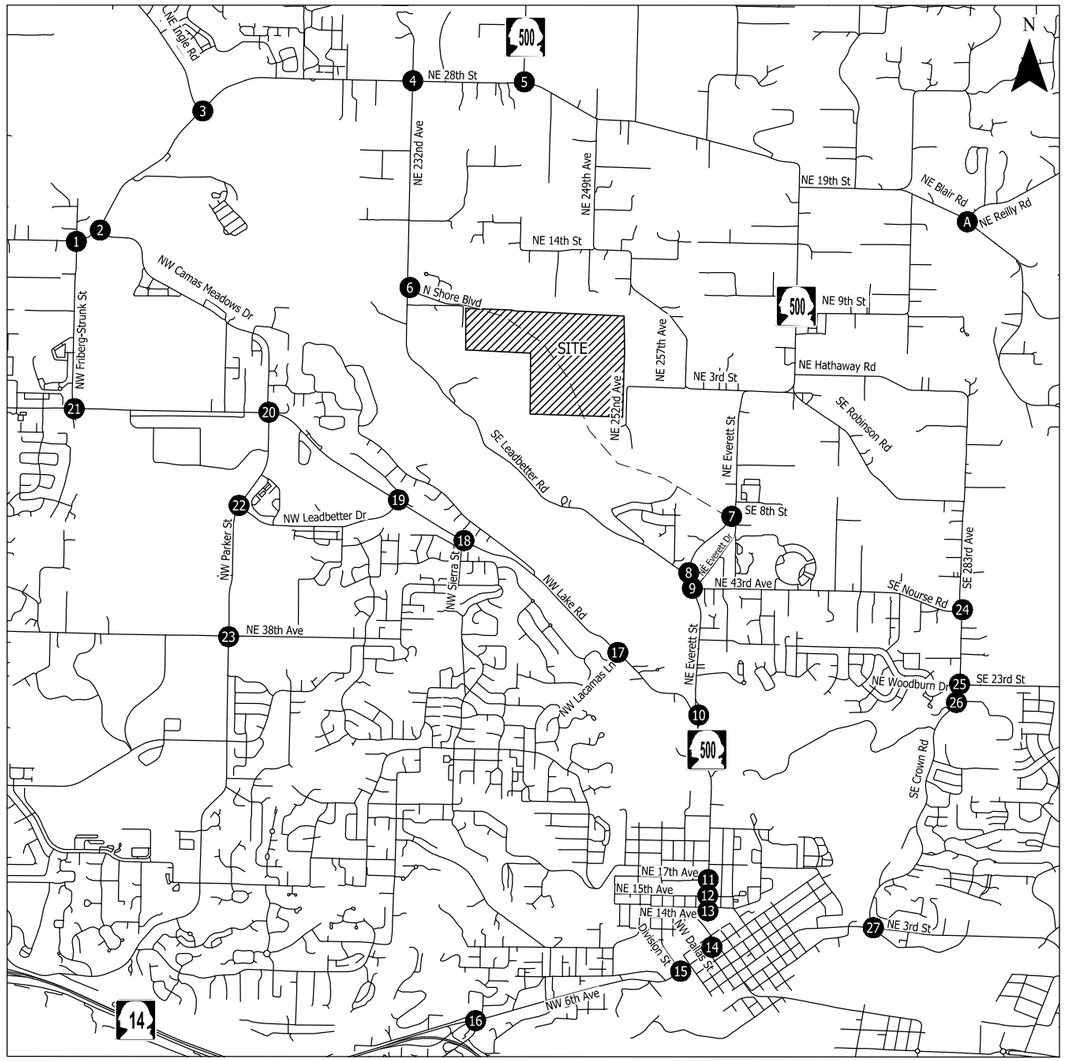


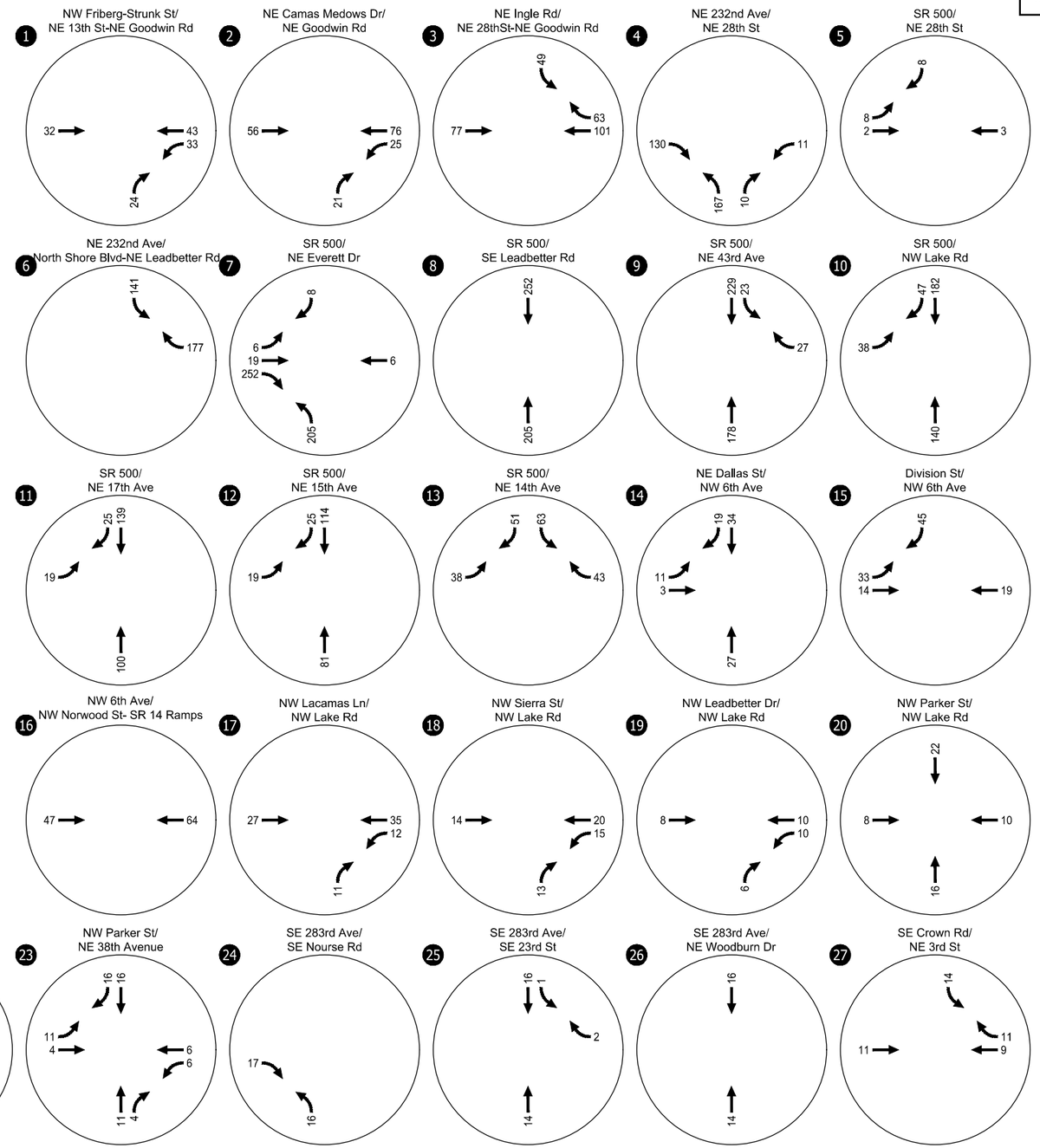
(#) Study Intersections

Weekday PM Peak Hour
Employment Trip Assignment
Camas, Washington

Figure
8

H:\31\31612 - Johnston Dairy\report\Figs\31612_Scoping Figs.dwg Jul 21, 2025 - 2:10pm - cdougherty Layout Tab: Fig 8PM Employment Trips





Study Intersections

Weekday AM Peak Hour Cumulative Net New Site Trips Camas, Washington

Figure 9

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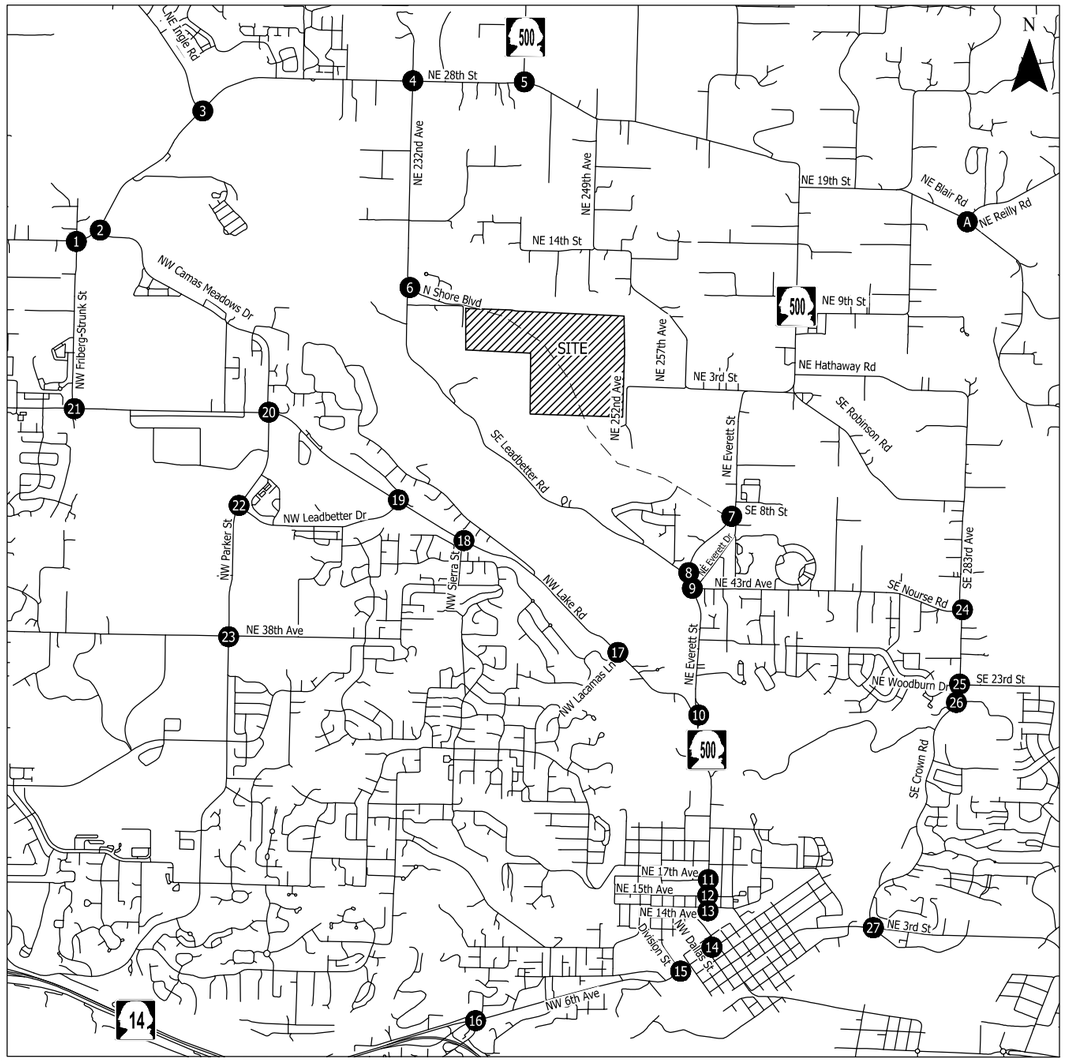


1 NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd: 51 → 46, 35 ←; 39 ↖

2 NE Camas Meadows Dr/ NE Goodwin Rd: 90 → 81, 37 ←; 43 ↖

3 NE Ingle Rd/ NE 28thSt-NE Goodwin Rd: 85 ↓; 133 → 79, 118 ←

4 NE 232nd Ave/ NE 28th St: 229 → 26 ←; 209 ↖ 27 ↗

5 SR 500/ NE 28th St: 19 ↓; 19 → 8 ←; 7 ←

6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd: 255 ↓; 236 ←

7 SR 500/ NE Everett Dr: 24 ↓; 25 → 13 → 378 → 21 ←; 397 ↖

8 SR 500/ SE Leadbetter Rd: 378 ↓; 397 ↑

9 SR 500/ NE 43rd Ave: 314 ↓ 64 ↓; 62 ←; 335 ↑

10 SR 500/ NW Lake Rd: 72 → 72 ↓ 242 ↓; 263 ↑

11 SR 500/ NE 17th Ave: 32 ↓ 166 ↓; 64 → ; 91 ↑

12 SR 500/ NE 15th Ave: 32 ↓ 134 ↓; 91 ↑

13 SR 500/ NE 14th Ave: 63 ↓ 71 ↓; 91 ←

14 NE Dallas St/ NW 6th Ave: 20 ↓ 43 ↓; 17 → 6 → ; 45 ↑

15 Division St/ NW 6th Ave: 49 ↓; 53 → 23 → ; 20 ←

16 NW 6th Ave/ NW Norwood St- SR 14 Ramps: 76 → ; 69 ←

17 NW Lacamas Ln/ NW Lake Rd: 48 → 48 ← 24 ↓; 24 ↖

18 NW Sierra St/ NW Lake Rd: 22 → 22 ← 26 ↓; 26 ↖

19 NW Leadbetter Dr/ NW Lake Rd: 12 → 11 ← 11 ↓; 10 ↖

20 NW Parker St/ NW Lake Rd: 22 ↓; 12 → 11 ←; 29 ↑

A NE BLAIR RD/ NE REILLY RD: 3 ↓ 3 ↓; 3 ↖

21 NW Friberg-Strunk St/ NW Lake Rd-SE 1st St: 35 ↓; 39 → 12 → ; 11 ←

22 NW Parker St/ NW Leadbetter Dr: 22 ↓; 11 ↖; 29 ↑ 10 ↑

23 NW Parker St/ NE 38th Avenue: 16 ↓ 17 ↓; 20 → 6 → ; 6 ← 5 ↓; 19 ↑ 6 ↑

24 SE 283rd Ave/ SE Nourse Rd: 34 ↓; 34 ↖

25 SE 283rd Ave/ SE 23rd St: 28 ↓ 6 ↓; 5 ↖; 29 ↑

26 SE 283rd Ave/ NE Woodburn Dr: 28 ↓; 29 ↑

27 SE Crown Rd/ NE 3rd St: 19 ↓; 18 → ; 21 ← 19 ↓

Study Intersections

Weekday PM Peak Hour
Cumulative Net New Site Trips
Camas, Washington

Figure
10

H:\31\31612 - Johnston Dairy\report\Figs\31612_Scoping Figs.dwg Jul 21, 2025 - 2:36pm - cdougherty Layout Tab: Fig10 PM Total Trips

Table 4. Potential Study Intersections

ID	Potential Study Intersection	Traffic Control
1	NW Friberg-Strunk St/NE 13th St-NE Goodwin Rd	Signalized
2	NE Camas Medows Dr/NE Goodwin Rd	TWSC
3	NE Ingle Rd/ NE 28th St-NE Goodwin Rd	Signalized
4	NE 232nd Ave/NE 28th St	TWSC
5	SR 500/NE 28th St	TWSC
6	NE 232nd Ave/North Shore Blvd-NE Leadbetter Rd	TWSC
7	SR 500/NE Everett Dr	TWSC (Future Roundabout)
8	SR 500/SE Leadbetter Rd	TWSC
9	SR 500/NE 43rd Ave	Signalized
10	SR 500/NW Lake Rd	Roundabout
11	SR 500/NE 17th Ave	TWSC
12	SR 500/NE 15th Ave	TWSC
13	SR 500/NE 14th Ave	TWSC
14	NE Dallas St/NW 6th Ave	TWSC
15	Division St/NW 6th Ave	TWSC
16	NW 6th Ave/NW Norwood St- SR 14 Ramps	Roundabout
17	NW Lacamas Ln/NW Lake Rd	TWSC
18	NW Sierra St/NW Lake Rd	TWSC (Future Roundabout)
19	NW Leadbetter Dr/NW Lake Rd	TWSC
20	NW Parker St/NW Lake Rd	Signalized
21	NW Friberg-Strunk St/NW Lake Rd-SE 1St St	Signalized
22	NW Parker St/NW Leadbetter Dr	TWSC
23	NW Parker St/NE 38th Avenue	Signalized
24	SE 283rd Ave/SE Nourse Rd	TWSC
25	SE 283rd Ave/SE 23rd St	TWSC
26	SE 283rd Ave/NE Woodburn Dr	TWSC
27	SE Crown Rd/NE 3rd St	Signalized

ANALYSIS METHODOLOGY

All stop-control and signalized intersection operations analysis will be completed using Synchro software and the *Highway Capacity Manual, 7th Edition* methodologies. Roundabout intersection operations analysis will be completed using Sidra software.

MOBILITY STANDARDS

The applicable City, WSDOT and Clark County mobility standards are described below and summarized in Table 5.

City of Camas

Camas uses level of service (LOS) for traffic operations. Minor and local streets must meet LOS C standards, and collector and arterial streets must meet LOS D standards. If site traffic contributes to traffic operations that exceed the LOS D standard, then the TIS recommendations need to include mitigations or roadways improvements.

SR 500

Chapter 320 of WSDOT's *Design Manual* covers traffic impact analysis on state facilities.

The Urban non-National Highway System facilities (non-HSS standard) established by the Southwest Washington RTC for Clark County is LOS E and applies to Study Intersections 7 through 13[6]. The Rural non-HSS standard is LOS C, which based on WSDOT mapping applies to intersection 5. WSDOT also specifies a LOS threshold D for urban non-NHS facilities, which is applicable to Study Intersection 16.

Clark County

Clark County Code (CCC) 40.350.020.G specifies that the LOS standard for unsignalized intersections of regional significance in the unincorporated county is LOS E if warrants are not met. If warrants are met, unsignalized intersections of regional significance shall be LOS D or better. This standard is applicable to Study Intersections 4, 6, 24 and 25.

Table 5. Applicable Mobility Standards

ID	Potential Study Intersection	Traffic Control	Jurisdictional Authority	Facility Designation	Operating Requirement
1	NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd	Signalized	City of Camas	City Arterial	LOS D
2	NE Camas Medows Dr/ NE Goodwin Rd	TWSC	City of Camas	City Arterial	LOS D
3	NE Ingle Rd/NE 28th St-NE Goodwin Rd	Signalized	City of Camas	City Arterial	LOS D
4	NE 232nd Ave/NE 28th St	TWSC	Clark County	Rural Major Collector	LOS E

[6] Regional Transportation Planning Organizations (RTPOs) have the authority to set LOS thresholds for non-Highways of Statewide Significance (HSS). The Urban non-HSS standard established by RTC for Clark County is LOS E, and the Rural non-HSS standard is LOS C. https://geo.wa.gov/datasets/WSDOT::wsdot-roadway-data-urban-rural/

ID	Potential Study Intersection	Traffic Control	Jurisdictional Authority	Facility Designation	Operating Requirement
5	SR 500/NE 28th St	TWSC	RTC[1]	Rural non-HSS	LOS C
6	NE 232nd Ave/North Shore Blvd-NE Leadbetter Rd	TWSC	City of Camas	City Arterial	LOS D
7	SR 500/NE Everett Dr	TWSC (Future Roundabout)	RTC[1]	Urban non-HSS	LOS E
8	SR 500/SE Leadbetter Rd	TWSC	RTC[1]	Urban non-HSS	LOS E
9	SR 500/NE 43rd Ave	Signalized	RTC[1]	Urban non-HSS	LOS E
10	SR 500/NW Lake Rd	Roundabout	RTC[1]	Urban non-HSS	LOS E
11	SR 500/NE 17th Ave	TWSC	RTC[1]	Urban non-HSS	LOS E
12	SR 500/NE 15th Ave	TWSC	RTC[1]	Urban non-HSS	LOS E
13	SR 500/NE 14th Ave	TWSC	RTC[1]	Urban non-HSS	LOS E
14	NE Dallas St/NW 6th Ave	TWSC	City of Camas	City Arterial	LOS D
15	Division St/NW 6th Ave	TWSC	City of Camas	City Arterial	LOS D
16	NW 6th Ave/NW Norwood St-SR 14 Ramps	Roundabout	WSDOT	Urban HSS	LOS D
17	NW Lacamas Ln/NW Lake Rd	TWSC	City of Camas	City Arterial	LOS D
18	NW Sierra St/ NW Lake Rd	TWSC (Future Roundabout)	City of Camas	City Arterial	LOS D
19	NW Leadbetter Dr/NW Lake Rd	TWSC	City of Camas	City Arterial	LOS D
20	NW Parker St/NW Lake Rd	Signalized	City of Camas	City Arterial	LOS D
21	NW Friberg-Strunk St/ NW Lake Rd-SE 1St St	Signalized	City of Camas	City Arterial	LOS D
22	NW Parker St/NW Leadbetter Dr	TWSC	City of Camas	City Arterial	LOS D
23	NW Parker St/NE 38th Ave	Signalized	City of Camas	City Arterial	LOS D
24	SE 283rd Ave/SE Nourse Rd	TWSC	Clark County	Urban Major Collector	LOS E
25	SE 283rd Ave/SE 23rd St	TWSC	Clark County	Urban Collector	LOS E
26	SE 283rd Ave/NE Woodburn Dr	TWSC	City of Camas	City Arterial	LOS D
27	SE Crown Rd/NE 3rd St	Signalized	City of Camas	City Arterial	LOS D

TWSC = Two-way Stop Control

[1]RTPOs have the authority to set LOS thresholds for non-Highways of Statewide Significance (HSS). The Urban non-HSS standard established by RTC for Clark County is LOS E.

STUDY TIME PERIODS

We propose to analyze the one-hour peak within the weekday morning (7-9 AM) and weekday PM (4-6 PM) commuter peak periods. The following analysis scenarios will be analyzed assuming project buildout by the year 2030:

- Year 2025 existing traffic conditions – weekday AM and weekday PM peak hours.
- Year 2030 background traffic conditions (including background growth and identified in-process developments, but not including any site-generated traffic volumes related to the proposed development) – weekday AM and weekday PM peak hours.
- Year 2030 total traffic conditions (including site-generated traffic volumes to the proposed development) – weekday AM and weekday PM peak hours.

A year 2027 interim access scenario may also be considered assuming North Shore Boulevard is not yet built-out to SR 500. This analysis could inform the number of single family homes to be constructed before improvements are triggered at key study intersections such as NE 232nd Avenue/NE Leadbetter Road and SR 500/Leadbetter Road.

IN-PROCESS DEVELOPMENTS AND BACKGROUND GROWTH RATES

Based on previous development projects in Camas, we propose to assume a two percent annual background growth rate for Clark County's intersections (Study Intersections 4, 24 and 25), as well as along SR 500 north of NE Everett Drive (Study Intersection 5). The remaining study intersections will not have a growth rate applied but will have in-process development trips added.

The following are known in-process developments for which site trips for each will be included at all impacted study intersections as background vehicular trips:

- North Shore Village, located east of NE 252nd Avenue and south of SE 3rd Street;
- Camas Woods and Camas Woods 2, located east of SR 500 between Everrett Drive and NE 8th Street;
- Camas Heights, located on the north side of NE 28th Street and west of NE 232nd Avenue;
- Green Mountain Estates, located on the north of NE 28th Street east of NE 222nd Avenue;
- Green Mountain Planned Residential Development (PRD), located east of NE Ingle Road north of NE 28th Street;
- Lacamas Hills, located on the north side of Leadbetter Road west of Everett Road (formerly known as CJ Dens East Subdivision); and,
- Monte Verde Subdivision, located on the south side of NE 28th Street west of NE 232nd Avenue.

We ask that City, County, and WSDOT staff please confirm the list above as well as identify and provide any additional relevant in-process developments to be included in the background traffic conditions analysis.

As the planned North Shore Boulevard extension to SR 500 was not explicitly accounted for in the above studies, a limited re-route of in-process trips onto North Shore Boulevard will be considered and documented in the TIS analysis.

BACKGROUND TRANSPORTATION IMPROVEMENTS

As noted in Tables 4 and 5, there are two potential study intersections slated for near-term reconstruction as single lane roundabouts. Considering the 2030 buildout year, the TIS will assume these roundabout improvements are in-place. These locations are:

- SR 500/NE Everett Drive (Private development delivered)
- NW Sierra Street/NW Lake Road (City delivered)

We ask that the City, County, and WSDOT staff please identify and provide any additional funded transportation improvement projects that should be assumed in place for the background traffic conditions analysis.

CITY OF VANCOUVER PROPORTIONAL SHARE INTERSECTIONS

We will track site-generated trips through impacted City of Vancouver proportional share intersections by land use type (residential, commercial, and employment) and summarize those findings in tabular form as part of the final report.

NEXT STEPS

We request that City, County, and WSDOT staff please review and provide direction on the potential study intersections, intersection analysis periods, trip generation estimates and trip distribution pattern in particular. Please contact us if you have any questions as you review this material.

Appendix B : WSDOT Crash Data

KAI Intersection #	KAI Assigned	JURISDICTION	COUNTY	CITY	PRIMARY TRAFFICWAY	MILEPOST	BLOCK NUMBER	INTERSECTING TRAFFICWAY	INTERSECTING COUNTY ROAD MP	DIST FROM REF POINT	MI or FT	COMP DIR FROM REF POINT	REFERENCE POINT NAME	SR ONLY HISTORY / SUSPENSE IND	REPORT NUMBER	DATE	TIME	MOST SEVERE INJURY TYPE	KAI - Crash Severity	# INJ	# FAT	# VEH	# PEDS	# BIKES	VEHICLE 1 TYPE	VEHICLE 2 TYPE	JUNCTION RELATIONSHIP	WEATHER	ROADWAY SURFACE CONDITION	LIGHTING CONDITION	KAI - Collision Type
1	NW Friberg-Strunk St/NE 13th St-NE Goodwin Rd	City Street	Clark	Camas	NE GOODWIN RD		7801	NW FRIBERG STRUNK ST						No	EC42777	05/02/2022	15:00	No Apparent Injury	PDO	0	0	1	0	0	Passenger Car		At Intersection and Related	Clear	Wet	Daylight	Fixed Object
3	NE Ingle Rd/ NE 28th St-NE Goodwin Rd	City Street	Clark	Camas	NE GOODWIN RD		2456	NE INGLE RD						No	EE09429	10/13/2023	13:05	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cl	Dry	Daylight	Angle
3	NE Ingle Rd/ NE 28th St-NE Goodwin Rd	City Street	Clark	Camas	NE GOODWIN RD		2456	NE INGLE RD						No	EB31078	05/10/2021	08:30	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Truck (Flatbad,Van,etc)	At Intersection and Related	Clear	Dry	Daylight	Angle
3	NE Ingle Rd/ NE 28th St-NE Goodwin Rd	City Street	Clark	Camas	NE GOODWIN RD		2456	NE INGLE RD						No	EF36498	11/01/2024	19:53	Suspected Minor Injury	Injury	1	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Raining	Wet	Dark-Street Lights On	Angle
3	NE Ingle Rd/ NE 28th St-NE Goodwin Rd	City Street	Clark	Camas	NE GOODWIN RD		2456	NE INGLE RD						No	EC98250	10/28/2022	15:07	Suspected Minor Injury	Injury	1	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Raining	Wet	Daylight	Angle
3	NE Ingle Rd/ NE 28th St-NE Goodwin Rd	City Street	Clark	Camas	NE INGLE RD		2801	NE GOODWIN RD						No	EC42752	05/02/2022	17:00	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Clear	Wet	Daylight	Angle
3	NE Ingle Rd/ NE 28th St-NE Goodwin Rd	City Street	Clark	Camas	NE GOODWIN RD		2456	NE INGLE RD						No	ED96903	09/05/2023	11:15	Suspected Minor Injury	Injury	1	0	1	0	1	Passenger Car		At Intersection and Related	Clear	Dry	Daylight	Ped/Bike
3	NE Ingle Rd/ NE 28th St-NE Goodwin Rd	City Street	Clark	Camas	NE GOODWIN RD		0	NE INGLE RD						No	EA18227	02/18/2020	15:27	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cl	Dry	Daylight	Turning
4	NE 232nd Ave/NE 28th St	County Road	Clark		93350	3.090		30950	2.890					No	EB42601	06/15/2021	18:31	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Raining	Wet	Daylight	Angle
4	NE 232nd Ave/NE 28th St	County Road	Clark		93350	3.090		30950	2.890					No	EB53840	07/20/2021	15:10	Suspected Minor Injury	Injury	3	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear	Dry	Daylight	Angle
4	NE 232nd Ave/NE 28th St	County Road	Clark		93350	3.090		30950	2.890					No	EE74231	02/18/2024	15:52	Unknown	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Overcast	Unknown	Other	Angle
4	NE 232nd Ave/NE 28th St	County Road	Clark		93350	3.090		30950	2.890					No	EB69640	09/01/2021	11:59	No Apparent Injury	PDO	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		At Intersection and Related	Clear	Dry	Daylight	Fixed Object
4	NE 232nd Ave/NE 28th St	County Road	Clark		30950	2.890		93350	3.090					No	EE81852	05/28/2024	14:30	No Apparent Injury	PDO	0	0	1	0	0	Truck & Trailer		At Intersection and Related	Overcast	Dry	Daylight	Fixed Object
4	NE 232nd Ave/NE 28th St	County Road	Clark		93350	3.090		30950	2.890					No	EB10619	02/28/2021	16:35	No Apparent Injury	PDO	0	0	1	0	1	Pickup,Panel Truck or Vanette under 10,000 lb		At Intersection and Related	Clear	Dry	Daylight	Ped/Bike
4	NE 232nd Ave/NE 28th St	County Road	Clark		93350	3.090								No	EA84265	11/24/2020	15:25	Possible Injury	Injury	2	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	Driveway Related but Not at Driveway	Overcast	Dry	Daylight	Rear End
4	NE 232nd Ave/NE 28th St	County Road	Clark		93350	3.090		30950	2.890					No	ED64349	05/21/2023	16:55	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Overcast	Dry	Daylight	Turning
5	SR 500/NE 28th St	State Route	Clark		500	13.84								No	EB87073	11/06/2021	15:55	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Passenger Car	At Driveway within Major Intersection	Raining	Wet	Daylight	Angle
5	SR 500/NE 28th St	State Route	Clark		500	13.84								No	ED77436	07/04/2023	16:05	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cl	Dry	Daylight	Angle
5	SR 500/NE 28th St	State Route	Clark		500	13.84								No	EF31345	10/28/2024	07:59	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Driveway within Major Intersection	Overcast	Wet	Daylight	Turning
6	NE 232nd Ave/North Shore Blvd-NE Leadbetter Rd	City Street	Clark	Camas	NE 232ND AVE		23200	NORTH SHORE BLVD						No	EB92001	11/16/2021	22:54	Unknown	PDO	0	0	1	0	0	Passenger Car		At Intersection and Not Related	Clear	Dry	Dark-Street Lights On	Fixed Object
7	SR 500/NE Everett Dr	State Route	Clark	Camas	500	16.95								No	EA37248	05/30/2020	14:02	No Apparent Injury	PDO	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		At Intersection and Not Related	Overcast	Dry	Daylight	Fixed Object
7	SR 500/NE Everett Dr	State Route	Clark	Camas	500	16.94								No	EC39091	04/12/2022	16:39	No Apparent Injury	PDO	0	0	1	0	0	Passenger Car		At Intersection and Not Related	Overcast	Wet	Daylight	Fixed Object
7	SR 500/NE Everett Dr	State Route	Clark	Camas	500	16.94								No	EF48090	12/18/2024	12:35	Suspected Minor Injury	Injury	2	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Overcast	Wet	Daylight	Angle
8	SR 500/SE Leadbetter Rd	State Route	Clark	Camas	500	17.26								No	EC94672	10/17/2022	11:32	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cl	Dry	Daylight	Rear End
8	SR 500/SE Leadbetter Rd	State Route	Clark	Camas	500	17.26								No	EE99646	07/23/2024	14:39	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cl	Dry	Daylight	Angle
9	SR 500/NE 43rd Ave	State Route	Clark	Camas	500	17.33								No	EC02446	12/14/2021	08:40	No Apparent Injury	PDO	0	0	1	0	0	Passenger Car		At Intersection and Related	Clear	Ice	Daylight	Turning
9	SR 500/NE 43rd Ave	State Route	Clark	Camas	500	17.33								No	EC13028	01/11/2022	08:25	Suspected Minor Injury	Injury	3	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Raining	Wet	Daylight	Turning
9	SR 500/NE 43rd Ave	State Route	Clark	Camas	500	17.33								No	EF15278	09/13/2024	22:45	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cl	Dry	Dark-Street Lights On	Rear End
10	SR 500/NW Lake Rd	State Route	Clark	Camas	500	17.94								No	EB68144	09/10/2021	22:38	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	Circulating Roundabout	Clear	Dry	Dark-Street Lights On	Side Swipe
10	SR 500/NW Lake Rd	State Route	Clark	Camas	500	17.95								No	ED77972	07/09/2023	18:23	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	Entering Roundabout	Clear or Partly Cl	Dry	Daylight	Angle
10	SR 500/NW Lake Rd	State Route	Clark	Camas	500	17.96								No	EE12985	10/23/2023	17:36	Possible Injury	Injury	1	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	Entering Roundabout	Clear	Dry	Daylight	Rear End
10	SR 500/NW Lake Rd	State Route	Clark	Camas	500	17.95								No	EE59686	03/10/2024	18:46	No Apparent Injury	PDO	0	0	1	0	0	Passenger Car		Circulating Roundabout	Raining	Wet	Dusk	Fixed Object
10	SR 500/NW Lake Rd	State Route	Clark	Camas	500	17.94								No	EE70253	03/21/2024	23:58	Suspected Minor Injury	Injury	1	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		Circulating Roundabout	Clear	Dry	Dark-Street Lights On	Fixed Object
10	SR 500/NW Lake Rd	State Route	Clark	Camas	500	17.95								No	EE76103	05/11/2024	14:27	Possible Injury	Injury	1	0	2	0	0	Passenger Car	Passenger Car	Entering Roundabout	Clear	Dry	Daylight	Angle
10	SR 500/NW Lake Rd	State Route	Clark	Camas	500	17.95								No	EF44810	12/10/2024	18:11	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	Entering Roundabout	Clear	Dry	Dark-Street Lights On	Angle
10	SR 500/NW Lake Rd	State Route	Clark	Camas	500	17.95								No	EF45423	12/12/2024	18:14	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	Entering Roundabout	Raining	Wet	Dark-Street Lights On	Angle
10	SR 500/NW Lake Rd	State Route	Clark	Camas	500	17.90								No	EA87306	12/07/2020	08:30	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Not Related	Clear	Dry	Daylight	Rear End
12	SR 500/NE 15th Ave	City Street	Clark	Camas	NE 15TH AVE		500			43	F	E	NE EVERET	No	EA41160	06/17/2020	18:45	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Driveway	Clear or Partly Cl	Dry	Daylight	Turning
12	SR 500/NE 15th Ave	State Route	Clark	Camas	500	18.75								No	EE31626	11/07/2023	16:17	Suspected Minor Injury	Injury	1	0	2	0	0	Passenger Car	Passenger Car	At Intersection and Related	Overcast	Wet	Daylight	Angle
13	SR 500/NE 14th Ave	State Route	Clark	Camas	500	18.80								No	EB52359	07/27/2021	16:59	No Apparent Injury	PDO	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		At Intersection and Related	Clear	Dry	Daylight	Fixed Object
13	SR 500/NE 14th Ave	State Route	Clark	Camas	500	18.80								No	EB68471	09/16/2021	16:22	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	School Bus	At Intersection and Related	Clear or Partly Cl	Dry	Daylight	Angle
13	SR 500/NE 14th Ave	State Route	Clark	Camas	500	18.80								No	EC10091	01/06/2022	17:26	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cl	Wet	Dark-Street Lights On	Rear End
13	SR 500/NE 14th Ave	State Route	Clark	Camas	500	18.80								No	EC28645	03/01/2022	05:30	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Passenger Car	At Intersection and Related	Raining	Wet	Dark-Street Lights On	Turning
14	NE Dallas St/NW 6th Ave	City Street	Clark	Camas	NE DALLAS ST		577	NE 6TH AVE						No	EF43045	12/05/2024	19:31	Possible Injury	Injury	1	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cl	Dry	Dark-Street Lights On	Angle
14	NE Dallas St/NW 6th Ave	City Street	Clark	Camas	NE 6TH AVE		498	NE DALLAS ST						No	EB07902	02/19/2021	15:13	Possible Injury	Injury	1	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Raining	Wet	Daylight	Angle
14	NE Dallas St/NW 6th Ave	City Street	Clark	Camas	NE 6TH AVE		498	NE DALLAS ST						No	EC33821	03/30/2022	18:09	Possible Injury	Injury	1	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cl	Dry	Daylight	Angle
14	NE Dallas St/NW 6th Ave	City Street	Clark	Camas	NE 6TH AVE		498	NE DALLAS ST						No	ED65497	05/24/2023	13:02	Suspected Minor Injury	Injury	1	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cl	Dry	Daylight	Angle
14	NE Dallas St/NW 6th Ave	City Street	Clark	Camas	NE 6TH AVE		0	NE DALLAS ST						No	EA00588	01/05/2020	16:59	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Overcast	Wet	Dusk	Angle
14	NE Dallas St/NW 6th Ave	City Street	Clark	Camas	NE 6TH AVE		498	NE DALLAS ST						No	EE74450	05/05/2024	13:00	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Raining	Wet	Daylight	Angle
14	NE Dallas St/NW 6th Ave	City Street	Clark	Camas	NE 6TH AVE		498	NE DALLAS ST						No	EC60125	06/29/2022	12:42	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear	Dry	Daylight	Angle
14	NE Dallas St/NW 6th Ave	City Street	Clark	Camas	NE 6TH AVE		498	NE DALLAS ST						No	EA95029	01/01/2021	18:07	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Raining	Wet	Dark-Street Lights On	Angle
14	NE Dallas St/NW 6th Ave	City Street	Clark	Camas	NE 3RD LOOP		1800			108	F	S	NE 3RD AV	No	ED94704	08/30/2023	16:35	Possible Injury	Injury	1	0	1	0	0	Passenger Car		Intersection Related but Not at Intersection	Clear	Dry	Daylight	Fixed Object
14	NE Dallas St/NW 6th Ave	City Street	Clark	Camas	NE 6TH AVE		498	NE DALLAS ST						No	EE65461	03/27/2024	13:15	No Apparent Injury	PDO	0	0	1	0	0	Truck & Trailer		At Intersection and Related	Clear	Dry	Daylight	Fixed Object
15	Division St/NW 6th Ave	City Street	Clark	Camas	DIVISION ST		201	NW 6TH AVE						No	EF44133	12/09/2024	17:28	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Clear	Dry	Dark-Street Lights On	Rear-End
15	Division St/NW 6th Ave	City Street	Clark	Camas	NW 6TH AVE		141	DIVISION ST						No	EE26307	12/03/2023	08:07	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Raining	Wet	Daylight	Rear-End
15	Division St/NW 6th Ave	City Street	Clark	Camas	NW 6TH AVE		141	DIVISION ST						No	ED88447	08/10/2023	15:58	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cl	Dry	Daylight	Turning
15	Division St/NW 6th Ave	City Street	Clark	Camas	NW 6TH AVE		141	DIVISION ST						No	EB48003	07/13/2021	13:34	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cl	Dry	Daylight	Angle
15	Division St/NW 6th Ave	City Street	Clark	Camas	NW 6TH AVE		141	DIVISION ST						No	EB74074	10/02/2021	08:00	Possible Injury	Injury	1	0	1	0	0	Passenger Car		At Intersection and Related	Overcast	Dry	Daylight	Fixed Object
15	Division St/NW 6th Ave	City Street	Clark	Camas	DIVISION ST		201	NE 6TH AVE						No	ED76877	07/02/2023	12:19	Suspected Minor Injury	Injury	1	0	1	0	1	Pickup,Panel Truck or Vanette under 10,000 lb		At Intersection and Related	Clear	Dry	Daylight	Ped/Bike
16	NW 6th Ave/NW Norwood St- SR 14 Ramps	State Route	Clark	Camas	014LX01240	0.00								No	EC60826	04/10/2022	13:01	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	Entering Roundabout	Raining	Wet	Daylight	Angle
16	NW 6th Ave/NW Norwood St- SR 14 Ramps	State Route	Clark	Camas	014LX01240	0.05								No	EF39870	11/25/2024	15:26	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Driveway	Overcast	Wet	Daylight	Angle
16	NW 6th Ave/NW Norwood St- SR 14 Ramps	State Route	Clark	Camas	014LX01240	0.05								No	ED57987	05/05/2023	20:57	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Driveway	Raining	Wet	Dark-Street Lights On	Angle
16	NW 6th Ave/NW Norwood St- SR 14 Ramps	State Route	Clark	Camas	014LX01240	0.00								No	EC22917	02/12/2022	22:53	No Apparent Injury	PDO	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		Circulating Roundabout	Clear	Dry	Dark-Street Lights On	Fixed Object
16	NW 6th Ave/NW Norwood St- SR 14 Ramps	State Route	Clark	Camas	014LX01240	0.01								No	ED72453	06/20/2023	15:23	No Apparent Injury	PDO	0	0	1	0	0	Passenger Car		Entering Roundabout	Overcast	Dry	Daylight	Fixed Object
16	NW 6th Ave/NW Norwood St- SR 14 Ramps	State Route	Clark	Camas	014LX01240	0.02								No	EE48958	02/07/2024	08:23	No Apparent Injury	PDO	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		Exiting Roundabout	Overcast	Wet	Daylight	Fixed Object
16	NW 6th Ave/NW Norwood St- SR 14 Ramps	State Route	Clark	Camas	014LX01240	0.01								No	EA50351	07/12/2020	16:43	No Apparent Injury	PDO	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		Exiting Roundabout	Clear	Dry	Daylight	Other
16	NW 6th Ave/NW Norwood St- SR 14 Ramps	State Route	Clark	Camas	014P101203	0.45								No	EE24998	11/28/2023	11:02	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	Roundabout Related but not at Roundabout	Clear	Dry	Daylight	Rear-End
17	NW Lacamas Ln/NW Lake Rd	City Street	Clark	Camas	NW LAKE RD		1299	NW LACAMAS LN						No	EB29220	05/10/2021	19:03	No Apparent Injury	PDO	0	0	1	0	0	Passenger Car		At Intersection and Related	Clear	Dry	Daylight	Fixed Object
18	NW Sierra St/NW Lake Rd	City Street	Clark	Camas	NW LAKE RD		4300	NW SIERRA ST						No	EC06334	12/27/2021	21:10	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Passenger Car	At Intersection and Related	Snowing	Ice	Dark-Street Lights On	Angle
19	NW Leadbetter Dr/NW Lake Rd	City Street	Clark	Camas	NW LAKE RD		2531	NW LEADBETTER BLVD						No	EE76102	05/10/2024	13:00	Suspected Minor Injury	Injury	1	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Clear or Partly Cl	Dry	Daylight	Angle
20	NW Parker St/NW Lake Rd	City Street	Clark	Camas	NW LAKE RD		3716	NW PARKER ST						No	EB35916	06/03/2021	10:12	Possible Injury	Injury	1	0	3	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cl	Dry	Daylight	Angle
20	NW Parker St/NW Lake Rd	City Street	Clark	Camas	NW LAKE RD		3716	NW PARKER ST						No	EC17085	01/26/2022	14:40	Possible Injury	Injury	1	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear	Dry	Daylight	Rear End
20	NW Parker St/NW Lake Rd	City Street	Clark	Camas	NW LAKE RD		3716	NW PARKER ST						No	EC85934	09/21/2022	08:53	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Clear or Partly Cl	Dry	Daylight	Rear End
20	NW Parker St/NW Lake Rd	City Street	Clark	Camas	NW LAKE RD		3600			80	F	E	NW PARKE	No	EC92262	10/10/2022	11:26	No Apparent Injury	PDO	0	0	3	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	Intersection Related but Not at Intersection	Clear	Dry	Daylight	Rear End
20	NW Parker St/NW Lake Rd	City Street	Clark	Camas	NW LAKE RD		3716	NW PARKER ST						No	ED14248	11/16/2022	16:55	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cl	Dry	Dark-Street Lights On	Rear End
20	NW Parker St/NW Lake Rd	City Street	Clark	Camas	NW PARKER ST			NW LAKE RD						No	EE22702	11/16/2023	09:50	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cl	Dry	Daylight	Rear End
20	NW Parker St/NW Lake Rd	City Street	Clark	Camas	NW LAKE RD		3716	NW PARKER ST						No	EF15111	09/08/2024	20:40	Suspected Minor Injury	Injury	5	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cl	Dry	Dark-Street Lights On	Turning
20	NW Parker St/NW Lake Rd	City Street	Clark	Camas	NW PARKER ST			NW LAKE RD						No	EF18541	09/22/2024	16:28	No Apparent Injury	PDO	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Clear or Partly Cl	Dry	Daylight	Side Swipe
21	NW Friberg-Strunk St/NW Lake Rd-SE 1St St	City Street	Clark	Vancou	SE 1ST ST		20199	NW FRIBERG STRUNK ST						No	ED49006	04/04/2023	14:54	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Not Related	Overcast	Dry	Daylight	Rear-End
21	NW Friberg-Strunk St/NW Lake Rd-SE 1St St	City Street	Clark	Vancou	SE 1ST ST		0	NW FRIBERG STRUNK ST						No	EA42305	06/22/2020	17:38	Suspected Minor Injury	Injury	1	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Clear or Partly Cl	Dry	Daylight	Turning
23	NW Parker St/NE 38th Avenue	City Street	Clark	Camas	NW 38TH AVE			NW PARKER ST						No	EE50958	02/15/2024	18:38	No Apparent Injury	PDO	0	0	3	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Overcast	Dry	Dusk	Rear-End
23	NW Parker St/NE 38th Avenue	City Street	Clark	Camas	NW PARKER ST		4301	NW 38TH AVE						No	ED25221	01/15/2023	23:27	No Apparent Injury	PDO	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		At Intersection and Related	Clear	Wet	Dark-Street Lights On	Fixed Object
23	NW Parker St/NE 38th Avenue	City Street	Clark	Camas	NW 38TH AVE			NW PARKER ST						No	ED21294	12/31/2022	14:54	Possible Injury	Injury	2	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Overcast	Wet	Daylight	Turning
24	SE 283rd Ave/SE Nourse Rd	County Road	Clark		30860	1.21								No	EB07239	02/13/2021	00:10	No Apparent Injury	PDO	0	0	1	0	0	Truck (Flatbad,Van,etc)		Intersection Related but Not at Intersection	Snowing	Snow/Slush	Dark-No Street Lights	Other
24	SE 283rd Ave/SE Nourse Rd	County Road	Clark		30860	1.23		31690	1.77					No	ED55602	03/29/2023	13:23	No Apparent Injury	PDO	0	0	2	0	0	Passenger Car	Passenger Car	At Intersection and Related	Clear	Dry	Daylight	Turning
25	SE 283rd Ave/SE 23rd St	City Street	Clark	Camas	SE 283RD AVE	0		SE 23RD ST						No	EA13156	02/07/2020	20:53	No Apparent Injury	PDO	0	0	1	0	0	Passenger Car		At Intersection and Not Related	Clear	Dry	Dark-Street Lights On	Fixed Object
25	SE 283rd Ave/SE 23rd St	City Street	Clark	Camas	SE 23RD ST	28475		SE 283RD AVE						No	EE22703	11/10/2023	16:33	Suspected Minor Injury	Injury	1	0	1	0	0	Motorcycle		At Intersection and Related	Overcast	Dry	Daylight	Fixed Object
26	SE 283rd Ave/NE Woodburn Dr	City Street	Clark	Camas	SE 283RD AVE		2301	NE WOODBURN DR						No	EA69233	10/04/2020	00:18	Suspected Minor Injury

FIRST COLLISION TYPE / OBJECT STRUCK	VEHICLE 1 ACTION	VEHICLE 2 ACTION	VEHICLE 1 COMPASS DIRECTION FROM	VEHICLE 1 COMPASS DIRECTION TO	VEHICLE 2 COMPASS DIRECTION FROM	VEHICLE 2 COMPASS DIRECTION TO	MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2)	CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2)	DRIVER CONTRIBUTING CIRCUMSTANCE 3	CONTRIBUTING CIRCUMSTANCE 1 (UNIT 1)	BICYCLIST CONTRIBUTING CIRCUMSTANCE 2 (UNIT 1)	CONTRIBUTING CIRCUMSTANCE 3 (UNIT 1)	BICYCLIST CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2)	CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2)	CONTRIBUTING CIRCUMSTANCE 3 (UNIT 2)	FIRST IMPACT LOCATION (City, County & Misc Trafficways - 2010 forward)	WA STATE PLANE SOUTH - X 2010 - FORWARD	WA STATE PLANE SOUTH - Y 2010 - FORWARD
Metal Sign Post	Making Left Turn		East	West			Operating Defective Equipment	Overcorrecting / Oversteering											Past the Outside Shoulder of Primary Trafficway	1137599.35	115294.86
Entering at angle	Making Left Turn	Going Straight Ahead	North	East	East	West	Disregard Traffic Sign and Signals			None									Lane of Primary Trafficway	1140562.72	118372.88
Entering at angle	Making Left Turn	Going Straight Ahead	North	East	East	West	Did Not Grant RW to Vehicle			None									Lane of Primary Trafficway	1140562.72	118372.88
Entering at angle	Making Right Turn	Going Straight Ahead	Northwest	Southwest	Northeast	Southwest	Did Not Grant RW to Vehicle			None									Intersecting Trafficway	1140562.72	118372.88
Entering at angle	Making Left Turn	Going Straight Ahead	Northwest	Northeast	Northeast	Southwest	Did Not Grant RW to Vehicle			None									Lane of Primary Trafficway	1140562.72	118372.88
Entering at angle	Making Left Turn	Going Straight Ahead	Northwest	Northeast	Northeast	Southwest	Unknown Distraction			None									Lane of Primary Trafficway	1140562.72	118372.88
Vehicle Strikes Pedalcyclist	Making Left Turn		South	West			Did Not Grant R/W to Non Motorist									None			Lane of Primary Trafficway	1140562.72	118372.88
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West	Distractions Outside Vehicle			None									Lane of Primary Trafficway	1140563.25	118372.87
Entering at angle	Making Right Turn	Stopped at Signal or Stop Sign	West	South	South	West	Exceeding Reas. Safe Speed			None									Intersecting Trafficway	1145581.94	119082.99
Entering at angle	Making Left Turn	Going Straight Ahead	South	West	East	West	Did Not Grant RW to Vehicle	Unknown Distraction		None									Lane of Primary Trafficway	1145581.94	119082.99
Entering at angle	Going Straight Ahead	Making Left Turn	West	East	South	Northwest	None			Unknown Distraction									Lane of Primary Trafficway	1145581.94	119082.99
Utility Pole	Going Straight Ahead		East	West			Other Contributing Circ Not Listed												Past the Outside Shoulder of Primary Trafficway	1145581.94	119082.99
Utility Pole	Making Right Turn		West	South			None												Past the Outside Shoulder of Primary Trafficway	1145581.94	119082.99
Vehicle Strikes Pedalcyclist	Going Straight Ahead		East	West			None									Improper Turn/Merge			Lane of Primary Trafficway	1145581.94	119082.99
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	East	West	Vehicle Stopped	Vehicle Stopped	Follow Too Closely			None									Lane of Primary Trafficway	1145581.94	119082.99
From same direction - one right turn - one straight	Going Straight Ahead	Making Right Turn	West	East	West	South	Distracted by Adjusting Vehicle Cntrls			None									Lane of Primary Trafficway	1145581.94	119082.99
Entering at angle	Starting in Traffic Lane	Going Straight Ahead	North	South	East	West	Did Not Grant RW to Vehicle			None									Lane 1 Increasing Milepost	1148221.08	119048
Entering at angle	Starting in Traffic Lane	Making Left Turn	West	East	West	North	Improper Turn/Merge			None									Lane 1 Increasing Milepost	1148221.08	119048
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	North	East	South	North	Did Not Grant RW to Vehicle			None									Lane 1 Increasing Milepost	1148224.12	119052.38
Linear Curb	Other*		North	West			Operating Recklessly or Aggressively												Outside Shoulder of Primary Trafficway	1145533.9	114197.49
Street Light Pole or Base	Going Straight Ahead		South	North			Unknown Distraction												Past Right Shoulder Decreasing Milepost	1153096.05	108634.08
Roadway Ditch	Negotiating a Curve		North	South			Under Influence of Alcohol												Intersecting Road Decreasing Milepost	1153134.84	108693.07
Entering at angle	Making Left Turn	Going Straight Ahead	Southeast	Southwest	Southwest	Northeast	Did Not Grant RW to Vehicle			None									Lane 1 Decreasing Milepost	1153135.32	108693.65
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	Northwest	Southeast	Vehicle Stopped	Vehicle Stopped	Other Distractions			None									Intersecting Road Increasing Milepost	1152153.03	107393.23
Entering at angle	Making Left Turn	Going Straight Ahead	West	North	North	South	Did Not Grant RW to Vehicle			None									Lane 1 Increasing Milepost	1152153.03	107393.23
Traffic Island	Making Left Turn		North	East			None												Decreasing Other Location	1152219.53	107017.48
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	North	East	South	North	Did Not Grant RW to Vehicle			None									Lane 1 Decreasing Milepost	1152219.53	107017.48
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	North	South	North	Vehicle Stopped	Other Distractions			None									Lane 1 Increasing Milepost	1152219.53	107017.48
From same direction - both going straight - both moving - sideswipe	Negotiating a Curve	Negotiating a Curve	West	North	South	North	Improper Turn/Merge			None									Lane 1 Decreasing Milepost	1152480.74	104025.76
Entering at angle	Making Right Turn	Going Straight Ahead	South	Southeast	South	South	Improper Turn/Merge	Other Distractions		None									Lane 1 Increasing Milepost	1152377.01	103948.01
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	North	North	North	Vehicle Stopped	Follow Too Closely			None									Lane 1 Decreasing Milepost	1152423.25	103881.17
Tree or Stump (stationary)	Negotiating a Curve		South	North			None												Past Right Shoulder Decreasing Milepost	1152504.41	103935.94
Metal Sign Post	Other*		South	Northwest			Under Influence of Alcohol												Decreasing Other Location	1152437.15	104024.8
Entering at angle	Merging (Entering Traffic)	Going Straight Ahead	North	Southwest	North	Southwest	Did Not Grant RW to Vehicle			None									Lane 1 Increasing Milepost	1152387.86	103953.1
Entering at angle	Going Straight Ahead	Going Straight Ahead	South	North	West	East	Did Not Grant RW to Vehicle			None									Lane 2 Increasing Milepost	1152447.23	103890.01
Entering at angle	Going Straight Ahead	Other*	South	North	Northeast	West	Did Not Grant RW to Vehicle			None									Lane 2 Decreasing Milepost	1152470.14	103890.13
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	South	North	Vehicle Stopped	Vehicle Stopped	Unknown Distraction			None									Lane 1 Decreasing Milepost	1152315.28	104189.31
From same direction - one left turn - one straight	Overtaking and Passing	Making Left Turn	East	West	East	South	Improper Passing			Improper Turn/Merge	Failing to Signal								Lane of Primary Trafficway	1152636.1	99721.52
Entering at angle	Going Straight Ahead	Going Straight Ahead	East	East	South	South	Did Not Grant RW to Vehicle			None									Lane 1 Increasing Milepost	1152593.79	99723.39
Fire Hydrant	Going Straight Ahead		North	South			None												Past Right Shoulder Increasing Milepost	1152587.2	99453.43
Entering at angle	Starting in Traffic Lane	Making Left Turn	East	West	South	East	Did Not Grant RW to Vehicle			None									Lane 1 Decreasing Milepost	1152590.11	99454.29
From same direction - both going straight - one stopped - rear-end	Stopped in Roadway	Going Straight Ahead	Vehicle Stopped	Vehicle Stopped	North	South	None			Follow Too Closely									Lane 1 Increasing Milepost	1152590.11	99454.29
One parked--one moving	Making Left Turn	Legally Parked, Unoccupied	North	East			Exceeding Stated Speed Limit			None									Past Right Shoulder Increasing Milepost	1152590.11	99454.29
Entering at angle	Starting in Traffic Lane	Going Straight Ahead	Southwest	Northeast	Southeast	Northwest	Did Not Grant RW to Vehicle			None									Lane of Primary Trafficway	1152822.4	98562.26
Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	South	North	Did Not Grant RW to Vehicle			None									Lane of Primary Trafficway	1152822.4	98562.26
Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	North	South	Did Not Grant RW to Vehicle			None									Lane of Primary Trafficway	1152822.4	98562.26
Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	North	South	Did Not Grant RW to Vehicle			None									Lane of Primary Trafficway	1152822.4	98562.26
Entering at angle	Going Straight Ahead	Going Straight Ahead	East	West	North	South	Disregard Traffic Sign and Signals			None									Lane of Primary Trafficway	1152822.55	98562.28
Entering at angle	Going Straight Ahead	Going Straight Ahead	Southwest	Northeast	Southeast	Northwest	Did Not Grant RW to Vehicle			None									Lane of Primary Trafficway	1152822.4	98562.26
Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	South	North	Did Not Grant RW to Vehicle			None									Lane of Primary Trafficway	1152822.4	98562.26
Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	North	South	Unknown Distraction			None									Lane of Primary Trafficway	1152822.4	98562.26
Utility Pole	Making U-Turn		East	East			Improper U-Turn												Past the Outside Shoulder of Primary Trafficway	1156626.86	98867.88
Utility Pole	Making Right Turn		West	South			Overcorrecting / Oversteering												Past the Outside Shoulder of Primary Trafficway	1152822.4	98562.26
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	Northwest	Southeast	Northwest	Vehicle Stopped	Under Influence of Alcohol			None									Lane of Primary Trafficway	1151945.25	97940.01
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped in Roadway	Northwest	East	Vehicle Stopped	Vehicle Stopped	Other Contributing Circ Not Listed	Other Distractions		None									Lane of Primary Trafficway	1151945.25	97940.01
From same direction - all others	Making U-Turn	Going Straight Ahead	South	South	West	West	Improper U-Turn	Did Not Grant RW to Vehicle	Unknown Distraction	None									Lane of Primary Trafficway	1151945.25	97940.01
Entering at angle	Making Left Turn	Making Left Turn	North	East	West	North	Did Not Grant RW to Vehicle			None									Lane of Primary Trafficway	1151945.25	97940.01
Retaining Wall (concrete, rock, brick, etc.)	Making Left Turn		West	North			Other Contributing Circ Not Listed												Past the Outside Shoulder of Primary Trafficway	1151945.25	97940.01
Pedalcyclist Strikes Moving Vehicle	Stopped at Signal or Stop Sign		Vehicle Stopped	Vehicle Stopped			None									Physically Impaired			Lane of Primary Trafficway	1151945.25	97940.01
Entering at angle	Negotiating a Curve	Overtaking and Passing	South	North	East	West	None			Other Contributing Circ Not Listed									Lane 2 LX Decreasing Milepost	1147068.9	96783.3
Entering at angle	Making Left Turn	Making Left Turn	South	West	West	North	None			Did Not Grant RW to Vehicle									Lane 1 LX Increasing Milepost	1147076.56	96565.26
Entering at angle	Making Left Turn	Going Straight Ahead	West	North	South	North	Did Not Grant RW to Vehicle			None									Lane 1 LX Decreasing Milepost	1147072.14	96556.49
Metal Sign Post	Going Straight Ahead		Northeast	Southwest			Under Influence of Alcohol	Exceeding Reas. Safe Speed											Past Left Shoulder LX Decreasing Milepost	1147074.77	96784.55
Metal Sign Post	Going Straight Ahead		West	East			Apparently Ill												Increasing Other Location	1147063.58	96768.16
Street Light Pole or Base	Going Straight Ahead		West	East			Other Contributing Circ Not Listed												Past Right Shoulder LX Decreasing Milepost	1147126.21	96732.92
Vehicle Strikes Deer	Other*		West	East			None												Intersecting Road Increasing Milepost	1147076.64	96761.6
From same direction - both going straight - one stopped - rear-end	Negotiating a Curve	Stopped for Traffic	West	East	Vehicle Stopped	Vehicle Stopped	Exceeding Reas. Safe Speed			None									Lane 1 Off Ramp Increasing Milepost Side of Mainline	1146958.27	96727.71
Linear Curb	Making Left Turn		East	South			Exceeding Reas. Safe Speed	Unknown Distraction											Intersecting Trafficway	1150456.09	105487.5
Entering at angle	Making Right Turn	Stopped at Signal or Stop Sign	West	South	Vehicle Stopped	Vehicle Stopped	Overcorrecting / Oversteering	Failing to Signal		None									Intersecting Trafficway	1146760.44	108137.26
Entering at angle	Starting in Traffic Lane	Going Straight Ahead	Southwest	Northeast	Southeast	Northwest	Did Not Grant RW to Vehicle			None									Lane of Primary Trafficway	1145224.41	109111.55
Entering at angle	Going Straight Ahead	Going Straight Ahead	Southeast	Northwest	South	North	Did Not Grant R/W to Non Motorist			None									Lane of Primary Trafficway	1142143.4	111229.4
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	Vehicle Stopped	Vehicle Stopped	Follow Too Closely			None									Lane of Primary Trafficway	1142143.4	111229.4
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	Vehicle Stopped	Vehicle Stopped	Other Contributing Circ Not Listed			None									Lane of Primary Trafficway	1142143.4	111229.4
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	East	West	Vehicle Stopped	Vehicle Stopped	Distractions Outside Vehicle	Follow Too Closely		None									Lane of Primary Trafficway	1142249.84	111201.87
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	Vehicle Stopped	Vehicle Stopped	Lost in Thought / Day Dreaming			None									Lane of Primary Trafficway	1142143.4	111229.4
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	South	North	Vehicle Stopped	Vehicle Stopped	Unknown Distraction			None									Lane of Primary Trafficway	1142143.4	111229.4
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	East	South	West	East	Did Not Grant RW to Vehicle			None									Lane of Primary Trafficway	1142143.4	111229.4
From same direction - both going straight - both moving - sideswipe	Changing Lanes	Going Straight Ahead	North	South	North	South	Did Not Grant RW to Vehicle			None									Lane of Primary Trafficway	1142143.4	111229.4
From same direction - both going straight - both moving - rear-end	Going Straight Ahead	Going Straight Ahead	West	East	West	East	Exceeding Reas. Safe Speed	Follow Too Closely		None									Lane of Primary Trafficway	1137498.34	111334.8
From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn	East	West	West	North	Unknown Distraction			None									Lane of Primary Trafficway	1137496.61	111331.93
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	Vehicle Stopped	Vehicle Stopped	Follow Too Closely			None									Lane of Primary Trafficway	1141189.36	105908.28
Linear Curb	Making Left Turn		South	West			Exceeding Stated Speed Limit	Disregard Traffic Sign and Signals											Intersecting Trafficway	1141189.36	105908.28
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West	Did Not Grant RW to Vehicle			None									Lane of Primary Trafficway	1141189.36	105908.28
Vehicle overturned	Going Straight Ahead		West	East			None												Past the Outside Shoulder of Primary Trafficway	1158488.18	106493.36
From opposite direction - all others	Making Left Turn	Going Straight Ahead	South	West	West	East	Overcorrecting / Oversteering			None									Intersecting Trafficway	1158615.27	106492.62
Roadway Ditch	Making U-Turn		North	North			Improper U-Turn						Past the Outs	1158578.06	104745.56						
Tree or Stump (stationary)	Making Left Turn		West	West			None						Past the Outs	1158578.21	104746.99						
Roadway Ditch	Going Straight Ahead		South	North			Under Influence of Alcohol												Past the Outside Shoulder of Primary Trafficway	1158570.14	104523.97
Linear Curb	Negotiating a Curve		Northwest	Southeast			Distractions Outside Vehicle												Other Location (City/County/Misc. Trafficway)	1156590.56	98970.62
From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn	West	East	East	Southeast	None			Did Not Grant RW to Vehic	Unknown Distraction								Lane of Primary Trafficway	1156788.64	98942.36
Earth Bank or Ledge	Going Straight Ahead		North	South			Exceeding Reas. Safe Speed												Past the Outside Shoulder of Primary Trafficway	1156590.56	98970.62
Entering at angle	Going Straight Ahead	Going Straight Ahead	North	South	East	West	Disregard Traffic Sign and Signals			None									Lane of Primary Trafficway	1156590.56	98970.62
Earth Bank or Ledge	Going Straight Ahead		North	South			Exceeding Reas. Safe Speed	Overcorrecting / Oversteering											Past the Outside Shoulder of Primary Trafficway	1156590.56	98970.62

Appendix C : Traffic Count Data

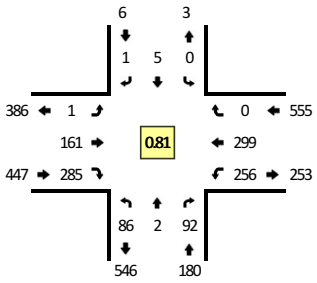
Type of peak hour being reported: Intersection Peak

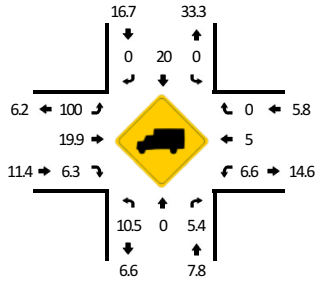
Method for determining peak hour: Total Entering

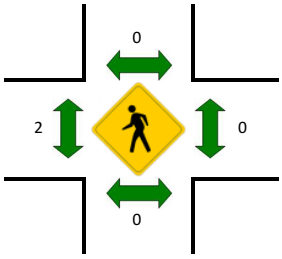
LOCATION: Friberg Strunk St -- NE 13th St
CITY/STATE: Camas, WA

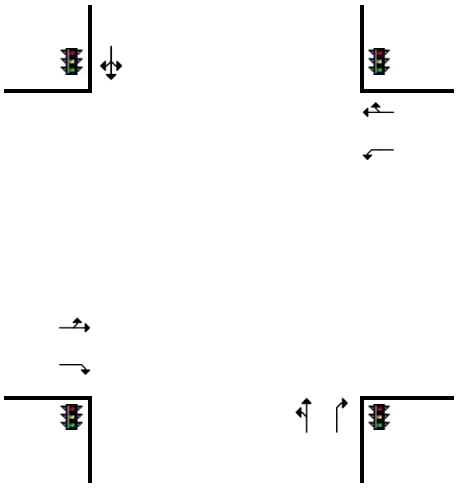
QC JOB #: 16993928
DATE: Tue, May 20 2025

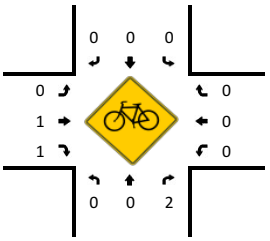
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

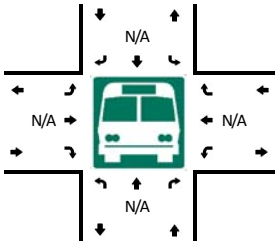


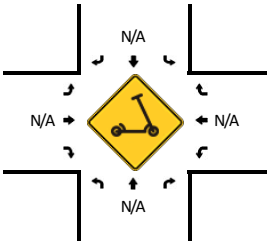












R* = RTOR

5-Min Count Period Beginning At	Friberg Strunk St (Northbound)					Friberg Strunk St (Southbound)					NE 13th St (Eastbound)					NE 13th St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	3	0	1	0	3	0	0	0	0	0	1	14	6	0	1	9	9	0	0	0	47	
7:05 AM	4	1	3	0	0	0	0	2	0	0	0	8	8	0	0	10	9	0	0	0	45	
7:10 AM	2	0	2	0	4	0	0	0	0	0	1	12	5	0	0	12	32	1	0	0	71	
7:15 AM	10	0	3	0	2	0	1	0	0	0	0	11	6	0	0	5	19	0	0	0	57	
7:20 AM	5	0	0	0	1	0	0	0	0	0	0	11	3	0	0	13	27	0	0	0	60	
7:25 AM	3	0	0	0	2	0	0	0	0	0	0	9	6	0	1	12	21	0	0	0	54	
7:30 AM	5	0	1	0	1	0	0	0	0	1	0	12	7	0	0	15	26	0	0	0	68	
7:35 AM	2	0	0	0	2	0	2	0	0	0	0	12	5	0	1	6	26	0	0	0	56	
7:40 AM	3	0	0	0	3	0	0	0	0	0	0	13	7	0	1	16	45	0	0	0	88	
7:45 AM	2	0	3	0	3	1	0	0	0	0	0	23	11	0	0	14	30	1	0	0	88	
7:50 AM	6	1	4	0	1	0	1	0	0	1	0	18	15	0	0	13	28	0	0	0	88	
7:55 AM	8	0	1	0	4	0	1	0	0	0	0	12	10	0	0	14	28	0	0	0	78	800
8:00 AM	1	0	3	0	4	0	0	0	0	0	0	13	7	0	1	11	33	0	0	0	73	826
8:05 AM	3	0	1	0	3	0	0	0	0	0	0	16	12	0	0	17	36	0	0	0	88	869
8:10 AM	6	0	1	0	5	0	0	0	0	0	0	16	14	0	3	10	26	0	0	0	81	879
8:15 AM	11	0	2	0	2	0	1	0	0	0	0	8	17	0	0	23	22	0	0	0	86	908
8:20 AM	5	0	1	0	3	0	0	0	0	0	0	10	31	0	0	26	29	0	0	0	105	953
8:25 AM	3	0	2	0	6	0	2	0	0	0	1	11	36	0	5	29	26	0	0	0	121	1020
8:30 AM	6	0	4	0	5	0	0	0	0	0	0	14	33	0	5	32	16	0	0	0	115	1067
8:35 AM	14	0	7	0	7	0	0	0	0	0	0	12	31	0	10	32	16	0	0	0	129	1140
8:40 AM	12	0	6	0	4	0	0	0	0	0	0	18	36	0	6	23	17	0	0	0	122	1174
8:45 AM	11	1	8	0	8	0	0	0	0	0	0	13	12	0	1	26	22	0	0	0	102	1188
8:50 AM	4	1	6	0	8	0	1	0	0	0	0	16	6	0	5	11	19	0	0	0	77	1177
8:55 AM	10	0	1	0	4	0	0	0	0	0	1	10	13	0	1	11	27	0	0	0	78	1177

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	128	0	132	0	64	0	0	0	0	0	0	176	484	0	84	348	196	0	0	0	1612
Heavy Trucks	32	0	20			0	0	0			0	36	4			16	4	0			112
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

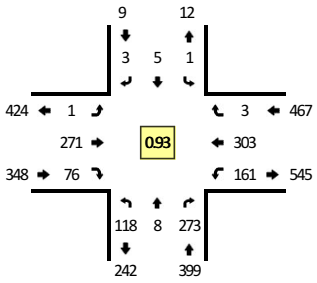
Type of peak hour being reported: Intersection Peak

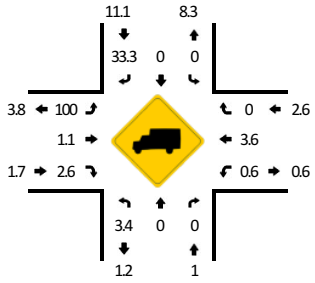
Method for determining peak hour: Total Entering

LOCATION: Friberg Strunk St -- NE 13th St
CITY/STATE: Camas, WA

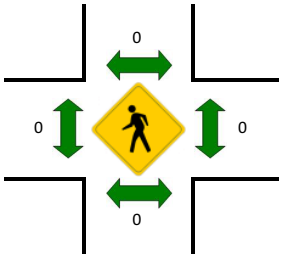
QC JOB #: 16993929
DATE: Tue, May 20 2025

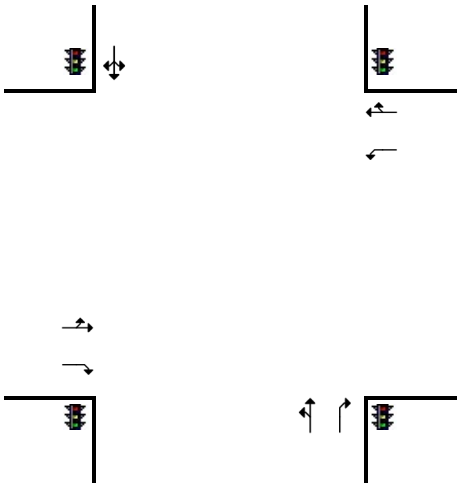
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

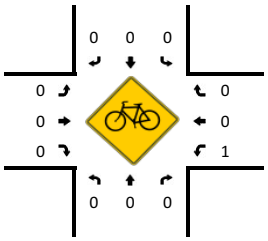


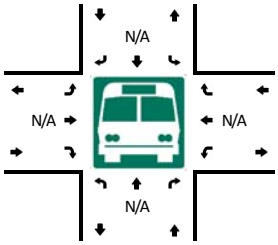


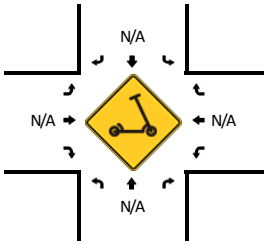
TRUE DATA TO IMPROVE MOBILITY











R* = RTOR

5-Min Count Period Beginning At	Friberg Strunk St (Northbound)					Friberg Strunk St (Southbound)					NE 13th St (Eastbound)					NE 13th St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	7	0	9	0	4	0	0	0	0	0	0	23	4	0	0	11	16	0	0	0	74	
4:05 PM	4	0	13	0	7	0	0	0	0	0	0	20	6	0	0	16	10	0	0	0	76	
4:10 PM	8	0	8	0	8	0	0	0	0	0	0	17	4	0	1	13	26	1	0	0	86	
4:15 PM	2	1	12	0	11	0	0	0	0	0	1	23	11	0	0	7	17	0	0	0	85	
4:20 PM	8	0	5	0	9	0	0	1	0	0	0	27	6	0	4	15	23	0	0	0	98	
4:25 PM	18	0	10	0	11	0	1	0	0	0	0	30	5	0	3	6	20	0	0	0	104	
4:30 PM	8	0	7	0	19	0	1	2	0	0	1	16	3	0	1	18	27	0	0	0	103	
4:35 PM	15	0	10	0	16	0	0	0	0	0	0	14	4	0	1	12	33	0	0	0	105	
4:40 PM	12	1	10	0	13	0	1	0	0	0	0	21	5	0	1	10	25	0	0	0	99	
4:45 PM	16	1	3	0	13	0	0	0	0	0	0	24	5	0	3	28	33	0	0	0	126	
4:50 PM	9	1	11	0	16	0	0	0	0	0	0	19	5	0	0	9	28	0	0	0	98	
4:55 PM	7	0	8	0	12	0	0	0	0	0	0	27	5	0	0	12	18	0	0	0	89	1143
5:00 PM	6	0	10	0	16	0	0	0	0	0	0	23	10	0	1	15	31	0	0	0	112	1181
5:05 PM	6	0	10	0	6	0	1	0	0	0	0	25	5	0	0	14	30	0	0	0	97	1202
5:10 PM	4	3	11	0	14	0	0	0	0	0	0	21	7	0	1	15	12	0	0	0	88	1204
5:15 PM	7	1	18	0	5	1	0	0	0	1	0	28	3	0	0	13	22	0	0	0	99	1218
5:20 PM	10	1	18	0	6	0	1	0	0	0	0	23	8	0	0	9	24	2	0	1	103	1223
5:25 PM	4	0	7	0	10	0	1	1	0	0	0	22	10	0	2	19	21	0	0	0	97	1216
5:30 PM	7	0	7	0	11	0	0	0	0	0	1	31	10	0	0	11	14	0	0	0	92	1205
5:35 PM	11	0	13	0	8	0	0	0	0	0	0	20	6	0	1	12	18	1	0	0	90	1190
5:40 PM	18	0	11	0	7	0	1	0	0	0	0	34	9	0	0	16	22	0	0	0	118	1209
5:45 PM	10	0	6	0	14	0	0	0	0	0	1	27	7	0	0	14	21	0	0	0	100	1183
5:50 PM	11	0	13	0	14	0	1	1	0	0	0	22	2	0	4	10	18	0	0	0	96	1181
5:55 PM	8	1	7	0	8	0	0	0	0	0	0	25	5	0	2	10	19	0	0	0	85	1177

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	172	8	260	0	168	0	4	0	0	0	0	236	76	0	20	200	364	0	0	0	1508
Heavy Trucks	8	0	0			0	0	0			0	4	0			4	16	0			32
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			4	0	0			4
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

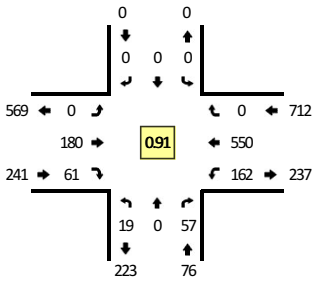
Type of peak hour being reported: Intersection Peak

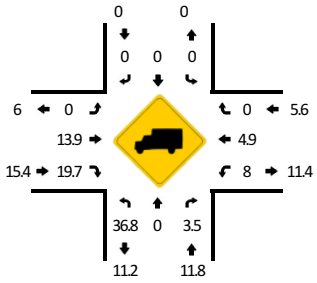
Method for determining peak hour: Total Entering

LOCATION: NE Camas Meadows Dr -- NE Goodwin Rd
CITY/STATE: Camas, WA

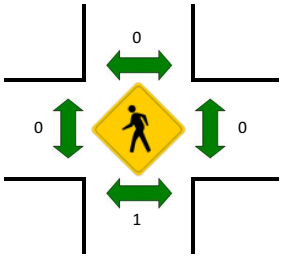
QC JOB #: 16993926
DATE: Tue, May 20 2025

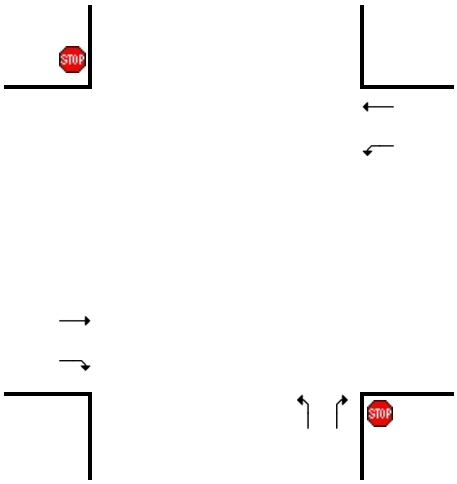
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

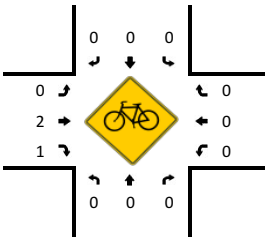


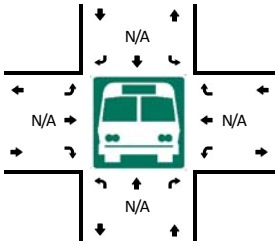


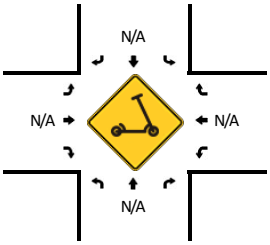
TRUE DATA TO IMPROVE MOBILITY











R* = RTOR

5-Min Count Period Beginning At	NE Camas Meadows Dr (Northbound)					NE Camas Meadows Dr (Southbound)					NE Goodwin Rd (Eastbound)					NE Goodwin Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	2	0	0	0	0	0	0	0	0	12	6	0	0	7	20	0	0	0	47	
7:05 AM	0	0	3	0	0	0	0	0	0	0	0	8	3	0	0	8	17	0	0	0	39	
7:10 AM	1	0	4	0	0	0	0	0	0	0	0	15	3	0	0	9	46	0	0	0	78	
7:15 AM	2	0	3	0	0	0	0	0	0	0	0	11	2	0	0	6	22	0	0	0	46	
7:20 AM	3	0	6	0	0	0	0	0	0	0	0	14	1	0	0	15	38	0	0	0	77	
7:25 AM	1	0	3	0	0	0	0	0	0	0	0	8	3	0	0	10	31	0	0	0	56	
7:30 AM	2	0	3	0	0	0	0	0	0	0	0	11	3	0	0	14	39	0	0	0	72	
7:35 AM	0	0	6	0	0	0	0	0	0	0	0	9	4	0	0	12	34	0	0	0	65	
7:40 AM	4	0	5	0	0	0	0	0	0	0	0	10	7	0	0	12	63	0	0	0	101	
7:45 AM	2	0	4	0	0	0	0	0	0	0	0	20	9	0	0	19	37	0	0	0	91	
7:50 AM	1	0	10	0	0	0	0	0	0	0	0	18	4	0	0	23	36	0	0	0	92	
7:55 AM	2	0	4	0	0	0	0	0	0	0	0	15	4	0	0	16	45	0	0	0	86	850
8:00 AM	4	0	5	0	0	0	0	0	0	0	0	14	3	0	0	17	37	0	0	0	80	883
8:05 AM	1	0	6	0	0	0	0	0	0	0	0	13	10	0	0	11	51	0	0	0	92	936
8:10 AM	2	0	3	0	0	0	0	0	0	0	0	15	4	0	0	14	37	0	0	0	75	933
8:15 AM	3	0	4	0	0	0	0	0	0	0	0	10	4	0	0	12	39	0	0	0	72	959
8:20 AM	0	0	5	0	0	0	0	0	0	0	0	9	4	0	0	11	57	0	0	0	86	968
8:25 AM	0	0	3	0	0	0	0	0	0	0	0	14	5	0	0	10	55	0	0	0	87	999
8:30 AM	0	0	3	0	0	0	0	0	0	0	0	21	2	0	0	9	46	0	0	0	81	1008
8:35 AM	0	0	5	0	0	0	0	0	0	0	0	21	5	0	0	8	47	0	0	0	86	1029
8:40 AM	4	0	4	0	0	0	0	0	0	0	0	25	3	0	0	8	41	0	0	0	85	1013
8:45 AM	3	0	7	0	0	0	0	0	0	0	0	24	4	0	0	5	41	0	0	0	84	1006
8:50 AM	4	0	5	0	0	0	0	0	0	0	0	24	3	0	0	8	28	0	0	0	72	986
8:55 AM	5	0	5	0	0	0	0	0	0	0	0	16	1	0	0	6	30	0	0	0	63	963

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	28	0	76	0	0	0	0	0	0	0	0	192	80	0	0	216	544	0	0	0	1136
Heavy Trucks	4	0	4			0	0	0			0	24	16			16	12	0			76
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

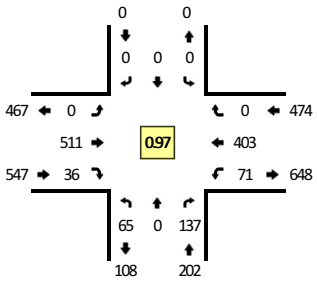
Type of peak hour being reported: Intersection Peak

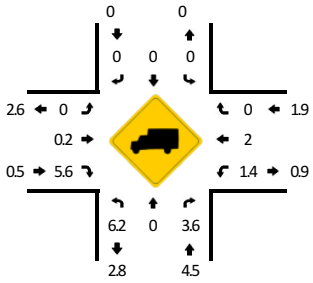
Method for determining peak hour: Total Entering

LOCATION: NE Camas Meadows Dr -- NE Goodwin Rd
CITY/STATE: Camas, WA

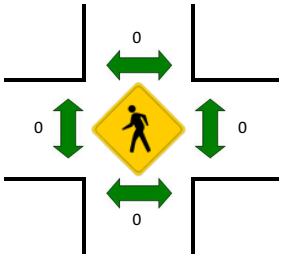
QC JOB #: 16993927
DATE: Tue, May 20 2025

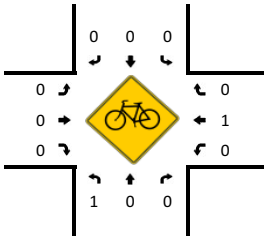
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

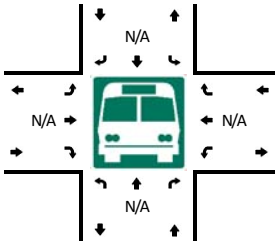


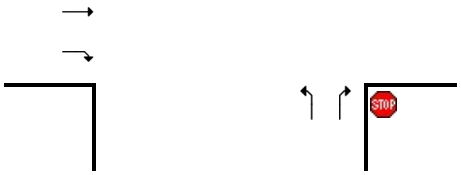


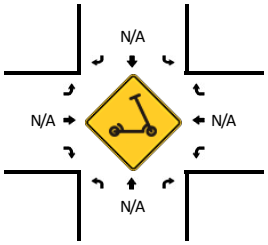
TRUE DATA TO IMPROVE MOBILITY











R* = RTOR

5-Min Count Period Beginning At	NE Camas Meadows Dr (Northbound)					NE Camas Meadows Dr (Southbound)					NE Goodwin Rd (Eastbound)					NE Goodwin Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	5	0	7	0	0	0	0	0	0	0	0	33	6	0	0	7	25	0	0	0	83	
4:05 PM	0	0	8	0	0	0	0	0	0	0	0	34	6	0	0	7	23	0	0	0	78	
4:10 PM	6	0	13	0	0	0	0	0	0	0	0	32	1	0	0	3	34	0	0	0	89	
4:15 PM	2	0	10	0	0	0	0	0	0	0	0	42	2	0	0	6	24	0	0	0	86	
4:20 PM	8	0	11	0	0	0	0	0	0	0	0	32	5	0	0	4	31	0	0	0	91	
4:25 PM	4	0	10	0	0	0	0	0	0	0	0	52	3	0	0	7	23	0	0	0	99	
4:30 PM	10	0	7	1	0	0	0	0	0	0	0	39	1	0	0	6	31	0	0	0	95	
4:35 PM	6	0	8	0	0	0	0	0	0	0	0	39	1	0	0	5	41	0	0	0	100	
4:40 PM	3	0	12	0	0	0	0	0	0	0	0	41	2	0	0	4	31	0	0	0	93	
4:45 PM	4	0	10	0	0	0	0	0	0	0	0	36	5	0	0	8	58	0	0	0	121	
4:50 PM	5	0	7	0	0	0	0	0	0	0	0	47	3	0	0	5	30	0	0	0	97	
4:55 PM	5	0	9	0	0	0	0	0	0	0	0	38	5	0	0	8	29	0	0	0	94	1126
5:00 PM	3	0	10	0	0	0	0	0	0	0	0	52	0	0	0	3	42	0	0	0	110	1153
5:05 PM	11	0	15	0	0	0	0	0	0	0	0	40	2	0	0	5	32	0	0	0	105	1180
5:10 PM	2	0	16	0	0	0	0	0	0	0	0	38	5	0	0	6	25	0	0	0	92	1183
5:15 PM	7	0	14	0	0	0	0	0	0	0	0	48	5	0	0	6	27	0	0	0	107	1204
5:20 PM	4	0	19	0	0	0	0	0	0	0	0	41	4	0	0	8	34	0	0	0	110	1223
5:25 PM	6	0	13	0	0	0	0	0	0	0	0	40	1	0	0	3	31	0	0	0	94	1218
5:30 PM	2	0	7	0	0	0	0	0	0	0	0	42	4	0	0	4	27	0	0	0	86	1209
5:35 PM	1	0	6	0	0	0	0	0	0	0	0	42	1	0	0	7	27	0	0	0	84	1193
5:40 PM	6	0	13	0	0	0	0	0	0	0	0	45	2	0	0	8	33	0	0	0	107	1207
5:45 PM	6	0	7	0	0	0	0	0	0	0	0	45	4	0	0	8	27	0	0	0	97	1183
5:50 PM	5	0	2	0	0	0	0	0	0	0	0	50	1	0	0	6	24	0	0	0	88	1174
5:55 PM	1	0	10	0	0	0	0	0	0	0	0	29	5	0	0	0	25	0	0	0	70	1150

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	52	0	120	0	0	0	0	0	0	0	0	464	32	0	0	68	520	0	0	0	1256
Heavy Trucks	4	0	4			0	0	0			0	4	8			0	16	0			36
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	4	0			4
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

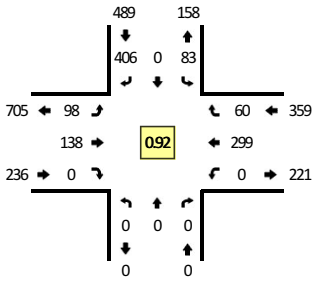
Type of peak hour being reported: Intersection Peak

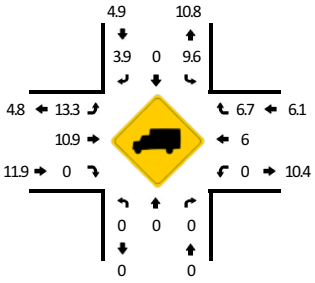
Method for determining peak hour: Total Entering

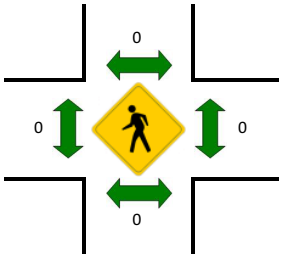
LOCATION: NE Ingle Rd -- NE 28th St
CITY/STATE: Camas, WA

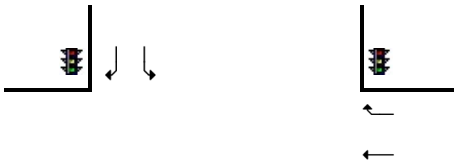
QC JOB #: 16993924
DATE: Tue, May 20 2025

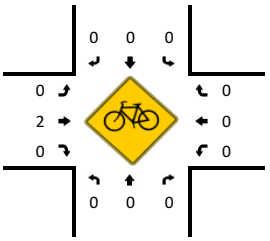
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

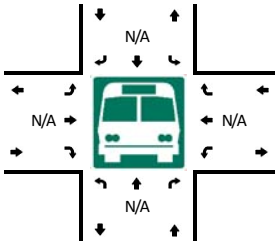


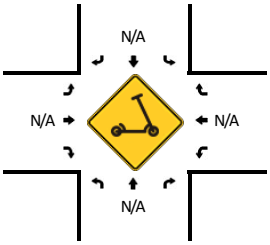












R* = RTOR

5-Min Count Period Beginning At	NE Ingle Rd (Northbound)					NE Ingle Rd (Southbound)					NE 28th St (Eastbound)					NE 28th St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	7	0	8	0	5	4	6	0	0	0	0	13	2	0	0	45	
7:05 AM	0	0	0	0	0	7	0	9	0	9	5	6	0	0	0	0	16	3	0	0	55	
7:10 AM	0	0	0	0	0	7	0	8	0	6	8	5	0	0	0	0	33	5	0	0	72	
7:15 AM	0	0	0	0	0	8	0	6	0	7	6	11	0	0	0	0	17	2	0	0	57	
7:20 AM	0	0	0	0	0	4	0	22	0	7	11	7	0	0	0	0	21	0	0	0	72	
7:25 AM	0	0	0	0	0	5	0	10	0	15	5	8	0	0	0	0	26	4	0	1	74	
7:30 AM	0	0	0	0	0	9	0	15	0	5	7	4	0	0	0	0	19	11	0	1	71	
7:35 AM	0	0	0	0	0	11	0	11	0	10	3	13	0	0	0	0	28	4	0	0	80	
7:40 AM	0	0	0	0	0	13	0	36	0	4	5	11	0	0	0	0	32	2	0	1	104	
7:45 AM	0	0	0	0	0	8	0	29	0	8	4	16	0	0	0	0	28	1	0	0	94	
7:50 AM	0	0	0	0	0	8	0	17	0	17	9	20	0	0	0	0	19	5	0	2	97	
7:55 AM	0	0	0	0	0	11	0	24	0	9	7	10	0	0	0	0	28	7	0	1	97	918
8:00 AM	0	0	0	0	0	8	0	14	0	5	6	13	0	0	0	0	31	5	0	0	82	955
8:05 AM	0	0	0	0	0	7	0	27	0	6	8	11	0	0	0	0	26	8	0	1	94	994
8:10 AM	0	0	0	0	0	5	0	14	0	9	6	12	0	0	0	0	26	4	0	2	78	1000
8:15 AM	0	0	0	0	0	3	0	24	0	13	6	9	0	0	0	0	21	5	0	1	82	1025
8:20 AM	0	0	0	0	0	5	0	31	0	10	4	8	0	0	0	0	29	4	0	0	91	1044
8:25 AM	0	0	0	0	0	7	0	27	0	11	12	7	0	0	0	0	19	5	0	1	89	1059
8:30 AM	0	0	0	0	0	4	0	20	0	16	13	10	0	0	0	0	22	3	0	0	88	1076
8:35 AM	0	0	0	0	0	4	0	12	0	23	18	11	0	0	0	0	18	1	0	1	88	1084
8:40 AM	0	0	0	0	0	6	0	20	0	10	8	13	0	0	0	0	20	1	0	1	79	1059
8:45 AM	0	0	0	0	0	5	0	8	0	13	14	14	0	0	0	0	16	3	0	0	73	1038
8:50 AM	0	0	0	0	0	5	0	11	0	7	20	9	0	0	0	0	17	5	0	0	74	1015
8:55 AM	0	0	0	0	0	9	0	6	0	6	12	10	0	0	0	0	22	3	0	1	69	987

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	116	0	444	0	116	72	188	0	0	0	0	316	44	0	12	1308
Heavy Trucks	0	0	0			12	0	16			4	24	0			0	16	4			76
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

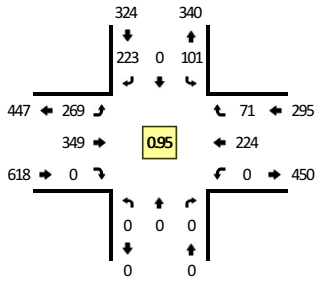
Type of peak hour being reported: Intersection Peak

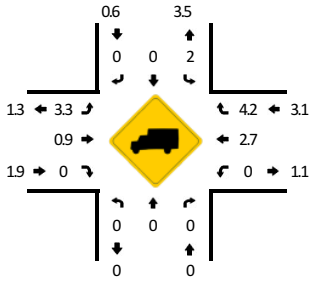
Method for determining peak hour: Total Entering

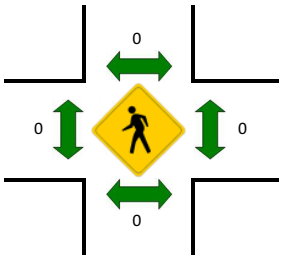
LOCATION: NE Ingle Rd -- NE 28th St
CITY/STATE: Camas, WA

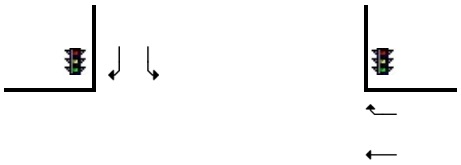
QC JOB #: 16993925
DATE: Tue, May 20 2025

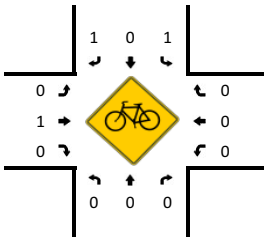
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

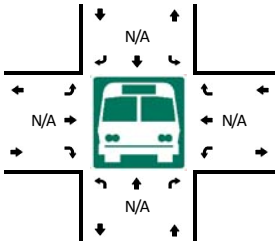


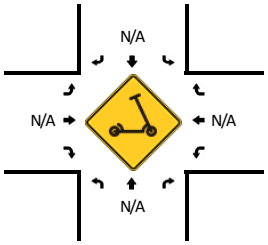












R* = RTOR

5-Min Count Period Beginning At	NE Ingle Rd (Northbound)					NE Ingle Rd (Southbound)					NE 28th St (Eastbound)					NE 28th St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	0	0	0	11	0	13	0	5	11	18	0	0	0	0	11	1	0	1	71	
4:05 PM	0	0	0	0	0	5	0	7	0	7	20	22	0	0	0	0	19	7	0	1	88	
4:10 PM	0	0	0	0	0	8	0	12	0	8	24	18	0	0	0	0	18	6	0	1	95	
4:15 PM	0	0	0	0	0	0	0	0	0	11	30	27	0	0	0	0	15	16	0	0	99	
4:20 PM	0	0	0	0	0	2	0	8	0	12	22	22	0	0	0	0	14	3	0	0	83	
4:25 PM	0	0	0	0	0	7	0	5	0	11	21	38	0	0	0	0	17	8	0	1	108	
4:30 PM	0	0	0	0	0	3	0	4	0	18	21	22	0	0	0	0	17	3	0	0	88	
4:35 PM	0	0	0	0	0	11	0	9	0	0	25	25	0	0	0	0	25	3	0	0	98	
4:40 PM	0	0	0	0	0	9	0	11	0	13	19	19	0	0	0	0	22	5	0	3	101	
4:45 PM	0	0	0	0	0	6	0	18	0	15	21	27	0	0	0	0	28	4	0	0	119	
4:50 PM	0	0	0	0	0	9	0	7	0	5	14	44	0	0	0	0	18	7	0	3	107	
4:55 PM	0	0	0	0	0	5	0	8	0	9	20	28	0	0	0	0	17	4	0	0	91	1148
5:00 PM	0	0	0	0	0	3	0	4	0	12	24	29	0	0	0	0	16	2	0	0	90	1167
5:05 PM	0	0	0	0	0	15	0	7	0	11	31	31	0	0	0	0	20	1	0	2	118	1197
5:10 PM	0	0	0	0	0	9	0	7	0	11	21	23	0	0	0	0	11	8	0	4	94	1196
5:15 PM	0	0	0	0	0	8	0	6	0	10	26	36	0	0	0	0	24	2	0	1	113	1210
5:20 PM	0	0	0	0	0	13	0	3	0	14	27	29	0	0	0	0	17	4	0	2	109	1236
5:25 PM	0	0	0	0	0	10	0	8	0	9	25	23	0	0	0	0	17	3	0	0	95	1223
5:30 PM	0	0	0	0	0	5	0	9	0	6	21	29	0	0	0	0	17	7	0	2	96	1231
5:35 PM	0	0	0	0	0	9	0	15	0	5	20	31	0	0	0	0	17	5	0	2	104	1237
5:40 PM	0	0	0	0	0	7	0	5	0	11	14	30	0	0	0	0	20	6	0	0	93	1229
5:45 PM	0	0	0	0	0	6	0	3	0	10	18	38	0	0	0	0	17	8	0	0	100	1210
5:50 PM	0	0	0	0	0	15	0	6	0	11	16	28	0	0	0	0	9	2	0	0	87	1190
5:55 PM	0	0	0	0	0	5	0	4	0	6	17	27	0	0	0	0	22	2	0	1	84	1183

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	96	0	276	0	132	216	360	0	0	0	0	272	88	0	24	1464
Heavy Trucks	0	0	0			4	0	0			0	0	0			0	8	4			16
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	4			0	0	0			0	0	0			4
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

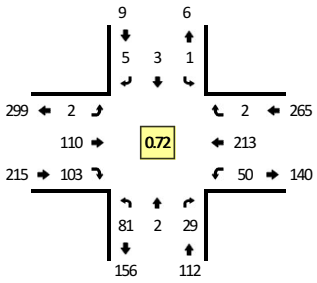
Type of peak hour being reported: Intersection Peak

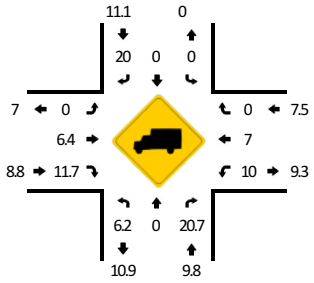
Method for determining peak hour: Total Entering

LOCATION: NE 232nd Ave -- NE 28th St
CITY/STATE: Fern Prairie, WA

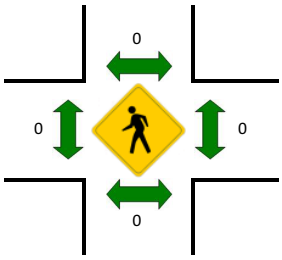
QC JOB #: 16977001
DATE: Tue, Apr 8 2025

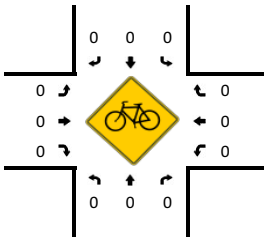
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

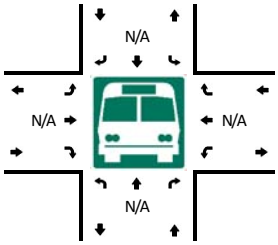


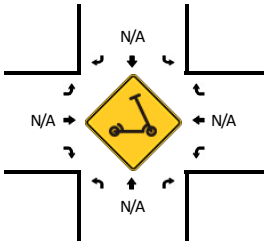


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	NE 232nd Ave (Northbound)					NE 232nd Ave (Southbound)					NE 28th St (Eastbound)					NE 28th St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	5	0	0	0	0	0	0	0	0	0	0	3	4	0	0	2	15	0	0	0	29	
7:05 AM	9	0	0	0	0	0	0	0	0	0	0	10	6	0	0	2	17	0	0	0	44	
7:10 AM	3	0	0	0	0	0	0	0	0	0	0	10	1	0	0	0	18	0	0	0	32	
7:15 AM	2	0	0	0	0	1	0	0	0	0	0	8	2	0	0	3	19	0	0	0	35	
7:20 AM	2	0	0	0	0	0	0	0	0	0	0	8	6	0	0	1	12	0	0	0	29	
7:25 AM	3	0	0	0	0	0	0	2	0	0	0	10	4	0	0	2	20	0	0	0	41	
7:30 AM	2	0	0	0	0	0	0	0	0	0	0	6	3	0	0	1	28	0	0	0	40	
7:35 AM	1	0	0	0	0	0	0	0	0	0	0	3	7	0	0	2	27	0	0	0	40	
7:40 AM	4	0	0	0	0	0	0	1	0	0	0	5	14	0	0	8	14	0	0	0	46	
7:45 AM	9	0	4	0	0	1	0	0	0	0	0	14	10	0	0	14	10	0	0	0	62	
7:50 AM	7	0	6	0	0	0	1	0	0	0	0	12	16	0	0	12	16	0	0	0	70	
7:55 AM	11	0	6	0	0	0	2	0	0	0	0	14	11	0	0	6	15	0	0	0	65	533
8:00 AM	14	1	6	0	0	0	0	0	0	0	0	14	15	0	0	3	21	0	0	0	74	578
8:05 AM	11	0	5	0	0	0	0	1	0	0	0	11	9	0	0	0	16	1	0	0	54	588
8:10 AM	6	0	1	0	0	0	0	0	0	0	0	9	7	0	0	0	16	1	0	0	40	596
8:15 AM	7	0	1	0	0	0	0	0	0	0	1	4	4	0	0	1	17	0	0	0	35	596
8:20 AM	6	1	0	0	0	0	0	1	0	0	1	8	3	0	0	1	13	0	0	0	34	601
8:25 AM	2	0	4	0	0	1	0	1	0	0	0	6	4	0	0	0	17	0	0	0	35	595
8:30 AM	1	0	1	0	0	0	0	0	0	0	0	13	8	0	0	0	17	0	0	0	40	595
8:35 AM	6	0	1	0	0	0	0	0	0	0	1	5	6	0	0	0	14	0	0	0	33	588
8:40 AM	6	0	1	0	0	0	0	1	0	0	0	7	2	0	0	0	19	0	0	0	36	578
8:45 AM	1	0	1	0	0	0	0	2	0	0	0	8	10	0	0	1	14	0	0	0	37	553
8:50 AM	2	0	1	0	0	0	0	1	0	0	0	12	5	0	0	1	27	0	0	0	49	532
8:55 AM	2	0	3	0	0	0	0	0	0	0	2	14	7	0	0	0	16	0	0	0	44	511

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	128	4	72	0	0	0	12	0	0	0	0	160	168	0	0	84	208	0	0	0	836
Heavy Trucks	8	0	12			0	0	0			0	12	16			0	8	0			56
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:14 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

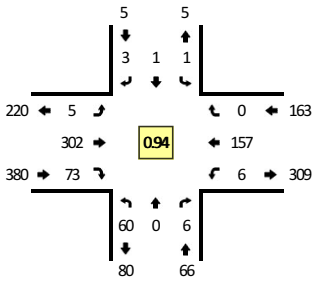
Type of peak hour being reported: Intersection Peak

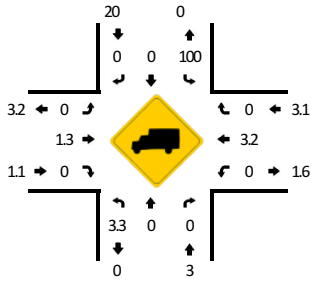
Method for determining peak hour: Total Entering

LOCATION: NE 232nd Ave -- NE 28th St
CITY/STATE: Fern Prairie, WA

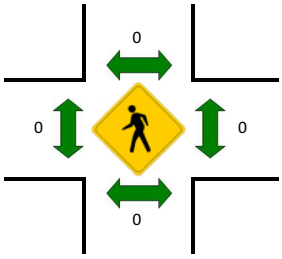
QC JOB #: 16977002
DATE: Tue, Apr 8 2025

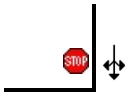
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

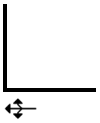


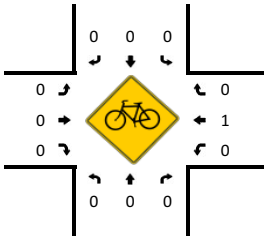


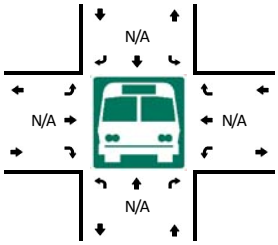
TRUE DATA TO IMPROVE MOBILITY

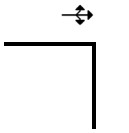


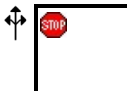


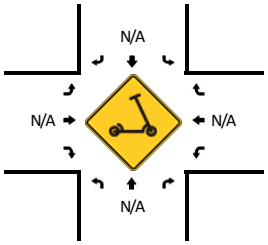












R* = RTOR

5-Min Count Period Beginning At	NE 232nd Ave (Northbound)					NE 232nd Ave (Southbound)					NE 28th St (Eastbound)					NE 28th St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	5	0	1	0	0	0	0	0	0	0	1	34	6	0	0	1	15	0	0	0	63	
4:05 PM	2	0	2	0	0	0	0	0	0	0	0	23	7	0	0	0	18	0	0	0	52	
4:10 PM	7	0	1	0	0	0	0	0	0	0	0	27	6	0	0	0	20	0	0	0	61	
4:15 PM	4	0	0	0	0	0	0	0	0	0	1	11	4	0	0	2	16	0	0	0	38	
4:20 PM	7	0	0	0	0	0	0	0	0	0	0	13	4	0	0	1	18	1	0	0	44	
4:25 PM	2	0	1	0	0	0	0	0	0	0	0	25	7	0	0	0	11	0	0	0	46	
4:30 PM	2	0	1	0	0	0	0	0	0	0	0	21	8	0	0	0	17	0	0	0	49	
4:35 PM	5	0	1	0	0	0	0	0	0	0	0	34	4	0	0	1	14	0	0	0	59	
4:40 PM	9	0	1	0	0	0	1	2	0	0	1	25	3	0	0	1	20	0	0	0	63	
4:45 PM	3	0	0	0	0	0	0	0	0	0	0	16	7	0	0	1	11	0	0	0	38	
4:50 PM	10	0	0	0	0	0	0	1	0	0	2	19	5	0	0	0	15	0	0	0	52	
4:55 PM	2	0	1	0	0	0	0	0	0	0	0	25	7	0	0	1	11	0	0	0	47	612
5:00 PM	2	0	0	0	0	1	0	0	0	0	0	19	2	0	0	0	10	0	0	0	34	583
5:05 PM	4	0	1	0	0	0	0	0	0	0	1	27	11	0	0	0	9	0	0	0	53	584
5:10 PM	2	0	0	0	0	0	0	0	0	0	0	29	7	0	0	0	16	0	0	0	54	577
5:15 PM	12	0	0	0	0	0	0	0	0	0	0	22	7	0	0	1	15	0	0	0	57	596
5:20 PM	2	0	0	0	0	0	0	0	0	0	0	33	7	0	0	0	10	0	0	0	52	604
5:25 PM	5	0	2	0	0	0	0	0	0	0	0	27	5	0	0	0	15	0	0	0	54	612
5:30 PM	4	0	0	0	0	0	0	0	0	0	1	26	8	0	0	1	11	0	0	0	51	614
5:35 PM	4	0	1	0	0	0	0	0	0	0	1	18	7	0	0	0	11	0	0	0	42	597
5:40 PM	9	0	0	0	0	0	0	0	0	0	1	29	10	0	0	1	11	0	0	0	61	595
5:45 PM	4	0	1	0	0	0	0	0	0	0	0	16	3	0	0	0	17	0	0	0	41	598
5:50 PM	5	0	1	0	0	0	0	0	0	0	0	22	3	0	0	1	15	0	0	0	47	593
5:55 PM	6	0	0	0	0	0	0	0	0	0	0	22	4	0	0	0	16	0	0	0	48	594

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	72	0	4	0	0	0	0	0	0	0	4	312	100	0	0	4	160	0	0	0	656
Heavy Trucks	4	0	0			0	0	0			0	0	0			0	0	0			4
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

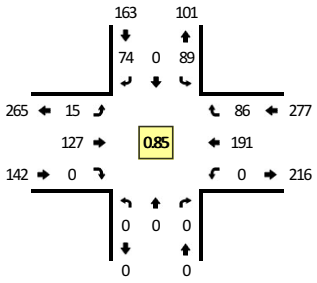
Type of peak hour being reported: Intersection Peak

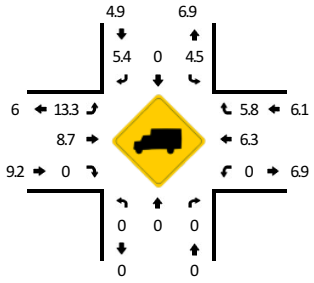
Method for determining peak hour: Total Entering

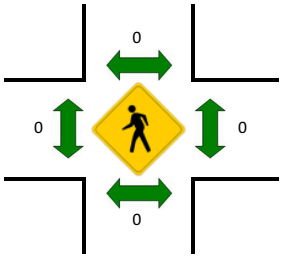
LOCATION: NE 242nd Ave (SR 500) -- NE 28th St
CITY/STATE: Fern Prairie, WA

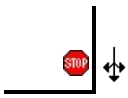
QC JOB #: 16977003
DATE: Tue, Apr 8 2025

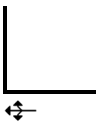
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

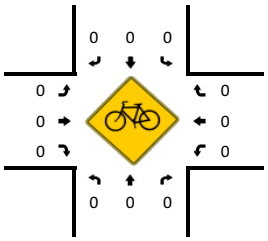


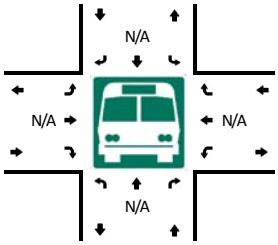


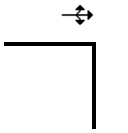


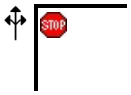


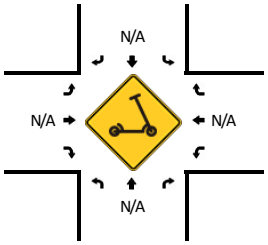












R* = RTOR

5-Min Count Period Beginning At	NE 242nd Ave (SR 500) (Northbound)					NE 242nd Ave (SR 500) (Southbound)					NE 28th St (Eastbound)					NE 28th St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	1	0	7	0	0	0	4	0	0	0	0	10	11	0	0	33	
7:05 AM	0	0	0	0	0	3	0	6	0	0	0	9	0	0	0	0	14	8	0	0	40	
7:10 AM	0	0	0	0	0	4	0	7	0	0	0	6	0	0	0	0	16	10	0	0	43	
7:15 AM	0	0	0	0	0	7	0	2	0	0	0	11	0	0	0	0	17	7	0	0	44	
7:20 AM	0	0	0	0	0	6	0	4	0	0	1	9	0	0	0	0	11	8	0	0	39	
7:25 AM	0	0	0	0	0	3	0	4	0	0	0	7	0	0	0	0	18	12	0	0	44	
7:30 AM	0	0	0	0	0	6	0	10	0	0	0	9	0	0	0	0	14	11	0	0	50	
7:35 AM	0	0	0	0	0	9	0	7	0	0	0	3	0	0	0	0	24	9	0	0	52	
7:40 AM	0	0	0	0	0	7	0	11	0	0	1	4	0	0	0	0	9	2	0	0	34	
7:45 AM	0	0	0	0	0	12	0	8	0	0	2	14	0	0	0	0	16	7	0	0	59	
7:50 AM	0	0	0	0	0	6	0	7	0	0	3	15	0	0	0	0	20	3	0	0	54	
7:55 AM	0	0	0	0	0	11	0	6	0	0	4	16	0	0	0	0	16	5	0	0	58	550
8:00 AM	0	0	0	0	0	5	0	4	0	0	3	17	0	0	0	0	15	7	0	0	51	568
8:05 AM	0	0	0	0	0	13	0	4	0	0	1	16	0	0	0	0	15	5	0	0	54	582
8:10 AM	0	0	0	0	0	2	0	3	0	0	2	6	0	0	0	0	14	6	0	0	33	572
8:15 AM	0	0	0	0	0	6	1	3	0	0	0	7	0	0	0	0	13	7	0	0	37	565
8:20 AM	0	0	0	0	0	14	0	5	0	0	2	7	0	0	0	0	11	5	0	0	44	570
8:25 AM	0	0	0	0	0	7	0	4	0	0	2	7	0	0	0	0	15	5	0	0	40	566
8:30 AM	0	0	0	0	0	11	0	4	0	0	2	14	0	0	0	0	11	13	0	0	55	571
8:35 AM	0	0	0	0	0	11	0	5	0	0	1	4	0	0	0	0	11	7	0	0	39	558
8:40 AM	0	0	0	0	0	11	0	4	0	0	0	6	0	0	0	0	15	7	0	0	43	567
8:45 AM	0	0	0	0	0	8	0	1	0	0	1	9	0	0	0	0	13	16	0	0	48	556
8:50 AM	0	0	0	0	0	12	1	6	0	0	4	12	0	0	0	0	22	9	0	0	66	568
8:55 AM	0	0	0	0	0	6	0	4	0	0	1	13	0	0	0	0	12	5	0	0	41	551

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	116	0	84	0	0	36	180	0	0	0	0	208	60	0	0	684
Heavy Trucks	0	0	0			0	0	0			4	24	0			0	0	8			36
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:14 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

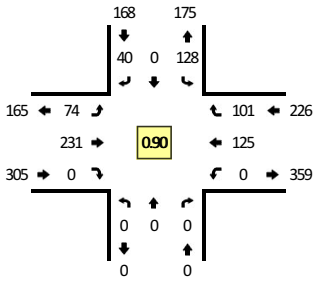
Type of peak hour being reported: Intersection Peak

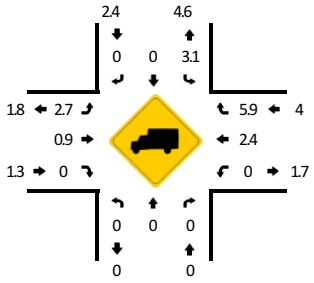
Method for determining peak hour: Total Entering

LOCATION: NE 242nd Ave (SR 500) -- NE 28th St
CITY/STATE: Fern Prairie, WA

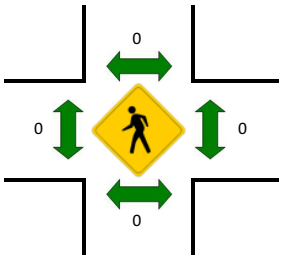
QC JOB #: 16977004
DATE: Tue, Apr 8 2025

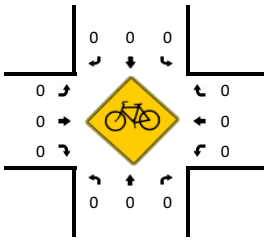
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

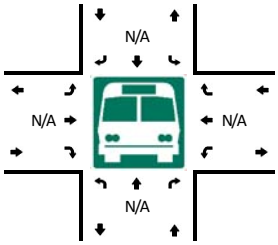


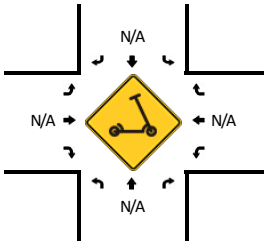


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	NE 242nd Ave (SR 500) (Northbound)					NE 242nd Ave (SR 500) (Southbound)					NE 28th St (Eastbound)					NE 28th St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	1	0	0	0	0	15	0	3	0	0	5	18	0	0	0	0	9	6	0	0	57	
4:05 PM	0	0	0	0	0	12	0	3	0	0	7	28	0	0	0	0	16	9	0	0	75	
4:10 PM	0	0	0	0	0	5	0	2	0	0	9	21	0	0	0	0	17	11	0	0	65	
4:15 PM	0	0	0	0	0	11	0	5	0	0	3	8	0	0	0	0	13	8	0	0	48	
4:20 PM	0	0	0	0	0	5	0	1	0	0	3	10	0	0	0	0	17	10	0	0	46	
4:25 PM	0	0	0	0	0	10	0	4	0	0	3	24	0	0	0	0	9	9	0	0	59	
4:30 PM	0	0	0	0	0	10	0	2	0	0	3	15	0	0	0	0	15	10	0	0	55	
4:35 PM	0	0	0	0	0	9	0	0	0	0	8	22	0	0	0	0	14	9	0	0	62	
4:40 PM	0	0	0	0	0	12	0	8	0	0	11	19	0	0	0	0	10	13	0	0	73	
4:45 PM	0	0	0	0	0	14	0	8	0	0	7	14	0	0	0	0	7	6	0	0	56	
4:50 PM	0	0	0	0	0	12	0	3	0	0	4	13	0	0	0	0	11	3	0	0	46	
4:55 PM	0	0	0	0	0	5	0	5	0	0	4	21	0	0	0	0	6	6	0	0	47	689
5:00 PM	0	0	0	0	0	14	0	1	0	0	5	17	0	0	0	0	10	10	0	0	57	689
5:05 PM	0	0	0	0	0	11	0	0	0	0	7	16	0	0	0	0	8	8	0	0	50	664
5:10 PM	0	0	0	0	0	6	0	3	0	0	8	21	0	0	0	0	11	9	0	0	58	657
5:15 PM	0	0	0	0	0	9	0	4	0	0	3	24	0	0	0	0	13	13	0	0	66	675
5:20 PM	0	0	0	0	0	16	0	2	0	0	7	23	0	0	0	0	10	5	0	0	63	692
5:25 PM	0	0	0	0	0	10	0	4	0	0	7	26	0	0	0	0	10	9	0	0	66	699
5:30 PM	0	0	0	0	0	9	0	2	0	0	5	16	0	0	0	0	8	10	0	0	50	694
5:35 PM	0	0	0	0	0	10	0	2	0	0	2	18	0	0	0	0	9	11	0	0	52	684
5:40 PM	0	0	0	0	0	2	0	4	0	0	6	20	0	0	0	0	8	6	0	0	46	657
5:45 PM	0	0	0	0	0	9	0	5	0	0	5	15	0	0	0	0	13	4	0	0	51	652
5:50 PM	0	0	0	0	0	10	0	4	0	0	5	17	0	0	0	0	13	10	0	0	59	665
5:55 PM	0	0	0	0	0	6	0	1	0	0	8	15	0	0	0	0	15	4	0	0	49	667

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	140	0	40	0	0	68	292	0	0	0	0	132	108	0	0	780
Heavy Trucks	0	0	0			4	0	0			0	8	0			0	0	0			12
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:14 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

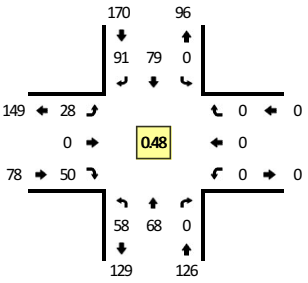
Type of peak hour being reported: Intersection Peak

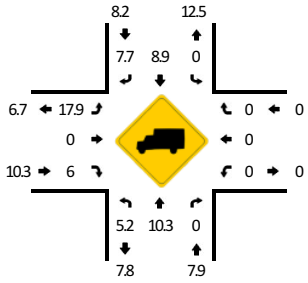
Method for determining peak hour: Total Entering

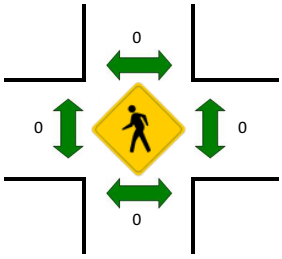
LOCATION: NE 232nd Ave -- SE Leadbetter Rd
CITY/STATE: Camas, WA

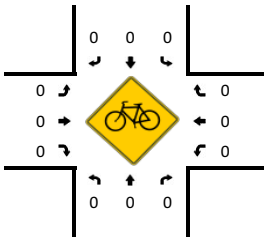
QC JOB #: 16993922
DATE: Tue, Jun 10 2025

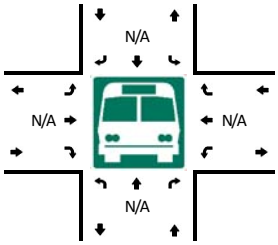
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

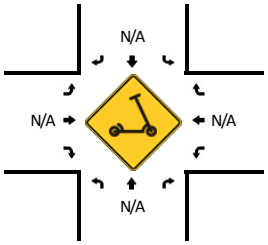












5-Min Count Period Beginning At	NE 232nd Ave (Northbound)				NE 232nd Ave (Southbound)				SE Leadbetter Rd (Eastbound)				SE Leadbetter Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	1	4	0	2	0	1	0	0	0	0	0	8	
7:05 AM	0	0	0	0	0	3	1	0	2	0	4	0	0	0	0	0	10	
7:10 AM	0	0	0	0	0	3	4	0	2	0	2	0	0	0	0	0	11	
7:15 AM	0	0	0	0	0	3	4	0	1	0	1	0	0	0	0	0	9	
7:20 AM	0	0	0	0	0	3	4	0	2	0	1	0	0	0	0	0	10	
7:25 AM	0	0	0	0	0	0	5	0	4	0	1	0	0	0	0	0	10	
7:30 AM	0	0	0	0	0	3	3	0	2	0	1	0	0	0	0	0	9	
7:35 AM	0	1	0	0	0	5	8	0	2	0	3	0	0	0	0	0	19	
7:40 AM	0	1	0	0	0	11	8	0	1	0	10	0	0	0	0	0	31	
7:45 AM	13	15	0	0	0	14	14	0	0	0	11	0	0	0	0	0	67	
7:50 AM	13	9	0	0	0	17	5	0	1	0	13	0	0	0	0	0	58	
7:55 AM	11	24	0	0	0	20	7	0	3	0	5	0	0	0	0	0	70	312
8:00 AM	8	10	0	0	0	7	6	0	4	0	6	0	0	0	0	0	41	345
8:05 AM	7	4	0	0	0	1	5	0	1	0	1	0	0	0	0	0	19	354
8:10 AM	5	1	0	0	0	2	8	0	3	0	1	0	0	0	0	0	20	363
8:15 AM	0	2	0	0	0	1	6	0	3	0	0	0	0	0	0	0	12	366
8:20 AM	1	0	0	0	0	1	9	0	3	0	0	0	0	0	0	0	14	370
8:25 AM	0	0	0	0	0	0	6	0	3	0	0	0	0	0	0	0	9	369
8:30 AM	0	1	0	0	0	0	9	0	4	0	0	0	0	0	0	0	14	374
8:35 AM	0	0	0	0	0	3	5	0	0	0	0	0	0	0	0	0	8	363
8:40 AM	1	0	0	0	0	1	10	0	2	0	1	0	0	0	0	0	15	347
8:45 AM	0	0	0	0	0	1	6	0	2	0	0	0	0	0	0	0	9	289
8:50 AM	1	2	0	0	0	0	4	0	6	0	1	0	0	0	0	0	14	245
8:55 AM	2	0	0	0	0	0	5	0	8	0	1	0	0	0	0	0	16	191

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	148	192	0	0	0	204	104	0	16	0	116	0	0	0	0	0	780
Heavy Trucks	8	24	0		0	4	8		0	0	0		0	0	0		44
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/17/2025 11:51 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

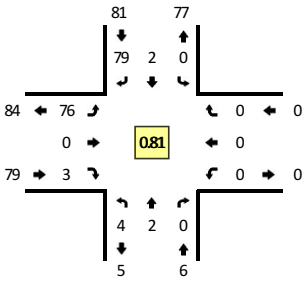
Type of peak hour being reported: Intersection Peak

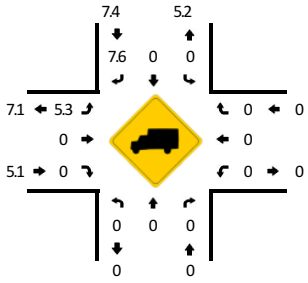
Method for determining peak hour: Total Entering

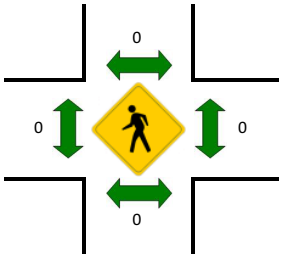
LOCATION: NE 232nd Ave -- SE Leadbetter Rd
CITY/STATE: Camas, WA

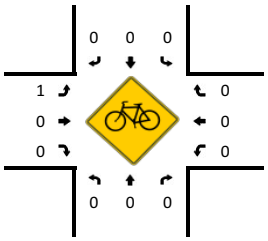
QC JOB #: 16993923
DATE: Tue, Jun 10 2025

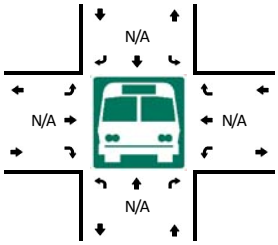
Peak-Hour: 4:50 PM -- 5:50 PM
Peak 15-Min: 4:50 PM -- 5:05 PM

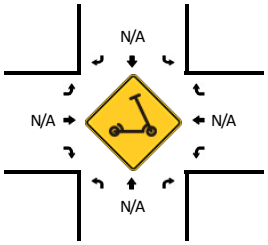












5-Min Count Period Beginning At	NE 232nd Ave (Northbound)				NE 232nd Ave (Southbound)				SE Leadbetter Rd (Eastbound)				SE Leadbetter Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	4	0	3	0	0	0	0	0	0	0	7	
4:05 PM	2	0	0	0	0	1	4	0	6	0	0	0	0	0	0	0	13	
4:10 PM	0	0	0	0	0	0	4	0	11	0	0	0	0	0	0	0	15	
4:15 PM	0	1	0	0	0	0	9	0	9	0	0	0	0	0	0	0	19	
4:20 PM	1	0	0	0	0	1	2	0	4	0	0	0	0	0	0	0	8	
4:25 PM	0	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	10	
4:30 PM	0	0	0	0	0	0	4	0	4	0	1	0	0	0	0	0	9	
4:35 PM	0	1	0	0	0	1	9	0	6	0	0	0	0	0	0	0	17	
4:40 PM	0	1	0	0	0	0	7	0	6	0	0	0	0	0	0	0	14	
4:45 PM	0	0	0	0	0	0	4	0	5	0	0	0	0	0	0	0	9	
4:50 PM	1	0	0	0	0	0	5	0	10	0	1	0	0	0	0	0	17	
4:55 PM	0	0	0	0	0	0	4	0	8	0	0	0	0	0	0	0	12	150
5:00 PM	0	1	0	0	0	0	11	0	9	0	1	0	0	0	0	0	22	165
5:05 PM	0	0	0	0	0	0	5	0	2	0	0	1	0	0	0	0	8	160
5:10 PM	1	0	0	0	0	1	5	0	6	0	1	0	0	0	0	0	14	159
5:15 PM	1	0	0	0	0	0	7	0	7	0	0	0	0	0	0	0	15	155
5:20 PM	0	0	0	0	0	0	2	0	6	0	0	0	0	0	0	0	8	155
5:25 PM	0	1	0	0	0	0	9	0	4	0	0	0	0	0	0	0	14	159
5:30 PM	0	0	0	0	0	0	9	0	5	0	0	0	0	0	0	0	14	164
5:35 PM	0	0	0	0	0	0	7	0	6	0	0	0	0	0	0	0	13	160
5:40 PM	1	0	0	0	0	1	2	0	9	0	0	0	0	0	0	0	13	159
5:45 PM	0	0	0	0	0	0	13	0	3	0	0	0	0	0	0	0	16	166
5:50 PM	1	0	0	0	0	1	8	0	4	0	0	0	0	0	0	0	14	163
5:55 PM	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	6	157

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	4	0	0	0	0	80	0	108	0	8	0	0	0	0	0	204
Heavy Trucks	0	0	0		0	0	8		8	0	0		0	0	0		16
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		4	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 6/17/2025 11:51 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

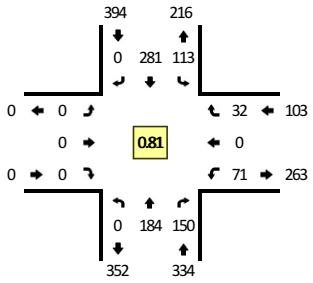
Type of peak hour being reported: Intersection Peak

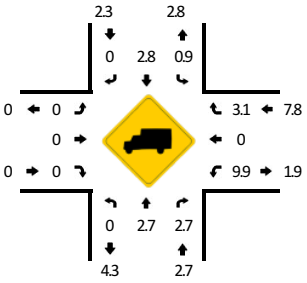
Method for determining peak hour: Total Entering

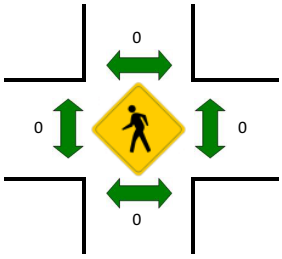
LOCATION: NE Everett St (SR 500) -- NE Everett Dr
CITY/STATE: Camas, WA

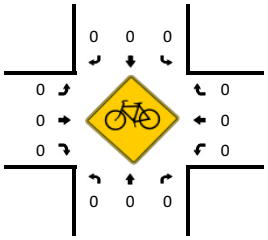
QC JOB #: 16977016
DATE: Tue, Apr 8 2025

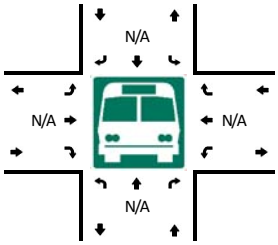
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 8:05 AM -- 8:20 AM

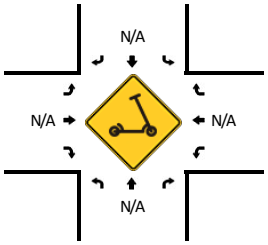












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE Everett Dr (Eastbound)					NE Everett Dr (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	3	2	0	0	2	8	0	0	0	0	0	0	0	0	1	0	1	0	0	17	
7:05 AM	0	8	5	0	0	1	12	0	0	0	0	0	0	0	0	2	0	1	0	0	29	
7:10 AM	0	4	1	0	0	2	12	0	0	0	0	0	0	0	0	3	0	1	0	0	23	
7:15 AM	0	7	2	0	0	4	10	0	0	0	0	0	0	0	0	1	0	0	0	0	24	
7:20 AM	0	3	3	0	0	2	9	0	0	0	0	0	0	0	0	1	0	1	0	0	19	
7:25 AM	0	4	3	0	0	7	12	0	0	0	0	0	0	0	0	2	0	1	0	0	29	
7:30 AM	0	8	4	0	0	4	12	0	0	0	0	0	0	0	0	1	0	6	0	0	35	
7:35 AM	0	5	3	0	0	3	14	0	0	0	0	0	0	0	0	2	0	2	0	0	29	
7:40 AM	0	12	3	0	0	3	13	0	0	0	0	0	0	0	0	1	0	0	0	0	32	
7:45 AM	0	11	3	0	0	1	20	0	0	0	0	0	0	0	0	3	0	1	0	0	39	
7:50 AM	0	8	6	0	0	5	30	0	0	0	0	0	0	0	0	1	0	1	0	0	51	
7:55 AM	0	16	8	0	0	11	9	0	0	0	0	0	0	0	0	0	0	1	0	0	45	372
8:00 AM	0	24	17	0	0	8	14	0	0	0	0	0	0	0	0	1	0	2	0	0	66	421
8:05 AM	0	37	16	0	0	5	32	0	0	0	0	0	0	0	0	2	0	6	0	0	98	490
8:10 AM	0	21	8	0	0	8	43	0	0	0	0	0	0	0	0	0	0	0	0	0	80	547
8:15 AM	0	18	14	0	0	6	38	0	0	0	0	0	0	0	0	2	0	1	0	0	79	602
8:20 AM	0	8	15	0	0	11	25	0	0	0	0	0	0	0	0	3	0	1	0	0	63	646
8:25 AM	0	9	12	0	0	12	20	0	0	0	0	0	0	0	0	11	0	4	0	0	68	685
8:30 AM	0	9	22	0	0	19	20	0	0	0	0	0	0	0	0	5	0	2	0	0	77	727
8:35 AM	0	9	21	0	0	22	12	0	0	0	0	0	0	0	0	15	0	5	0	0	84	782
8:40 AM	0	11	9	0	0	5	16	0	0	0	0	0	0	0	0	17	0	4	0	0	62	812
8:45 AM	0	14	2	0	0	1	22	0	0	0	0	0	0	0	0	14	0	5	0	0	58	831
8:50 AM	0	15	0	0	0	2	16	0	0	0	0	0	0	0	0	2	0	4	0	0	39	819
8:55 AM	0	21	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	1	0	0	30	804

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	304	152	0	0	76	452	0	0	0	0	0	0	0	0	16	0	28	0	0	1028
Heavy Trucks	0	4	8			0	16	0			0	0	0			8	0	0			36
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

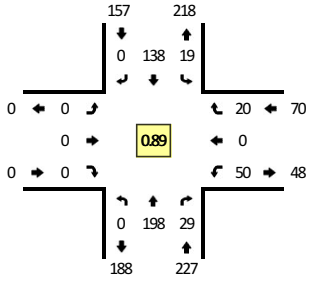
Type of peak hour being reported: Intersection Peak

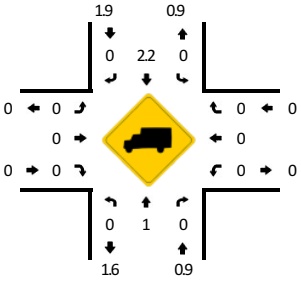
Method for determining peak hour: Total Entering

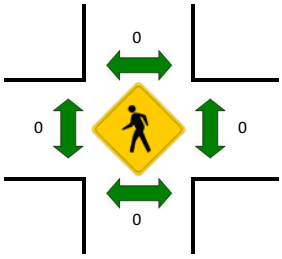
LOCATION: NE Everett St (SR 500) -- NE Everett Dr
CITY/STATE: Camas, WA

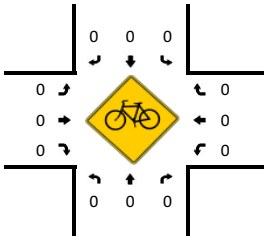
QC JOB #: 16977017
DATE: Tue, Apr 8 2025

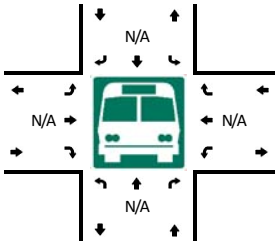
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM

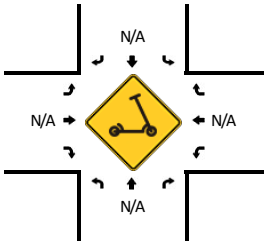












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE Everett Dr (Eastbound)					NE Everett Dr (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	20	1	0	0	0	12	0	0	0	0	0	0	0	0	2	0	1	0	0	36	
4:05 PM	0	21	3	0	0	1	14	0	0	0	0	0	0	0	0	6	0	2	0	0	47	
4:10 PM	0	13	3	0	0	1	19	0	0	0	0	0	0	0	0	0	0	2	0	0	38	
4:15 PM	0	17	1	0	0	2	15	0	0	0	0	0	0	0	0	1	0	1	0	0	37	
4:20 PM	0	14	0	0	0	1	10	0	0	0	0	0	0	0	0	3	0	0	0	0	28	
4:25 PM	0	13	0	0	0	1	9	0	0	0	0	0	0	0	0	0	0	2	0	0	25	
4:30 PM	0	17	2	0	0	0	8	0	0	0	0	0	0	0	0	0	0	1	0	0	28	
4:35 PM	0	18	0	0	0	1	10	0	0	0	0	0	0	0	0	1	0	0	0	0	30	
4:40 PM	0	15	0	0	0	0	14	0	0	0	0	0	0	0	0	1	0	0	0	0	30	
4:45 PM	0	10	1	0	0	3	17	0	0	0	0	0	0	0	0	3	0	1	0	0	35	
4:50 PM	0	10	3	0	0	7	15	0	0	0	0	0	0	0	0	4	0	2	0	0	41	
4:55 PM	0	18	4	0	0	2	9	0	0	0	0	0	0	0	0	4	0	0	0	0	37	412
5:00 PM	0	19	4	0	0	0	6	0	0	0	0	0	0	0	0	5	0	2	0	0	36	412
5:05 PM	0	19	5	0	0	0	18	0	0	0	0	0	0	0	0	2	0	1	0	0	45	410
5:10 PM	0	21	0	0	0	2	9	0	0	0	0	0	0	0	0	5	0	3	0	0	40	412
5:15 PM	0	14	1	0	0	2	14	0	0	0	0	0	0	0	0	6	0	0	0	0	37	412
5:20 PM	0	19	2	0	0	2	8	0	0	0	0	0	0	0	0	1	0	1	0	0	33	417
5:25 PM	0	21	1	0	0	1	6	0	0	0	0	0	0	0	0	2	0	1	0	0	32	424
5:30 PM	0	13	5	0	0	1	11	0	0	0	0	0	0	0	0	5	0	2	0	0	37	433
5:35 PM	0	19	2	0	0	1	12	0	0	0	0	0	0	0	0	3	0	1	0	0	38	441
5:40 PM	0	10	1	0	0	0	12	0	0	0	0	0	0	0	0	3	0	2	0	0	28	439
5:45 PM	0	17	2	0	0	3	13	0	0	0	0	0	0	0	0	5	0	3	0	0	43	447
5:50 PM	0	14	3	0	0	5	17	0	0	0	0	0	0	0	0	3	0	1	0	0	43	449
5:55 PM	0	12	3	0	0	2	12	0	0	0	0	0	0	0	0	10	0	3	0	0	42	454

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	172	32	0	0	40	168	0	0	0	0	0	0	0	0	72	0	28	0	0	512
Heavy Trucks	0	0	0			0	8	0			0	0	0			0	0	0			8
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

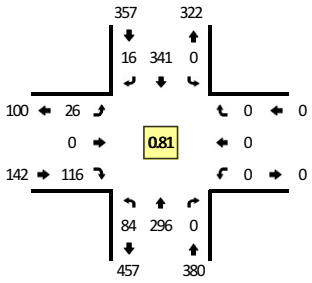
Type of peak hour being reported: Intersection Peak

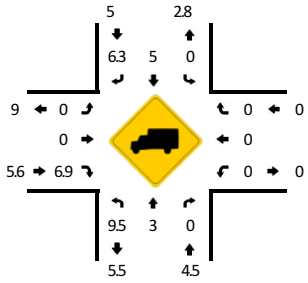
Method for determining peak hour: Total Entering

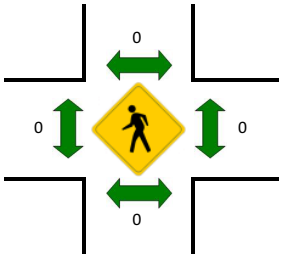
LOCATION: NE Everett St (SR 500) -- SE Leadbetter Rd
CITY/STATE: Camas, WA

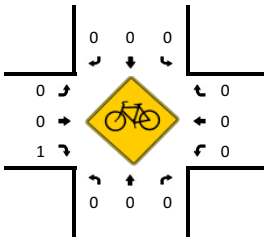
QC JOB #: 16977018
DATE: Tue, Apr 8 2025

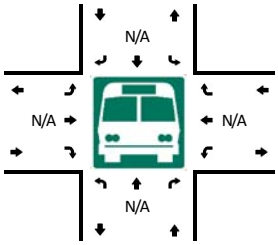
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 8:05 AM -- 8:20 AM

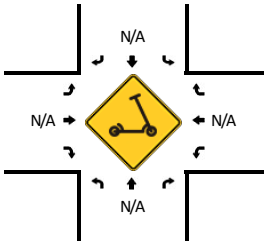












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					SE Leadbetter Rd (Eastbound)					SE Leadbetter Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	10	7	0	0	0	0	9	0	0	0	0	0	4	0	0	0	0	0	0	0	30	
7:05 AM	4	13	0	0	0	0	11	0	0	0	0	0	3	0	0	0	0	0	0	0	31	
7:10 AM	3	4	0	0	0	0	18	0	0	0	0	0	4	0	0	0	0	0	0	0	29	
7:15 AM	9	7	0	0	0	0	13	0	0	0	0	0	2	0	0	0	0	0	0	0	31	
7:20 AM	7	6	0	0	0	0	9	0	0	0	0	0	4	0	0	0	0	0	0	0	26	
7:25 AM	10	9	0	0	0	0	14	0	0	0	1	0	3	0	0	0	0	0	0	0	37	
7:30 AM	9	7	0	0	0	0	12	1	0	0	2	0	4	0	0	0	0	0	0	0	35	
7:35 AM	8	7	0	0	0	0	16	1	0	0	1	0	8	0	0	0	0	0	0	0	41	
7:40 AM	7	14	0	0	0	0	14	0	0	0	1	0	13	0	0	0	0	0	0	0	49	
7:45 AM	16	11	0	0	0	0	20	4	0	0	0	0	12	0	0	0	0	0	0	0	63	
7:50 AM	13	15	0	0	0	0	23	6	0	0	0	0	12	0	0	0	0	0	0	0	69	
7:55 AM	10	21	0	0	0	0	12	1	0	0	4	0	20	0	0	0	0	0	0	0	68	509
8:00 AM	2	30	0	0	0	0	12	1	0	0	6	0	18	0	0	0	0	0	0	0	69	548
8:05 AM	6	42	0	0	0	0	34	1	0	0	4	0	19	0	0	0	0	0	0	0	106	623
8:10 AM	6	29	0	0	0	0	38	5	0	0	2	0	8	0	0	0	0	0	0	0	88	682
8:15 AM	5	28	0	0	0	0	41	0	0	0	0	0	3	0	0	0	0	0	0	0	77	728
8:20 AM	7	23	0	0	0	0	29	0	0	0	1	0	9	0	0	0	0	0	0	0	69	771
8:25 AM	10	21	0	0	0	0	31	0	0	0	2	0	5	0	0	0	0	0	0	0	69	803
8:30 AM	8	27	0	0	0	0	27	1	0	0	4	0	5	0	0	0	0	0	0	0	72	840
8:35 AM	7	26	0	0	0	0	25	1	0	0	1	0	7	0	0	0	0	0	0	0	67	866
8:40 AM	4	21	0	0	0	0	28	0	0	0	1	0	7	0	0	0	0	0	0	0	61	878
8:45 AM	6	13	0	0	0	0	41	0	0	0	1	0	3	0	0	0	0	0	0	0	64	879
8:50 AM	8	17	0	0	0	0	19	0	0	0	0	0	8	0	0	0	0	0	0	0	52	862
8:55 AM	2	23	0	0	0	0	8	0	0	0	0	0	11	0	0	0	0	0	0	0	44	838

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	68	396	0	0	0	0	452	24	0	0	24	0	120	0	0	0	0	0	0	0	1084
Heavy Trucks	16	12	0			0	20	4			0	0	8			0	0	0			60
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

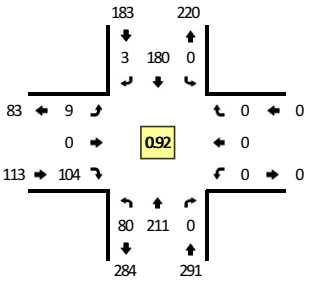
Type of peak hour being reported: Intersection Peak

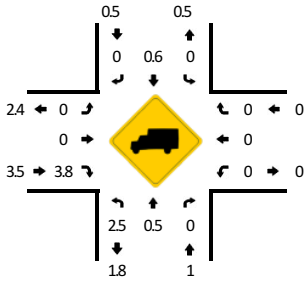
Method for determining peak hour: Total Entering

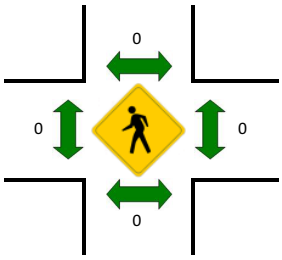
LOCATION: NE Everett St (SR 500) -- SE Leadbetter Rd
CITY/STATE: Camas, WA

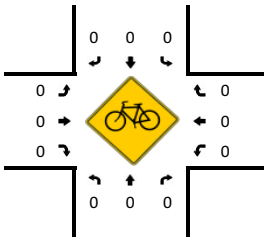
QC JOB #: 16977019
DATE: Tue, Apr 8 2025

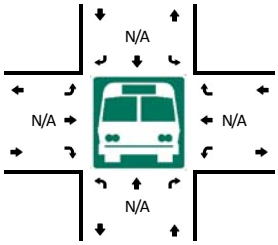
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

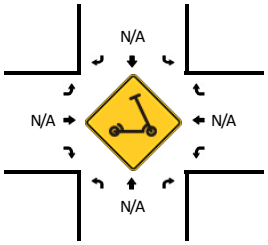












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					SE Leadbetter Rd (Eastbound)					SE Leadbetter Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	5	18	0	0	0	0	16	0	0	0	0	0	12	0	0	0	0	0	0	0	51	
4:05 PM	5	28	0	0	0	0	18	1	0	0	0	0	9	0	0	0	0	0	0	0	61	
4:10 PM	7	14	0	0	0	0	20	0	0	0	0	0	9	0	0	0	0	0	0	0	50	
4:15 PM	10	18	0	0	0	0	16	0	0	0	0	0	7	0	0	0	0	0	0	0	51	
4:20 PM	1	14	0	0	0	0	12	0	0	0	0	0	7	0	0	0	0	0	0	0	34	
4:25 PM	5	13	0	0	0	0	11	0	0	0	0	0	5	0	0	0	0	0	0	0	34	
4:30 PM	6	17	0	0	0	0	7	0	0	0	2	0	3	0	0	0	0	0	0	0	35	
4:35 PM	12	18	0	0	0	0	13	0	0	0	0	0	7	0	0	0	0	0	0	0	50	
4:40 PM	10	14	0	0	0	0	15	0	0	0	1	0	8	0	0	0	0	0	0	0	48	
4:45 PM	9	11	0	0	0	0	18	1	0	0	1	0	9	0	0	0	0	0	0	0	49	
4:50 PM	4	13	0	0	0	0	21	0	0	0	0	0	11	0	0	0	0	0	0	0	49	
4:55 PM	6	22	0	0	0	0	12	0	0	0	1	0	11	0	0	0	0	0	0	0	52	564
5:00 PM	6	22	0	0	0	0	11	0	0	0	0	0	7	0	0	0	0	0	0	0	46	559
5:05 PM	7	22	0	0	0	0	22	0	0	0	1	0	7	0	0	0	0	0	0	0	59	557
5:10 PM	10	16	0	0	0	0	14	0	0	0	1	0	11	0	0	0	0	0	0	0	52	559
5:15 PM	3	16	0	0	0	0	18	2	0	0	0	0	10	0	0	0	0	0	0	0	49	557
5:20 PM	2	20	0	0	0	0	8	0	0	0	0	0	4	0	0	0	0	0	0	0	34	557
5:25 PM	6	19	0	0	0	0	10	0	0	0	3	0	14	0	0	0	0	0	0	0	52	575
5:30 PM	5	18	0	0	0	0	18	0	0	0	1	0	5	0	0	0	0	0	0	0	47	587
5:35 PM	7	18	0	0	0	0	14	0	0	0	1	0	9	0	0	0	0	0	0	0	49	586
5:40 PM	7	15	0	0	0	0	15	1	0	0	0	0	8	0	0	0	0	0	0	0	46	584
5:45 PM	7	15	0	0	0	0	17	1	0	0	0	0	7	0	0	0	0	0	0	0	47	582
5:50 PM	5	17	0	0	0	0	18	0	0	0	0	0	8	0	0	0	0	0	0	0	48	581
5:55 PM	5	17	0	0	0	0	22	1	0	0	0	0	8	0	0	0	0	0	0	0	53	582

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	80	216	0	0	0	0	216	8	0	0	8	0	112	0	0	0	0	0	0	0	640
Heavy Trucks	0	0	0			0	0	0			0	0	8			0	0	0			8
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

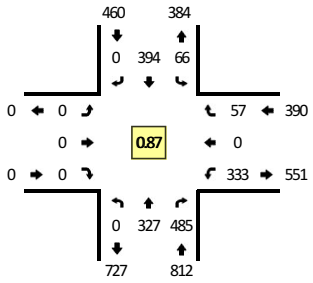
Type of peak hour being reported: Intersection Peak

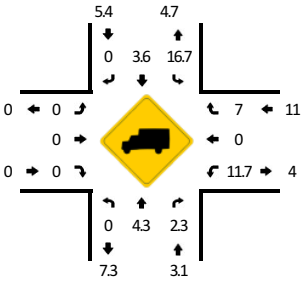
Method for determining peak hour: Total Entering

LOCATION: NE Everett St (SR 500) -- NE 43rd Ave
CITY/STATE: Camas, WA

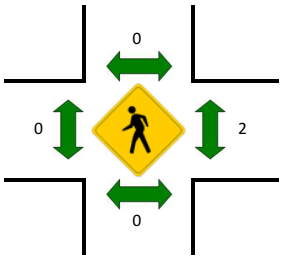
QC JOB #: 16977020
DATE: Tue, Apr 8 2025

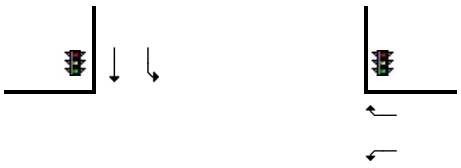
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 8:10 AM -- 8:25 AM

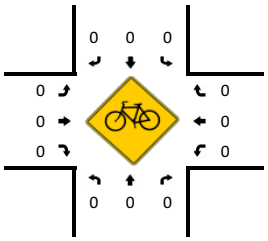


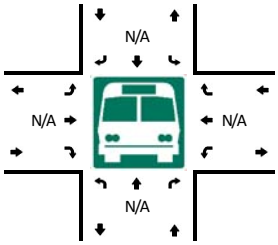


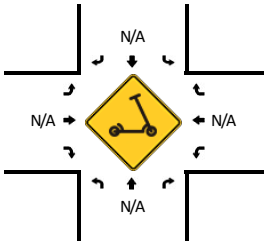
TRUE DATA TO IMPROVE MOBILITY











R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE 43rd Ave (Eastbound)					NE 43rd Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	16	6	0	4	0	14	0	0	0	0	0	0	0	0	8	0	2	0	0	50	
7:05 AM	0	16	3	0	10	2	11	0	0	0	0	0	0	0	0	15	0	1	0	0	58	
7:10 AM	0	8	6	0	3	2	19	0	0	0	0	0	0	0	0	9	0	2	0	0	49	
7:15 AM	0	15	12	0	4	1	15	0	0	0	0	0	0	0	0	12	0	2	0	0	61	
7:20 AM	0	13	15	0	11	1	13	0	0	0	0	0	0	0	0	15	0	0	0	0	68	
7:25 AM	0	13	7	0	5	1	15	0	0	0	0	0	0	0	0	10	0	5	0	0	56	
7:30 AM	0	17	7	0	2	1	16	0	0	0	0	0	0	0	0	14	0	0	0	0	57	
7:35 AM	0	11	9	0	3	1	24	0	0	0	0	0	0	0	0	19	0	2	0	3	72	
7:40 AM	0	19	7	0	10	3	24	0	0	0	0	0	0	0	0	18	0	1	0	1	83	
7:45 AM	0	14	17	0	5	4	25	0	0	0	0	0	0	0	0	18	0	9	0	3	95	
7:50 AM	0	21	17	0	11	4	33	0	0	0	0	0	0	0	0	16	0	3	0	4	109	
7:55 AM	0	23	23	0	9	10	22	0	0	0	0	0	0	0	0	13	0	6	0	3	109	867
8:00 AM	0	30	21	0	22	9	17	0	0	0	0	0	0	0	0	14	0	2	0	1	116	933
8:05 AM	0	36	17	0	17	12	44	0	0	0	0	0	0	0	0	19	0	9	0	2	156	1031
8:10 AM	0	33	14	0	38	11	38	0	0	0	0	0	0	0	0	25	0	1	0	3	163	1145
8:15 AM	0	28	27	0	29	4	39	0	0	0	0	0	0	0	0	25	0	1	0	2	155	1239
8:20 AM	0	31	35	0	30	6	33	0	0	0	0	0	0	0	0	26	0	0	0	0	161	1332
8:25 AM	0	28	29	0	20	4	27	0	0	0	0	0	0	0	0	34	0	3	0	3	148	1424
8:30 AM	0	28	22	0	29	2	30	0	0	0	0	0	0	0	0	47	0	4	0	0	162	1529
8:35 AM	0	31	22	0	23	1	34	0	0	0	0	0	0	0	0	35	0	4	0	0	150	1607
8:40 AM	0	20	9	0	11	2	35	0	0	0	0	0	0	0	0	31	0	1	0	2	111	1635
8:45 AM	0	18	1	0	9	1	42	0	0	0	0	0	0	0	0	48	0	3	0	0	122	1662
8:50 AM	0	20	9	0	5	3	26	0	0	0	0	0	0	0	0	16	0	3	0	1	83	1636
8:55 AM	0	24	7	0	1	0	19	0	0	0	0	0	0	0	0	14	0	2	0	0	67	1594

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	368	692	0	388	84	440	0	0	0	0	0	0	0	0	304	0	28	0	20	2324
Heavy Trucks	0	32	32			20	16	0			0	0	0			20	0	0			120
Buses																					
Pedestrians		0					0					0					4				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

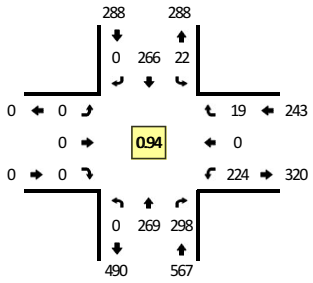
Type of peak hour being reported: Intersection Peak

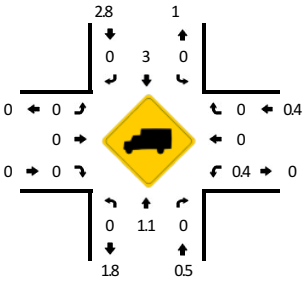
Method for determining peak hour: Total Entering

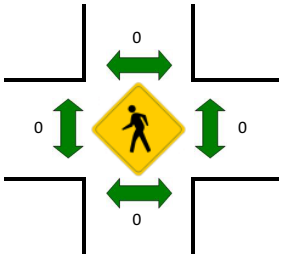
LOCATION: NE Everett St (SR 500) -- NE 43rd Ave
CITY/STATE: Camas, WA

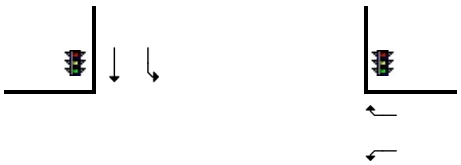
QC JOB #: 16977021
DATE: Tue, Apr 8 2025

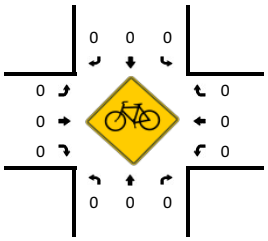
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM

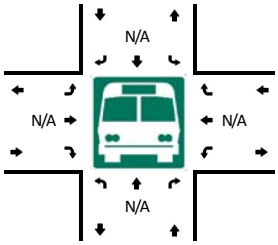


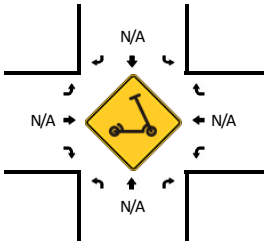












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE 43rd Ave (Eastbound)					NE 43rd Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	23	5	0	3	3	26	0	0	0	0	0	0	0	0	19	0	0	0	0	79	
4:05 PM	0	30	10	0	5	1	25	0	0	0	0	0	0	0	0	17	0	1	0	1	90	
4:10 PM	0	19	10	0	4	2	25	0	0	0	0	0	0	0	0	13	0	3	0	1	77	
4:15 PM	0	23	8	0	4	1	25	0	0	0	0	0	0	0	0	14	0	1	0	1	77	
4:20 PM	0	17	7	0	5	0	18	0	0	0	0	0	0	0	0	15	0	0	0	0	62	
4:25 PM	0	18	7	0	5	2	14	0	0	0	0	0	0	0	0	14	0	0	0	0	60	
4:30 PM	0	20	13	0	8	1	9	0	0	0	0	0	0	0	0	9	0	1	0	1	62	
4:35 PM	0	25	8	0	10	2	15	0	0	0	0	0	0	0	0	15	0	5	0	0	80	
4:40 PM	0	23	15	0	8	1	26	0	0	0	0	0	0	0	0	6	0	1	0	1	81	
4:45 PM	0	18	17	0	7	1	25	0	0	0	0	0	0	0	0	18	0	1	0	1	88	
4:50 PM	0	14	15	0	6	4	29	0	0	0	0	0	0	0	0	17	0	1	0	2	88	
4:55 PM	0	29	16	0	16	1	19	0	0	0	0	0	0	0	0	17	0	1	0	0	99	943
5:00 PM	0	25	13	0	10	5	15	0	0	0	0	0	0	0	0	25	0	0	0	1	94	958
5:05 PM	0	24	10	0	9	0	29	0	0	0	0	0	0	0	0	20	0	4	0	2	98	966
5:10 PM	0	24	7	0	17	1	19	0	0	0	0	0	0	0	0	26	0	1	0	0	95	984
5:15 PM	0	18	17	0	7	5	29	0	0	0	0	0	0	0	0	9	0	1	0	1	87	994
5:20 PM	0	25	11	0	12	1	11	0	0	0	0	0	0	0	0	20	0	0	0	0	80	1012
5:25 PM	0	22	26	0	9	2	21	0	0	0	0	0	0	0	0	14	0	0	0	1	95	1047
5:30 PM	0	23	16	0	8	1	20	0	0	0	0	0	0	0	0	18	0	0	0	0	86	1071
5:35 PM	0	24	13	0	4	0	26	0	0	0	0	0	0	0	0	19	0	2	0	1	89	1080
5:40 PM	0	19	12	0	10	3	17	0	0	0	0	0	0	0	0	21	0	1	0	0	83	1082
5:45 PM	0	23	14	0	13	3	22	0	0	0	0	0	0	0	0	12	0	1	0	1	89	1083
5:50 PM	0	19	13	0	17	1	27	0	0	0	0	0	0	0	0	22	0	0	0	1	100	1095
5:55 PM	0	23	17	0	13	0	30	0	0	0	0	0	0	0	0	18	0	0	0	1	102	1098

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	260	348	0	172	16	316	0	0	0	0	0	0	0	0	208	0	16	0	12	1348
Heavy Trucks	0	0	0			0	12	0			0	0	0			0	0	0			12
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

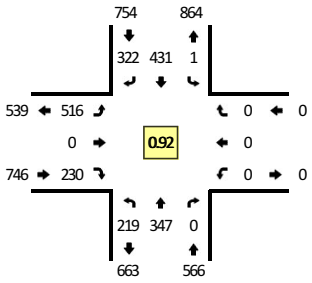
Type of peak hour being reported: Intersection Peak

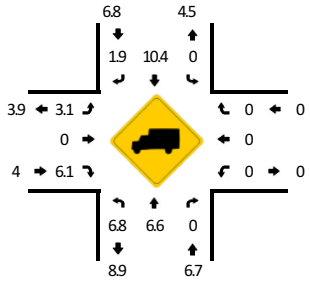
Method for determining peak hour: Total Entering

LOCATION: NE Everett St (SR 500) -- NW Lake Rd
CITY/STATE: Camas, WA

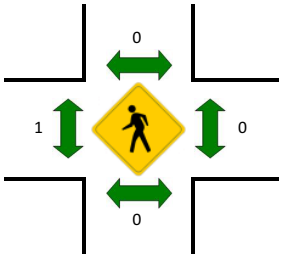
QC JOB #: 16977022
DATE: Tue, Apr 8 2025

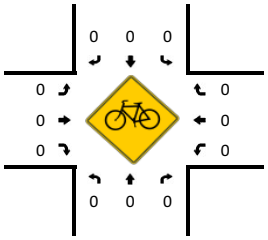
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 8:10 AM -- 8:25 AM

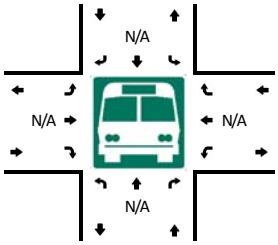


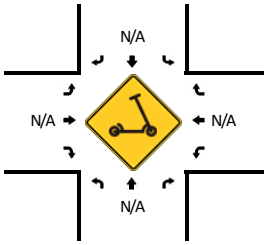


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	9	15	0	0	0	0	12	17	0	0	12	0	8	0	0	0	0	0	0	0	73	
7:05 AM	2	15	0	0	0	0	14	14	0	0	12	0	8	0	0	0	0	0	0	0	65	
7:10 AM	8	11	0	0	0	0	14	19	0	0	14	0	6	0	0	0	0	0	0	0	72	
7:15 AM	14	12	0	0	0	0	11	16	1	0	13	0	10	0	0	0	0	0	0	0	77	
7:20 AM	9	17	0	0	0	0	15	22	1	0	18	0	3	0	0	0	0	0	0	0	85	
7:25 AM	11	15	0	0	0	0	18	10	0	0	16	0	9	0	0	0	0	0	0	0	79	
7:30 AM	9	19	0	0	0	0	22	24	0	0	5	0	9	0	0	0	0	0	0	0	88	
7:35 AM	13	16	0	0	0	0	22	21	0	0	9	0	12	0	0	0	0	0	0	0	93	
7:40 AM	11	20	0	0	0	0	34	25	0	0	22	0	19	0	0	0	0	0	0	0	131	
7:45 AM	22	24	0	0	0	0	31	20	0	0	22	0	20	0	0	0	0	0	0	0	139	
7:50 AM	30	31	0	0	0	0	30	24	0	0	20	0	22	0	0	0	0	0	0	0	157	
7:55 AM	22	28	0	1	0	0	28	19	1	0	38	0	18	0	0	0	0	0	0	0	155	1214
8:00 AM	14	38	0	0	0	0	10	15	0	0	53	0	16	0	0	0	0	0	0	0	146	1287
8:05 AM	20	34	0	0	0	0	35	21	0	0	55	0	19	0	0	0	0	0	0	0	184	1406
8:10 AM	12	28	0	0	0	0	38	37	0	0	54	0	23	0	0	0	0	0	0	0	192	1526
8:15 AM	19	34	0	0	0	0	29	30	0	0	57	0	12	0	0	0	0	0	0	0	181	1630
8:20 AM	15	32	0	1	0	0	36	28	0	0	61	0	16	0	0	0	0	0	0	0	189	1734
8:25 AM	9	29	0	0	0	0	38	28	0	0	53	0	12	0	0	0	0	0	0	0	169	1824
8:30 AM	13	34	0	0	0	0	45	17	0	0	50	0	14	0	0	0	0	0	0	0	173	1909
8:35 AM	19	25	0	0	0	0	51	35	0	0	42	0	27	0	0	0	0	0	0	0	199	2015
8:40 AM	23	18	0	0	0	0	42	24	0	0	19	0	28	0	0	0	0	0	0	0	154	2038
8:45 AM	21	16	0	0	0	0	49	44	0	0	14	0	23	0	0	0	0	0	0	0	167	2066
8:50 AM	22	28	0	1	0	0	43	28	0	0	5	0	29	0	0	0	0	0	0	0	156	2065
8:55 AM	21	30	0	0	0	0	28	12	0	0	8	0	20	0	0	0	0	0	0	0	119	2029

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	184	376	0	4	0	0	412	380	0	0	688	0	204	0	0	0	0	0	0	0	2248
Heavy Trucks	12	28	0			0	20	12			40	0	4			0	0	0			116
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

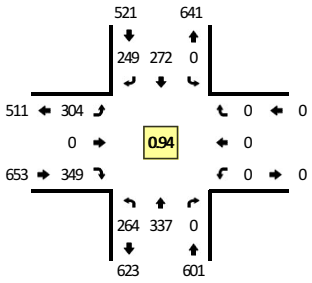
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering

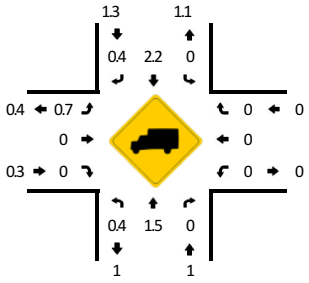
LOCATION: NE Everett St (SR 500) -- NW Lake Rd
CITY/STATE: Camas, WA

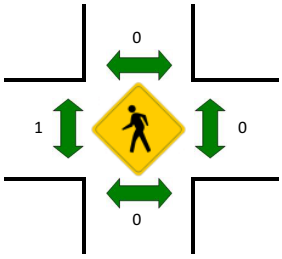
QC JOB #: 16977023
DATE: Tue, Apr 8 2025

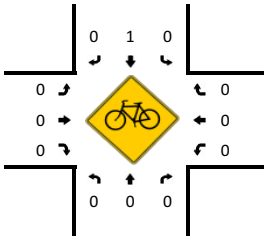
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 4:50 PM -- 5:05 PM

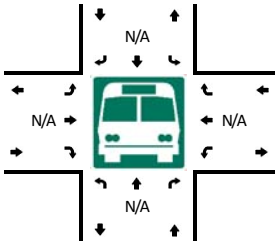


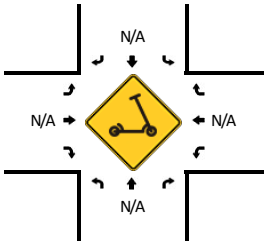
TRUE DATA TO IMPROVE MOBILITY











R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	20	29	0	0	0	0	23	17	0	0	9	0	24	0	0	0	0	0	0	0	122	
4:05 PM	23	30	0	0	0	0	29	18	0	0	16	0	35	0	0	0	0	0	0	0	151	
4:10 PM	17	28	0	1	0	0	28	13	0	0	20	0	24	0	0	0	0	0	0	0	131	
4:15 PM	25	18	0	0	0	0	29	14	0	0	17	0	29	0	0	0	0	0	0	0	132	
4:20 PM	25	24	0	0	0	0	23	15	0	0	14	0	23	0	0	0	0	0	0	0	124	
4:25 PM	26	21	0	0	0	0	18	12	0	0	8	0	28	0	0	0	0	0	0	0	113	
4:30 PM	27	28	0	0	0	0	14	8	0	0	28	0	23	0	0	0	0	0	0	0	128	
4:35 PM	22	25	0	0	0	0	17	15	0	0	21	0	28	0	0	0	0	0	0	0	128	
4:40 PM	28	25	0	0	0	0	24	16	0	0	21	0	28	0	0	0	0	0	0	0	142	
4:45 PM	19	27	0	0	0	0	21	23	0	0	21	0	26	0	0	0	0	0	0	0	137	
4:50 PM	24	25	0	0	0	0	21	21	0	0	30	0	43	0	0	0	0	0	0	0	164	
4:55 PM	16	32	0	0	0	0	29	17	0	0	28	0	30	0	0	0	0	0	0	0	152	1624
5:00 PM	16	40	0	0	0	0	20	25	0	0	25	0	30	0	0	0	0	0	0	0	156	1658
5:05 PM	32	27	0	0	0	0	23	20	0	0	20	0	26	0	0	0	0	0	0	0	148	1655
5:10 PM	22	37	0	0	0	0	28	23	0	0	19	0	29	0	0	0	0	0	0	0	158	1682
5:15 PM	19	19	0	0	0	0	27	19	0	0	24	0	35	0	0	0	0	0	0	0	143	1693
5:20 PM	21	28	0	1	0	0	10	18	0	0	41	0	31	0	0	0	0	0	0	0	150	1719
5:25 PM	27	23	0	0	0	0	20	20	0	0	27	0	29	0	0	0	0	0	0	0	146	1752
5:30 PM	17	35	0	1	0	0	24	21	0	0	29	0	23	0	0	0	0	0	0	0	150	1774
5:35 PM	21	19	0	0	0	0	25	26	0	0	19	0	19	0	0	0	0	0	0	0	129	1775
5:40 PM	17	24	0	0	0	0	20	18	0	0	33	0	22	0	0	0	0	0	0	0	134	1767
5:45 PM	8	24	0	0	0	0	27	14	0	0	30	0	21	0	0	0	0	0	0	0	124	1754
5:50 PM	20	24	0	1	0	0	25	25	0	0	34	0	32	0	0	0	0	0	0	0	161	1751
5:55 PM	15	35	0	0	0	0	30	18	0	0	20	0	29	0	0	0	0	0	0	0	147	1746

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	224	388	0	0	0	0	280	252	0	0	332	0	412	0	0	0	0	0	0	0	1888
Heavy Trucks	0	4	0			0	0	4			0	0	0			0	0	0			8
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

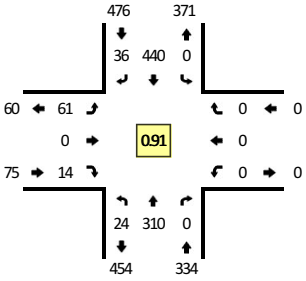
Type of peak hour being reported: Intersection Peak

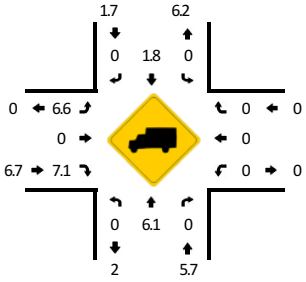
Method for determining peak hour: Total Entering

LOCATION: NE Everett St (SR 500) -- NE 17th Ave
CITY/STATE: Camas, WA

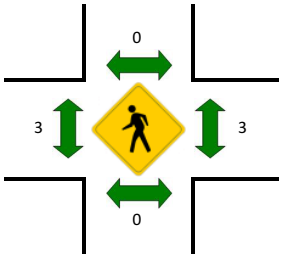
QC JOB #: 16977024
DATE: Tue, Apr 8 2025

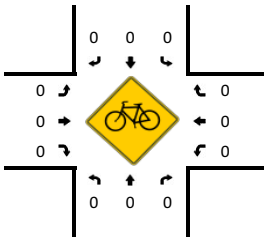
Peak-Hour: 7:55 AM -- 8:55 AM
Peak 15-Min: 8:40 AM -- 8:55 AM

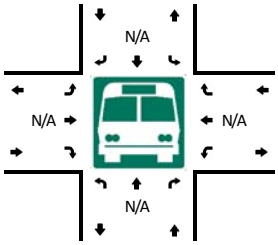


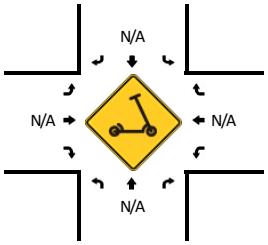


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE 17th Ave (Eastbound)					NE 17th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	2	13	0	0	0	0	16	1	0	0	4	0	3	0	0	0	0	0	0	0	39	
7:05 AM	1	8	0	0	0	0	14	2	0	0	5	0	0	0	0	0	0	0	0	0	30	
7:10 AM	0	13	0	0	0	0	14	1	0	0	3	0	0	0	0	0	0	0	0	0	31	
7:15 AM	1	15	0	0	0	0	12	2	0	0	4	0	0	0	0	0	0	0	0	0	34	
7:20 AM	0	14	0	0	0	0	9	5	0	0	5	0	1	0	0	0	0	0	0	0	34	
7:25 AM	0	15	0	0	0	0	12	3	0	0	4	0	1	0	0	0	0	0	0	0	35	
7:30 AM	1	10	0	0	0	0	16	4	0	0	1	0	0	0	0	0	0	0	0	0	32	
7:35 AM	0	21	0	0	0	0	18	3	0	0	7	0	3	0	0	0	0	0	0	0	52	
7:40 AM	0	12	0	0	0	0	20	1	0	0	3	0	1	0	0	0	0	0	0	0	37	
7:45 AM	4	34	0	0	0	0	30	7	0	0	5	0	4	0	0	0	0	0	0	0	84	
7:50 AM	4	28	0	0	0	0	22	7	0	0	5	0	0	0	0	0	0	0	0	0	66	
7:55 AM	6	17	0	0	0	0	36	4	0	0	11	0	1	0	0	0	0	0	0	0	75	549
8:00 AM	2	35	0	0	0	0	27	3	0	0	6	0	2	0	0	0	0	0	0	0	75	585
8:05 AM	1	25	0	0	0	0	26	1	0	0	8	0	0	0	0	0	0	0	0	0	61	616
8:10 AM	3	24	0	0	0	0	43	1	0	0	6	0	0	0	0	0	0	0	0	0	77	662
8:15 AM	1	26	0	0	0	0	31	4	0	0	6	0	0	0	0	0	0	0	0	0	68	696
8:20 AM	0	23	0	0	0	0	42	2	0	0	5	0	3	0	0	0	0	0	0	0	75	737
8:25 AM	0	16	0	0	0	0	31	3	0	0	8	0	1	0	0	0	0	0	0	0	59	761
8:30 AM	3	27	0	0	0	0	30	1	0	0	1	0	2	0	0	0	0	0	0	0	64	793
8:35 AM	3	31	0	0	0	0	46	5	0	0	2	0	0	0	0	0	0	0	0	0	87	828
8:40 AM	1	29	0	0	0	0	30	5	0	0	2	0	1	0	0	0	0	0	0	0	68	859
8:45 AM	1	27	0	0	0	0	38	4	0	0	4	0	2	0	0	0	0	0	0	0	76	851
8:50 AM	3	30	0	0	0	0	60	3	0	0	2	0	2	0	0	0	0	0	0	0	100	885
8:55 AM	2	32	0	0	0	0	35	2	0	0	1	0	0	0	0	0	0	0	0	0	72	882

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	20	344	0	0	0	0	512	48	0	0	32	0	20	0	0	0	0	0	0	0	976
Heavy Trucks	0	12	0			0	16	0			4	0	0			0	0	0			32
Buses																					
Pedestrians		0					0					4					8				12
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

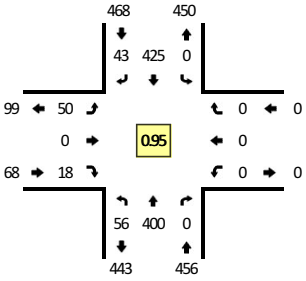
Type of peak hour being reported: Intersection Peak

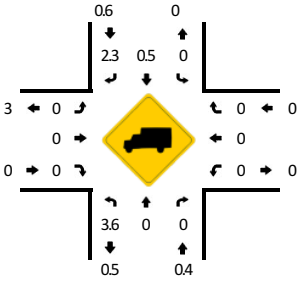
Method for determining peak hour: Total Entering

LOCATION: NE Everett St (SR 500) -- NE 17th Ave
CITY/STATE: Camas, WA

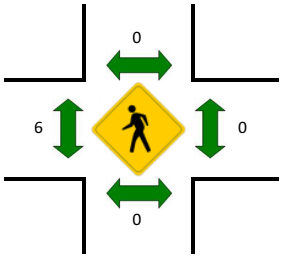
QC JOB #: 16977025
DATE: Tue, Apr 8 2025

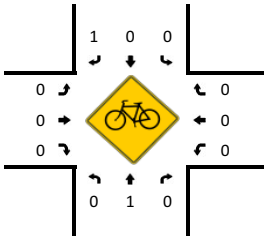
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

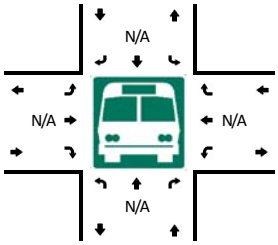


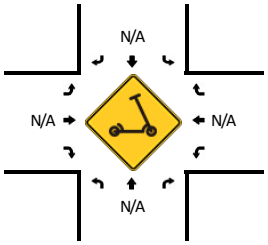


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE 17th Ave (Eastbound)					NE 17th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	4	26	0	0	0	0	29	2	0	0	5	0	1	0	0	0	0	0	0	0	67	
4:05 PM	7	26	0	0	0	0	47	4	0	0	4	0	2	0	0	0	0	0	0	0	90	
4:10 PM	5	36	0	0	0	0	29	3	0	0	6	0	1	0	0	0	0	0	0	0	80	
4:15 PM	3	30	0	0	0	0	38	2	0	0	2	0	4	0	0	0	0	0	0	0	79	
4:20 PM	4	25	0	0	0	0	35	5	0	0	2	0	4	0	0	0	0	0	0	0	75	
4:25 PM	4	23	0	0	0	0	36	2	0	0	2	0	3	0	0	0	0	0	0	0	70	
4:30 PM	4	25	0	0	0	0	27	2	0	0	4	0	2	0	0	0	0	0	0	0	64	
4:35 PM	3	36	0	0	0	0	35	2	0	0	3	0	1	0	0	0	0	0	0	0	80	
4:40 PM	4	30	0	0	0	0	35	1	0	0	2	0	1	0	0	0	0	0	0	0	73	
4:45 PM	3	31	0	0	0	0	33	3	0	0	4	0	4	0	0	0	0	0	0	0	78	
4:50 PM	3	36	0	0	0	0	36	2	0	0	3	0	4	0	0	0	0	0	0	0	84	
4:55 PM	7	30	0	0	0	0	37	4	0	0	2	0	1	0	0	0	0	0	0	0	81	921
5:00 PM	3	42	0	0	0	0	30	5	0	0	7	0	2	0	0	0	0	0	0	0	89	943
5:05 PM	4	39	0	0	0	0	36	3	0	0	7	0	0	0	0	0	0	0	0	0	89	942
5:10 PM	9	33	0	0	0	0	34	3	0	0	2	0	1	0	0	0	0	0	0	0	82	944
5:15 PM	5	25	0	0	0	0	44	4	0	0	3	0	0	0	0	0	0	0	0	0	81	946
5:20 PM	1	37	0	0	0	0	40	8	0	0	6	0	2	0	0	0	0	0	0	0	94	965
5:25 PM	7	27	0	0	0	0	37	5	0	0	8	0	0	0	0	0	0	0	0	0	84	979
5:30 PM	7	34	0	0	0	0	28	3	0	0	3	0	2	0	0	0	0	0	0	0	77	992
5:35 PM	5	29	0	0	0	0	29	6	0	0	5	0	1	0	0	0	0	0	0	0	75	987
5:40 PM	5	25	0	0	0	0	33	2	0	0	6	0	3	0	0	0	0	0	0	0	74	988
5:45 PM	9	20	0	0	0	0	31	8	0	0	4	0	1	0	0	0	0	0	0	0	73	983
5:50 PM	2	34	0	0	0	0	37	6	0	0	2	0	0	0	0	0	0	0	0	0	81	980
5:55 PM	5	29	0	0	0	0	23	7	0	0	4	0	0	0	0	0	0	0	0	0	68	967

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	64	456	0	0	0	0	400	44	0	0	64	0	12	0	0	0	0	0	0	0	1040
Heavy Trucks	0	0	0			0	0	4			0	0	0			0	0	0			4
Buses																					
Pedestrians		0					0					8					0				8
Bicycles	0	4	0			0	0	0			0	0	0			0	0	0			4
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

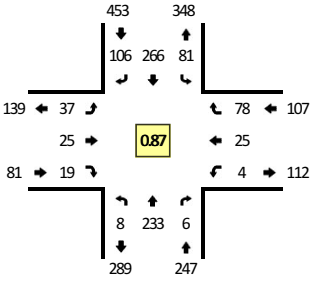
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering

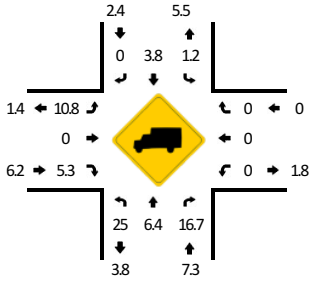
LOCATION: NE Everett St (SR 500) -- NE 15th Ave
CITY/STATE: Camas, WA

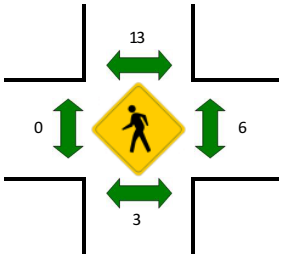
QC JOB #: 16977026
DATE: Tue, Apr 8 2025

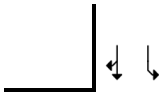
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

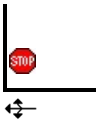


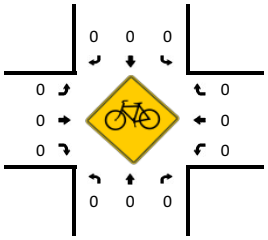
TRUE DATA TO IMPROVE MOBILITY

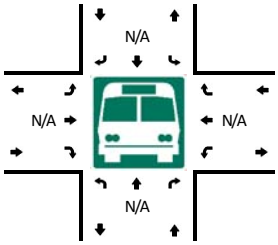


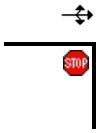


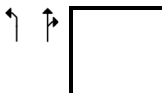


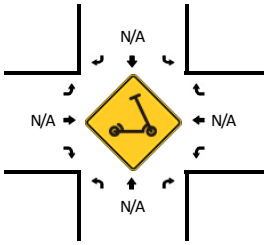












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE 15th Ave (Eastbound)					NE 15th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	12	0	0	0	0	11	8	0	0	1	0	1	0	0	0	0	0	0	0	33	
7:05 AM	0	8	0	0	0	0	6	9	0	0	1	0	2	0	0	1	0	0	0	0	27	
7:10 AM	1	11	0	0	0	0	7	6	0	0	3	1	2	0	0	0	1	0	0	0	32	
7:15 AM	1	14	0	0	0	0	9	4	0	0	1	0	3	0	0	0	2	0	0	0	34	
7:20 AM	0	11	0	0	0	0	6	3	0	0	3	0	0	0	0	0	1	0	0	0	24	
7:25 AM	0	9	1	0	0	1	11	2	0	0	5	0	3	0	0	0	0	1	0	0	33	
7:30 AM	0	11	1	0	0	0	3	12	0	0	1	1	1	0	0	0	0	0	0	0	30	
7:35 AM	2	19	1	0	0	1	9	11	0	0	1	0	1	0	0	0	0	0	0	0	45	
7:40 AM	0	9	2	0	0	7	9	6	0	0	2	1	3	0	0	1	0	1	0	0	41	
7:45 AM	1	29	1	0	0	8	18	8	0	0	0	6	1	0	0	0	3	9	0	0	84	
7:50 AM	0	25	0	0	0	2	10	6	0	0	3	3	3	0	0	0	3	4	0	0	59	
7:55 AM	5	12	0	0	0	10	21	9	0	0	2	3	1	0	0	0	2	6	0	0	71	513
8:00 AM	1	20	0	0	0	6	20	2	0	0	13	1	1	0	0	0	5	5	0	0	74	554
8:05 AM	1	20	0	0	0	5	13	8	0	0	5	1	3	0	0	0	1	1	0	0	58	585
8:10 AM	0	23	0	0	0	3	27	9	0	0	2	0	1	0	0	1	0	1	0	0	67	620
8:15 AM	1	24	1	0	0	5	23	6	0	0	2	1	4	0	0	0	1	2	0	0	70	656
8:20 AM	3	20	1	0	0	3	26	13	0	0	1	0	1	0	0	0	1	2	0	0	71	703
8:25 AM	0	8	1	0	0	3	19	12	0	0	5	2	2	0	0	2	0	3	0	0	57	727
8:30 AM	0	26	0	0	0	7	15	7	0	0	2	5	2	0	0	0	0	4	0	0	68	765
8:35 AM	1	20	0	0	0	16	25	9	0	0	1	7	0	0	0	0	5	11	0	0	95	815
8:40 AM	0	15	1	0	0	13	14	8	0	0	1	3	1	0	0	1	3	14	0	0	74	848
8:45 AM	0	19	1	0	0	9	20	8	0	0	0	2	0	0	0	0	4	9	0	0	72	836
8:50 AM	0	21	1	0	0	10	41	12	0	0	3	2	1	0	0	0	3	11	0	0	105	882
8:55 AM	1	17	0	0	0	1	23	12	0	0	2	1	3	0	0	0	2	15	0	0	77	888

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	4	228	8	0	0	80	336	128	0	0	20	20	16	0	0	0	36	140	0	0	1016
Heavy Trucks	0	16	4			0	16	0			4	0	0			0	0	0			40
Buses																					
Pedestrians		0					20					0					20				40
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

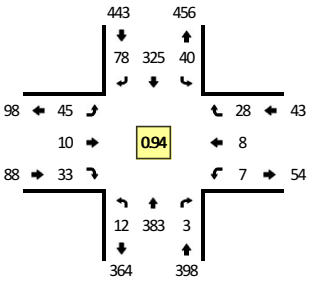
Type of peak hour being reported: Intersection Peak

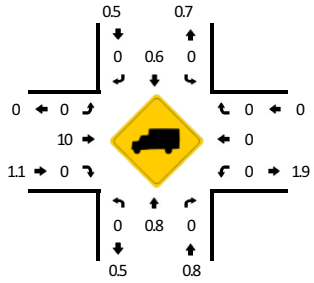
Method for determining peak hour: Total Entering

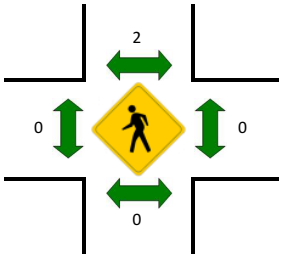
LOCATION: NE Everett St (SR 500) -- NE 15th Ave
CITY/STATE: Camas, WA

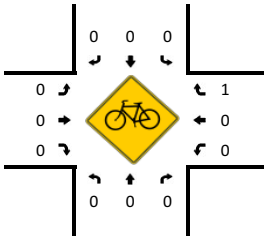
QC JOB #: 16977027
DATE: Tue, Apr 8 2025

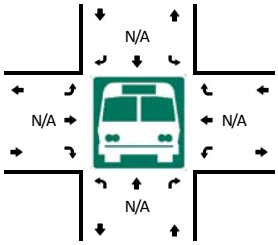
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 4:50 PM -- 5:05 PM

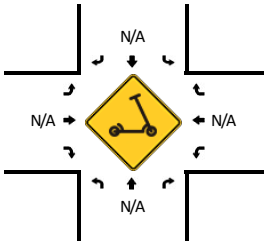












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE 15th Ave (Eastbound)					NE 15th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	2	24	1	0	0	1	23	7	0	0	3	0	1	0	0	0	1	2	0	0	65	
4:05 PM	0	29	0	0	0	2	38	10	0	0	5	0	2	0	0	0	0	1	0	0	87	
4:10 PM	1	33	1	0	0	1	23	4	0	0	6	1	4	0	0	0	1	1	0	0	76	
4:15 PM	3	30	1	0	0	3	34	6	0	0	3	0	1	0	0	0	1	0	0	0	82	
4:20 PM	1	25	2	0	0	2	29	8	0	0	1	0	4	0	0	0	0	2	0	0	74	
4:25 PM	3	21	1	0	0	1	33	4	0	0	7	2	4	0	0	0	1	0	0	0	77	
4:30 PM	1	23	1	0	0	0	24	5	0	0	5	3	4	0	0	2	1	1	0	0	70	
4:35 PM	0	35	0	0	0	3	30	4	0	0	3	1	0	0	0	1	0	0	0	0	77	
4:40 PM	1	27	0	0	0	1	24	9	0	0	6	0	4	0	0	0	0	1	0	0	73	
4:45 PM	3	29	0	0	0	5	29	5	0	0	4	0	3	0	0	0	0	2	0	0	80	
4:50 PM	1	35	0	0	0	4	26	9	0	0	3	3	6	0	0	1	1	0	0	0	89	
4:55 PM	2	33	0	0	0	5	28	5	0	0	4	1	1	0	0	0	1	1	0	0	81	931
5:00 PM	0	36	0	0	0	3	25	5	0	0	8	3	4	0	0	2	1	1	0	0	88	954
5:05 PM	0	38	1	0	0	2	25	10	0	0	2	0	5	0	0	1	1	3	0	0	88	955
5:10 PM	1	31	1	0	0	1	26	7	0	0	3	0	1	0	0	0	2	7	0	0	80	959
5:15 PM	1	21	1	0	0	4	33	3	0	0	6	2	3	0	0	0	0	2	0	0	76	953
5:20 PM	1	32	0	0	0	6	31	10	0	0	0	0	2	0	0	0	1	8	1	0	92	971
5:25 PM	1	26	0	0	0	2	27	6	0	0	4	0	3	0	0	1	0	2	0	0	72	966
5:30 PM	1	40	0	0	0	4	21	5	0	0	2	0	1	0	0	0	1	1	0	0	76	972
5:35 PM	0	27	0	0	0	2	20	9	0	0	5	0	2	0	0	1	1	1	0	0	68	963
5:40 PM	0	23	0	0	0	2	25	9	0	0	7	1	3	0	0	0	0	0	0	0	70	960
5:45 PM	1	27	1	0	0	2	24	5	0	0	3	1	1	0	0	0	1	0	0	0	66	946
5:50 PM	3	29	1	0	0	6	23	8	0	0	6	2	2	0	0	0	0	1	0	0	81	938
5:55 PM	1	28	1	0	0	2	14	5	0	0	5	1	3	0	0	0	1	2	1	0	64	921

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	12	416	0	0	0	48	316	76	0	0	60	28	44	0	0	12	12	8	0	0	1032
Heavy Trucks	0	4	0			0	0	0			0	4	0			0	0	0			8
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	4			4
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

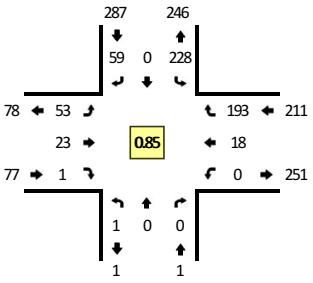
Type of peak hour being reported: Intersection Peak

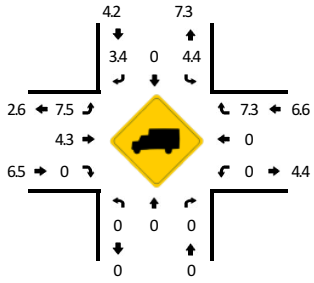
Method for determining peak hour: Total Entering

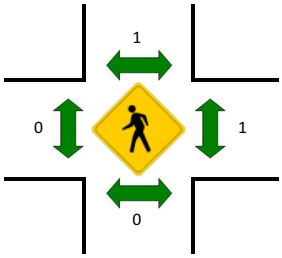
LOCATION: NE Everett St (SR 500) -- NE 14th Ave
CITY/STATE: Camas, WA

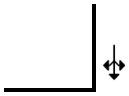
QC JOB #: 16977028
DATE: Tue, Apr 8 2025

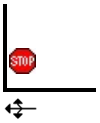
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

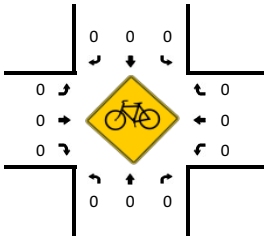


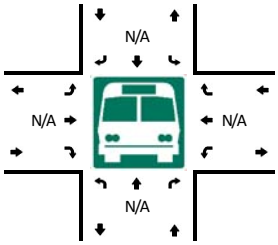


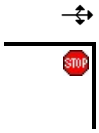


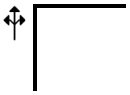


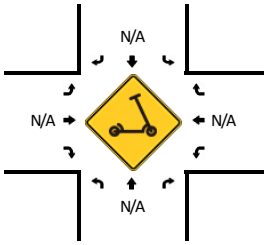












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE 14th Ave (Eastbound)					NE 14th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	8	0	1	0	0	2	1	0	0	0	0	0	9	0	0	21	
7:05 AM	0	0	0	0	0	5	0	3	0	0	1	1	0	0	0	0	0	6	0	0	16	
7:10 AM	0	0	0	0	0	9	0	1	0	0	2	3	0	0	0	0	0	9	0	0	24	
7:15 AM	0	0	0	0	0	9	0	2	0	0	3	1	0	0	0	0	2	13	0	0	30	
7:20 AM	0	0	0	0	0	5	0	1	0	0	2	0	1	0	0	0	2	7	0	0	18	
7:25 AM	0	0	0	0	0	12	0	2	0	0	3	1	0	0	0	0	0	8	0	0	26	
7:30 AM	0	0	0	0	0	4	0	0	0	0	1	1	0	0	0	0	1	11	0	0	18	
7:35 AM	0	0	0	0	0	10	0	1	0	0	4	3	0	0	0	0	0	16	0	0	34	
7:40 AM	0	0	0	0	0	9	0	2	0	0	1	4	0	0	0	0	1	11	0	0	28	
7:45 AM	0	0	0	0	0	14	0	3	0	0	5	1	0	0	0	0	0	23	0	0	46	
7:50 AM	0	0	0	0	0	10	0	4	0	0	6	4	0	0	0	0	3	20	0	0	47	
7:55 AM	0	0	0	0	0	17	0	4	0	0	3	1	0	0	0	0	1	15	0	0	41	349
8:00 AM	0	0	0	0	0	18	0	4	0	0	4	3	0	0	0	0	1	16	0	0	46	374
8:05 AM	0	0	0	0	0	14	0	2	0	0	4	1	0	0	0	0	0	17	0	0	38	396
8:10 AM	0	0	0	0	0	23	0	5	0	0	4	2	0	0	0	0	0	19	0	0	53	425
8:15 AM	0	0	0	0	0	21	0	5	0	0	8	1	0	0	0	0	0	18	0	0	53	448
8:20 AM	1	0	0	0	0	18	0	9	0	0	5	2	0	0	0	0	0	16	0	0	51	481
8:25 AM	0	0	0	0	0	16	0	8	0	0	3	0	0	0	0	0	0	6	0	0	33	488
8:30 AM	0	0	0	0	0	13	0	3	0	0	10	2	0	0	0	0	1	18	0	0	47	517
8:35 AM	0	0	0	0	0	20	0	5	0	0	2	1	0	0	0	0	3	17	0	0	48	531
8:40 AM	0	0	0	0	0	13	0	4	0	0	5	2	0	0	0	0	0	14	0	0	38	541
8:45 AM	0	0	0	0	0	14	0	4	0	0	2	3	1	0	0	0	2	17	0	0	43	538
8:50 AM	0	0	0	0	0	34	0	7	0	0	2	3	0	0	0	0	3	19	0	0	68	559
8:55 AM	0	0	0	0	0	24	0	3	0	0	4	3	0	0	0	0	8	16	0	0	58	576

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	288	0	56	0	0	32	36	4	0	0	0	52	208	0	0	676
Heavy Trucks	0	0	0			16	0	0			0	4	0			0	0	12			32
Buses																					
Pedestrians		0					0					0					4				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

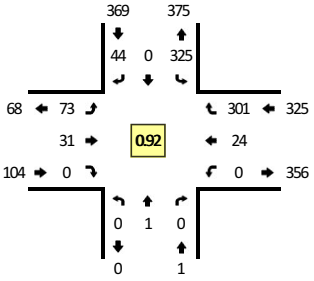
Type of peak hour being reported: Intersection Peak

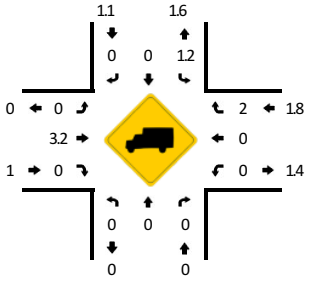
Method for determining peak hour: Total Entering

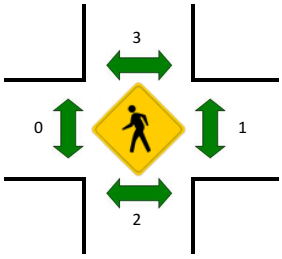
LOCATION: NE Everett St (SR 500) -- NE 14th Ave
CITY/STATE: Camas, WA

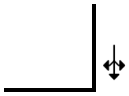
QC JOB #: 16977029
DATE: Tue, Apr 8 2025

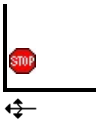
Peak-Hour: 4:10 PM -- 5:10 PM
Peak 15-Min: 4:55 PM -- 5:10 PM

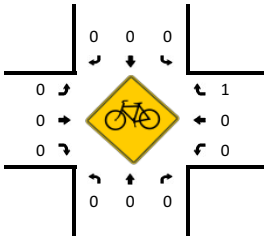


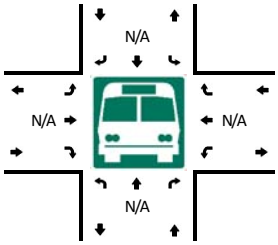


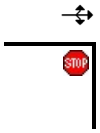


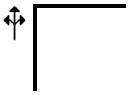


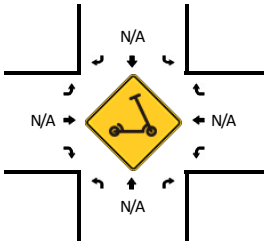












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE 14th Ave (Eastbound)					NE 14th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	0	0	0	18	0	5	0	0	5	2	0	0	0	0	0	22	0	0	52	
4:05 PM	0	0	0	0	0	36	0	4	0	0	3	0	0	0	0	0	0	28	0	0	71	
4:10 PM	0	0	0	0	0	24	0	3	0	0	8	2	0	0	0	0	1	26	0	0	64	
4:15 PM	0	0	0	0	0	28	0	7	0	0	5	2	0	0	0	0	2	28	0	0	72	
4:20 PM	0	0	0	0	0	28	0	2	0	0	7	2	0	0	0	0	0	22	0	0	61	
4:25 PM	0	0	0	0	0	30	0	5	0	0	4	2	0	0	0	0	1	21	0	0	63	
4:30 PM	0	0	0	0	0	27	0	4	0	0	5	7	0	0	0	0	1	20	0	0	64	
4:35 PM	0	0	0	0	0	26	0	6	0	0	4	0	0	0	0	0	3	29	0	0	68	
4:40 PM	0	1	0	0	0	21	0	3	0	0	6	2	0	0	0	0	2	22	0	0	57	
4:45 PM	0	0	0	0	0	30	0	4	0	0	6	1	0	0	0	0	2	23	0	0	66	
4:50 PM	0	0	0	0	0	30	0	2	0	0	3	2	0	0	0	0	2	29	0	0	68	
4:55 PM	0	0	0	0	0	23	0	5	0	0	10	5	0	0	0	0	1	28	0	0	72	778
5:00 PM	0	0	0	0	0	30	0	1	0	0	10	2	0	0	0	0	3	21	0	0	67	793
5:05 PM	0	0	0	0	0	28	0	2	0	0	5	4	0	0	0	0	6	32	0	0	77	799
5:10 PM	0	0	0	0	0	20	0	3	0	0	9	3	0	0	0	0	1	24	0	0	60	795
5:15 PM	0	0	0	0	0	26	0	9	0	0	6	0	0	0	0	0	2	20	0	0	63	786
5:20 PM	0	1	0	0	0	28	0	6	0	0	10	2	0	0	0	0	1	21	0	0	69	794
5:25 PM	0	0	0	0	0	21	0	5	0	0	6	1	0	0	0	0	0	21	0	0	54	785
5:30 PM	0	0	0	0	0	22	0	2	0	0	12	1	0	0	0	0	1	26	0	0	64	785
5:35 PM	0	0	0	0	0	20	0	1	0	0	4	2	0	0	0	0	0	22	0	0	49	766
5:40 PM	0	0	0	0	0	25	0	2	0	0	1	4	0	0	0	0	0	22	0	0	54	763
5:45 PM	0	0	0	0	0	21	1	2	0	0	3	4	0	0	0	0	2	27	0	0	60	757
5:50 PM	0	0	0	0	0	20	0	2	0	0	7	4	0	0	0	0	1	24	0	0	58	747
5:55 PM	0	0	0	0	0	18	0	1	0	0	6	5	0	0	0	0	3	20	0	0	53	728

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	324	0	32	0	0	100	44	0	0	0	0	40	324	0	0	864
Heavy Trucks	0	0	0			0	0	0			0	0	0			0	0	4			4
Buses																					
Pedestrians		0					0					0					4				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

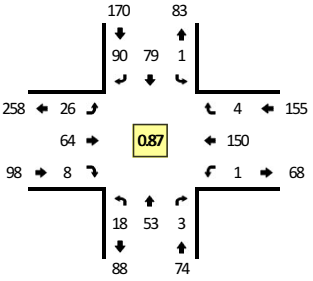
Type of peak hour being reported: Intersection Peak

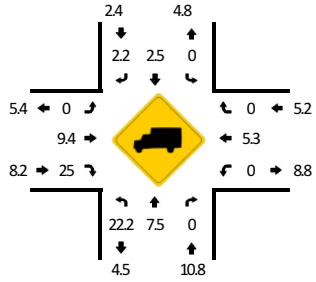
Method for determining peak hour: Total Entering

LOCATION: NE Dallas St -- NE 6th Ave
CITY/STATE: Camas, WA

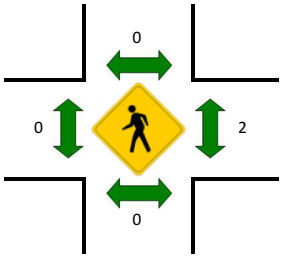
QC JOB #: 16977040
DATE: Tue, Apr 8 2025

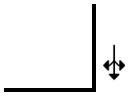
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

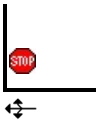


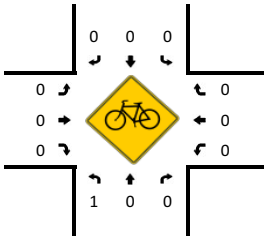


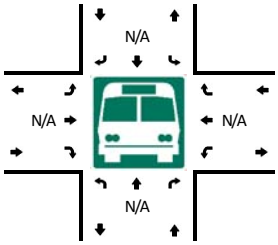
TRUE DATA TO IMPROVE MOBILITY

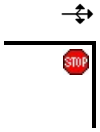


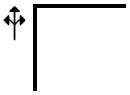


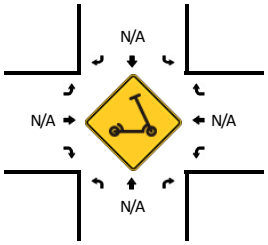












R* = RTOR

5-Min Count Period Beginning At	NE Dallas St (Northbound)					NE Dallas St (Southbound)					NE 6th Ave (Eastbound)					NE 6th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	1	2	0	0	0	0	5	5	0	0	1	4	0	0	0	0	9	0	0	0	27	
7:05 AM	1	2	0	0	0	0	4	3	0	0	1	3	0	0	0	0	8	1	0	0	23	
7:10 AM	1	1	0	0	0	0	3	5	0	0	1	4	0	0	0	0	9	1	0	0	25	
7:15 AM	0	2	0	0	0	1	5	1	0	0	2	5	2	0	0	0	11	0	0	0	29	
7:20 AM	0	1	0	0	0	0	3	2	0	0	0	9	0	0	0	0	11	0	0	0	26	
7:25 AM	3	7	0	0	0	0	5	1	0	0	3	2	1	0	0	2	10	1	0	0	35	
7:30 AM	0	1	0	0	0	0	6	6	0	0	1	4	1	0	0	0	4	0	0	0	23	
7:35 AM	0	3	0	0	0	1	2	4	0	0	2	5	0	0	0	1	10	0	0	0	28	
7:40 AM	2	2	1	0	0	0	6	6	0	0	0	5	0	0	0	2	6	0	0	0	30	
7:45 AM	0	4	0	0	0	0	4	10	0	0	3	6	0	0	0	0	15	0	0	0	42	
7:50 AM	2	6	0	0	0	0	10	7	0	0	1	7	1	0	0	0	14	1	0	0	49	
7:55 AM	3	2	0	0	0	1	9	9	0	0	2	6	1	0	0	0	18	1	0	0	52	389
8:00 AM	0	6	0	0	0	0	8	6	0	0	2	5	0	0	0	0	15	0	0	0	42	404
8:05 AM	4	3	0	0	0	0	5	6	0	0	2	4	1	0	0	0	10	0	0	0	35	416
8:10 AM	1	2	0	0	0	0	5	6	0	0	4	3	2	0	0	1	11	0	0	0	35	426
8:15 AM	1	4	2	0	0	0	8	8	0	0	3	6	0	0	0	0	6	0	0	0	38	435
8:20 AM	0	3	0	0	0	0	4	8	0	0	2	2	0	0	0	0	9	0	0	0	28	437
8:25 AM	2	5	1	0	0	0	8	11	0	0	0	6	0	0	0	0	8	1	0	0	42	444
8:30 AM	3	7	0	0	0	0	7	8	0	0	5	9	0	0	0	0	10	0	0	0	49	470
8:35 AM	0	5	0	0	0	0	6	5	0	0	1	4	2	0	0	0	19	0	0	0	42	484
8:40 AM	2	6	0	0	0	0	5	6	0	0	1	6	1	0	0	0	15	1	0	0	43	497
8:45 AM	2	1	1	0	0	1	11	4	0	0	1	6	0	0	0	0	14	0	0	0	41	496
8:50 AM	2	3	1	0	0	0	16	3	0	0	3	4	1	0	0	0	10	2	0	0	45	492
8:55 AM	1	5	1	1	0	0	10	4	0	0	3	3	0	0	0	1	14	0	0	0	43	483

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	20	48	0	0	0	4	92	104	0	0	24	76	8	0	0	0	188	8	0	0	572
Heavy Trucks	4	0	0			0	4	4			0	0	0			0	28	0			40
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

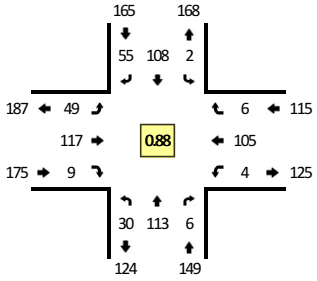
Type of peak hour being reported: Intersection Peak

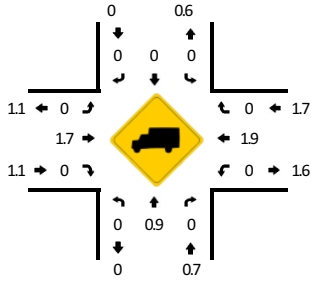
Method for determining peak hour: Total Entering

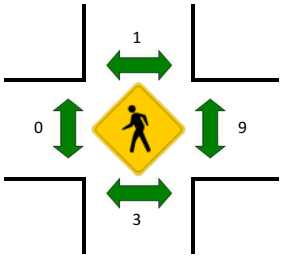
LOCATION: NE Dallas St -- NE 6th Ave
CITY/STATE: Camas, WA

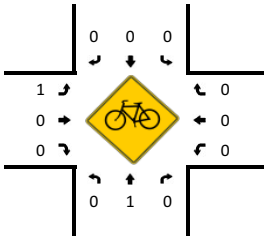
QC JOB #: 16977041
DATE: Tue, Apr 8 2025

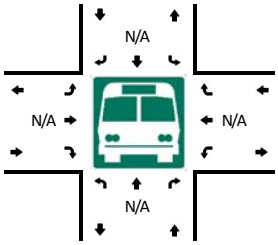
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 4:50 PM -- 5:05 PM

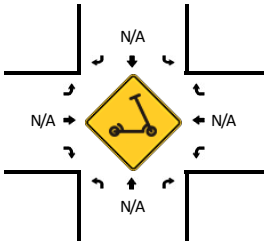












R* = RTOR

5-Min Count Period Beginning At	NE Dallas St (Northbound)					NE Dallas St (Southbound)					NE 6th Ave (Eastbound)					NE 6th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	2	10	1	0	0	0	13	5	0	0	0	4	2	0	0	0	11	0	0	0	48	
4:05 PM	5	11	0	0	0	1	7	4	0	0	5	4	0	0	0	0	12	0	0	0	49	
4:10 PM	3	13	1	0	0	0	8	5	0	0	3	5	0	0	0	0	8	1	0	0	47	
4:15 PM	2	10	0	0	0	1	8	4	0	0	3	10	1	0	0	1	5	0	0	0	45	
4:20 PM	1	9	0	0	0	0	11	5	0	0	3	5	1	0	0	1	6	0	0	0	42	
4:25 PM	3	5	0	0	0	0	10	8	0	0	4	7	2	0	0	0	9	3	0	0	51	
4:30 PM	2	7	0	0	0	0	6	3	0	0	3	6	0	0	0	1	8	1	0	0	37	
4:35 PM	6	11	0	0	0	1	11	3	0	0	1	10	0	0	0	1	6	0	0	0	50	
4:40 PM	5	6	0	0	0	0	8	2	0	0	4	8	0	0	0	1	8	1	0	0	43	
4:45 PM	3	4	0	0	0	0	9	5	0	0	3	9	1	0	0	0	11	1	0	0	46	
4:50 PM	3	6	0	0	0	0	10	7	0	0	4	15	0	0	0	0	11	2	0	0	58	
4:55 PM	0	11	0	1	0	0	8	5	0	0	4	15	2	0	0	0	10	1	0	0	57	573
5:00 PM	2	15	2	0	0	0	8	3	0	0	5	9	2	0	0	0	10	1	0	0	57	582
5:05 PM	2	8	1	0	0	0	8	5	0	0	2	10	0	0	0	0	12	0	0	0	48	581
5:10 PM	0	10	0	1	0	1	10	4	0	0	8	8	1	0	0	0	5	0	0	0	48	582
5:15 PM	0	15	0	0	0	0	10	4	0	0	4	10	0	0	0	0	9	0	0	0	52	589
5:20 PM	3	8	1	0	0	0	11	4	0	0	5	3	0	0	0	0	8	0	0	0	43	590
5:25 PM	2	6	0	0	0	0	7	6	0	0	6	10	0	0	0	0	5	0	0	0	42	581
5:30 PM	1	13	2	1	0	0	8	7	0	0	3	10	3	0	0	2	10	0	0	0	60	604
5:35 PM	1	16	0	0	0	0	5	5	0	0	2	7	1	0	0	0	9	0	0	0	46	600
5:40 PM	2	8	0	1	0	0	9	2	0	0	5	10	0	0	0	0	5	0	0	0	42	599
5:45 PM	1	4	0	0	0	0	8	3	0	0	5	10	0	0	0	0	9	1	0	0	41	594
5:50 PM	3	6	1	1	0	1	5	7	0	0	5	13	1	0	0	0	6	0	0	0	49	585
5:55 PM	2	9	1	1	0	0	5	0	0	0	5	9	0	0	0	0	9	2	0	0	43	571

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	20	128	8	4	0	0	104	60	0	0	52	156	16	0	0	0	124	16	0	0	688
Heavy Trucks	0	4	0			0	0	0			0	4	0			0	0	0			8
Buses																					
Pedestrians		0					0					0					4				4
Bicycles	0	4	0			0	0	0			4	0	0			0	0	0			8
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

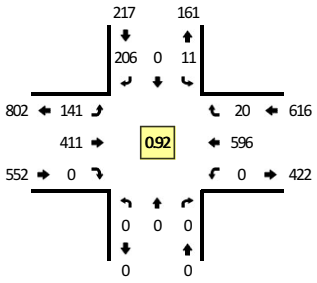
Type of peak hour being reported: Intersection Peak

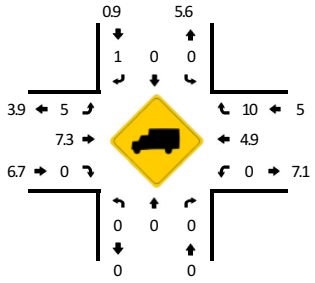
Method for determining peak hour: Total Entering

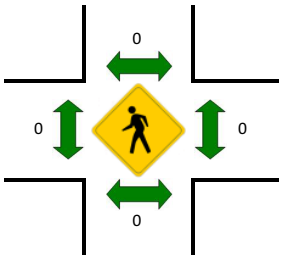
LOCATION: Division St -- NE 6th Ave
CITY/STATE: Camas, WA

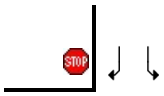
QC JOB #: 16977030
DATE: Tue, Apr 8 2025

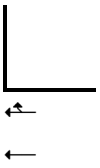
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

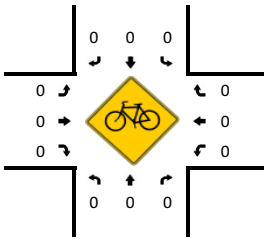


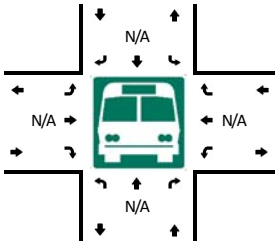


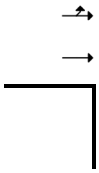


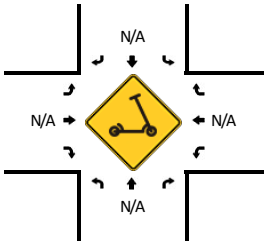












R* = RTOR

5-Min Count Period Beginning At	Division St (Northbound)					Division St (Southbound)					NE 6th Ave (Eastbound)					NE 6th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	1	0	10	0	0	8	19	0	0	0	0	31	0	0	0	69	
7:05 AM	0	0	0	0	0	2	0	12	0	0	4	24	0	0	0	0	37	0	0	0	79	
7:10 AM	0	0	0	0	0	0	0	12	0	0	7	22	0	0	0	0	42	2	0	0	85	
7:15 AM	0	0	0	0	0	1	0	17	0	0	6	26	0	0	0	0	30	1	0	0	81	
7:20 AM	0	0	0	0	0	0	0	14	0	0	4	37	0	0	0	0	48	1	0	0	104	
7:25 AM	0	0	0	0	0	1	0	10	0	0	10	20	0	0	0	0	30	0	0	0	71	
7:30 AM	0	0	0	0	0	2	0	21	0	0	8	25	0	0	0	0	56	1	0	0	113	
7:35 AM	0	0	0	0	0	0	0	26	0	0	10	25	0	0	0	0	53	1	0	0	115	
7:40 AM	0	0	0	0	0	0	0	10	0	0	12	18	0	0	0	0	49	0	0	0	89	
7:45 AM	0	0	0	0	0	0	0	17	0	0	12	36	0	0	0	0	44	0	0	0	109	
7:50 AM	0	0	0	0	0	0	0	24	0	0	14	30	0	0	0	0	55	1	0	0	124	
7:55 AM	0	0	0	0	0	1	0	20	0	0	10	48	0	0	0	0	56	4	0	0	139	1178
8:00 AM	0	0	0	0	0	0	0	13	0	0	13	33	0	0	0	0	53	0	0	0	112	1221
8:05 AM	0	0	0	0	0	2	0	9	0	0	11	25	0	0	0	0	42	1	0	0	90	1232
8:10 AM	0	0	0	0	0	0	0	15	0	0	11	37	0	0	0	0	37	0	0	0	100	1247
8:15 AM	0	0	0	0	0	2	0	16	0	0	11	28	0	0	0	0	49	2	0	0	108	1274
8:20 AM	0	0	0	0	0	0	0	17	0	0	18	37	0	0	0	0	47	4	0	0	123	1293
8:25 AM	0	0	0	0	0	1	0	17	0	0	12	32	0	0	0	0	44	2	0	0	108	1330
8:30 AM	0	0	0	0	0	2	0	19	0	0	5	38	0	0	0	0	61	2	0	0	127	1344
8:35 AM	0	0	0	0	0	2	0	17	0	0	11	30	0	0	0	0	47	2	0	0	109	1338
8:40 AM	0	0	0	0	0	0	0	21	0	0	10	35	0	0	0	0	57	0	0	0	123	1372
8:45 AM	0	0	0	0	0	1	0	18	0	0	15	38	0	0	0	0	48	2	0	0	122	1385
8:50 AM	0	0	0	0	0	0	0	21	0	0	7	49	0	0	0	0	34	1	0	0	112	1373
8:55 AM	0	0	0	0	0	1	0	18	0	0	7	34	0	0	0	0	39	0	0	0	99	1333

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	4	0	228	0	0	148	444	0	0	0	0	656	20	0	0	1500
Heavy Trucks	0	0	0			0	0	8			4	8	0			0	36	4			60
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

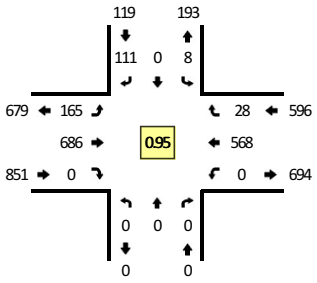
Type of peak hour being reported: Intersection Peak

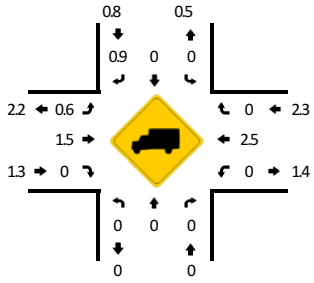
Method for determining peak hour: Total Entering

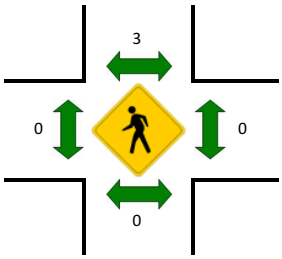
LOCATION: Division St -- NE 6th Ave
CITY/STATE: Camas, WA

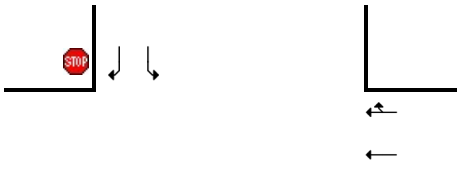
QC JOB #: 16977031
DATE: Tue, Apr 8 2025

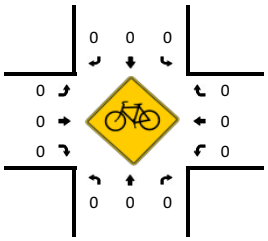
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

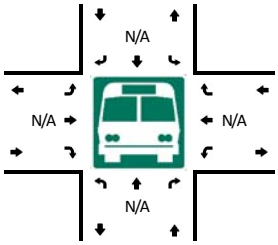


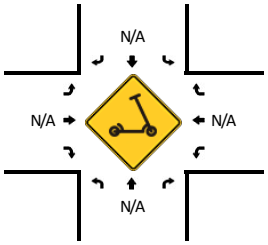












R* = RTOR

5-Min Count Period Beginning At	Division St (Northbound)					Division St (Southbound)					NE 6th Ave (Eastbound)					NE 6th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	0	0	0	2	0	8	0	0	17	54	0	0	0	0	55	1	0	0	137	
4:05 PM	0	0	0	0	0	0	0	8	0	0	8	45	0	0	0	0	53	3	0	0	117	
4:10 PM	0	0	0	0	0	0	0	13	0	0	13	45	0	0	0	0	53	2	0	0	126	
4:15 PM	0	0	0	0	0	2	0	10	0	0	11	55	0	0	0	0	37	1	0	0	116	
4:20 PM	0	0	0	0	0	3	0	15	0	0	10	42	0	0	0	0	43	2	0	0	115	
4:25 PM	0	0	0	0	0	0	0	6	0	0	13	61	0	0	0	0	32	3	0	0	115	
4:30 PM	0	0	0	0	0	0	0	9	0	0	16	37	0	0	0	0	47	3	0	0	112	
4:35 PM	0	0	0	0	0	3	0	10	0	0	14	55	0	0	0	0	34	3	0	0	119	
4:40 PM	0	0	0	0	0	1	0	6	0	0	11	56	0	0	0	0	51	4	0	0	129	
4:45 PM	0	0	0	0	0	1	0	8	0	0	14	52	0	0	0	0	47	2	0	0	124	
4:50 PM	0	0	0	0	0	0	0	11	0	0	16	61	0	0	0	0	52	2	0	0	142	
4:55 PM	0	0	0	0	0	0	0	8	0	0	10	60	0	0	0	0	48	1	0	0	127	1479
5:00 PM	0	0	0	0	0	1	0	12	0	0	15	52	0	0	0	0	39	3	0	0	122	1464
5:05 PM	0	0	0	0	0	0	0	7	0	0	13	61	0	0	0	0	59	2	0	0	142	1489
5:10 PM	0	0	0	0	0	0	0	13	0	0	13	60	0	0	0	0	51	0	0	0	137	1500
5:15 PM	0	0	0	0	0	1	0	5	0	0	17	59	0	0	0	0	47	3	0	0	132	1516
5:20 PM	0	0	0	0	0	1	0	12	0	0	13	48	0	0	0	0	54	6	0	0	134	1535
5:25 PM	0	0	0	0	0	0	0	8	0	0	10	62	0	0	0	0	40	2	0	0	122	1542
5:30 PM	0	0	0	0	0	1	0	12	0	0	15	57	0	0	0	0	37	1	0	0	123	1553
5:35 PM	0	0	0	0	0	2	0	9	0	0	18	58	0	0	0	0	43	2	0	0	132	1566
5:40 PM	0	0	0	0	0	0	0	15	0	0	10	51	0	0	0	0	29	0	0	0	105	1542
5:45 PM	0	0	0	0	0	1	0	7	0	0	15	56	0	0	0	0	42	3	0	0	124	1542
5:50 PM	0	0	0	0	0	1	0	7	0	0	23	74	0	0	0	0	47	5	0	0	157	1557
5:55 PM	0	0	0	0	0	4	0	18	0	0	7	51	0	0	0	0	41	2	0	0	123	1553

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	4	0	100	0	0	172	720	0	0	0	0	628	20	0	0	1644
Heavy Trucks	0	0	0			0	0	0			0	4	0			0	20	0			24
Buses																					
Pedestrians		0					4					0					0				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

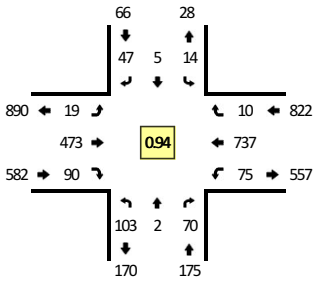
Type of peak hour being reported: Intersection Peak

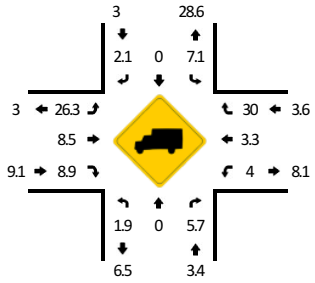
Method for determining peak hour: Total Entering

LOCATION: NW 6th Ave -- SR 14 Ramps
CITY/STATE: Camas, WA

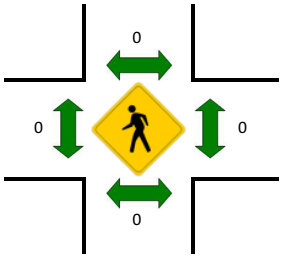
QC JOB #: 16993908
DATE: Tue, May 20 2025

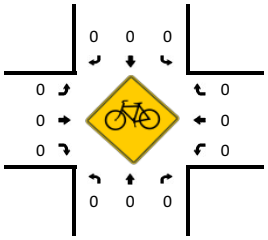
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

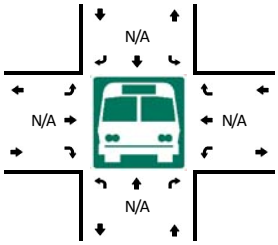


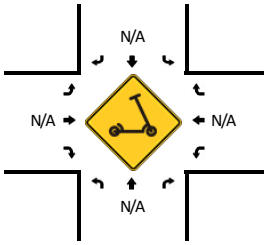


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	NW 6th Ave (Northbound)					NW 6th Ave (Southbound)					SR 14 Ramps (Eastbound)					SR 14 Ramps (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	8	0	5	0	0	0	0	1	0	0	1	18	3	0	0	5	49	0	0	0	90	
7:05 AM	3	0	2	0	0	0	0	0	0	0	1	17	1	0	0	4	55	0	0	0	83	
7:10 AM	4	0	0	0	0	0	0	3	0	0	1	25	5	0	0	7	53	0	0	0	98	
7:15 AM	7	0	4	0	0	2	1	4	0	0	2	23	8	0	0	6	51	0	0	0	108	
7:20 AM	5	0	3	0	0	0	1	1	0	0	1	37	2	0	0	3	56	0	0	0	109	
7:25 AM	10	0	2	0	0	0	2	5	0	0	1	33	1	0	0	8	58	1	0	0	121	
7:30 AM	7	0	1	0	0	0	0	2	0	0	1	28	1	0	0	4	72	0	0	0	116	
7:35 AM	8	0	3	0	0	1	1	4	0	0	0	27	4	0	0	5	74	0	0	0	127	
7:40 AM	3	0	3	0	0	3	0	4	0	0	0	30	3	0	0	6	64	0	0	0	116	
7:45 AM	8	0	7	0	0	3	0	9	0	0	1	48	9	0	0	11	57	0	0	0	153	
7:50 AM	9	1	10	0	0	1	0	4	0	0	0	36	6	0	0	5	58	1	0	0	131	
7:55 AM	12	0	3	0	0	1	1	3	0	0	1	35	7	0	0	14	74	2	0	0	153	1405
8:00 AM	6	0	6	0	0	1	0	1	0	0	3	38	6	0	0	11	69	1	0	0	142	1457
8:05 AM	10	0	7	0	0	3	1	1	0	0	2	36	8	0	0	6	49	1	0	0	124	1498
8:10 AM	7	0	7	0	0	1	0	5	0	0	4	35	9	0	0	6	50	0	0	0	124	1524
8:15 AM	9	0	6	0	0	0	1	8	0	0	0	39	10	1	0	3	69	1	0	0	147	1563
8:20 AM	12	0	4	0	0	2	0	4	0	0	0	38	6	1	0	4	60	0	0	0	131	1585
8:25 AM	9	0	3	0	0	1	0	5	0	0	0	40	10	0	0	2	61	2	0	0	133	1597
8:30 AM	6	1	8	0	0	0	0	0	0	0	3	42	9	0	0	4	57	0	0	0	130	1611
8:35 AM	6	0	4	0	0	1	1	4	0	0	1	46	6	1	0	6	63	2	0	0	141	1625
8:40 AM	9	0	5	0	0	0	1	3	0	0	1	40	4	0	0	3	70	0	0	0	136	1645
8:45 AM	3	0	2	0	0	3	0	2	0	0	3	39	5	0	0	6	64	2	0	0	129	1621
8:50 AM	5	0	7	0	0	2	2	2	0	0	4	41	2	0	0	2	71	0	0	0	138	1628
8:55 AM	7	0	1	0	0	1	0	0	0	0	3	38	2	0	0	7	63	1	0	0	123	1598

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	116	4	80	0	0	20	4	64	0	0	8	476	88	0	0	120	756	12	0	0	1748
Heavy Trucks	8	0	4			0	0	0			4	32	4			8	16	8			84
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

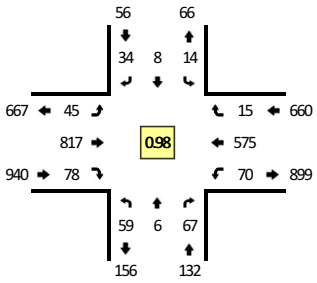
Type of peak hour being reported: Intersection Peak

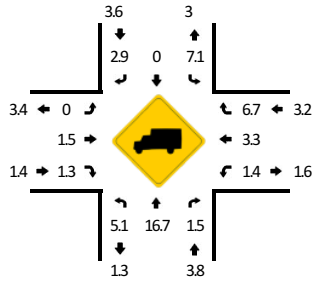
Method for determining peak hour: Total Entering

LOCATION: NW 6th Ave -- SR 14 Ramps
CITY/STATE: Camas, WA

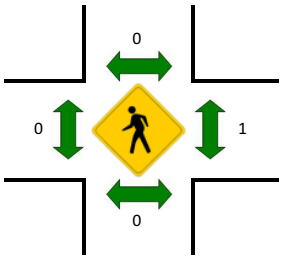
QC JOB #: 16993909
DATE: Tue, May 20 2025

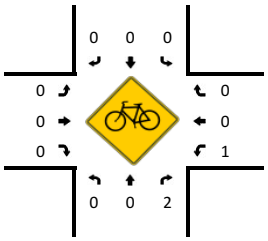
Peak-Hour: 4:20 PM -- 5:20 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

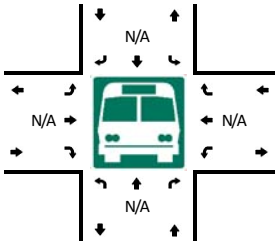


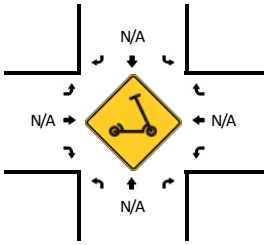


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	NW 6th Ave (Northbound)					NW 6th Ave (Southbound)					SR 14 Ramps (Eastbound)					SR 14 Ramps (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	2	0	7	0	0	2	0	2	0	0	7	64	4	0	0	5	50	2	0	0	145	
4:05 PM	2	0	6	0	0	2	0	2	0	0	4	61	5	0	0	0	66	1	0	0	149	
4:10 PM	3	0	5	0	0	1	1	2	0	0	3	59	6	1	0	8	60	0	1	0	150	
4:15 PM	3	0	5	0	0	0	0	3	0	0	3	65	14	0	0	4	41	1	0	0	139	
4:20 PM	11	0	12	0	0	3	2	3	1	0	3	70	7	0	0	5	41	1	0	0	159	
4:25 PM	6	1	3	1	0	2	1	4	0	0	3	61	6	0	0	7	52	1	0	0	148	
4:30 PM	5	2	4	0	0	0	1	1	0	0	6	60	6	0	0	10	43	2	0	0	140	
4:35 PM	10	1	7	0	0	2	0	2	0	0	6	67	5	1	0	4	57	1	0	0	163	
4:40 PM	2	1	10	0	0	0	0	2	0	0	5	60	11	0	0	8	50	1	1	0	151	
4:45 PM	6	0	6	0	0	0	3	3	0	0	5	58	9	0	0	0	50	2	1	0	143	
4:50 PM	4	1	3	0	0	0	0	3	0	0	2	74	6	0	0	7	46	1	0	0	147	
4:55 PM	1	0	8	0	0	1	0	1	0	0	5	66	5	0	0	9	41	0	0	0	137	1771
5:00 PM	4	0	5	0	0	0	0	3	0	0	4	80	5	0	0	2	52	1	0	0	156	1782
5:05 PM	3	0	1	0	0	2	0	2	0	0	2	69	5	0	0	3	54	2	0	0	143	1776
5:10 PM	2	0	4	1	0	1	1	7	0	0	1	84	5	0	0	3	43	2	0	0	154	1780
5:15 PM	3	0	4	0	0	2	0	3	0	0	2	68	8	0	0	10	46	1	0	0	147	1788
5:20 PM	1	0	3	0	0	0	0	3	0	0	3	66	3	0	0	3	57	2	0	0	141	1770
5:25 PM	4	1	3	0	0	2	0	1	0	0	4	64	12	0	0	4	46	1	1	0	143	1765
5:30 PM	8	1	7	0	0	3	1	3	0	0	3	62	8	1	0	9	45	2	0	0	153	1778
5:35 PM	9	1	4	0	0	0	1	1	0	0	4	61	11	0	0	5	45	2	1	0	145	1760
5:40 PM	5	0	6	0	0	0	0	1	0	0	3	68	7	0	0	6	52	0	0	0	148	1757
5:45 PM	6	0	7	0	0	1	2	0	0	0	5	76	4	0	0	7	31	0	0	0	139	1753
5:50 PM	2	0	2	0	0	2	1	3	0	0	2	69	6	0	0	3	38	1	0	0	129	1735
5:55 PM	3	1	6	0	0	2	0	1	0	0	6	54	9	0	0	3	40	2	1	0	128	1726

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	72	8	92	0	0	8	12	28	0	0	64	740	100	4	0	48	628	16	8	0	1828
Heavy Trucks	4	4	0			0	0	0			0	16	4			0	16	0			44
Buses																					
Pedestrians		0					0					0					4				4
Bicycles	0	0	4			0	0	0			0	0	0			0	0	0			4
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

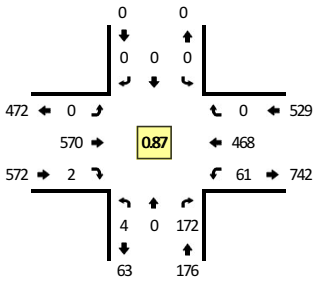
Type of peak hour being reported: Intersection Peak

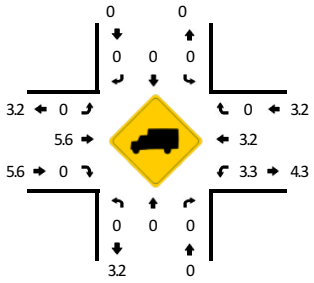
Method for determining peak hour: Total Entering

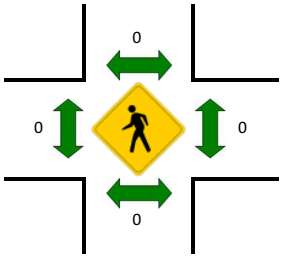
LOCATION: NW Lacamas Ln -- NW Lake Rd
CITY/STATE: Camas, WA

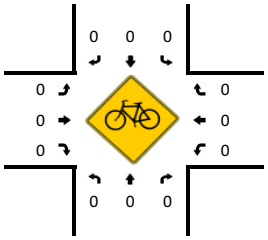
QC JOB #: 16977032
DATE: Tue, Apr 8 2025

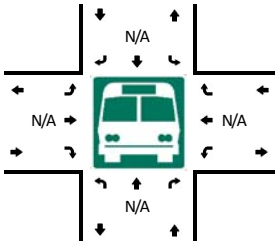
Peak-Hour: 7:55 AM -- 8:55 AM
Peak 15-Min: 8:05 AM -- 8:20 AM

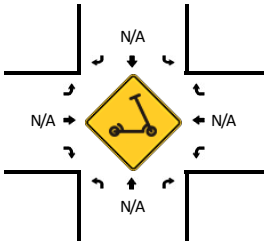












R* = RTOR

5-Min Count Period Beginning At	NW Lacamas Ln (Northbound)					NW Lacamas Ln (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	5	0	0	0	0	0	0	0	0	16	1	0	0	2	21	0	0	0	45	
7:05 AM	0	0	3	0	0	0	0	0	0	0	0	16	1	0	0	3	20	0	0	0	43	
7:10 AM	0	0	6	0	0	0	0	0	0	0	0	17	0	0	0	1	21	0	0	0	45	
7:15 AM	0	0	2	0	0	0	0	0	0	0	0	13	0	0	0	5	27	0	0	0	47	
7:20 AM	0	0	12	0	0	0	0	0	0	0	0	16	0	0	0	2	26	0	0	0	56	
7:25 AM	0	0	6	0	0	0	0	0	0	0	0	12	0	0	0	1	25	0	0	0	44	
7:30 AM	0	0	2	0	0	0	0	0	0	0	0	12	0	0	0	3	26	0	0	0	43	
7:35 AM	0	0	4	0	0	0	0	0	0	0	0	27	0	0	0	2	32	0	0	0	65	
7:40 AM	1	0	9	0	0	0	0	0	0	0	0	28	0	0	0	4	29	0	0	0	71	
7:45 AM	0	0	14	0	0	0	0	0	0	0	0	33	0	0	0	1	41	0	0	0	89	
7:50 AM	0	0	13	0	0	0	0	0	0	0	0	34	0	0	0	6	43	0	0	0	96	
7:55 AM	1	0	10	0	0	0	0	0	0	0	0	49	0	0	0	3	37	0	0	0	100	744
8:00 AM	0	0	26	0	0	0	0	0	0	0	0	44	0	0	0	2	21	0	0	0	93	792
8:05 AM	0	0	17	0	0	0	0	0	0	0	0	61	0	0	0	4	45	0	0	0	127	876
8:10 AM	0	0	23	0	0	0	0	0	0	0	0	62	0	0	0	4	42	0	0	0	131	962
8:15 AM	0	0	14	0	0	0	0	0	0	0	0	52	0	0	0	3	39	0	0	0	108	1023
8:20 AM	2	0	14	0	0	0	0	0	0	0	0	60	0	0	0	11	39	0	0	0	126	1093
8:25 AM	0	0	22	0	0	0	0	0	0	0	0	47	0	0	0	9	30	0	0	0	108	1157
8:30 AM	0	0	21	0	0	0	0	0	0	0	0	53	0	0	0	1	29	0	0	0	104	1218
8:35 AM	0	0	10	0	0	0	0	0	0	0	0	31	1	0	0	3	46	0	0	0	91	1244
8:40 AM	1	0	6	0	0	0	0	0	0	0	0	43	0	0	0	5	41	0	0	0	96	1269
8:45 AM	0	0	3	0	0	0	0	0	0	0	0	30	1	0	0	7	55	0	0	0	96	1276
8:50 AM	0	0	6	0	0	0	0	0	0	0	0	38	0	0	0	9	44	0	0	0	97	1277
8:55 AM	0	0	1	0	0	0	0	0	0	0	0	20	0	0	0	1	35	0	0	0	57	1234

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	216	0	0	0	0	0	0	0	0	700	0	0	0	44	504	0	0	0	1464
Heavy Trucks	0	0	0			0	0	0			0	28	0			4	36	0			68
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

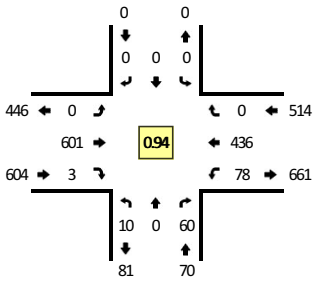
Type of peak hour being reported: Intersection Peak

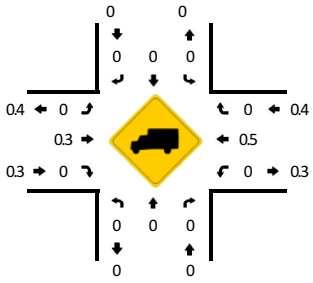
Method for determining peak hour: Total Entering

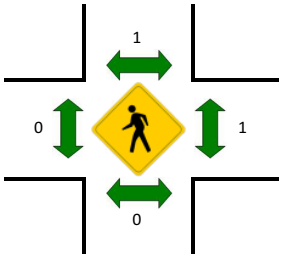
LOCATION: NW Lacamas Ln -- NW Lake Rd
CITY/STATE: Camas, WA

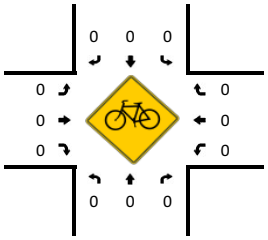
QC JOB #: 16977033
DATE: Tue, Apr 8 2025

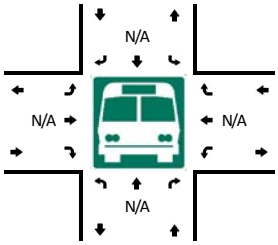
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

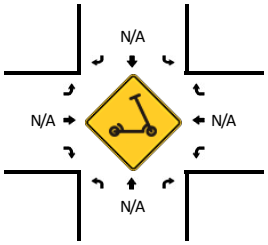












R* = RTOR

5-Min Count Period Beginning At	NW Lacamas Ln (Northbound)					NW Lacamas Ln (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	2	0	0	0	0	0	0	0	0	39	0	0	0	4	36	0	0	0	81	
4:05 PM	0	0	2	0	0	0	0	0	0	0	0	51	1	0	0	3	31	0	0	0	88	
4:10 PM	0	0	1	0	0	0	0	0	0	0	0	41	0	0	0	4	33	0	0	0	79	
4:15 PM	1	0	4	0	0	0	0	0	0	0	0	41	0	0	0	6	30	0	0	0	82	
4:20 PM	1	0	2	0	0	0	0	0	0	0	0	41	0	0	0	6	31	0	0	0	81	
4:25 PM	0	0	4	0	0	0	0	0	0	0	0	27	1	0	0	2	32	0	0	0	66	
4:30 PM	0	0	3	0	0	0	0	0	0	0	0	47	0	0	0	2	39	0	0	0	91	
4:35 PM	0	0	2	0	0	0	0	0	0	0	0	49	0	0	0	1	32	0	0	0	84	
4:40 PM	1	0	2	0	0	0	0	0	0	0	0	45	1	0	0	9	47	0	0	0	105	
4:45 PM	2	0	3	0	0	0	0	0	0	0	0	46	0	0	0	7	34	0	0	0	92	
4:50 PM	1	0	11	0	0	0	0	0	0	0	0	65	0	0	0	8	29	0	0	0	114	
4:55 PM	1	0	3	0	0	0	0	0	0	0	0	54	0	0	0	5	35	0	0	0	98	1061
5:00 PM	0	0	5	0	0	0	0	0	0	0	0	52	0	0	0	6	33	0	0	0	96	1076
5:05 PM	1	0	3	0	0	0	0	0	0	0	0	33	0	0	0	4	55	0	0	0	96	1084
5:10 PM	1	0	4	0	0	0	0	0	0	0	0	55	1	0	0	6	36	0	0	0	103	1108
5:15 PM	0	0	6	0	0	0	0	0	0	0	0	53	1	0	0	6	32	0	0	0	98	1124
5:20 PM	0	0	9	0	0	0	0	0	0	0	0	63	0	0	0	8	34	0	0	0	114	1157
5:25 PM	0	0	5	0	0	0	0	0	0	0	0	47	0	0	0	5	38	0	0	0	95	1186
5:30 PM	2	0	2	0	0	0	0	0	0	0	0	51	0	0	0	5	27	0	0	0	87	1182
5:35 PM	1	0	7	0	0	0	0	0	0	0	0	37	0	0	0	9	36	0	0	0	90	1188
5:40 PM	0	0	1	0	0	0	0	0	0	0	0	56	1	0	0	6	33	0	0	0	97	1180
5:45 PM	0	0	7	0	0	0	0	0	0	0	0	47	0	0	0	5	22	0	0	0	81	1169
5:50 PM	1	0	14	0	0	0	0	0	0	0	0	52	1	0	0	4	33	0	0	0	105	1160
5:55 PM	0	0	7	0	0	0	0	0	0	0	0	45	2	0	0	5	38	0	0	0	97	1159

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	4	0	76	0	0	0	0	0	0	0	0	684	8	0	0	80	408	0	0	0	1260
Heavy Trucks	0	0	0			0	0	0			0	4	0			0	0	0			4
Buses																					
Pedestrians		0					4					0					4				8
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

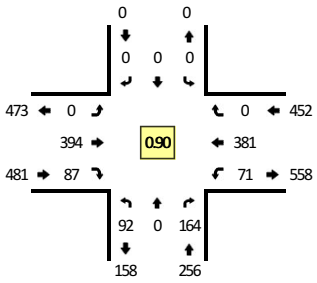
Type of peak hour being reported: Intersection Peak

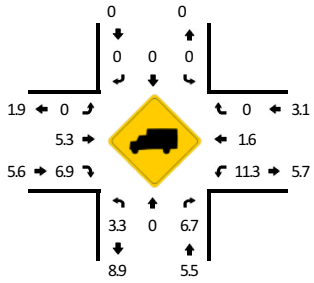
Method for determining peak hour: Total Entering

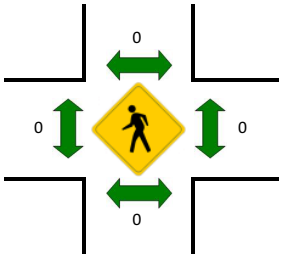
LOCATION: NW Sierra St -- NW Lake Rd
CITY/STATE: Camas, WA

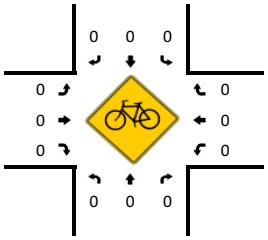
QC JOB #: 16977034
DATE: Tue, Apr 8 2025

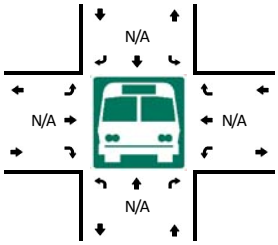
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 8:05 AM -- 8:20 AM

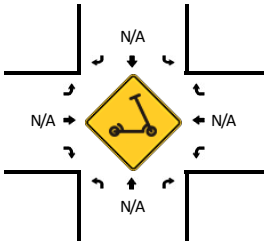












R* = RTOR

5-Min Count Period Beginning At	NW Sierra St (Northbound)					NW Sierra St (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	2	0	4	0	0	0	0	0	0	0	0	16	3	0	0	3	13	0	0	0	41	
7:05 AM	9	0	5	0	0	0	0	0	0	0	0	9	5	0	0	0	25	0	0	0	53	
7:10 AM	7	0	4	0	0	0	0	0	0	0	0	9	4	0	0	3	22	0	0	0	49	
7:15 AM	5	0	3	0	0	0	0	0	0	0	0	14	2	0	0	2	16	0	0	0	42	
7:20 AM	3	0	2	0	0	0	0	0	0	0	0	15	9	0	0	3	23	0	0	0	55	
7:25 AM	3	0	3	0	0	0	0	0	0	0	0	8	2	0	0	4	24	0	0	0	44	
7:30 AM	6	0	3	0	0	0	0	0	0	0	0	7	5	0	0	3	22	0	0	0	46	
7:35 AM	4	0	4	0	0	0	0	0	0	0	0	23	7	0	0	4	22	0	0	0	64	
7:40 AM	9	0	7	0	0	0	0	0	0	0	0	25	6	0	0	4	32	0	0	0	83	
7:45 AM	9	0	7	0	0	0	0	0	0	0	0	16	3	0	0	2	33	0	0	0	70	
7:50 AM	9	0	12	0	0	0	0	0	0	0	0	28	8	0	0	4	42	0	0	0	103	
7:55 AM	10	0	13	0	0	0	0	0	0	0	0	32	4	0	0	8	34	0	0	0	101	751
8:00 AM	11	0	15	0	0	0	0	0	0	0	0	35	7	0	0	3	11	0	0	0	82	792
8:05 AM	8	0	17	0	0	0	0	0	0	0	0	46	8	0	0	10	26	0	0	0	115	854
8:10 AM	8	0	9	0	0	0	0	0	0	0	0	48	8	0	0	3	29	0	0	0	105	910
8:15 AM	8	0	20	0	0	0	0	0	0	0	0	35	3	0	0	5	39	0	0	0	110	978
8:20 AM	5	0	17	0	0	0	0	0	0	0	0	32	6	0	0	5	31	0	0	0	96	1019
8:25 AM	8	0	17	0	0	0	0	0	0	0	0	26	6	0	0	7	28	0	0	0	92	1067
8:30 AM	8	0	16	0	0	0	0	0	0	0	0	32	4	0	0	5	28	0	0	0	93	1114
8:35 AM	5	0	10	0	0	0	0	0	0	0	0	23	9	0	0	5	36	0	0	0	88	1138
8:40 AM	6	0	7	0	0	0	0	0	0	0	0	33	10	0	0	2	43	0	0	0	101	1156
8:45 AM	6	0	11	0	0	0	0	0	0	0	0	24	14	0	0	14	34	0	0	0	103	1189
8:50 AM	8	0	9	0	0	0	0	0	0	0	0	27	9	0	0	15	33	0	0	0	101	1187
8:55 AM	6	0	3	0	0	0	0	0	0	0	0	15	11	0	0	4	33	0	0	0	72	1158

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	96	0	184	0	0	0	0	0	0	0	0	516	76	0	0	72	376	0	0	0	1320
Heavy Trucks	0	0	20			0	0	0			0	20	4			24	4	0			72
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

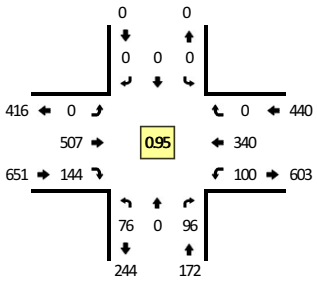
Type of peak hour being reported: Intersection Peak

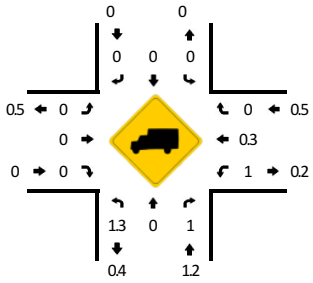
Method for determining peak hour: Total Entering

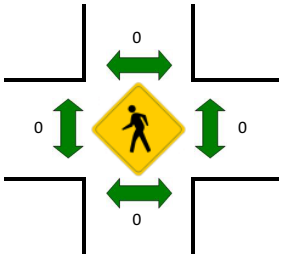
LOCATION: NW Sierra St -- NW Lake Rd
CITY/STATE: Camas, WA

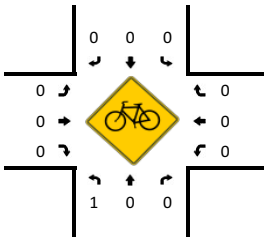
QC JOB #: 16977035
DATE: Tue, Apr 8 2025

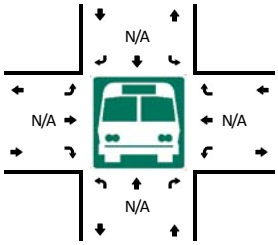
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

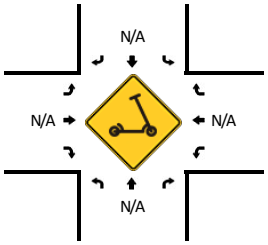












R* = RTOR

5-Min Count Period Beginning At	NW Sierra St (Northbound)					NW Sierra St (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	10	0	10	0	0	0	0	0	0	0	0	40	11	0	0	9	20	0	0	0	100	
4:05 PM	10	0	3	0	0	0	0	0	0	0	0	31	14	0	0	8	26	0	0	0	92	
4:10 PM	8	0	6	0	0	0	0	0	0	0	0	49	12	0	0	5	26	0	0	0	106	
4:15 PM	7	0	6	0	0	0	0	0	0	0	0	31	6	0	0	2	27	0	0	0	79	
4:20 PM	6	0	5	0	0	0	0	0	0	0	0	33	5	0	0	11	24	0	0	0	84	
4:25 PM	3	0	6	0	0	0	0	0	0	0	0	30	7	0	0	6	28	0	0	0	80	
4:30 PM	9	0	3	0	0	0	0	0	0	0	0	34	13	0	0	9	23	0	0	0	91	
4:35 PM	7	0	8	0	0	0	0	0	0	0	0	44	10	0	0	2	34	0	0	0	105	
4:40 PM	11	0	8	0	0	0	0	0	0	0	0	35	13	0	0	13	29	0	0	0	109	
4:45 PM	5	0	6	0	0	0	0	0	0	0	0	48	22	0	0	1	35	0	0	0	117	
4:50 PM	6	0	14	0	0	0	0	0	0	0	0	44	9	0	0	5	26	0	0	0	104	
4:55 PM	6	0	8	0	0	0	0	0	0	0	0	44	6	0	0	13	29	0	0	0	106	1173
5:00 PM	7	0	10	0	0	0	0	0	0	0	0	43	7	0	0	4	19	0	0	0	90	1163
5:05 PM	6	0	6	0	0	0	0	0	0	0	0	33	12	0	0	12	37	0	0	0	106	1177
5:10 PM	5	0	7	0	0	0	0	0	0	0	0	46	13	0	0	13	26	0	0	0	110	1181
5:15 PM	7	0	9	0	0	0	0	0	0	0	0	47	12	0	0	12	29	0	0	0	116	1218
5:20 PM	5	0	10	0	0	0	0	0	0	0	0	53	14	0	0	8	18	0	0	0	108	1242
5:25 PM	2	0	7	0	0	0	0	0	0	0	0	36	13	0	0	8	35	0	0	0	101	1263
5:30 PM	5	0	7	0	0	0	0	0	0	0	0	38	14	0	0	4	23	0	0	0	91	1263
5:35 PM	5	0	12	0	0	0	0	0	0	0	0	34	12	0	0	6	27	0	0	0	96	1254
5:40 PM	8	0	13	0	0	0	0	0	0	0	0	35	11	0	0	5	31	0	0	0	103	1248
5:45 PM	8	0	7	0	0	0	0	0	0	0	0	45	11	0	0	7	18	0	0	0	96	1227
5:50 PM	6	0	6	0	0	0	0	0	0	0	0	45	7	0	0	5	20	0	0	0	89	1212
5:55 PM	12	0	8	0	0	0	0	0	0	0	0	38	9	0	0	6	33	0	0	0	106	1212

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	68	0	104	0	0	0	0	0	0	0	0	584	156	0	0	132	292	0	0	0	1336
Heavy Trucks	0	0	0			0	0	0			0	0	0			0	0	0			0
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

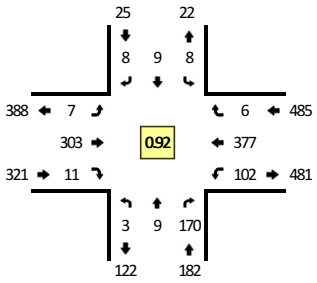
Type of peak hour being reported: Intersection Peak

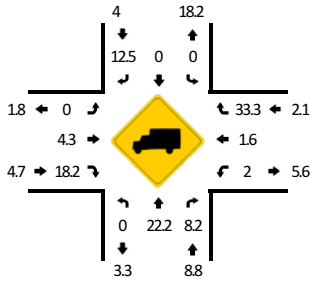
Method for determining peak hour: Total Entering

LOCATION: NW Leadbetter Dr -- NW Lake Rd
CITY/STATE: Camas, WA

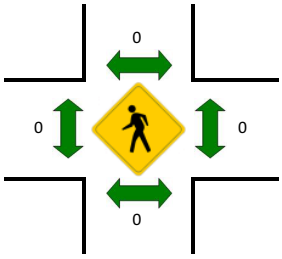
QC JOB #: 16977036
DATE: Tue, Apr 8 2025

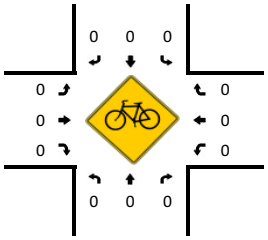
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 8:05 AM -- 8:20 AM

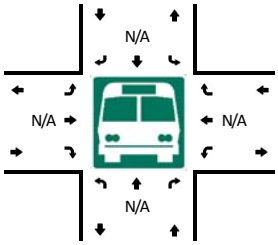


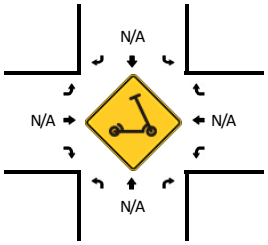


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	NW Leadbetter Dr (Northbound)					NW Leadbetter Dr (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	1	0	8	0	0	0	1	1	0	0	0	15	0	0	0	4	10	0	0	0	40	
7:05 AM	0	0	2	0	0	0	0	3	0	0	0	9	0	0	0	7	23	0	0	0	44	
7:10 AM	0	0	3	0	0	0	3	1	0	0	0	10	0	0	0	7	22	0	0	0	46	
7:15 AM	0	0	4	0	0	0	0	2	0	0	1	14	0	0	0	6	16	0	0	0	43	
7:20 AM	0	0	4	0	0	1	1	0	0	0	0	21	0	0	0	12	13	0	0	0	52	
7:25 AM	0	0	1	0	0	0	3	1	0	0	0	8	0	0	0	12	16	0	0	0	41	
7:30 AM	0	2	1	0	0	0	0	0	0	0	0	11	0	0	0	7	17	0	0	0	38	
7:35 AM	0	1	6	0	0	1	2	0	0	0	0	25	1	0	0	4	26	0	0	0	66	
7:40 AM	0	0	6	0	0	3	2	2	0	0	1	20	3	0	0	9	28	0	0	0	74	
7:45 AM	0	0	10	0	0	0	1	0	0	0	1	11	0	0	0	13	28	0	0	0	64	
7:50 AM	0	1	16	0	0	1	1	1	0	0	1	25	1	0	0	13	39	0	0	0	99	
7:55 AM	0	0	16	0	0	0	1	0	0	0	0	18	2	0	0	7	40	0	0	0	84	691
8:00 AM	0	0	21	0	0	1	1	0	0	0	0	22	2	0	0	3	22	1	0	0	73	724
8:05 AM	3	1	24	0	0	0	0	2	0	0	0	30	0	0	0	9	29	0	0	0	98	778
8:10 AM	0	1	18	0	0	1	1	1	0	0	0	30	0	0	0	5	37	1	0	0	95	827
8:15 AM	0	0	16	0	0	0	1	0	0	0	2	24	0	0	0	11	29	0	0	0	83	867
8:20 AM	0	0	15	0	0	1	0	0	0	0	1	21	0	0	0	8	26	1	0	0	73	888
8:25 AM	0	0	13	0	0	0	0	1	0	0	0	22	0	0	0	5	36	0	0	0	77	924
8:30 AM	0	1	9	0	0	1	0	0	0	0	0	23	0	0	0	10	23	2	0	0	69	955
8:35 AM	0	1	11	0	0	1	1	2	0	0	1	20	1	0	0	9	28	1	0	0	76	965
8:40 AM	0	3	8	0	0	0	0	0	0	0	1	39	2	0	0	15	35	0	0	0	103	994
8:45 AM	0	1	3	0	0	2	3	1	0	0	1	29	3	0	0	7	33	0	0	0	83	1013
8:50 AM	0	1	7	0	0	0	1	2	0	0	1	31	1	0	0	10	33	0	0	0	87	1001
8:55 AM	0	0	4	0	0	0	2	0	0	0	1	21	5	0	0	3	31	3	0	0	70	987

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	12	8	232	0	0	4	8	12	0	0	8	336	0	0	0	100	380	4	0	0	1104
Heavy Trucks	0	0	16			0	0	4			0	8	0			4	8	0			40
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

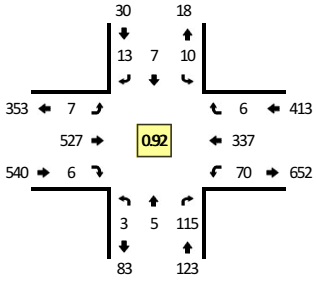
Type of peak hour being reported: Intersection Peak

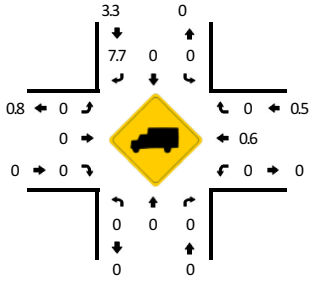
Method for determining peak hour: Total Entering

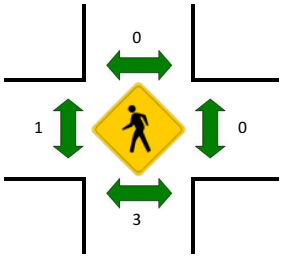
LOCATION: NW Leadbetter Dr -- NW Lake Rd
CITY/STATE: Camas, WA

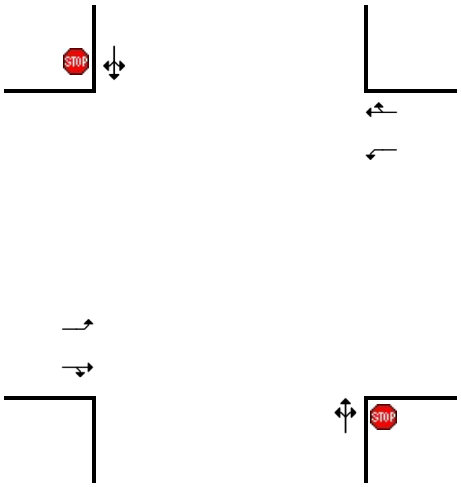
QC JOB #: 16977037
DATE: Tue, Apr 8 2025

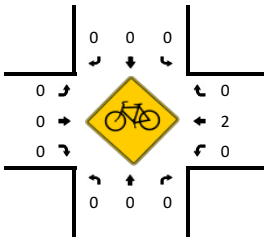
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

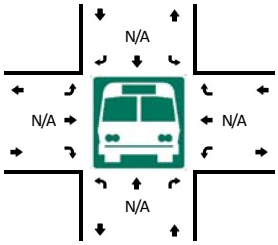


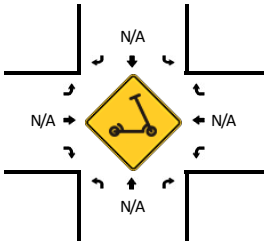












R* = RTOR

5-Min Count Period Beginning At	NW Leadbetter Dr (Northbound)					NW Leadbetter Dr (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	2	1	10	0	0	0	1	1	0	0	0	48	0	0	0	5	21	0	0	0	89	
4:05 PM	0	0	8	0	0	1	0	1	0	0	0	31	0	0	0	4	32	1	0	0	78	
4:10 PM	0	1	4	0	0	0	0	0	0	0	0	46	2	0	0	4	28	1	0	0	86	
4:15 PM	0	0	6	0	0	0	0	1	0	0	1	36	2	0	0	4	33	0	0	0	83	
4:20 PM	0	2	5	0	0	0	0	0	0	0	0	29	0	0	0	1	30	0	0	0	67	
4:25 PM	0	1	5	0	0	0	1	0	0	0	3	39	3	0	0	6	25	0	0	0	83	
4:30 PM	0	0	4	0	0	1	0	0	0	0	1	41	1	0	0	6	23	0	0	0	77	
4:35 PM	0	1	13	0	0	1	1	2	0	0	1	38	0	0	0	9	34	1	0	0	101	
4:40 PM	0	0	5	0	0	2	0	1	0	0	0	47	1	0	0	6	32	0	0	0	94	
4:45 PM	2	0	13	0	0	1	0	2	0	0	0	53	0	0	0	1	33	2	0	0	107	
4:50 PM	0	0	10	0	0	0	1	2	0	0	0	42	2	0	0	2	33	0	0	0	92	
4:55 PM	0	0	13	0	0	0	1	1	0	0	2	39	0	0	0	8	29	0	0	0	93	1050
5:00 PM	1	0	8	0	0	1	0	1	0	0	0	36	0	0	0	5	17	1	0	0	70	1031
5:05 PM	0	2	7	0	0	0	0	1	0	0	2	39	1	0	0	10	35	1	0	0	98	1051
5:10 PM	0	0	12	0	0	2	1	1	0	0	1	47	1	0	0	4	25	0	0	0	94	1059
5:15 PM	0	1	7	0	0	2	0	0	0	0	1	53	0	0	0	6	30	0	0	0	100	1076
5:20 PM	0	0	11	0	0	0	2	0	0	0	0	48	0	0	0	3	21	0	0	0	85	1094
5:25 PM	0	0	5	0	0	1	1	2	0	0	0	46	0	0	0	10	24	1	0	0	90	1101
5:30 PM	0	1	11	0	0	0	0	0	0	0	0	39	1	0	0	6	24	0	0	0	82	1106
5:35 PM	1	1	10	0	0	1	0	0	0	0	0	36	0	0	0	3	27	0	0	0	79	1084
5:40 PM	0	3	4	0	0	1	1	0	0	0	2	38	0	0	0	1	38	0	0	0	88	1078
5:45 PM	1	0	8	0	0	0	1	2	0	0	0	51	1	0	0	6	17	1	0	0	88	1059
5:50 PM	0	0	11	0	0	1	1	1	0	0	0	36	1	0	0	4	16	2	0	0	73	1040
5:55 PM	0	1	6	0	0	1	1	1	0	0	0	40	0	0	0	8	37	0	0	0	95	1042

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	8	4	124	0	0	16	4	20	0	0	4	552	4	0	0	64	396	12	0	0	1208
Heavy Trucks	0	0	0			0	0	0			0	0	0			0	4	0			4
Buses																					
Pedestrians		8					0					4					0				12
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

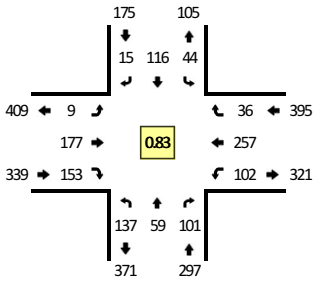
Type of peak hour being reported: Intersection Peak

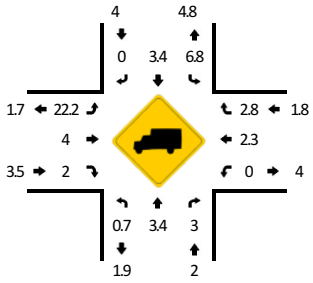
Method for determining peak hour: Total Entering

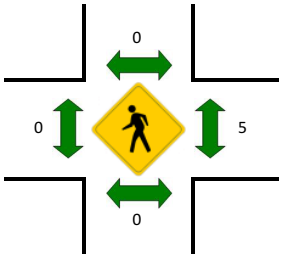
LOCATION: NW Parker St -- NW Lake Rd
CITY/STATE: Camas, WA

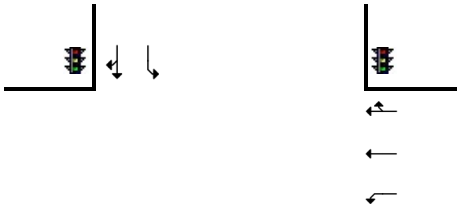
QC JOB #: 16977038
DATE: Tue, Apr 8 2025

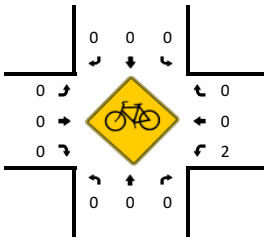
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

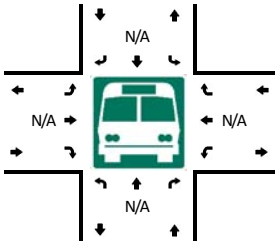


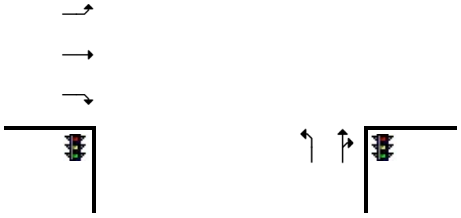


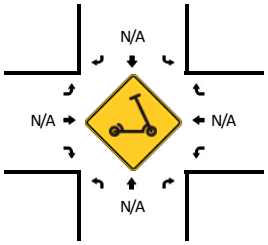












R* = RTOR

5-Min Count Period Beginning At	NW Parker St (Northbound)					NW Parker St (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	8	4	0	0	0	3	5	0	0	0	2	11	5	0	2	1	11	0	0	1	53	
7:05 AM	6	5	0	0	0	1	8	1	0	1	0	7	1	0	0	2	23	2	0	0	57	
7:10 AM	2	4	1	0	0	5	9	1	0	0	1	6	2	0	3	5	16	0	0	0	55	
7:15 AM	5	3	2	0	0	3	7	2	0	0	1	10	5	0	1	4	15	2	0	0	60	
7:20 AM	4	2	0	0	1	4	5	1	0	1	0	14	2	0	0	4	10	0	0	1	49	
7:25 AM	5	3	0	0	0	1	5	1	0	0	1	4	2	0	3	6	13	0	0	1	45	
7:30 AM	6	4	1	0	1	3	2	0	0	0	0	8	5	0	2	1	12	1	0	0	46	
7:35 AM	3	5	4	0	1	4	5	1	0	1	0	21	8	0	2	7	19	2	0	0	83	
7:40 AM	5	4	2	0	2	3	10	0	0	1	1	11	9	0	4	10	21	1	0	0	84	
7:45 AM	7	5	2	0	1	5	12	0	0	0	2	8	13	0	10	6	18	1	0	1	91	
7:50 AM	10	6	3	0	1	1	19	2	0	0	0	17	21	0	13	4	27	2	0	3	129	
7:55 AM	7	10	5	0	2	3	19	1	0	0	1	12	12	0	12	17	19	1	0	2	123	875
8:00 AM	15	5	4	0	1	7	10	1	0	0	1	15	8	0	8	7	25	3	0	0	110	932
8:05 AM	16	6	4	0	1	6	10	0	0	0	1	24	5	0	3	4	16	2	0	3	101	976
8:10 AM	8	5	5	0	3	2	10	1	1	1	1	13	6	0	2	13	22	0	0	3	96	1017
8:15 AM	7	4	9	0	1	3	10	3	0	0	0	11	9	0	1	8	25	2	0	0	93	1050
8:20 AM	4	4	3	0	1	2	4	0	0	0	2	16	4	0	5	8	22	3	0	3	81	1082
8:25 AM	16	5	8	0	4	5	9	0	0	1	0	10	3	0	2	6	25	3	0	0	97	1134
8:30 AM	8	1	4	0	0	4	9	2	0	0	1	10	4	0	2	9	17	1	0	0	72	1160
8:35 AM	11	5	4	0	3	3	7	0	0	0	0	19	5	0	3	7	13	2	0	1	83	1160
8:40 AM	15	5	7	0	6	4	3	2	0	0	1	19	9	0	5	9	18	0	0	1	104	1180
8:45 AM	20	3	16	0	6	3	6	1	0	0	1	11	3	0	8	10	28	1	0	0	117	1206
8:50 AM	15	9	9	0	6	3	4	0	0	1	1	12	5	0	6	11	30	1	0	0	113	1190
8:55 AM	13	8	3	0	7	1	5	0	0	0	1	11	4	0	4	9	19	3	0	1	89	1156

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	128	84	64	0	16	44	192	16	0	0	8	176	296	0	132	112	284	44	0	20	1616
Heavy Trucks	0	0	0			4	4	0			0	4	0			0	8	0			20
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

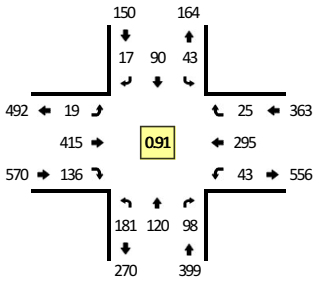
Type of peak hour being reported: Intersection Peak

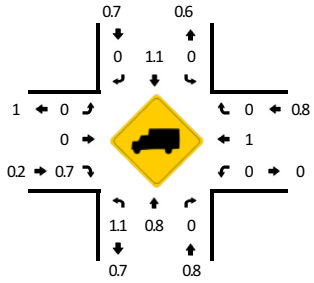
Method for determining peak hour: Total Entering

LOCATION: NW Parker St -- NW Lake Rd
CITY/STATE: Camas, WA

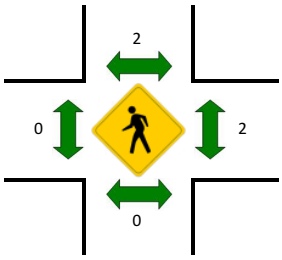
QC JOB #: 16977039
DATE: Tue, Apr 8 2025

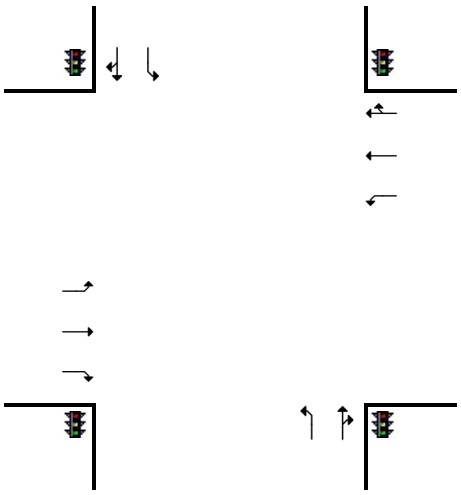
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

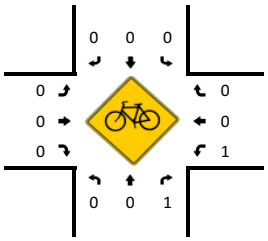


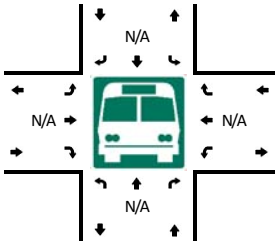


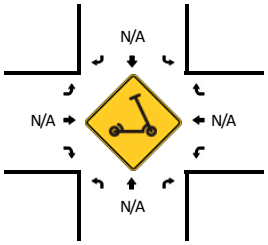
TRUE DATA TO IMPROVE MOBILITY











R* = RTOR

5-Min Count Period Beginning At	NW Parker St (Northbound)					NW Parker St (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	9	3	4	0	2	3	8	1	0	0	2	41	6	0	2	2	24	2	0	0	109	
4:05 PM	12	11	4	0	3	3	9	1	0	0	1	30	4	0	1	3	24	1	0	1	108	
4:10 PM	9	11	5	0	2	3	5	3	0	3	5	32	4	0	0	5	26	1	0	2	116	
4:15 PM	14	4	2	0	4	5	2	1	0	1	1	26	3	0	3	2	26	1	0	0	95	
4:20 PM	10	10	5	0	0	3	9	0	0	3	1	25	3	0	5	5	28	3	0	0	110	
4:25 PM	9	7	3	0	0	0	3	1	0	1	1	46	7	0	5	2	18	0	0	0	103	
4:30 PM	9	7	4	0	1	5	9	0	0	0	4	29	14	0	7	1	27	0	0	1	118	
4:35 PM	16	7	4	0	2	4	8	0	0	0	2	32	12	0	0	6	30	3	0	0	126	
4:40 PM	15	12	3	0	2	2	9	1	0	1	1	41	8	0	4	4	27	0	0	1	131	
4:45 PM	20	9	19	0	1	13	8	0	0	0	0	28	6	0	5	1	35	3	0	0	148	
4:50 PM	22	5	5	0	2	1	4	2	0	0	2	30	4	0	5	6	33	0	0	0	121	
4:55 PM	8	11	4	0	3	3	3	1	0	0	2	25	8	0	3	5	21	1	0	1	99	1384
5:00 PM	15	19	7	1	1	0	10	1	0	2	1	33	6	0	1	2	18	0	0	0	117	1392
5:05 PM	17	11	4	0	0	6	10	0	0	0	3	37	9	0	2	4	26	4	0	3	136	1420
5:10 PM	19	10	6	0	4	0	10	1	0	0	1	44	5	0	3	9	21	1	0	0	134	1438
5:15 PM	15	10	8	0	2	3	4	3	0	0	1	35	3	0	5	2	18	2	0	1	112	1455
5:20 PM	13	12	8	0	0	4	9	3	0	1	1	46	5	0	2	1	21	2	0	1	129	1474
5:25 PM	11	7	7	0	1	2	6	0	0	1	1	35	11	0	8	2	18	1	0	0	111	1482
5:30 PM	8	8	9	0	2	1	5	0	0	0	5	23	9	0	3	0	24	0	0	1	98	1462
5:35 PM	13	10	2	0	1	1	11	1	0	0	2	38	10	0	12	4	21	1	0	1	128	1464
5:40 PM	12	11	4	0	2	1	11	1	0	0	0	39	7	0	5	9	25	2	0	1	130	1463
5:45 PM	5	8	6	0	2	5	11	0	0	0	1	36	17	0	7	7	21	2	0	0	128	1443
5:50 PM	16	8	2	0	0	3	7	0	0	1	2	30	13	0	5	3	8	0	0	0	98	1420
5:55 PM	19	6	1	0	1	2	3	0	0	0	0	30	3	0	6	6	25	4	0	1	107	1428

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	204	112	124	0	20	76	100	8	0	4	12	404	140	0	36	44	368	28	0	4	1684
Heavy Trucks	4	0	0			0	0	0			0	0	0			0	4	0			8
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			4	0	0			4
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

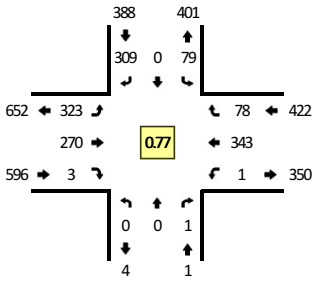
Type of peak hour being reported: Intersection Peak

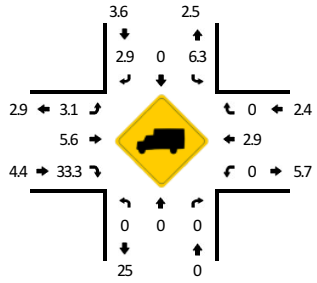
Method for determining peak hour: Total Entering

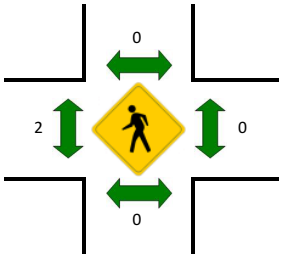
LOCATION: NW Friberg-Strunk St -- NW Lake Rd
CITY/STATE: Vancouver, WA

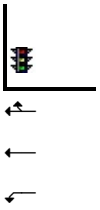
QC JOB #: 16993920
DATE: Tue, May 20 2025

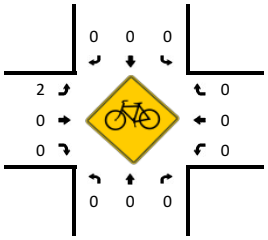
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:35 AM -- 8:50 AM

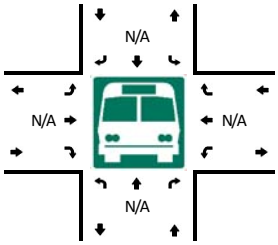


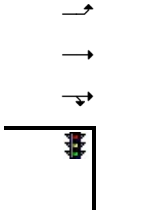


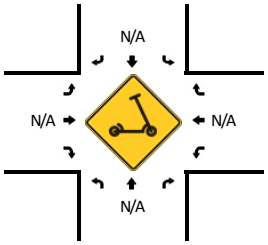












R* = RTOR

5-Min Count Period Beginning At	NW Friberg-Strunk St (Northbound)					NW Friberg-Strunk St (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	4	0	3	0	2	4	10	0	0	0	0	15	4	0	0	42	
7:05 AM	0	0	0	0	0	4	0	2	0	7	4	9	0	0	0	0	15	4	0	1	46	
7:10 AM	1	0	0	0	0	4	0	3	0	1	8	15	0	0	0	0	16	1	0	0	49	
7:15 AM	0	0	0	0	0	5	0	1	0	5	8	9	0	0	0	0	18	5	0	2	53	
7:20 AM	0	0	0	0	0	2	0	3	0	2	6	20	0	0	0	0	9	2	0	0	44	
7:25 AM	0	0	0	0	0	11	0	5	0	2	2	16	0	0	0	0	18	6	0	1	61	
7:30 AM	0	0	0	0	0	9	0	5	0	6	6	16	0	0	0	0	23	0	0	2	67	
7:35 AM	0	0	0	0	0	8	0	1	0	3	5	25	0	0	0	0	19	1	1	0	63	
7:40 AM	0	0	0	0	0	7	0	1	0	7	7	11	1	0	0	0	24	1	0	0	59	
7:45 AM	0	0	0	0	0	10	0	2	0	0	6	23	0	0	0	0	23	4	0	2	70	
7:50 AM	0	0	0	0	1	8	0	7	0	7	9	34	0	0	0	0	21	6	1	2	96	
7:55 AM	0	0	0	0	0	11	0	3	0	2	10	25	0	0	0	0	28	2	0	2	83	733
8:00 AM	0	0	0	0	0	13	0	4	0	3	11	36	0	0	0	0	32	3	0	3	105	796
8:05 AM	0	0	0	0	0	4	0	5	0	6	20	24	0	0	0	0	28	2	0	2	91	841
8:10 AM	0	0	0	0	1	7	0	6	0	7	25	26	1	0	0	1	17	6	0	2	99	891
8:15 AM	0	0	0	0	0	6	0	3	0	10	25	28	0	0	0	0	21	3	0	1	97	935
8:20 AM	0	0	0	0	0	7	0	17	0	12	29	15	0	0	0	0	27	3	0	1	111	1002
8:25 AM	0	0	0	0	0	4	0	18	0	12	37	10	1	0	0	0	26	7	0	2	117	1058
8:30 AM	0	0	0	0	0	6	0	19	0	20	31	16	0	0	0	0	33	6	0	0	131	1122
8:35 AM	0	0	0	0	0	6	0	31	0	27	46	24	1	0	0	0	17	4	0	0	156	1215
8:40 AM	0	0	0	0	0	3	0	18	0	27	48	25	0	0	0	0	31	9	0	0	161	1317
8:45 AM	0	0	0	0	0	6	0	24	0	17	25	17	0	0	0	0	43	6	0	3	141	1388
8:50 AM	0	0	0	0	0	11	0	8	0	6	16	28	0	0	0	0	33	3	0	2	107	1399
8:55 AM	0	0	0	0	0	6	0	4	0	5	10	21	0	0	0	0	35	7	0	3	91	1407

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	60	0	576	0	284	476	264	4	0	0	0	364	88	0	12	2128
Heavy Trucks	0	0	0			0	0	20			8	8	0			0	8	0			44
Buses																					
Pedestrians		0					0					4					0				4
Bicycles	0	0	0			0	0	0			4	0	0			0	0	0			4
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

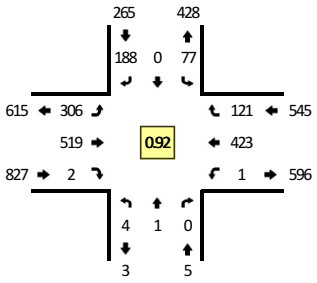
Type of peak hour being reported: Intersection Peak

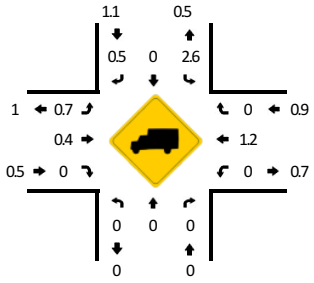
Method for determining peak hour: Total Entering

LOCATION: NW Friberg-Strunk St -- NW Lake Rd
CITY/STATE: Vancouver, WA

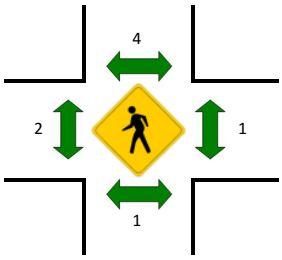
QC JOB #: 16993921
DATE: Tue, May 20 2025

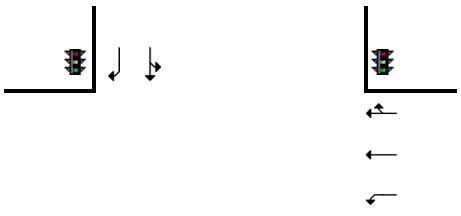
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

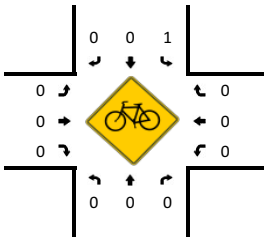


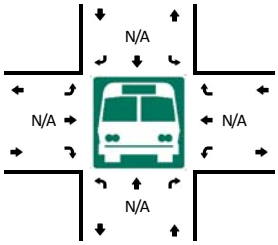


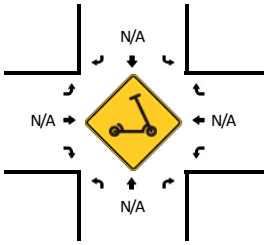
TRUE DATA TO IMPROVE MOBILITY











R* = RTOR

5-Min Count Period Beginning At	NW Friberg-Strunk St (Northbound)					NW Friberg-Strunk St (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	0	0	0	2	0	6	0	16	16	45	0	0	0	0	32	2	0	3	122	
4:05 PM	1	0	0	0	0	5	0	12	0	10	15	42	0	0	0	0	28	2	0	3	118	
4:10 PM	0	0	0	0	0	8	0	4	0	10	29	34	0	0	0	0	41	2	1	0	129	
4:15 PM	0	0	0	0	1	5	0	4	0	7	21	29	1	0	0	0	35	5	0	2	110	
4:20 PM	2	1	0	0	0	8	0	3	0	11	23	37	0	0	0	0	29	7	0	2	123	
4:25 PM	0	0	0	0	0	6	0	8	0	9	25	36	0	0	0	0	36	6	0	3	129	
4:30 PM	0	0	0	0	0	3	0	0	0	10	31	44	0	0	0	0	35	6	0	2	131	
4:35 PM	0	0	0	0	0	4	0	14	0	12	20	52	0	0	0	0	44	6	0	4	156	
4:40 PM	0	0	0	0	0	5	0	8	0	7	22	28	0	0	0	0	39	9	0	9	127	
4:45 PM	0	0	0	0	0	7	0	10	0	14	23	28	0	0	0	1	38	9	0	4	134	
4:50 PM	0	0	0	0	0	8	0	6	0	12	25	37	0	0	0	0	38	13	0	1	140	
4:55 PM	0	1	0	0	0	8	0	2	0	8	23	51	0	0	0	0	27	4	0	0	124	1543
5:00 PM	0	0	0	0	0	10	0	5	0	10	26	38	0	0	0	0	23	5	0	1	118	1539
5:05 PM	0	0	0	0	0	4	0	4	0	12	30	47	0	0	0	0	34	2	0	3	136	1557
5:10 PM	2	0	0	0	0	11	0	10	0	4	21	59	0	0	1	0	47	8	0	1	164	1592
5:15 PM	1	0	0	0	0	5	0	1	0	6	28	57	0	0	0	0	20	8	0	4	130	1612
5:20 PM	1	0	0	0	0	6	0	8	0	8	32	42	1	0	0	0	42	11	0	2	153	1642
5:25 PM	0	0	0	0	0	7	0	5	0	7	21	53	0	0	0	0	26	6	0	1	126	1639
5:30 PM	0	0	0	0	0	9	0	5	0	5	28	32	0	0	0	0	27	7	0	1	114	1622
5:35 PM	0	0	0	0	0	10	0	7	0	3	16	39	0	0	0	0	32	8	0	3	118	1584
5:40 PM	0	0	0	0	0	18	0	15	0	5	24	49	0	0	0	0	31	5	0	0	147	1604
5:45 PM	0	0	0	0	0	11	0	4	0	6	22	38	0	0	1	0	31	6	1	1	121	1591
5:50 PM	0	0	0	0	0	5	0	3	0	9	31	41	0	0	0	0	20	6	0	0	115	1566
5:55 PM	0	0	0	0	0	5	0	8	0	6	27	38	0	0	0	0	24	3	0	3	114	1556

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	16	0	0	0	0	88	0	148	0	72	324	632	8	0	4	0	436	136	0	28	1892
Heavy Trucks	0	0	0			0	0	0			0	4	0			0	12	0			16
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

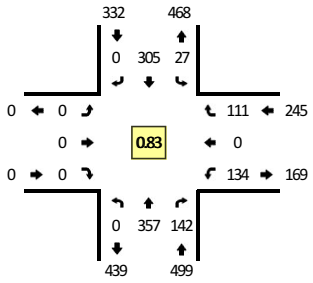
Type of peak hour being reported: Intersection Peak

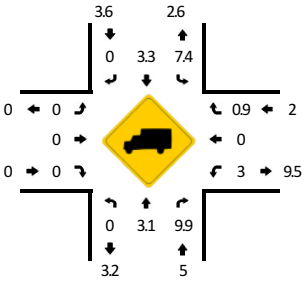
Method for determining peak hour: Total Entering

LOCATION: NW Parker St -- NW Leadbetter Dr
CITY/STATE: Camas, WA

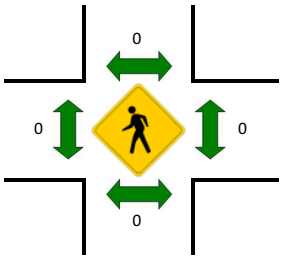
QC JOB #: 16993916
DATE: Tue, May 20 2025

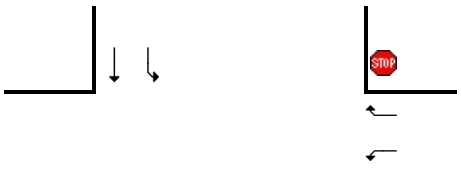
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 8:35 AM -- 8:50 AM

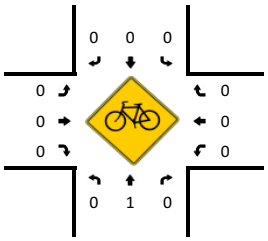


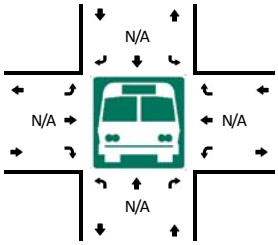


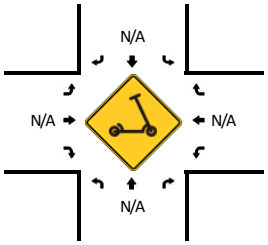
TRUE DATA TO IMPROVE MOBILITY











R* = RTOR

5-Min Count Period Beginning At	NW Parker St (Northbound)					NW Parker St (Southbound)					NW Leadbetter Dr (Eastbound)					NW Leadbetter Dr (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	6	5	0	0	1	8	0	0	0	0	0	0	0	0	2	0	0	0	0	22	
7:05 AM	0	11	4	0	0	3	13	0	0	0	0	0	0	0	0	5	0	2	0	0	38	
7:10 AM	0	11	8	0	0	2	7	0	0	0	0	0	0	0	0	4	0	1	0	0	33	
7:15 AM	0	8	4	0	0	0	9	0	0	0	0	0	0	0	0	12	0	2	0	0	35	
7:20 AM	0	13	4	0	0	1	10	0	0	0	0	0	0	0	0	5	0	2	0	0	35	
7:25 AM	0	17	6	0	0	1	16	0	0	0	0	0	0	0	0	12	0	3	0	0	55	
7:30 AM	0	11	3	0	0	0	11	0	0	0	0	0	0	0	0	4	0	1	0	0	30	
7:35 AM	0	20	11	0	0	1	13	0	0	0	0	0	0	0	0	12	0	2	0	0	59	
7:40 AM	0	22	3	0	0	6	15	0	0	0	0	0	0	0	0	4	0	3	0	0	53	
7:45 AM	0	22	20	0	0	5	16	0	0	0	0	0	0	0	0	12	0	10	0	0	85	
7:50 AM	0	36	23	0	0	2	18	0	0	0	0	0	0	0	0	18	0	5	0	0	102	
7:55 AM	0	25	24	0	0	10	18	0	0	0	0	0	0	0	0	11	0	11	0	0	99	646
8:00 AM	0	28	11	0	0	0	18	0	0	0	0	0	0	0	0	19	0	14	0	0	90	714
8:05 AM	0	24	13	0	0	1	17	0	0	0	0	0	0	0	0	18	0	12	0	0	85	761
8:10 AM	0	23	15	0	0	4	16	0	0	0	0	0	0	0	0	7	0	4	0	0	69	797
8:15 AM	0	21	6	0	0	1	21	0	0	0	0	0	0	0	0	9	0	3	0	0	61	823
8:20 AM	0	21	7	0	0	0	25	0	0	0	0	0	0	0	0	12	0	2	0	0	67	855
8:25 AM	0	26	15	0	0	1	27	0	0	0	0	0	0	0	0	7	0	5	0	0	81	881
8:30 AM	0	26	17	0	0	2	31	0	0	0	0	0	0	0	0	13	0	10	0	0	99	950
8:35 AM	0	34	2	0	0	0	40	0	0	0	0	0	0	0	0	7	0	15	0	0	98	989
8:40 AM	0	52	3	0	0	3	29	0	0	0	0	0	0	0	0	6	0	10	0	0	103	1039
8:45 AM	0	41	6	0	0	3	45	0	0	0	0	0	0	0	0	7	0	20	0	0	122	1076
8:50 AM	0	36	3	0	0	1	29	0	0	0	0	0	0	0	0	7	0	11	0	0	87	1061
8:55 AM	0	33	6	0	0	3	48	0	0	0	0	0	0	0	0	6	0	5	0	0	101	1063

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	508	44	0	0	24	456	0	0	0	0	0	0	0	0	80	0	180	0	0	1292
Heavy Trucks	0	4	4			0	4	0			0	0	0			0	0	0			12
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

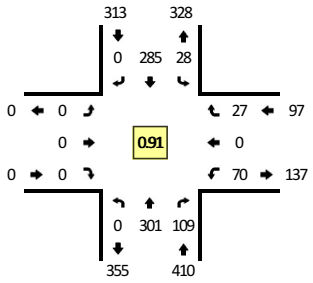
Type of peak hour being reported: Intersection Peak

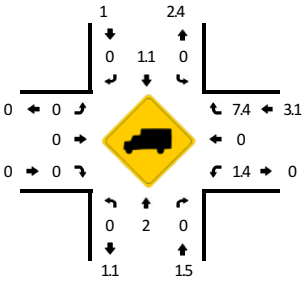
Method for determining peak hour: Total Entering

LOCATION: NW Parker St -- NW Leadbetter Dr
CITY/STATE: Camas, WA

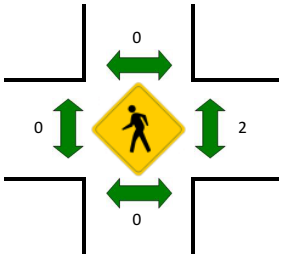
QC JOB #: 16993917
DATE: Tue, May 20 2025

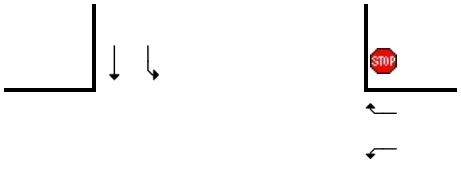
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

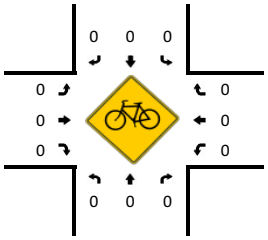


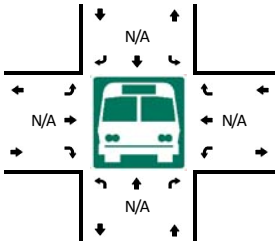


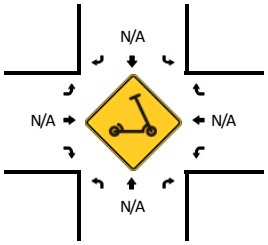
TRUE DATA TO IMPROVE MOBILITY











R* = RTOR

5-Min Count Period Beginning At	NW Parker St (Northbound)					NW Parker St (Southbound)					NW Leadbetter Dr (Eastbound)					NW Leadbetter Dr (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	17	9	0	0	1	18	0	0	0	0	0	0	0	0	5	0	2	0	0	52	
4:05 PM	0	25	10	0	0	3	18	0	0	0	0	0	0	0	0	5	0	1	0	0	62	
4:10 PM	0	16	7	0	0	0	21	0	0	0	0	0	0	0	0	3	0	1	0	0	48	
4:15 PM	0	16	4	0	0	1	16	0	0	0	0	0	0	0	0	7	0	1	0	0	45	
4:20 PM	0	21	9	0	0	2	14	0	0	0	0	0	0	0	0	5	0	4	0	0	55	
4:25 PM	0	23	11	0	0	2	14	0	0	0	0	0	0	0	0	9	0	1	0	0	60	
4:30 PM	0	22	7	0	0	1	20	0	0	0	0	0	0	0	0	6	0	3	0	0	59	
4:35 PM	0	23	8	0	0	4	18	0	0	0	0	0	0	0	0	3	0	6	0	0	62	
4:40 PM	0	37	7	0	0	1	18	0	0	0	0	0	0	0	0	6	0	3	0	0	72	
4:45 PM	0	35	8	0	0	2	37	0	0	0	0	0	0	0	0	5	0	1	0	0	88	
4:50 PM	0	24	7	0	0	5	19	0	0	0	0	0	0	0	0	8	0	3	0	0	66	
4:55 PM	0	21	11	0	0	2	20	0	0	0	0	0	0	0	0	4	0	0	0	0	58	727
5:00 PM	0	18	12	0	0	1	40	0	0	0	0	0	0	0	0	5	0	5	0	0	81	756
5:05 PM	0	21	9	0	0	3	20	0	0	0	0	0	0	0	0	4	0	1	0	0	58	752
5:10 PM	0	21	12	0	0	2	32	0	0	0	0	0	0	0	0	5	0	1	0	0	73	777
5:15 PM	0	27	10	0	0	2	21	0	0	0	0	0	0	0	0	10	0	2	0	0	72	804
5:20 PM	0	29	7	0	0	3	26	0	0	0	0	0	0	0	0	5	0	1	0	0	71	820
5:25 PM	0	14	13	0	0	3	21	0	0	0	0	0	0	0	0	5	0	2	0	0	58	818
5:30 PM	0	17	7	0	0	1	12	0	0	0	0	0	0	0	0	6	0	3	0	0	46	805
5:35 PM	0	26	9	0	0	1	28	0	0	0	0	0	0	0	0	6	0	1	0	0	71	814
5:40 PM	0	23	9	0	0	1	21	0	0	0	0	0	0	0	0	4	0	2	0	0	60	802
5:45 PM	0	20	10	0	0	3	18	0	0	0	0	0	0	0	0	7	0	1	0	0	59	773
5:50 PM	0	31	8	0	0	1	19	0	0	0	0	0	0	0	0	3	0	4	0	0	66	773
5:55 PM	0	18	13	0	0	2	23	0	0	0	0	0	0	0	0	1	0	3	0	0	60	775

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	384	88	0	0	32	296	0	0	0	0	0	0	0	0	76	0	28	0	0	904
Heavy Trucks	0	0	0			0	4	0			0	0	0			0	0	0			4
Buses																					
Pedestrians		0					0					0					4				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

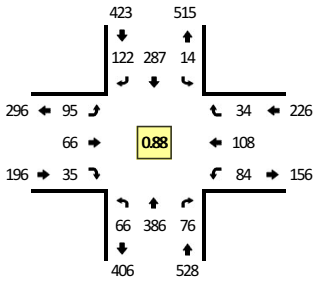
Type of peak hour being reported: Intersection Peak

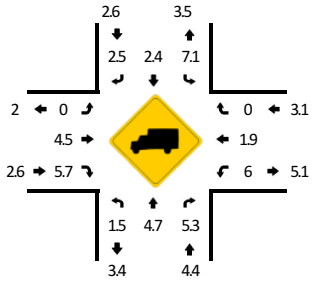
Method for determining peak hour: Total Entering

LOCATION: NW Parker St -- NW 38th Ave
CITY/STATE: Camas, WA

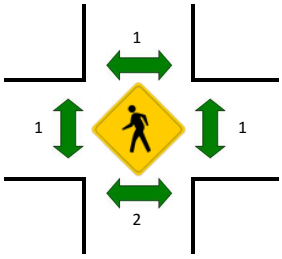
QC JOB #: 17043029
DATE: Thu, May 15 2025

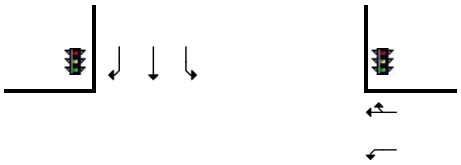
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

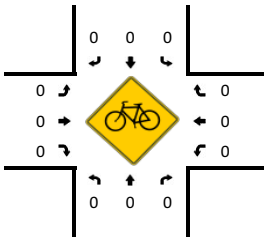


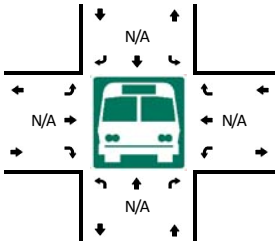


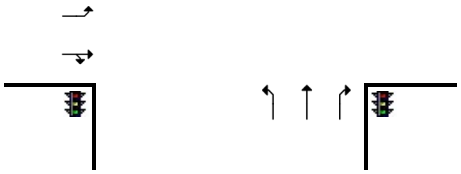
TRUE DATA TO IMPROVE MOBILITY

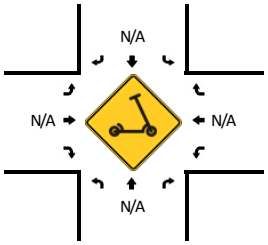












R* = RTOR

5-Min Count Period Beginning At	NW Parker St (Northbound)					NW Parker St (Southbound)					NW 38th Ave (Eastbound)					NW 38th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	1	9	1	0	1	0	9	4	0	2	3	2	3	0	0	8	11	1	0	0	55	
7:05 AM	4	12	1	0	0	0	13	5	0	3	5	1	0	0	0	9	8	0	0	0	61	
7:10 AM	2	10	1	0	1	1	10	3	0	0	1	4	0	0	1	11	4	0	0	1	50	
7:15 AM	6	20	0	0	0	0	18	4	0	0	4	1	0	0	1	6	5	0	0	0	65	
7:20 AM	5	15	1	0	0	0	14	3	0	1	1	4	2	0	1	7	10	0	0	1	65	
7:25 AM	2	14	0	0	2	1	11	5	0	2	5	2	0	0	0	9	7	0	0	0	60	
7:30 AM	2	5	1	0	2	1	7	1	0	3	5	1	1	0	0	8	9	3	0	0	49	
7:35 AM	5	25	2	0	2	2	12	5	0	0	7	3	1	0	1	7	7	1	0	1	81	
7:40 AM	7	10	4	0	0	1	17	0	0	6	7	8	4	0	1	9	16	1	0	0	91	
7:45 AM	3	26	2	0	4	2	18	5	0	4	13	5	1	0	1	10	9	2	0	1	106	
7:50 AM	7	40	1	0	3	1	17	11	0	3	15	9	7	0	0	8	7	2	0	1	132	
7:55 AM	6	45	8	0	6	1	27	6	0	1	8	8	3	0	1	7	9	1	0	0	137	952
8:00 AM	8	25	3	0	2	1	26	6	0	5	15	8	2	0	1	6	11	0	0	0	119	1016
8:05 AM	12	24	5	0	3	1	28	7	0	1	5	4	0	0	0	4	16	1	0	0	111	1066
8:10 AM	3	22	0	0	1	1	24	10	0	1	8	6	3	0	1	7	8	1	0	0	96	1112
8:15 AM	5	25	2	0	2	0	19	3	0	4	3	5	3	0	0	5	6	2	0	1	85	1132
8:20 AM	5	25	2	0	1	1	25	5	0	5	6	4	0	0	0	11	8	2	0	0	100	1167
8:25 AM	3	30	6	0	1	0	18	10	0	1	11	6	4	0	2	9	9	1	0	2	113	1220
8:30 AM	4	37	7	0	3	0	22	4	0	2	9	6	2	0	0	6	8	2	0	2	114	1285
8:35 AM	6	35	2	0	2	2	27	8	0	2	8	1	2	0	3	5	6	4	0	1	114	1318
8:40 AM	3	45	3	0	4	3	24	11	0	4	5	5	0	0	1	8	10	4	0	0	130	1357
8:45 AM	4	33	5	0	4	3	30	8	0	4	2	4	0	0	0	8	10	5	0	2	122	1373
8:50 AM	5	34	1	0	4	4	35	6	0	7	4	3	2	0	0	6	10	1	0	0	122	1363
8:55 AM	3	11	2	0	2	3	35	3	0	0	4	7	2	0	0	8	6	2	0	1	89	1315

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	84	440	92	0	44	12	280	128	0	36	152	100	56	0	8	84	108	16	0	4	1644
Heavy Trucks	4	8	8			4	4	0			0	0	0			12	4	0			44
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 5/22/2025 4:30 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

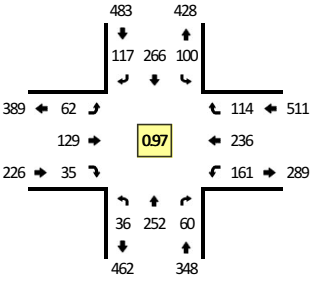
Type of peak hour being reported: Intersection Peak

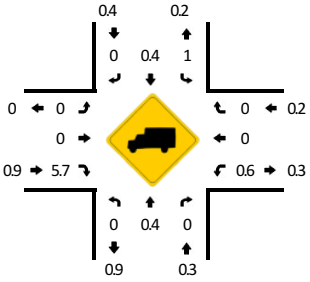
Method for determining peak hour: Total Entering

LOCATION: NW Parker St -- NW 38th Ave
CITY/STATE: Camas, WA

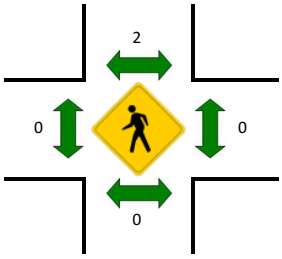
QC JOB #: 17043030
DATE: Thu, May 15 2025

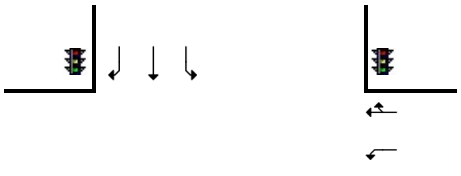
Peak-Hour: 4:50 PM -- 5:50 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

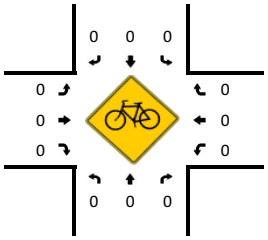


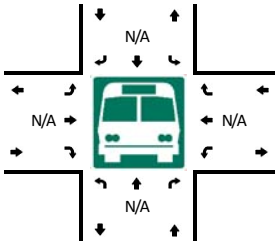


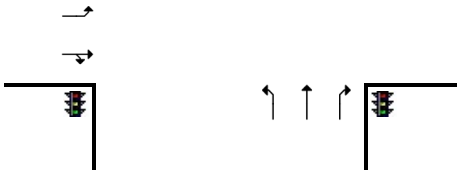
TRUE DATA TO IMPROVE MOBILITY

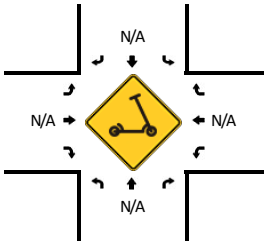












R* = RTOR

5-Min Count Period Beginning At	NW Parker St (Northbound)					NW Parker St (Southbound)					NW 38th Ave (Eastbound)					NW 38th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	3	12	0	0	2	5	21	3	0	4	9	9	0	0	0	9	14	9	0	2	102	
4:05 PM	2	16	1	0	1	2	16	7	0	3	6	16	1	0	1	10	17	3	0	1	103	
4:10 PM	1	13	6	0	3	13	16	4	0	7	5	9	1	0	0	11	13	5	0	2	109	
4:15 PM	1	9	1	0	3	3	25	3	0	3	5	16	0	0	0	12	23	9	0	2	115	
4:20 PM	1	17	4	0	3	10	16	3	0	4	5	7	1	0	1	4	11	8	0	5	100	
4:25 PM	4	12	4	0	6	4	13	3	0	2	5	11	3	0	0	9	23	8	0	2	109	
4:30 PM	1	17	4	0	2	9	22	0	0	4	4	7	1	0	0	9	16	5	0	1	102	
4:35 PM	3	11	5	0	2	7	20	3	0	3	6	11	1	0	0	11	11	8	0	0	102	
4:40 PM	3	15	0	0	2	9	23	2	0	6	5	6	4	0	0	9	16	8	0	4	112	
4:45 PM	3	24	4	0	6	3	20	3	0	4	6	8	0	0	1	13	16	9	0	1	121	
4:50 PM	4	24	1	0	2	8	18	8	0	6	4	14	1	0	1	18	21	6	0	1	137	
4:55 PM	3	18	1	0	2	9	14	3	0	4	6	12	1	0	0	17	16	10	0	5	121	1333
5:00 PM	3	28	1	0	2	8	18	2	0	6	7	13	3	0	1	13	25	10	0	2	142	1373
5:05 PM	2	28	2	0	5	3	19	2	0	3	7	14	2	0	0	14	17	4	0	1	123	1393
5:10 PM	1	15	5	0	4	8	22	1	0	4	4	11	4	0	2	19	24	12	0	2	138	1422
5:15 PM	1	17	4	0	6	7	30	5	0	7	7	11	1	0	0	11	21	8	0	0	136	1443
5:20 PM	3	13	3	0	2	15	27	6	0	6	6	9	4	0	0	9	15	8	0	3	129	1472
5:25 PM	8	21	4	0	1	9	23	6	0	7	6	6	1	0	1	12	24	9	0	3	141	1504
5:30 PM	5	20	3	0	2	11	19	4	0	6	3	8	1	0	2	18	17	8	0	2	129	1531
5:35 PM	4	18	1	0	0	5	28	1	0	11	4	10	2	0	2	6	21	8	0	1	122	1551
5:40 PM	2	24	2	0	4	6	24	3	0	6	6	14	2	0	0	13	17	3	0	2	128	1567
5:45 PM	0	26	0	0	3	11	24	7	0	3	2	7	3	0	1	11	18	5	0	1	122	1568
5:50 PM	2	21	3	0	2	5	27	3	0	5	6	14	4	0	2	13	20	9	0	0	136	1567
5:55 PM	3	27	4	0	2	3	22	3	0	5	5	10	2	0	0	7	14	6	0	1	114	1560

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	48	204	80	0	36	124	320	148	0	80	76	104	28	0	4	128	240	124	0	24	1768
Heavy Trucks	0	0	0			0	0	0			0	0	0			0	0	0			0
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 5/22/2025 4:30 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

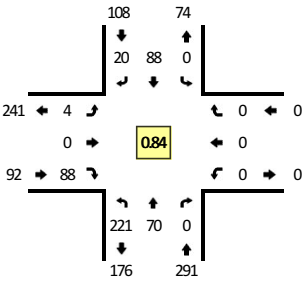
Type of peak hour being reported: Intersection Peak

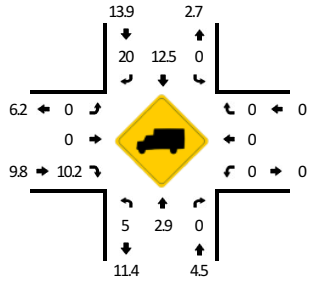
Method for determining peak hour: Total Entering

LOCATION: SE 283rd Ave -- SE 15th St/SE Nourse Rd
CITY/STATE: Camas, WA

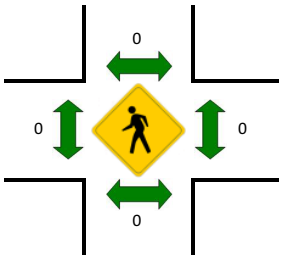
QC JOB #: 16993932
DATE: Tue, May 20 2025

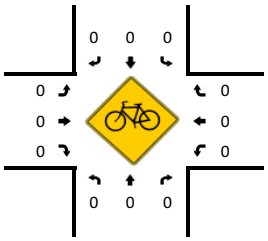
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

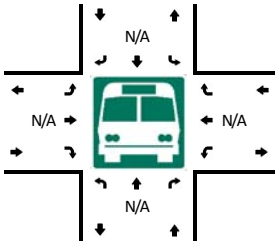


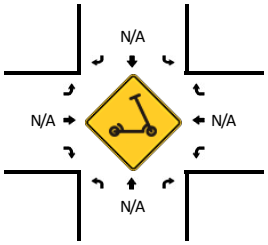


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	SE 283rd Ave (Northbound)					SE 283rd Ave (Southbound)					SE 15th St/SE Nourse Rd (Eastbound)					SE 15th St/SE Nourse Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	4	4	0	0	0	0	2	0	0	0	1	0	3	0	0	0	0	0	0	0	14	
7:05 AM	6	3	0	0	0	0	4	0	0	0	1	0	1	0	0	0	0	0	0	0	15	
7:10 AM	7	7	0	0	0	0	3	2	0	0	1	0	4	0	0	0	0	0	0	0	24	
7:15 AM	4	7	0	0	0	0	2	1	0	0	0	0	3	0	0	0	0	0	0	0	17	
7:20 AM	4	4	0	0	0	0	6	0	0	0	0	0	1	0	0	0	0	0	0	0	15	
7:25 AM	9	2	0	0	0	0	4	2	0	0	0	0	1	0	0	0	0	0	0	0	18	
7:30 AM	11	2	0	0	0	0	4	0	0	0	0	0	1	0	0	0	0	0	0	0	18	
7:35 AM	10	2	0	0	0	0	5	1	0	0	0	0	6	0	0	0	0	0	0	0	24	
7:40 AM	8	10	0	0	0	0	9	1	0	0	0	0	5	0	0	0	0	0	0	0	33	
7:45 AM	10	7	0	0	0	0	11	1	0	0	1	0	6	0	0	0	0	0	0	0	36	
7:50 AM	18	5	0	0	0	0	9	0	0	0	2	0	11	0	0	0	0	0	0	0	45	
7:55 AM	19	7	0	0	0	0	6	4	0	0	0	0	12	0	0	0	0	0	0	0	48	307
8:00 AM	22	9	0	0	0	0	7	0	0	0	0	0	4	0	0	0	0	0	0	0	42	335
8:05 AM	20	3	0	0	0	0	6	3	0	0	1	0	8	0	0	0	0	0	0	0	41	361
8:10 AM	18	6	0	0	0	0	8	2	0	0	0	0	6	0	0	0	0	0	0	0	40	377
8:15 AM	22	9	0	0	0	0	11	2	0	0	0	0	9	0	0	0	0	0	0	0	53	413
8:20 AM	28	5	0	0	0	0	6	4	0	0	0	0	4	0	0	0	0	0	0	0	47	445
8:25 AM	26	5	0	0	0	0	5	1	0	0	0	0	10	0	0	0	0	0	0	0	47	474
8:30 AM	20	2	0	0	0	0	5	1	0	0	0	0	7	0	0	0	0	0	0	0	35	491
8:35 AM	5	4	0	0	0	0	5	1	0	0	1	0	8	0	0	0	0	0	0	0	24	491
8:40 AM	2	7	0	0	0	0	5	0	0	0	0	0	7	0	0	0	0	0	0	0	21	479
8:45 AM	4	4	0	0	0	0	7	1	0	0	0	0	4	0	0	0	0	0	0	0	20	463
8:50 AM	2	1	0	0	0	0	9	1	0	0	0	0	4	0	0	0	0	0	0	0	17	435
8:55 AM	2	2	0	0	0	0	7	0	0	0	1	0	4	0	0	0	0	0	0	0	16	403

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	304	76	0	0	0	0	88	28	0	0	0	0	92	0	0	0	0	0	0	0	588
Heavy Trucks	28	4	0			0	12	4			0	0	12			0	0	0			60
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

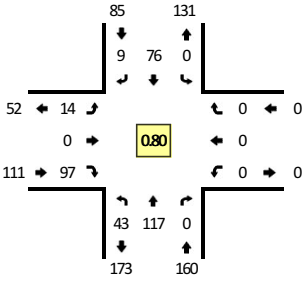
Type of peak hour being reported: Intersection Peak

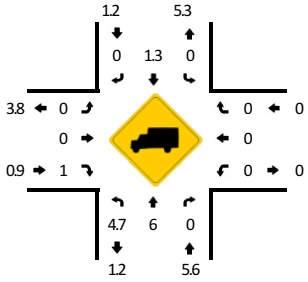
Method for determining peak hour: Total Entering

LOCATION: SE 283rd Ave -- SE 15th St/SE Nourse Rd
CITY/STATE: Camas, WA

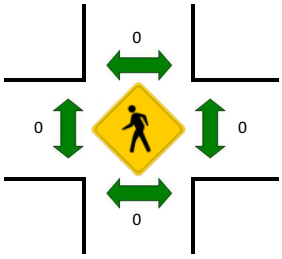
QC JOB #: 16993933
DATE: Tue, May 20 2025

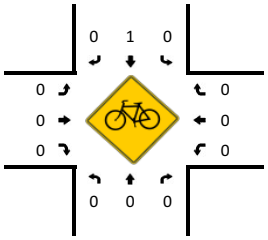
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

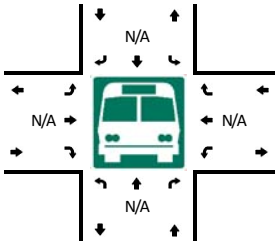


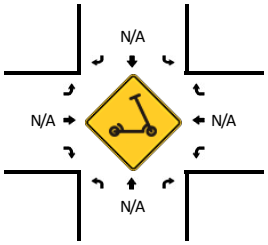


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	SE 283rd Ave (Northbound)					SE 283rd Ave (Southbound)					SE 15th St/SE Nourse Rd (Eastbound)					SE 15th St/SE Nourse Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	5	13	0	0	0	0	5	2	0	0	3	0	13	0	0	0	0	0	0	0	41	
4:05 PM	4	12	0	0	0	0	9	0	0	0	1	0	8	0	0	0	0	0	0	0	34	
4:10 PM	2	13	0	0	0	0	4	2	0	0	3	0	12	0	0	0	0	0	0	0	36	
4:15 PM	3	8	0	0	0	0	2	0	0	0	0	0	7	0	0	0	0	0	0	0	20	
4:20 PM	3	14	0	0	0	0	11	3	0	0	1	0	9	0	0	0	0	0	0	0	41	
4:25 PM	3	4	0	0	0	0	3	0	0	0	3	0	4	0	0	0	0	0	0	0	17	
4:30 PM	4	12	0	0	0	0	6	0	0	0	0	0	5	0	0	0	0	0	0	0	27	
4:35 PM	0	8	0	0	0	0	4	1	0	0	0	0	6	0	0	0	0	0	0	0	19	
4:40 PM	7	16	0	0	0	0	8	1	0	0	0	0	9	0	0	0	0	0	0	0	41	
4:45 PM	2	3	0	0	0	0	7	0	0	0	1	0	9	0	0	0	0	0	0	0	22	
4:50 PM	3	9	0	0	0	0	9	0	0	0	1	0	8	0	0	0	0	0	0	0	30	
4:55 PM	7	5	0	0	0	0	8	0	0	0	1	0	7	0	0	0	0	0	0	0	28	356
5:00 PM	4	10	0	0	0	0	6	1	0	0	1	0	9	0	0	0	0	0	0	0	31	346
5:05 PM	6	5	0	0	0	0	10	0	0	0	0	0	4	0	0	0	0	0	0	0	25	337
5:10 PM	4	10	0	0	0	0	2	0	0	0	1	0	5	0	0	0	0	0	0	0	22	323
5:15 PM	1	4	0	0	0	0	11	0	0	0	1	0	8	0	0	0	0	0	0	0	25	328
5:20 PM	8	6	0	0	0	0	10	1	0	0	1	0	0	0	0	0	0	0	0	0	26	313
5:25 PM	2	9	0	0	0	0	7	0	0	0	1	0	5	0	0	0	0	0	0	0	24	320
5:30 PM	7	6	0	0	0	0	13	0	0	0	2	0	10	0	0	0	0	0	0	0	38	331
5:35 PM	3	8	0	0	0	0	12	1	0	0	2	0	8	0	0	0	0	0	0	0	34	346
5:40 PM	4	8	0	0	0	0	7	0	0	0	1	0	4	0	0	0	0	0	0	0	24	329
5:45 PM	5	7	0	0	0	0	11	0	0	0	0	0	6	0	0	0	0	0	0	0	29	336
5:50 PM	12	8	0	0	0	0	8	4	0	0	0	0	5	0	0	0	0	0	0	0	37	343
5:55 PM	11	9	0	0	0	0	1	0	0	0	1	0	3	0	0	0	0	0	0	0	25	340

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	44	152	0	0	0	0	72	16	0	0	28	0	132	0	0	0	0	0	0	0	444
Heavy Trucks	8	12	0			0	0	0			0	0	4			0	0	0			24
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

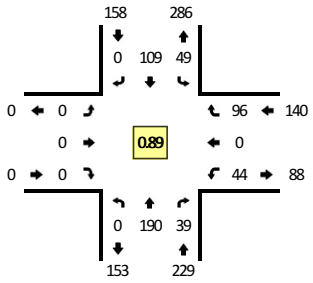
Type of peak hour being reported: Intersection Peak

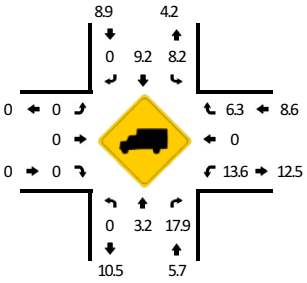
Method for determining peak hour: Total Entering

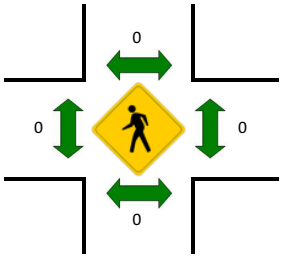
LOCATION: SE 283rd Ave -- SE 23rd St
CITY/STATE: Camas, WA

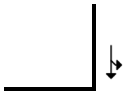
QC JOB #: 17021001
DATE: Tue, Apr 22 2025

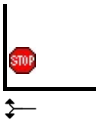
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 8:20 AM -- 8:35 AM

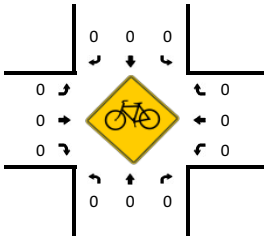


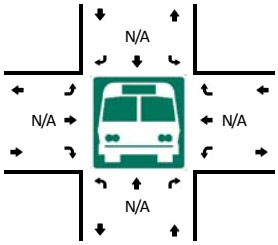


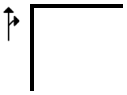


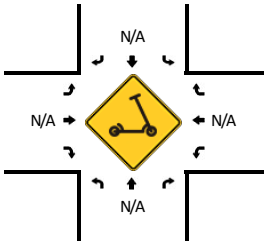












5-Min Count Period Beginning At	SE 283rd Ave (Northbound)				SE 283rd Ave (Southbound)				SE 23rd St (Eastbound)				SE 23rd St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	9	2	0	1	5	0	0	0	0	0	0	2	0	0	0	19	
7:05 AM	0	6	1	0	0	4	0	0	0	0	0	0	2	0	1	0	14	
7:10 AM	0	9	1	0	2	11	0	0	0	0	0	0	3	0	2	0	28	
7:15 AM	0	7	2	0	3	7	0	0	0	0	0	0	4	0	1	0	24	
7:20 AM	0	6	4	0	1	10	0	0	0	0	0	0	2	0	4	0	27	
7:25 AM	0	6	1	0	6	3	0	0	0	0	0	0	0	0	6	0	22	
7:30 AM	0	2	4	0	1	8	0	0	0	0	0	0	4	0	6	0	25	
7:35 AM	0	7	6	0	0	10	0	0	0	0	0	0	5	0	2	0	30	
7:40 AM	0	11	6	0	1	3	0	0	0	0	0	0	5	0	8	0	34	
7:45 AM	0	9	2	0	2	12	0	0	0	0	0	0	6	0	7	0	38	
7:50 AM	0	16	4	0	3	15	0	0	0	0	0	0	6	0	8	0	52	
7:55 AM	0	20	3	0	2	9	0	0	0	0	0	0	7	0	11	0	52	365
8:00 AM	0	16	4	0	0	10	0	0	0	0	0	0	2	0	8	0	40	386
8:05 AM	0	17	1	0	7	9	0	0	0	0	0	0	2	0	9	0	45	417
8:10 AM	0	19	4	0	4	7	0	0	0	0	0	0	4	0	7	0	45	434
8:15 AM	0	18	2	0	9	3	0	0	0	0	0	0	3	0	5	0	40	450
8:20 AM	0	18	0	0	7	7	0	0	0	0	0	0	1	0	13	0	46	469
8:25 AM	0	24	6	0	7	10	0	0	0	0	0	0	2	0	9	0	58	505
8:30 AM	0	17	2	0	2	12	0	0	0	0	0	0	2	0	9	0	44	524
8:35 AM	0	5	5	0	5	12	0	0	0	0	0	0	4	0	2	0	33	527
8:40 AM	0	6	3	0	5	8	0	0	0	0	0	0	2	0	2	0	26	519
8:45 AM	0	4	5	0	6	6	0	0	0	0	0	0	4	0	5	0	30	511
8:50 AM	0	8	3	0	4	7	0	0	0	0	0	0	6	0	2	0	30	489
8:55 AM	0	2	6	0	5	10	0	0	0	0	0	0	2	0	1	0	26	463

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	236	32	0	64	116	0	0	0	0	0	0	20	0	124	0	592
Heavy Trucks	0	12	8		8	16	0		0	0	0		0	0	4		48
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 4/29/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

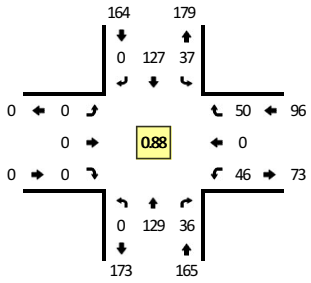
Type of peak hour being reported: Intersection Peak

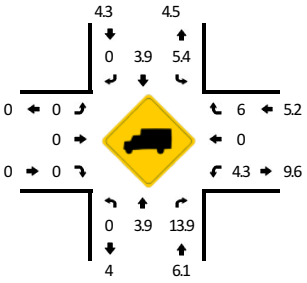
Method for determining peak hour: Total Entering

LOCATION: SE 283rd Ave -- SE 23rd St
CITY/STATE: Camas, WA

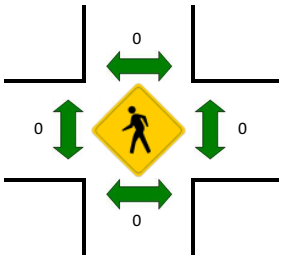
QC JOB #: 17021002
DATE: Tue, Apr 22 2025

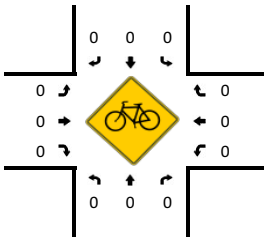
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:20 PM -- 4:35 PM

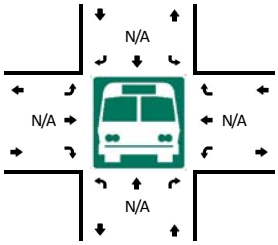


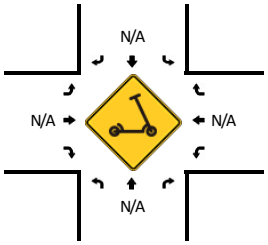


TRUE DATA TO IMPROVE MOBILITY









5-Min Count Period Beginning At	SE 283rd Ave (Northbound)				SE 283rd Ave (Southbound)				SE 23rd St (Eastbound)				SE 23rd St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	16	4	0	1	11	0	0	0	0	0	0	3	0	4	0	39	
4:05 PM	0	16	2	0	5	12	0	0	0	0	0	0	2	0	2	0	39	
4:10 PM	0	11	5	0	1	12	0	0	0	0	0	0	3	0	3	0	35	
4:15 PM	0	11	1	0	3	6	0	0	0	0	0	0	3	0	3	0	27	
4:20 PM	0	17	2	0	3	13	0	0	0	0	0	0	7	0	7	0	49	
4:25 PM	0	9	5	0	2	8	0	0	0	0	0	0	5	0	6	0	35	
4:30 PM	0	9	4	0	4	11	0	0	0	0	0	0	3	0	6	0	37	
4:35 PM	0	3	3	0	1	11	0	0	0	0	0	0	3	0	4	0	25	
4:40 PM	0	13	3	0	2	11	0	0	0	0	0	0	4	0	4	0	37	
4:45 PM	0	10	2	0	5	10	0	0	0	0	0	0	5	0	2	0	34	
4:50 PM	0	9	2	0	4	14	0	0	0	0	0	0	4	0	4	0	37	
4:55 PM	0	5	3	0	6	8	0	0	0	0	0	0	4	0	5	0	31	425
5:00 PM	0	6	4	0	3	7	0	0	0	0	0	0	7	0	5	0	32	418
5:05 PM	0	7	0	0	3	12	0	0	0	0	0	0	8	0	2	0	32	411
5:10 PM	0	13	3	0	2	10	0	0	0	0	0	0	4	0	2	0	34	410
5:15 PM	0	10	6	0	3	11	0	0	0	0	0	0	1	0	1	0	32	415
5:20 PM	0	9	0	0	5	7	0	0	0	0	0	0	3	0	1	0	25	391
5:25 PM	0	7	5	0	5	13	0	0	0	0	0	0	2	0	2	0	34	390
5:30 PM	0	9	4	0	8	10	0	0	0	0	0	0	2	0	3	0	36	389
5:35 PM	0	10	4	0	4	7	0	0	0	0	0	0	1	0	2	0	28	392
5:40 PM	0	11	2	0	2	14	0	0	0	0	0	0	5	0	6	0	40	395
5:45 PM	0	10	0	0	6	8	0	0	0	0	0	0	2	0	3	0	29	390
5:50 PM	0	11	2	0	3	12	0	0	0	0	0	0	2	0	8	0	38	391
5:55 PM	0	15	2	0	6	12	0	0	0	0	0	0	2	0	0	0	37	397

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	140	44	0	36	128	0	0	0	0	0	0	60	0	76	0	484
Heavy Trucks	0	8	8		0	4	0		0	0	0		0	0	0		20
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 4/29/2025 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

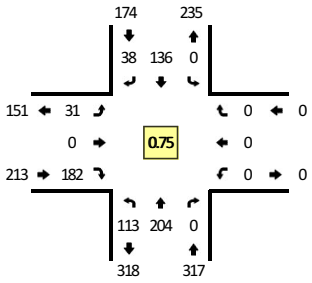
Type of peak hour being reported: Intersection Peak

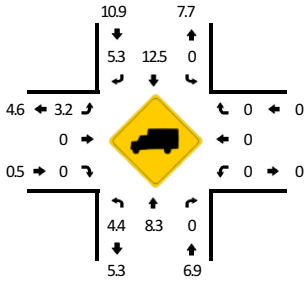
Method for determining peak hour: Total Entering

LOCATION: NE Woodburn Dr -- SE Crown Rd
CITY/STATE: Camas, WA

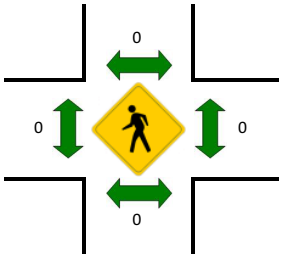
QC JOB #: 16993934
DATE: Tue, May 20 2025

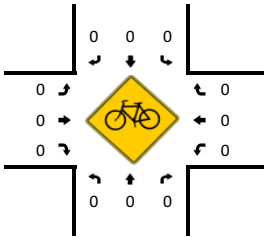
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

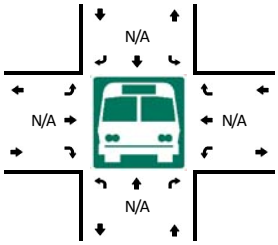


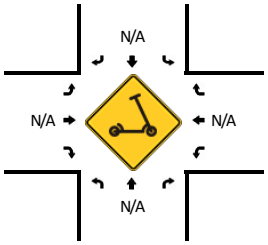


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	NE Woodburn Dr (Northbound)					NE Woodburn Dr (Southbound)					SE Crown Rd (Eastbound)					SE Crown Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	3	11	0	0	0	0	2	0	0	0	0	0	13	0	0	0	0	0	0	0	29	
7:05 AM	9	6	0	0	0	0	5	0	0	0	0	0	6	0	0	0	0	0	0	0	26	
7:10 AM	4	10	0	0	0	0	4	1	0	0	1	0	11	0	0	0	0	0	0	0	31	
7:15 AM	3	11	0	0	0	0	5	1	0	0	0	0	4	0	0	0	0	0	0	0	24	
7:20 AM	3	6	0	0	0	0	8	0	0	0	1	0	8	0	0	0	0	0	0	0	26	
7:25 AM	5	8	0	0	0	0	6	0	0	0	0	0	10	0	0	0	0	0	0	0	29	
7:30 AM	2	8	0	0	0	0	5	3	0	0	0	0	5	0	0	0	0	0	0	0	23	
7:35 AM	8	10	0	0	0	0	11	1	0	0	0	0	9	0	0	0	0	0	0	0	39	
7:40 AM	11	13	0	0	0	0	11	4	0	0	4	0	13	0	0	0	0	0	0	0	56	
7:45 AM	18	13	0	0	0	0	11	9	0	0	3	0	23	0	0	0	0	0	0	0	77	
7:50 AM	14	13	0	0	0	0	12	9	0	0	5	0	26	0	0	0	0	0	0	0	79	
7:55 AM	20	12	0	0	0	0	16	4	0	0	5	0	22	0	0	0	0	0	0	0	79	518
8:00 AM	15	16	0	0	0	0	5	4	0	0	5	0	31	0	0	0	0	0	0	0	76	565
8:05 AM	7	21	0	0	0	0	8	2	0	0	4	0	17	0	0	0	0	0	0	0	59	598
8:10 AM	4	17	0	0	0	0	12	1	0	0	3	0	6	0	0	0	0	0	0	0	43	610
8:15 AM	3	16	0	0	0	0	17	1	0	0	2	0	9	0	0	0	0	0	0	0	48	634
8:20 AM	8	36	0	0	0	0	6	1	0	0	0	0	6	0	0	0	0	0	0	0	57	665
8:25 AM	3	20	0	0	0	0	15	1	0	0	0	0	5	0	0	0	0	0	0	0	44	680
8:30 AM	2	17	0	0	0	0	12	1	0	0	0	0	15	0	0	0	0	0	0	0	47	704
8:35 AM	4	6	0	0	0	0	17	0	0	0	0	0	11	0	0	0	0	0	0	0	38	703
8:40 AM	1	9	0	0	0	0	19	0	0	0	0	0	9	0	0	0	0	0	0	0	38	685
8:45 AM	2	7	0	0	0	0	8	1	0	0	0	0	9	0	0	0	0	0	0	0	27	635
8:50 AM	8	6	0	0	0	0	10	1	0	0	0	0	11	0	0	0	0	0	0	0	36	592
8:55 AM	3	3	0	0	0	0	8	1	0	0	0	0	11	0	0	0	0	0	0	0	26	539

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	208	152	0	0	0	0	156	88	0	0	52	0	284	0	0	0	0	0	0	0	940
Heavy Trucks	0	16	0			0	16	0			0	0	0			0	0	0			32
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

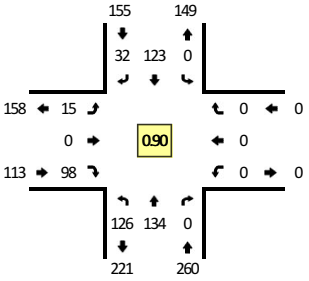
Type of peak hour being reported: Intersection Peak

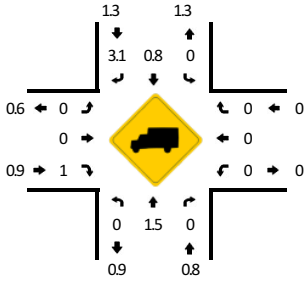
Method for determining peak hour: Total Entering

LOCATION: NE Woodburn Dr -- SE Crown Rd
CITY/STATE: Camas, WA

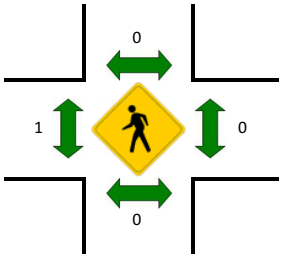
QC JOB #: 16993935
DATE: Tue, May 20 2025

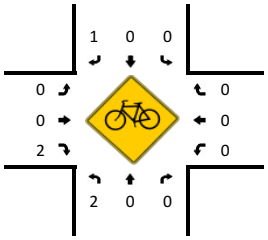
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

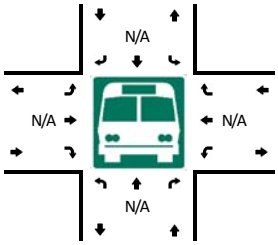


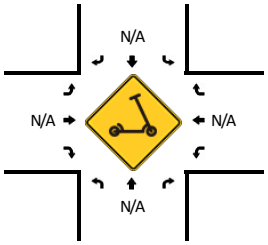


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	NE Woodburn Dr (Northbound)					NE Woodburn Dr (Southbound)					SE Crown Rd (Eastbound)					SE Crown Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	9	13	0	0	0	0	9	0	0	0	2	0	6	0	0	0	0	0	0	0	39	
4:05 PM	2	11	0	0	0	0	11	3	0	0	0	0	3	0	0	0	0	0	0	0	30	
4:10 PM	17	13	0	0	0	0	12	2	0	0	0	0	7	0	0	0	0	0	0	0	51	
4:15 PM	10	13	0	0	0	0	10	1	0	0	2	0	10	0	0	0	0	0	0	0	46	
4:20 PM	8	14	0	0	0	0	17	3	0	0	4	0	15	0	0	0	0	0	0	0	61	
4:25 PM	11	7	0	0	0	0	11	0	0	0	2	0	8	0	0	0	0	0	0	0	39	
4:30 PM	9	8	0	0	0	0	10	2	0	0	1	0	9	0	0	0	0	0	0	0	39	
4:35 PM	9	9	0	0	0	0	4	1	0	0	0	0	9	0	0	0	0	0	0	0	32	
4:40 PM	9	14	0	0	0	0	9	2	0	0	2	0	2	0	0	0	0	0	0	0	38	
4:45 PM	12	7	0	0	0	0	11	2	0	0	3	0	7	0	0	0	0	0	0	0	42	
4:50 PM	5	12	0	0	0	0	10	3	0	0	2	0	12	0	0	0	0	0	0	0	44	
4:55 PM	3	11	0	0	0	0	11	4	0	0	1	0	7	0	0	0	0	0	0	0	37	498
5:00 PM	9	9	0	0	0	0	10	2	0	0	1	0	2	0	0	0	0	0	0	0	33	492
5:05 PM	17	14	0	0	0	0	15	1	0	0	1	0	9	0	0	0	0	0	0	0	57	519
5:10 PM	10	10	0	0	0	0	8	0	0	0	0	0	13	0	0	0	0	0	0	0	41	509
5:15 PM	12	9	0	0	0	0	16	0	0	0	2	0	10	0	0	0	0	0	0	0	49	512
5:20 PM	13	13	0	0	0	0	11	2	0	0	1	0	8	0	0	0	0	0	0	0	48	499
5:25 PM	8	9	0	0	0	0	6	4	0	0	0	0	7	0	0	0	0	0	0	0	34	494
5:30 PM	11	11	0	0	0	0	13	2	0	0	0	0	9	0	0	0	0	0	0	0	46	501
5:35 PM	7	9	0	0	0	0	12	7	0	0	2	0	8	0	0	0	0	0	0	0	45	514
5:40 PM	7	7	0	0	0	0	9	3	0	0	5	0	8	0	0	0	0	0	0	0	39	515
5:45 PM	13	10	0	0	0	0	9	2	0	0	0	0	4	0	0	0	0	0	0	0	38	511
5:50 PM	11	19	0	0	0	0	8	4	0	0	2	0	10	0	0	0	0	0	0	0	54	521
5:55 PM	8	14	0	0	0	0	6	5	0	0	1	0	10	0	0	0	0	0	0	0	44	528

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	156	132	0	0	0	0	156	4	0	0	12	0	128	0	0	0	0	0	0	0	588
Heavy Trucks	0	0	0			0	0	0			0	0	0			0	0	0			0
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	4	0	0			0	0	0			0	0	8			0	0	0			12
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

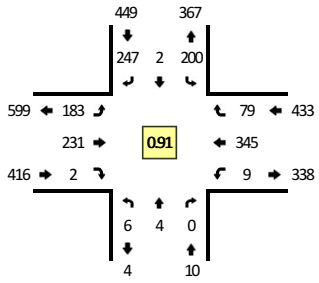
Type of peak hour being reported: Intersection Peak

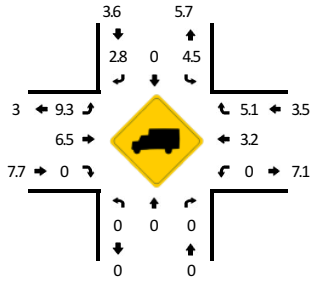
Method for determining peak hour: Total Entering

LOCATION: SE Crown Rd -- NE 3rd St
CITY/STATE: Camas, WA

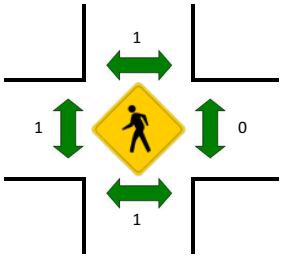
QC JOB #: 16993936
DATE: Tue, May 20 2025

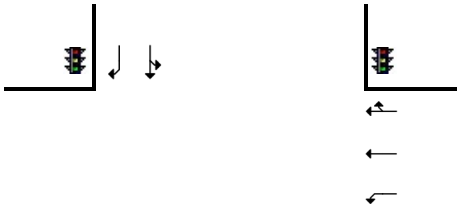
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

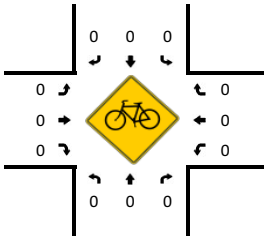


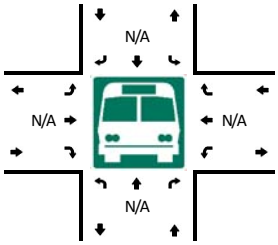


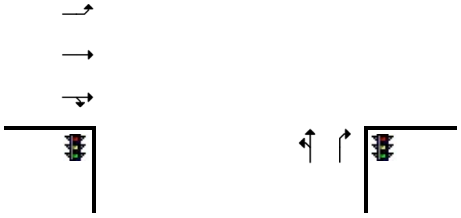
TRUE DATA TO IMPROVE MOBILITY

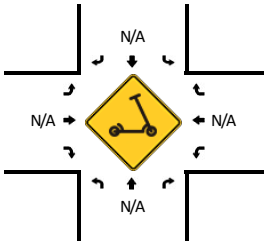












R* = RTOR

5-Min Count Period Beginning At	SE Crown Rd (Northbound)					SE Crown Rd (Southbound)					NE 3rd St (Eastbound)					NE 3rd St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	2	0	22	3	0	8	5	0	0	0	0	21	5	2	0	68	
7:05 AM	0	0	0	0	0	3	0	14	2	0	11	14	0	0	0	0	23	6	0	0	73	
7:10 AM	0	0	0	0	0	4	0	12	3	0	4	6	1	0	0	0	13	5	2	0	50	
7:15 AM	2	0	0	0	0	5	0	19	8	0	7	7	0	0	0	1	21	6	0	0	76	
7:20 AM	1	0	0	0	0	7	0	15	7	0	9	6	1	0	0	0	17	4	0	0	67	
7:25 AM	1	0	0	0	0	3	0	17	6	0	8	8	0	0	0	0	19	3	0	0	65	
7:30 AM	0	0	0	0	0	2	0	22	1	0	9	13	0	0	0	0	16	5	0	0	68	
7:35 AM	0	0	0	0	0	4	0	20	5	0	10	14	0	0	0	0	10	5	2	0	70	
7:40 AM	0	0	0	0	0	7	0	20	8	0	16	15	0	0	0	0	27	10	3	0	106	
7:45 AM	0	0	0	0	0	11	0	14	9	0	10	16	1	0	0	0	29	8	2	0	100	
7:50 AM	1	0	0	0	0	13	1	23	13	0	12	12	0	0	0	0	29	11	2	0	117	
7:55 AM	1	1	0	0	0	13	0	18	11	0	19	21	1	0	0	0	30	5	0	0	120	980
8:00 AM	0	0	0	0	0	15	0	14	10	0	16	24	0	0	0	0	35	8	0	0	122	1034
8:05 AM	0	2	0	0	0	10	0	15	16	0	15	20	0	0	0	0	18	7	1	0	104	1065
8:10 AM	0	0	0	0	0	5	0	21	5	0	10	17	0	0	0	0	33	11	0	0	102	1117
8:15 AM	0	0	0	0	0	4	0	22	1	0	24	19	0	0	0	0	31	9	3	0	113	1154
8:20 AM	0	1	0	0	0	7	0	22	6	0	17	28	0	0	0	0	21	8	1	0	111	1198
8:25 AM	1	0	0	0	0	5	0	15	6	0	14	16	0	1	0	0	21	6	1	0	86	1219
8:30 AM	0	0	0	0	0	5	0	22	6	0	12	10	0	0	0	0	38	3	0	0	96	1247
8:35 AM	2	0	0	0	0	8	0	30	8	0	12	18	1	0	0	0	37	2	1	0	119	1296
8:40 AM	1	0	0	0	0	6	0	30	6	0	15	11	0	0	0	0	27	4	0	0	100	1290
8:45 AM	0	0	0	0	0	7	1	15	14	0	16	35	0	0	0	0	25	5	0	0	118	1308
8:50 AM	1	0	0	0	0	5	1	16	11	0	11	28	0	0	0	0	34	2	0	0	109	1300
8:55 AM	1	0	0	0	0	7	0	12	11	0	12	23	0	0	0	0	23	5	1	0	95	1275

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	8	4	0	0	0	164	4	220	136	0	188	228	4	0	0	0	376	96	8	0	1436
Heavy Trucks	0	0	0			24	0	4			24	12	0			0	4	8			76
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

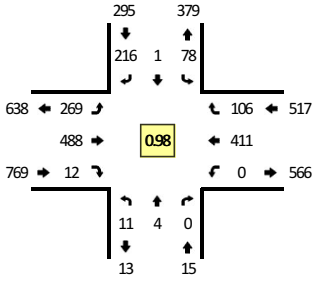
Type of peak hour being reported: Intersection Peak

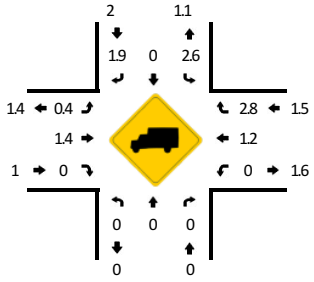
Method for determining peak hour: Total Entering

LOCATION: SE Crown Rd -- NE 3rd St
CITY/STATE: Camas, WA

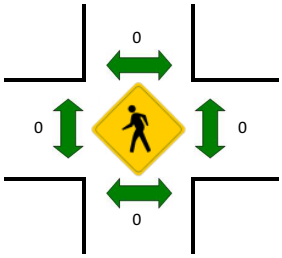
QC JOB #: 16993937
DATE: Tue, May 20 2025

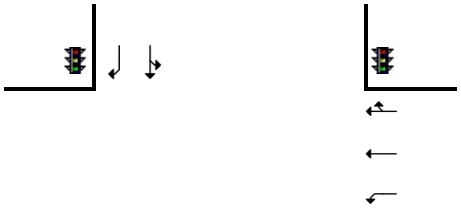
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

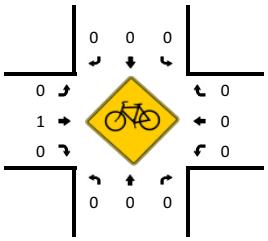


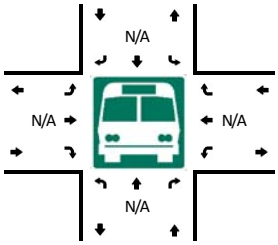


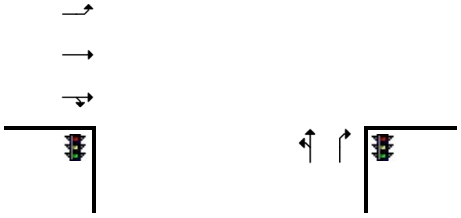
TRUE DATA TO IMPROVE MOBILITY

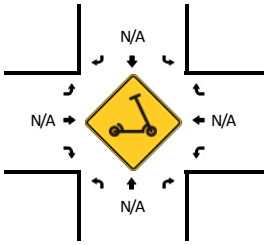












R* = RTOR

5-Min Count Period Beginning At	SE Crown Rd (Northbound)					SE Crown Rd (Southbound)					NE 3rd St (Eastbound)					NE 3rd St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	1	0	0	0	0	6	0	13	0	6	17	36	0	0	0	0	43	9	0	2	133	
4:05 PM	0	0	0	0	0	9	0	12	0	3	26	43	0	0	1	0	25	11	0	0	130	
4:10 PM	0	0	0	0	0	10	0	4	0	3	23	31	0	0	0	0	31	6	0	0	108	
4:15 PM	2	1	0	0	0	7	1	8	0	2	21	38	1	0	0	0	36	6	0	2	125	
4:20 PM	0	0	0	0	0	7	0	13	0	9	15	36	0	0	0	0	31	7	0	2	120	
4:25 PM	0	0	0	0	0	12	1	12	0	6	21	39	0	0	0	0	32	4	0	0	127	
4:30 PM	1	0	0	0	0	10	0	10	0	4	20	35	2	0	0	0	33	9	0	0	124	
4:35 PM	3	0	0	0	0	1	0	15	0	7	23	52	2	0	0	0	41	6	0	4	154	
4:40 PM	1	1	0	0	0	8	0	9	0	3	14	39	2	0	0	0	27	10	0	3	117	
4:45 PM	1	0	0	0	0	7	0	8	0	3	26	41	0	0	1	0	24	8	0	2	121	
4:50 PM	1	0	0	0	0	9	0	18	0	6	20	42	0	0	0	0	40	10	0	2	148	
4:55 PM	0	0	0	0	0	8	1	17	0	2	10	36	0	0	0	0	48	9	0	0	131	1538
5:00 PM	0	0	0	0	0	4	0	11	0	1	22	40	1	0	0	0	27	14	0	0	120	1525
5:05 PM	0	1	0	0	0	6	0	13	0	5	27	45	1	0	1	0	31	10	0	0	140	1535
5:10 PM	0	0	0	0	0	7	0	14	0	3	21	42	1	0	1	0	34	2	0	0	125	1552
5:15 PM	0	0	0	0	0	11	0	12	0	8	27	35	0	0	0	0	42	7	0	0	142	1569
5:20 PM	0	2	0	0	0	10	0	16	0	8	26	35	1	0	0	0	28	3	0	0	129	1578
5:25 PM	4	0	0	0	0	2	0	16	0	1	28	36	0	0	0	0	38	10	0	0	135	1586
5:30 PM	1	0	0	0	0	5	0	15	0	5	25	45	0	0	1	0	31	6	0	0	134	1596
5:35 PM	0	0	0	0	0	6	0	12	0	3	20	32	0	0	0	0	38	7	0	0	118	1560
5:40 PM	0	0	0	0	0	7	0	15	0	4	29	30	0	0	0	0	36	5	0	2	128	1571
5:45 PM	1	1	0	0	0	7	0	11	0	7	22	35	1	0	0	0	40	9	0	0	134	1584
5:50 PM	2	0	0	0	0	2	0	9	0	2	22	39	1	0	0	0	24	9	0	3	113	1549
5:55 PM	2	1	0	0	0	6	0	16	0	8	24	41	1	0	1	0	30	6	0	0	136	1554

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	4	0	0	0	96	0	220	0	64	300	488	16	0	8	0	428	76	0	0	1700
Heavy Trucks	0	0	0			4	0	0			0	8	0			0	12	0			24
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 5/29/2025 6:25 PM

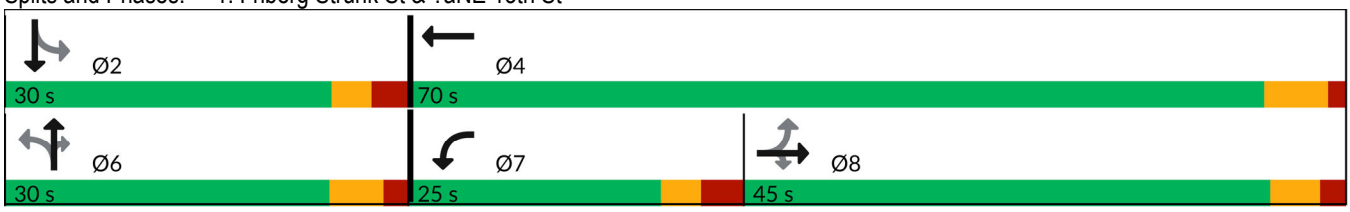
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-

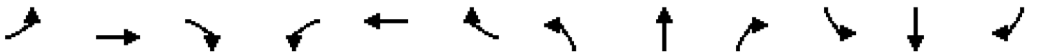
Appendix D : Existing Conditions Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Configurations									
Traffic Volume (vph)	1	161	285	256	299	86	2	92	5
Future Volume (vph)	1	161	285	256	299	86	2	92	5
Turn Type	Perm	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases		8		7	4		6		2
Permitted Phases	8		8			6		6	
Detector Phase	8	8	8	7	4	6	6	6	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.6	23.6	23.6	11.0	24.1	23.8	23.8	23.8	25.6
Total Split (s)	45.0	45.0	45.0	25.0	70.0	30.0	30.0	30.0	30.0
Total Split (%)	45.0%	45.0%	45.0%	25.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.6	3.6	3.6	3.0	4.7	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	3.0	1.4	1.8	1.8	1.8	2.6
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		5.6	5.6	6.0	6.1		5.8	5.8	5.6
Lead/Lag	Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	Min	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)		13.2	13.2	19.4	38.2		10.1	10.1	10.3
Actuated g/C Ratio		0.22	0.22	0.32	0.63		0.17	0.17	0.17
v/c Ratio		0.62	0.59	0.61	0.33		0.56	0.33	0.03
Control Delay (s/veh)		30.8	7.1	26.4	6.7		35.6	8.5	21.0
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		30.8	7.1	26.4	6.7		35.6	8.5	21.0
LOS		C	A	C	A		D	A	C
Approach Delay (s/veh)		15.7			15.8		21.7		21.0
Approach LOS		B			B		C		C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 60.4	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay (s/veh): 16.7	Intersection LOS: B
Intersection Capacity Utilization 52.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Friberg Strunk St & ?áNE 13th St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	161	285	256	299	0	86	2	92	0	5	1
Future Volume (veh/h)	1	161	285	256	299	0	86	2	92	0	5	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	0.96	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	401	1604	1811	1796	1826	1900	1682	1900	1826	1900	1604	1900
Adj Flow Rate, veh/h	1	199	352	316	369	0	106	2	114	0	6	1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	100	20	6	7	5	0	10	0	5	0	20	0
Cap, veh/h	74	459	431	378	1151	0	318	3	195	0	170	28
Arrive On Green	0.29	0.29	0.29	0.22	0.63	0.00	0.13	0.13	0.13	0.00	0.13	0.13
Sat Flow, veh/h	1	1601	1502	1711	1826	0	1357	26	1535	0	1338	223
Grp Volume(v), veh/h	200	0	352	316	369	0	108	0	114	0	0	7
Grp Sat Flow(s),veh/h/ln	1602	0	1502	1711	1826	0	1382	0	1535	0	0	1561
Q Serve(g_s), s	0.0	0.0	10.7	8.6	4.6	0.0	3.5	0.0	3.4	0.0	0.0	0.2
Cycle Q Clear(g_c), s	5.0	0.0	10.7	8.6	4.6	0.0	3.7	0.0	3.4	0.0	0.0	0.2
Prop In Lane	0.00		1.00	1.00		0.00	0.98		1.00	0.00		0.14
Lane Grp Cap(c), veh/h	534	0	431	378	1151	0	321	0	195	0	0	198
V/C Ratio(X)	0.37	0.00	0.82	0.84	0.32	0.00	0.34	0.00	0.59	0.00	0.00	0.04
Avail Cap(c_a), veh/h	1360	0	1208	663	2381	0	845	0	758	0	0	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	14.2	0.0	16.3	18.2	4.2	0.0	20.4	0.0	20.2	0.0	0.0	18.8
Incr Delay (d2), s/veh	0.2	0.0	1.5	1.9	0.1	0.0	0.2	0.0	1.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	3.2	3.1	0.9	0.0	1.0	0.0	1.1	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.4	0.0	17.7	20.1	4.3	0.0	20.6	0.0	21.2	0.0	0.0	18.8
LnGrp LOS	B		B	C	A		C		C			B
Approach Vol, veh/h		552			685			222			7	
Approach Delay, s/veh		16.5			11.6			20.9			18.8	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	2	4	6	7	8
Phs Duration (G+Y+Rc), s	12.0	37.0	12.0	16.8	20.2
Change Period (Y+Rc), s	* 5.8	6.1	5.8	6.0	* 6.1
Max Green Setting (Gmax), s	* 24	63.9	24.2	19.0	* 39
Max Q Clear Time (g_c+I1), s	2.2	6.6	5.7	10.6	12.7
Green Ext Time (p_c), s	0.0	1.4	0.5	0.3	1.4

Intersection Summary	
HCM 7th Control Delay, s/veh	14.9
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	180	61	162	550	19	57
Future Vol, veh/h	180	61	162	550	19	57
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	55	-	105	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	4	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	14	20	8	5	37	4
Mvmt Flow	198	67	178	604	21	63

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	266	0	1159	199
Stage 1	-	-	-	-	199	-
Stage 2	-	-	-	-	960	-
Critical Hdwy	-	-	4.18	-	6.77	6.24
Critical Hdwy Stg 1	-	-	-	-	5.77	-
Critical Hdwy Stg 2	-	-	-	-	5.77	-
Follow-up Hdwy	-	-	2.272	-	3.833	3.336
Pot Cap-1 Maneuver	-	-	1264	-	185	837
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	322	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1263	-	159	836
Mov Cap-2 Maneuver	-	-	-	-	159	-
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	276	-

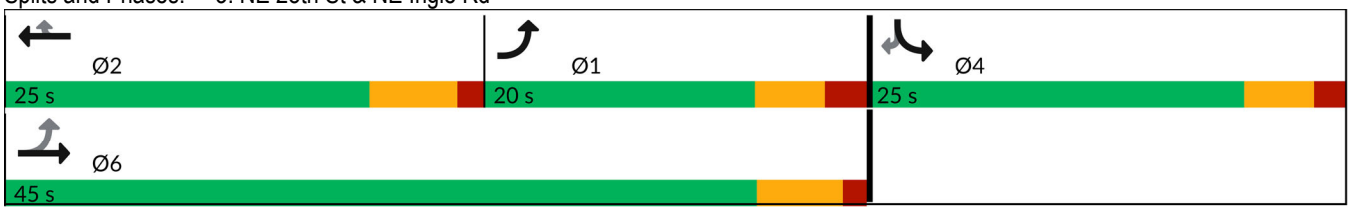
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.89	15.01
HCM LOS			C

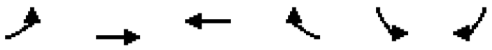
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	159	836	-	-	1263	-
HCM Lane V/C Ratio	0.132	0.075	-	-	0.141	-
HCM Ctrl Dly (s/v)	31.1	9.7	-	-	8.3	-
HCM Lane LOS	D	A	-	-	A	-
HCM 95th %tile Q(veh)	0.4	0.2	-	-	0.5	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	98	138	299	60	83	406
Future Volume (vph)	98	138	299	60	83	406
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	10.8	15.7	24.9	24.9	10.3	10.3
Total Split (s)	20.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	28.6%	64.3%	35.7%	35.7%	35.7%	35.7%
Yellow Time (s)	3.6	4.5	4.5	4.5	3.6	3.6
All-Red Time (s)	2.2	1.2	1.4	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.7	5.9	5.9	5.3	5.3
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effct Green (s)	23.0	21.5	13.2	13.2	8.0	8.0
Actuated g/C Ratio	0.56	0.52	0.32	0.32	0.19	0.19
v/c Ratio	0.18	0.17	0.58	0.13	0.30	0.69
Control Delay (s/veh)	6.7	5.9	18.1	4.9	18.8	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.7	5.9	18.1	4.9	18.8	8.8
LOS	A	A	B	A	B	A
Approach Delay (s/veh)		6.2	15.9		10.5	
Approach LOS		A	B		B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 41.2	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay (s/veh): 11.4	Intersection LOS: B
Intersection Capacity Utilization 50.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: NE 28th St & NE Ingle Rd





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	98	138	299	60	83	406
Future Volume (veh/h)	98	138	299	60	83	406
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1707	1737	1811	1796	1752	1841
Adj Flow Rate, veh/h	107	150	325	65	90	441
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	13	11	6	7	10	4
Cap, veh/h	304	761	417	351	537	503
Arrive On Green	0.08	0.44	0.23	0.23	0.32	0.32
Sat Flow, veh/h	1626	1737	1811	1522	1668	1560
Grp Volume(v), veh/h	107	150	325	65	90	441
Grp Sat Flow(s),veh/h/ln	1626	1737	1811	1522	1668	1560
Q Serve(g_s), s	0.0	2.5	7.8	1.6	1.8	12.4
Cycle Q Clear(g_c), s	0.0	2.5	7.8	1.6	1.8	12.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	304	761	417	351	537	503
V/C Ratio(X)	0.35	0.20	0.78	0.19	0.17	0.88
Avail Cap(c_a), veh/h	671	1473	746	627	709	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	8.0	16.7	14.3	11.3	14.8
Incr Delay (d2), s/veh	0.3	0.0	1.2	0.1	0.1	8.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.6	2.7	0.5	0.5	4.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	19.8	8.0	17.9	14.4	11.3	23.4
LnGrp LOS	B	A	B	B	B	C
Approach Vol, veh/h		257	390		531	
Approach Delay, s/veh		12.9	17.4		21.3	
Approach LOS		B	B		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.5	16.6		20.2		26.1
Change Period (Y+Rc), s	5.8	5.9		5.3		* 5.8
Max Green Setting (Gmax), s	14.2	19.1		19.7		* 39
Max Q Clear Time (g_c+I1), s	2.0	9.8		14.4		4.5
Green Ext Time (p_c), s	0.1	0.9		0.6		0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	18.2
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	110	103	50	213	2	81	2	29	1	3	5
Future Vol, veh/h	2	110	103	50	213	2	81	2	29	1	3	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	0	6	12	10	7	0	6	0	21	0	0	20
Mvmt Flow	3	153	143	69	296	3	113	3	40	1	4	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	299	0	0	296	0	0	667	667	224	596	738	297
Stage 1	-	-	-	-	-	-	230	230	-	436	436	-
Stage 2	-	-	-	-	-	-	437	438	-	160	301	-
Critical Hdwy	4.1	-	-	4.2	-	-	7.16	6.5	6.41	7.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.29	-	-	3.554	4	3.489	3.5	4	3.48
Pot Cap-1 Maneuver	1274	-	-	1221	-	-	367	382	770	418	348	702
Stage 1	-	-	-	-	-	-	764	718	-	603	583	-
Stage 2	-	-	-	-	-	-	591	582	-	847	668	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1274	-	-	1221	-	-	334	355	770	366	324	702
Mov Cap-2 Maneuver	-	-	-	-	-	-	334	355	-	366	324	-
Stage 1	-	-	-	-	-	-	762	716	-	562	543	-
Stage 2	-	-	-	-	-	-	541	543	-	798	667	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.07	1.53	20.12	12.86
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	392	15	-	-	339	-	-	470
HCM Lane V/C Ratio	0.397	0.002	-	-	0.057	-	-	0.027
HCM Ctrl Dly (s/v)	20.1	7.8	0	-	8.1	0	-	12.9
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.9	0	-	-	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	127	0	0	191	86	0	0	0	89	0	74
Future Vol, veh/h	15	127	0	0	191	86	0	0	0	89	0	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	13	9	0	0	6	6	0	0	0	4	0	5
Mvmt Flow	18	149	0	0	225	101	0	0	0	105	0	87

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	326	0	0	149	0	0	409	511	149	460	460	275
Stage 1	-	-	-	-	-	-	185	185	-	275	275	-
Stage 2	-	-	-	-	-	-	225	326	-	185	185	-
Critical Hdwy	4.23	-	-	4.1	-	-	7.1	6.5	6.2	7.14	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.317	-	-	2.2	-	-	3.5	4	3.3	3.536	4	3.345
Pot Cap-1 Maneuver	1174	-	-	1444	-	-	556	469	902	508	501	756
Stage 1	-	-	-	-	-	-	822	751	-	727	686	-
Stage 2	-	-	-	-	-	-	782	652	-	812	751	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1174	-	-	1444	-	-	484	461	902	500	493	756
Mov Cap-2 Maneuver	-	-	-	-	-	-	484	461	-	500	493	-
Stage 1	-	-	-	-	-	-	808	738	-	727	686	-
Stage 2	-	-	-	-	-	-	692	652	-	799	738	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.86	0	0	13.99
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	190	-	-	1444	-	-	591
HCM Lane V/C Ratio	-	0.015	-	-	-	-	-	0.325
HCM Ctrl Dly (s/v)	0	8.1	0	-	0	-	-	14
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1.4

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	50	58	68	79	91
Future Vol, veh/h	28	50	58	68	79	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-4	-4	-
Peak Hour Factor	48	48	48	48	48	48
Heavy Vehicles, %	18	6	5	10	9	8
Mvmt Flow	58	104	121	142	165	190

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	643	259	354	0	-	0
Stage 1	259	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Critical Hdwy	6.98	6.46	4.15	-	-	-
Critical Hdwy Stg 1	5.98	-	-	-	-	-
Critical Hdwy Stg 2	5.98	-	-	-	-	-
Follow-up Hdwy	3.662	3.354	2.245	-	-	-
Pot Cap-1 Maneuver	385	759	1188	-	-	-
Stage 1	727	-	-	-	-	-
Stage 2	628	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	343	759	1188	-	-	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	647	-	-	-	-	-
Stage 2	628	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	14.81	3.85	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	829	-	528	-	-
HCM Lane V/C Ratio	0.102	-	0.308	-	-
HCM Ctrl Dly (s/v)	8.4	0	14.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.3	-	1.3	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	71	32	184	150	113	281
Future Vol, veh/h	71	32	184	150	113	281
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	140	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	-2
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	10	3	3	3	1	3
Mvmt Flow	88	40	227	185	140	347

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	946	320	0	0	412	0
Stage 1	320	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Critical Hdwy	6.5	6.23	-	-	4.11	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.327	-	-	2.209	-
Pot Cap-1 Maneuver	281	719	-	-	1152	-
Stage 1	719	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	247	719	-	-	1152	-
Mov Cap-2 Maneuver	247	-	-	-	-	-
Stage 1	719	-	-	-	-	-
Stage 2	455	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	24.45	0	2.45
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	310	1152	-
HCM Lane V/C Ratio	-	-	0.41	0.121	-
HCM Ctrl Dly (s/v)	-	-	24.4	8.6	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.9	0.4	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	116	84	296	341	16
Future Vol, veh/h	26	116	84	296	341	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	110	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	4	-4	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	7	10	3	5	6
Mvmt Flow	32	143	104	365	421	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1004	431	441	0	-	0
Stage 1	431	-	-	-	-	-
Stage 2	573	-	-	-	-	-
Critical Hdwy	6.8	6.47	4.2	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.363	2.29	-	-	-
Pot Cap-1 Maneuver	242	599	1078	-	-	-
Stage 1	629	-	-	-	-	-
Stage 2	533	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	219	599	1078	-	-	-
Mov Cap-2 Maneuver	219	-	-	-	-	-
Stage 1	568	-	-	-	-	-
Stage 2	533	-	-	-	-	-

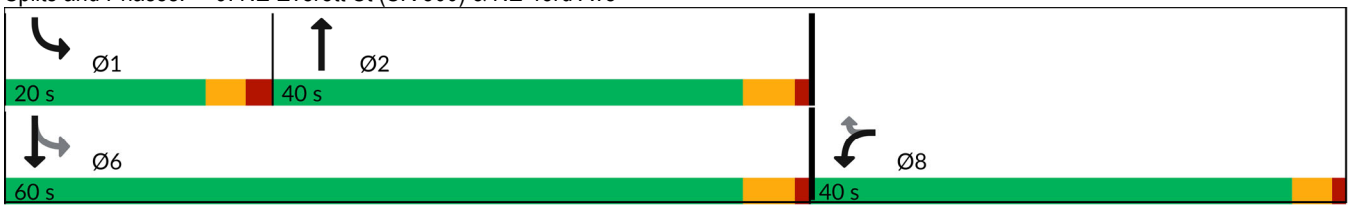
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	17.81	1.92	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1078	-	455	-	-
HCM Lane V/C Ratio	0.096	-	0.386	-	-
HCM Ctrl Dly (s/v)	8.7	-	17.8	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.3	-	1.8	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	333	57	327	485	66	394
Future Volume (vph)	333	57	327	485	66	394
Turn Type	Prot	Perm	NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		Free	6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	23.0	23.0	30.0		10.0	50.0
Total Split (s)	40.0	40.0	40.0		20.0	60.0
Total Split (%)	40.0%	40.0%	40.0%		20.0%	60.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0
All-Red Time (s)	1.0	1.0	1.0		2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	Min		None	Min
Act Effct Green (s)	22.3	22.3	23.2	65.3	32.7	32.7
Actuated g/C Ratio	0.34	0.34	0.36	1.00	0.50	0.50
v/c Ratio	0.71	0.12	0.61	0.38	0.20	0.50
Control Delay (s/veh)	29.1	5.7	24.9	0.7	10.8	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	29.1	5.7	24.9	0.7	10.8	13.6
LOS	C	A	C	A	B	B
Approach Delay (s/veh)	25.7		10.5			13.2
Approach LOS	C		B			B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 65.3	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay (s/veh): 14.8	Intersection LOS: B
Intersection Capacity Utilization 51.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: NE Everett St (SR 500) & NE 43rd Ave



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	333	57	327	485	66	394
Future Volume (veh/h)	333	57	327	485	66	394
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1799	1874	1746	1776	1802	1997
Adj Flow Rate, veh/h	383	43	376	0	76	453
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	12	7	4	2	17	4
Cap, veh/h	486	450	588		412	1014
Arrive On Green	0.28	0.28	0.34	0.00	0.06	0.51
Sat Flow, veh/h	1713	1588	1746	1505	1716	1997
Grp Volume(v), veh/h	383	43	376	0	76	453
Grp Sat Flow(s),veh/h/ln	1713	1588	1746	1505	1716	1997
Q Serve(g_s), s	8.9	0.9	7.9	0.0	1.1	6.2
Cycle Q Clear(g_c), s	8.9	0.9	7.9	0.0	1.1	6.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	486	450	588		412	1014
V/C Ratio(X)	0.79	0.10	0.64		0.18	0.45
Avail Cap(c_a), veh/h	1429	1325	1417		913	2546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	14.3	11.4	12.1	0.0	8.3	6.8
Incr Delay (d2), s/veh	2.9	0.1	2.5	0.0	0.2	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.3	2.8	0.0	0.3	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	17.2	11.5	14.6	0.0	8.6	7.1
LnGrp LOS	B	B	B		A	A
Approach Vol, veh/h	426		376			529
Approach Delay, s/veh	16.6		14.6			7.3
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	7.4	19.5			26.9	16.2
Change Period (Y+Rc), s	5.0	5.0			5.0	4.0
Max Green Setting (Gmax), s	15.0	35.0			55.0	36.0
Max Q Clear Time (g_c+I1), s	3.1	9.9			8.2	10.9
Green Ext Time (p_c), s	0.1	4.5			4.0	1.4

Intersection Summary	
HCM 7th Control Delay, s/veh	12.3
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

MOVEMENT SUMMARY

Site 10 NE Everett St & NW Lake Rd_ExistingAM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett Street															
3	L2	All MCs	231	0.0	231	0.0	0.311	13.4	LOS B	2.0	50.9	0.75	0.74	0.75	31.5
8	T1	All MCs	463	6.0	463	6.0	0.528	8.0	LOS A	4.6	120.8	0.85	0.73	0.94	34.2
Approach			694	4.0	694	4.0	0.528	9.8	LOS A	4.6	120.8	0.82	0.73	0.88	33.2
North: NE Everett Street															
4	T1	All MCs	454	10.0	454	10.0	0.398	5.1	LOS A	2.8	75.9	0.54	0.49	0.54	34.9
14	R2	All MCs	339	2.0	339	2.0	0.269	4.8	LOS A	1.7	44.3	0.47	0.51	0.47	35.2
Approach			793	6.6	793	6.6	0.398	5.0	LOS A	2.8	75.9	0.51	0.50	0.51	35.0
West: NW Lake Road															
5	L2	All MCs	561	3.0	561	3.0	0.542	13.5	LOS B	4.7	119.0	0.78	0.74	0.84	31.4
12	R2	All MCs	250	6.0	250	6.0	0.253	6.3	LOS A	1.6	41.3	0.64	0.61	0.64	34.7
Approach			811	3.9	811	3.9	0.542	11.3	LOS B	4.7	119.0	0.73	0.70	0.78	32.3
All Vehicles			2297	4.9	2297	4.9	0.542	8.7	LOS A	4.7	120.8	0.68	0.64	0.71	33.5

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	61	14	24	310	440	36
Future Vol, veh/h	61	14	24	310	440	36
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	7	7	0	6	2	0
Mvmt Flow	67	15	26	341	484	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	900	506	526	0	-	0
Stage 1	506	-	-	-	-	-
Stage 2	393	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.1	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.2	-	-	-
Pot Cap-1 Maneuver	303	556	1051	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	671	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	294	555	1048	-	-	-
Mov Cap-2 Maneuver	416	-	-	-	-	-
Stage 1	579	-	-	-	-	-
Stage 2	669	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	15.16	0.61	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1048	-	436	-	-
HCM Lane V/C Ratio	0.025	-	0.189	-	-
HCM Ctrl Dly (s/v)	8.5	-	15.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	25	19	4	25	78	8	233	6	81	266	106
Future Vol, veh/h	37	25	19	4	25	78	8	233	6	81	266	106
Conflicting Peds, #/hr	13	0	3	3	0	13	0	0	6	6	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	11	0	5	0	0	0	25	6	17	1	4	0
Mvmt Flow	43	29	22	5	29	90	9	268	7	93	306	122

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	866	852	370	805	909	290	428	0	0	281	0	0
Stage 1	553	553	-	296	296	-	-	-	-	-	-	-
Stage 2	314	299	-	509	614	-	-	-	-	-	-	-
Critical Hdwy	7.21	6.5	6.25	7.1	6.5	6.2	4.35	-	-	4.11	-	-
Critical Hdwy Stg 1	6.21	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.21	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.599	4	3.345	3.5	4	3.3	2.425	-	-	2.209	-	-
Pot Cap-1 Maneuver	264	299	669	303	277	754	1019	-	-	1288	-	-
Stage 1	502	518	-	717	672	-	-	-	-	-	-	-
Stage 2	678	670	-	550	486	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	188	273	668	241	253	741	1019	-	-	1281	-	-
Mov Cap-2 Maneuver	188	273	-	241	253	-	-	-	-	-	-	-
Stage 1	465	480	-	707	663	-	-	-	-	-	-	-
Stage 2	559	660	-	463	451	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	26.88	14.92	0.28	1.44
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1019	-	-	256	485	1281	-	-
HCM Lane V/C Ratio	0.009	-	-	0.364	0.254	0.073	-	-
HCM Ctrl Dly (s/v)	8.6	-	-	26.9	14.9	8	-	-
HCM Lane LOS	A	-	-	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.6	1	0.2	-	-

Intersection	
Int Delay, s/veh	10.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	23	1	0	18	193	1	0	0	228	0	59
Future Vol, veh/h	53	23	1	0	18	193	1	0	0	228	0	59
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	8	4	0	0	0	7	0	0	0	4	0	3
Mvmt Flow	62	27	1	0	21	227	1	0	0	268	0	69

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	585	575	35	-	609	2	69	0	0	1	0	0
Stage 1	571	571	-	-	3	-	-	-	-	-	-	-
Stage 2	14	3	-	-	606	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.54	6.2	-	6.5	6.27	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.18	5.54	-	-	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.54	-	-	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.036	3.3	-	4	3.363	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	414	426	1044	0	412	1068	1544	-	-	1609	-	-
Stage 1	495	502	-	0	897	-	-	-	-	-	-	-
Stage 2	991	889	-	0	490	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	254	351	1044	-	340	1066	1544	-	-	1607	-	-
Mov Cap-2 Maneuver	254	351	-	-	340	-	-	-	-	-	-	-
Stage 1	409	414	-	-	896	-	-	-	-	-	-	-
Stage 2	760	888	-	-	404	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	23.89	10.51	7.33	6.11
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1544	-	-	280	901	1192	-	-
HCM Lane V/C Ratio	0.001	-	-	0.324	0.275	0.167	-	-
HCM Ctrl Dly (s/v)	7.3	0	-	23.9	10.5	7.7	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.4	1.1	0.6	-	-

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	26	64	8	1	150	4	18	53	3	1	79	90
Future Vol, veh/h	26	64	8	1	150	4	18	53	3	1	79	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	4	-	-	-6	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	9	25	0	5	0	22	8	0	0	3	2
Mvmt Flow	30	74	9	1	172	5	21	61	3	1	91	103

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	333	253	143	236	303	65	194	0	0	66	0	0
Stage 1	145	145	-	106	106	-	-	-	-	-	-	-
Stage 2	189	108	-	130	197	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.59	6.45	7.1	6.55	6.2	4.32	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.59	-	6.1	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.59	-	6.1	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.081	3.525	3.5	4.045	3.3	2.398	-	-	2.2	-	-
Pot Cap-1 Maneuver	624	639	848	723	605	1005	1268	-	-	1548	-	-
Stage 1	863	764	-	904	802	-	-	-	-	-	-	-
Stage 2	818	793	-	879	733	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	435	626	848	620	593	1003	1268	-	-	1545	-	-
Mov Cap-2 Maneuver	435	626	-	620	593	-	-	-	-	-	-	-
Stage 1	862	763	-	887	787	-	-	-	-	-	-	-
Stage 2	625	778	-	785	732	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.83	13.51	1.92	0.04
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	433	-	-	572	600	10	-	-
HCM Lane V/C Ratio	0.016	-	-	0.197	0.297	0.001	-	-
HCM Ctrl Dly (s/v)	7.9	0	-	12.8	13.5	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	1.2	0	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	141	411	596	20	11	206
Future Vol, veh/h	141	411	596	20	11	206
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-8	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	7	5	10	0	1
Mvmt Flow	153	447	648	22	12	224

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	670	0	-	0	1189	335
Stage 1	-	-	-	-	659	-
Stage 2	-	-	-	-	530	-
Critical Hdwy	4.2	-	-	-	5.2	6.12
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	2.25	-	-	-	3.5	3.31
Pot Cap-1 Maneuver	897	-	-	-	312	715
Stage 1	-	-	-	-	646	-
Stage 2	-	-	-	-	709	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	897	-	-	-	251	715
Mov Cap-2 Maneuver	-	-	-	-	251	-
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	709	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	3.36	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	785	-	-	-	251	715
HCM Lane V/C Ratio	0.171	-	-	-	0.048	0.313
HCM Ctrl Dly (s/v)	9.8	1.1	-	-	20.1	12.3
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.6	-	-	-	0.1	1.3

MOVEMENT SUMMARY

Site 16 [NW Norwood St & NW 6th Ave_ExistingAM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NW 6th Avenue															
3	L2	All MCs	110	2.0	110	2.0	0.228	13.0	LOS B	1.3	32.8	0.65	0.70	0.65	32.6
8	T1	All MCs	2	0.0	2	0.0	0.228	6.6	LOS A	1.3	32.8	0.65	0.70	0.65	33.3
18	R2	All MCs	74	6.0	74	6.0	0.228	7.2	LOS A	1.3	32.8	0.65	0.70	0.65	32.9
Approach			186	3.6	186	3.6	0.228	10.6	LOS B	1.3	32.8	0.65	0.70	0.65	32.7
East: NW 6th Avenue															
1	L2	All MCs	80	4.0	80	4.0	0.748	11.6	LOS B	8.5	218.0	0.68	0.51	0.68	33.6
6	T1	All MCs	784	3.0	784	3.0	0.748	5.2	LOS A	8.5	218.0	0.68	0.51	0.68	34.4
16	R2	All MCs	11	30.0	11	30.0	0.748	6.5	LOS A	8.5	218.0	0.68	0.51	0.68	33.5
Approach			874	3.4	874	3.4	0.748	5.8	LOS A	8.5	218.0	0.68	0.51	0.68	34.3
North: NW Norwood Street															
7	L2	All MCs	15	7.0	15	7.0	0.142	17.6	LOS B	0.9	23.5	0.87	0.78	0.87	31.6
4	T1	All MCs	5	0.0	5	0.0	0.142	10.5	LOS B	0.9	23.5	0.87	0.78	0.87	32.4
14	R2	All MCs	50	2.0	50	2.0	0.142	10.9	LOS B	0.9	23.5	0.87	0.78	0.87	32.1
Approach			70	2.9	70	2.9	0.142	12.3	LOS B	0.9	23.5	0.87	0.78	0.87	32.0
West: NW 6th Avenue															
5	L2	All MCs	20	26.0	20	26.0	0.542	11.3	LOS B	4.4	117.2	0.43	0.43	0.43	33.8
2	T1	All MCs	503	8.0	503	8.0	0.542	4.5	LOS A	4.4	117.2	0.43	0.43	0.43	35.3
12	R2	All MCs	96	9.0	96	9.0	0.542	4.7	LOS A	4.4	117.2	0.43	0.43	0.43	34.9
Approach			619	8.7	619	8.7	0.542	4.8	LOS A	4.4	117.2	0.43	0.43	0.43	35.2
All Vehicles			1750	5.3	1750	5.3	0.748	6.2	LOS A	8.5	218.0	0.60	0.51	0.60	34.3

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	570	2	61	468	4	172
Future Vol, veh/h	570	2	61	468	4	172
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	105	-	85	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-6	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	0	3	3	0	0
Mvmt Flow	655	2	70	538	5	198

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	657	0	1334	656
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	678	-
Critical Hdwy	-	-	4.13	-	5.2	5.6
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	925	-	267	523
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	637	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	925	-	247	523
Mov Cap-2 Maneuver	-	-	-	-	247	-
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	588	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.06	16.09
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	247	523	-	-	925	-
HCM Lane V/C Ratio	0.019	0.378	-	-	0.076	-
HCM Ctrl Dly (s/v)	19.9	16	-	-	9.2	-
HCM Lane LOS	C	C	-	-	A	-
HCM 95th %tile Q(veh)	0.1	1.7	-	-	0.2	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	394	87	71	381	92	164
Future Vol, veh/h	394	87	71	381	92	164
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	7	11	2	3	7
Mvmt Flow	438	97	79	423	102	182

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	534	0	1067	486
Stage 1	-	-	-	-	486	-
Stage 2	-	-	-	-	581	-
Critical Hdwy	-	-	4.21	-	6.43	6.27
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.299	-	3.527	3.363
Pot Cap-1 Maneuver	-	-	989	-	245	571
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	557	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	989	-	225	571
Mov Cap-2 Maneuver	-	-	-	-	225	-
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	513	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.41	21.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	225	571	-	-	989	-
HCM Lane V/C Ratio	0.454	0.319	-	-	0.08	-
HCM Ctrl Dly (s/v)	33.6	14.2	-	-	9	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	2.2	1.4	-	-	0.3	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	303	11	102	377	6	3	9	170	8	9	8
Future Vol, veh/h	7	303	11	102	377	6	3	9	170	8	9	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	130	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	18	2	2	33	0	22	8	0	0	12
Mvmt Flow	8	329	12	111	410	7	3	10	185	9	10	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	416	0	0	341	0	0	987	989	335	984	991	413
Stage 1	-	-	-	-	-	-	351	351	-	635	635	-
Stage 2	-	-	-	-	-	-	636	638	-	349	357	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.1	6.72	6.28	7.1	6.5	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.72	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.72	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4.198	3.372	3.5	4	3.408
Pot Cap-1 Maneuver	1154	-	-	1218	-	-	228	228	693	229	248	618
Stage 1	-	-	-	-	-	-	670	599	-	470	476	-
Stage 2	-	-	-	-	-	-	469	441	-	671	632	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1154	-	-	1218	-	-	195	206	693	145	224	618
Mov Cap-2 Maneuver	-	-	-	-	-	-	195	206	-	145	224	-
Stage 1	-	-	-	-	-	-	666	595	-	427	432	-
Stage 2	-	-	-	-	-	-	411	401	-	481	628	-

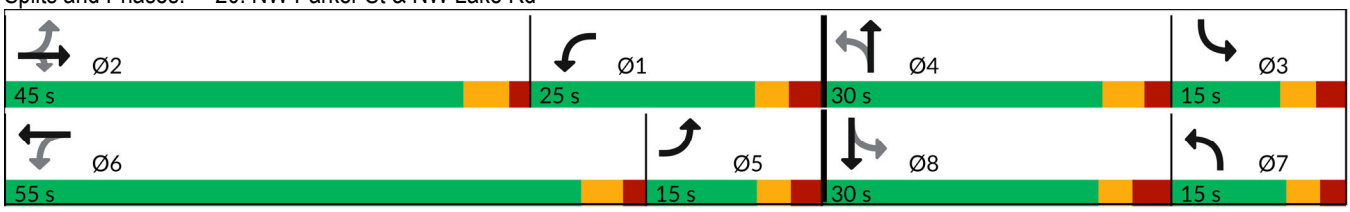
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.18	1.74	13.97	22.64
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	598	1154	-	-	1218	-	-	231
HCM Lane V/C Ratio	0.331	0.007	-	-	0.091	-	-	0.118
HCM Ctrl Dly (s/v)	14	8.1	-	-	8.3	-	-	22.6
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.4	0	-	-	0.3	-	-	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	9	177	153	102	257	137	59	44	116
Future Volume (vph)	9	177	153	102	257	137	59	44	116
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		1	6	7	4	3	8
Permitted Phases	2		2	6		4		8	
Detector Phase	5	2	2	1	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	26.7	26.7	10.7	20.5	10.2	29.2	10.6	33.3
Total Split (s)	15.0	45.0	45.0	25.0	55.0	15.0	30.0	15.0	30.0
Total Split (%)	13.0%	39.1%	39.1%	21.7%	47.8%	13.0%	26.1%	13.0%	26.1%
Yellow Time (s)	3.0	4.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0
All-Red Time (s)	2.5	1.7	1.7	2.7	1.9	2.2	2.3	2.6	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.7	5.7	5.7	5.5	5.2	5.9	5.6	6.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)	17.9	12.0	12.0	20.4	18.3	21.7	16.9	16.6	9.8
Actuated g/C Ratio	0.32	0.22	0.22	0.37	0.33	0.39	0.30	0.30	0.18
v/c Ratio	0.03	0.54	0.37	0.26	0.31	0.30	0.36	0.13	0.49
Control Delay (s/veh)	13.8	27.1	6.3	15.2	16.0	13.9	15.5	12.9	28.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.8	27.1	6.3	15.2	16.0	13.9	15.5	12.9	28.0
LOS	B	C	A	B	B	B	B	B	C
Approach Delay (s/veh)		17.4			15.8		14.7		24.2
Approach LOS		B			B		B		C

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 55.5	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay (s/veh): 17.2	Intersection LOS: B
Intersection Capacity Utilization 49.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 20: NW Parker St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	177	153	102	257	36	137	59	101	44	116	15
Future Volume (veh/h)	9	177	153	102	257	36	137	59	101	44	116	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1574	1841	1870	1900	1870	1856	1885	1856	1856	1796	1856	1900
Adj Flow Rate, veh/h	11	213	107	123	310	24	165	71	87	53	140	16
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	22	4	2	0	2	3	1	3	3	7	3	0
Cap, veh/h	385	311	268	397	553	43	405	121	149	386	251	29
Arrive On Green	0.11	0.17	0.17	0.10	0.17	0.17	0.09	0.16	0.16	0.09	0.15	0.15
Sat Flow, veh/h	1499	1841	1585	1810	3343	257	1795	754	924	1711	1632	186
Grp Volume(v), veh/h	11	213	107	123	164	170	165	0	158	53	0	156
Grp Sat Flow(s),veh/h/ln	1499	1841	1585	1810	1777	1824	1795	0	1679	1711	0	1818
Q Serve(g_s), s	0.0	5.3	2.9	0.0	4.1	4.1	0.0	0.0	4.2	0.0	0.0	3.8
Cycle Q Clear(g_c), s	0.0	5.3	2.9	0.0	4.1	4.1	0.0	0.0	4.2	0.0	0.0	3.8
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.55	1.00		0.10
Lane Grp Cap(c), veh/h	385	311	268	397	294	302	405	0	270	386	0	279
V/C Ratio(X)	0.03	0.68	0.40	0.31	0.56	0.56	0.41	0.00	0.59	0.14	0.00	0.56
Avail Cap(c_a), veh/h	514	1497	1289	933	1820	1868	604	0	837	559	0	891
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.0	18.9	17.9	18.8	18.5	18.6	18.9	0.0	18.8	17.9	0.0	18.9
Incr Delay (d2), s/veh	0.0	1.0	0.4	0.2	0.6	0.6	0.7	0.0	0.8	0.2	0.0	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.0	1.0	1.1	1.5	1.6	1.6	0.0	1.5	0.5	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.0	19.9	18.3	18.9	19.2	19.2	19.6	0.0	19.5	18.0	0.0	19.6
LnGrp LOS	B	B	B	B	B	B	B		B	B		B
Approach Vol, veh/h		331			457			323			209	
Approach Delay, s/veh		19.2			19.1			19.6			19.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	13.9	10.1	13.7	11.1	13.5	10.1	13.7
Change Period (Y+Rc), s	5.7	5.7	* 5.6	5.9	5.7	* 5.5	5.6	* 6.3
Max Green Setting (Gmax), s	19.3	39.3	* 9.4	24.1	9.5	* 50	9.8	* 24
Max Q Clear Time (g_c+I1), s	2.0	7.3	2.0	6.2	2.0	6.1	2.0	5.8
Green Ext Time (p_c), s	0.1	0.9	0.0	0.5	0.0	1.2	0.2	0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	19.3
HCM 7th LOS	B

Notes

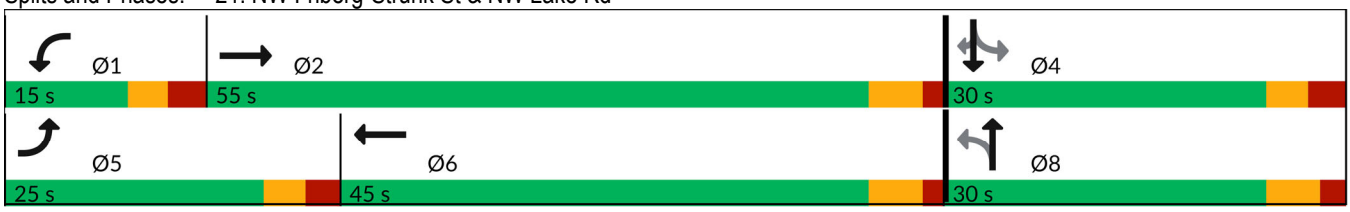
User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	323	270	1	343	0	79	0	309
Future Volume (vph)	323	270	1	343	0	79	0	309
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						4		4
Detector Phase	5	2	1	6	8	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.6	23.5	10.8	26.6	34.0	33.9	33.9	33.9
Total Split (s)	25.0	55.0	15.0	45.0	30.0	30.0	30.0	30.0
Total Split (%)	25.0%	55.0%	15.0%	45.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.6	1.5	2.8	1.6	2.0	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.6	5.5	5.8	5.6	6.0		5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	19.6	37.5	5.1	13.9	9.1		9.2	9.2
Actuated g/C Ratio	0.33	0.62	0.08	0.23	0.15		0.15	0.15
v/c Ratio	0.73	0.17	0.01	0.67	0.00		0.50	0.70
Control Delay (s/veh)	30.0	6.3	29.0	24.3	0.0		32.7	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	30.0	6.3	29.0	24.3	0.0		32.7	10.2
LOS	C	A	C	C	A		C	B
Approach Delay (s/veh)		19.1		24.3			14.8	
Approach LOS		B		C			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 60.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay (s/veh): 19.5	Intersection LOS: B
Intersection Capacity Utilization 55.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 21: NW Friberg-Strunk St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	323	270	3	1	343	78	0	0	1	79	0	309
Future Volume (veh/h)	323	270	3	1	343	78	0	0	1	79	0	309
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1811	1411	1900	1856	1900	1900	1900	1900	1811	1900	1856
Adj Flow Rate, veh/h	419	351	4	1	445	101	0	0	1	103	0	401
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	3	6	33	0	3	0	0	0	0	6	0	3
Cap, veh/h	460	1618	18	3	595	134	0	0	458	512	0	447
Arrive On Green	0.26	0.46	0.46	0.00	0.21	0.21	0.00	0.00	0.28	0.28	0.00	0.28
Sat Flow, veh/h	1767	3485	40	1810	2858	644	0	0	1607	1433	0	1569
Grp Volume(v), veh/h	419	173	182	1	273	273	0	0	1	103	0	401
Grp Sat Flow(s),veh/h/ln	1767	1721	1804	1810	1763	1740	0	0	1607	1433	0	1569
Q Serve(g_s), s	16.0	4.2	4.2	0.0	10.1	10.3	0.0	0.0	0.0	3.9	0.0	17.1
Cycle Q Clear(g_c), s	16.0	4.2	4.2	0.0	10.1	10.3	0.0	0.0	0.0	3.9	0.0	17.1
Prop In Lane	1.00		0.02	1.00		0.37	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	460	799	837	3	367	362	0	0	458	512	0	447
V/C Ratio(X)	0.91	0.22	0.22	0.39	0.74	0.75	0.00	0.00	0.00	0.20	0.00	0.90
Avail Cap(c_a), veh/h	492	1222	1281	239	996	983	0	0	553	599	0	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.0	11.1	11.1	34.8	25.9	25.9	0.0	0.0	17.8	19.2	0.0	23.9
Incr Delay (d2), s/veh	19.6	0.1	0.0	31.3	1.1	1.2	0.0	0.0	0.0	0.1	0.0	14.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	1.4	1.4	0.0	4.1	4.2	0.0	0.0	0.0	1.2	0.0	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	44.6	11.2	11.2	66.1	27.0	27.1	0.0	0.0	17.8	19.3	0.0	38.0
LnGrp LOS	D	B	B	E	C	C			B	B		D
Approach Vol, veh/h		774			547			1			504	
Approach Delay, s/veh		29.3			27.1			17.8			34.2	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	38.0		25.9	23.7	20.1		25.9				
Change Period (Y+Rc), s	5.8	* 5.6		* 6	5.6	5.6		6.0				
Max Green Setting (Gmax), s	9.2	* 50		* 24	19.4	39.4		24.0				
Max Q Clear Time (g_c+I1), s	2.0	6.2		19.1	18.0	12.3		2.0				
Green Ext Time (p_c), s	0.0	1.2		0.6	0.1	2.2		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh	30.0	
HCM 7th LOS	C	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	5.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	134	111	357	142	27	305
Future Vol, veh/h	134	111	357	142	27	305
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	175	0	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	2	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	3	1	3	10	7	3
Mvmt Flow	161	134	430	171	33	367

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	948	516	0	0	601	0
Stage 1	516	-	-	-	-	-
Stage 2	433	-	-	-	-	-
Critical Hdwy	6.03	6.01	-	-	4.17	-
Critical Hdwy Stg 1	5.03	-	-	-	-	-
Critical Hdwy Stg 2	5.03	-	-	-	-	-
Follow-up Hdwy	3.527	3.309	-	-	2.263	-
Pot Cap-1 Maneuver	320	578	-	-	952	-
Stage 1	633	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	309	578	-	-	952	-
Mov Cap-2 Maneuver	309	-	-	-	-	-
Stage 1	633	-	-	-	-	-
Stage 2	661	-	-	-	-	-

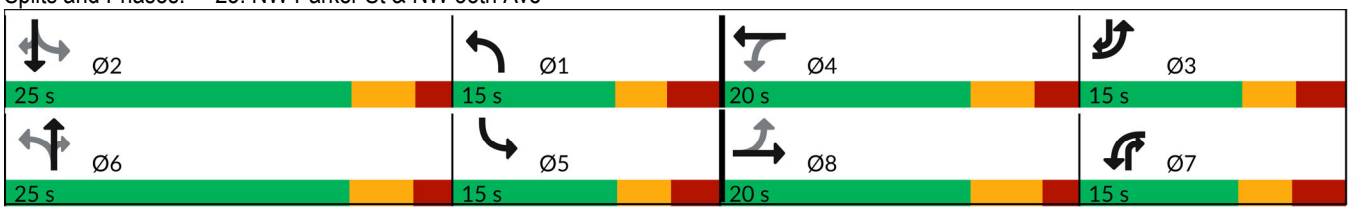
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	21.63	0	0.73
HCM LOS	C		

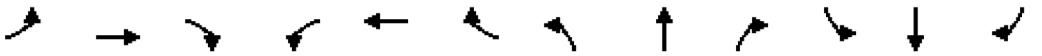
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	309	578	952	-
HCM Lane V/C Ratio	-	-	0.522	0.232	0.034	-
HCM Ctrl Dly (s/v)	-	-	28.7	13.1	8.9	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	2.8	0.9	0.1	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	95	66	84	108	66	386	76	14	287	122
Future Volume (vph)	95	66	84	108	66	386	76	14	287	122
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	7	4	1	6	7	5	2	3
Permitted Phases	8		4		6		6	2		2
Detector Phase	3	8	7	4	1	6	7	5	2	3
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.8	24.0	11.0	23.0	10.9	20.0	11.0	10.7	20.0	10.8
Total Split (s)	15.0	20.0	15.0	20.0	15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	20.0%	26.7%	20.0%	26.7%	20.0%	33.3%	20.0%	20.0%	33.3%	20.0%
Yellow Time (s)	3.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0	3.6	3.0
All-Red Time (s)	2.8	2.0	3.0	2.4	2.9	2.1	3.0	2.7	2.0	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.0	6.0	6.0	5.9	5.7	6.0	5.7	5.6	5.8
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	None	Max	None
Act Effct Green (s)	12.2	7.9	14.8	9.4	29.7	29.7	33.1	27.9	25.9	28.2
Actuated g/C Ratio	0.22	0.14	0.26	0.17	0.52	0.52	0.58	0.49	0.46	0.50
v/c Ratio	0.32	0.45	0.25	0.54	0.13	0.48	0.09	0.04	0.37	0.16
Control Delay (s/veh)	17.5	25.5	16.3	28.3	11.3	18.9	1.1	11.1	19.1	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.5	25.5	16.3	28.3	11.3	18.9	1.1	11.1	19.1	2.9
LOS	B	C	B	C	B	B	A	B	B	A
Approach Delay (s/veh)		21.6		23.9		15.4			14.1	
Approach LOS		C		C		B			B	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 56.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay (s/veh): 17.3	Intersection LOS: B
Intersection Capacity Utilization 57.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 23: NW Parker St & NW 38th Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	66	35	84	108	34	66	386	76	14	287	122
Future Volume (veh/h)	95	66	35	84	108	34	66	386	76	14	287	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1826	1811	1811	1870	1900	1870	1826	1826	1796	1945	1870
Adj Flow Rate, veh/h	108	75	40	95	123	39	75	439	86	16	326	139
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	5	6	6	2	0	2	5	5	7	2	2
Cap, veh/h	296	117	62	350	174	55	434	581	655	346	622	637
Arrive On Green	0.08	0.10	0.10	0.11	0.13	0.13	0.08	0.32	0.32	0.08	0.32	0.32
Sat Flow, veh/h	1882	1116	595	1725	1358	431	1781	1826	1545	1711	1945	1583
Grp Volume(v), veh/h	108	0	115	95	0	162	75	439	86	16	326	139
Grp Sat Flow(s),veh/h/ln	1882	0	1712	1725	0	1789	1781	1826	1545	1711	1945	1583
Q Serve(g_s), s	0.0	0.0	3.9	0.0	0.0	5.3	0.0	13.1	0.0	0.0	8.3	0.0
Cycle Q Clear(g_c), s	0.0	0.0	3.9	0.0	0.0	5.3	0.0	13.1	0.0	0.0	8.3	0.0
Prop In Lane	1.00		0.35	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	296	0	179	350	0	229	434	581	655	346	622	637
V/C Ratio(X)	0.36	0.00	0.64	0.27	0.00	0.71	0.17	0.76	0.13	0.05	0.52	0.22
Avail Cap(c_a), veh/h	427	0	395	424	0	413	554	581	655	468	622	637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	0.0	26.0	23.6	0.0	25.4	17.9	18.5	10.7	20.5	16.8	11.9
Incr Delay (d2), s/veh	0.3	0.0	1.4	0.2	0.0	1.5	0.1	8.8	0.4	0.0	3.1	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.5	1.2	0.0	2.2	0.8	6.3	0.7	0.2	3.8	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.7	0.0	27.5	23.8	0.0	26.9	17.9	27.4	11.1	20.5	20.0	12.7
LnGrp LOS	C		C	C		C	B	C	B	C	B	B
Approach Vol, veh/h		223			257			600			481	
Approach Delay, s/veh		26.6			25.7			23.9			17.9	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	25.0	11.0	13.8	10.9	25.0	12.4	12.3
Change Period (Y+Rc), s	5.9	5.6	6.0	* 6	5.9	* 5.7	6.0	6.0
Max Green Setting (Gmax), s	9.1	19.4	9.2	* 14	9.3	* 19	9.0	14.0
Max Q Clear Time (g_c+I1), s	2.0	10.3	2.0	7.3	2.0	15.1	2.0	5.9
Green Ext Time (p_c), s	0.0	1.0	0.1	0.3	0.0	0.8	0.1	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	22.7
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	88	221	70	88	20
Future Vol, veh/h	4	88	221	70	88	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	10	5	3	12	20
Mvmt Flow	5	105	263	83	105	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	726	117	129	0	-	0
Stage 1	117	-	-	-	-	-
Stage 2	610	-	-	-	-	-
Critical Hdwy	6.4	6.3	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.39	2.245	-	-	-
Pot Cap-1 Maneuver	394	914	1439	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	319	914	1439	-	-	-
Mov Cap-2 Maneuver	319	-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	546	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.89	6.12	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1367	-	846	-	-
HCM Lane V/C Ratio	0.183	-	0.13	-	-
HCM Ctrl Dly (s/v)	8.1	0	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.7	-	0.4	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	96	190	39	49	109
Future Vol, veh/h	44	96	190	39	49	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	14	6	3	18	8	9
Mvmt Flow	49	108	213	44	55	122

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	468	235	0	0	257	0
Stage 1	235	-	-	-	-	-
Stage 2	233	-	-	-	-	-
Critical Hdwy	6.54	6.26	-	-	4.18	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.354	-	-	2.272	-
Pot Cap-1 Maneuver	532	794	-	-	1273	-
Stage 1	776	-	-	-	-	-
Stage 2	779	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	507	794	-	-	1273	-
Mov Cap-2 Maneuver	507	-	-	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	742	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.96	0	2.47
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	674	558	-
HCM Lane V/C Ratio	-	-	0.233	0.043	-
HCM Ctrl Dly (s/v)	-	-	12	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	182	113	204	136	38
Future Vol, veh/h	31	182	113	204	136	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	2	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	3	0	4	8	12	5
Mvmt Flow	41	243	151	272	181	51

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	780	207	232	0	-	0
Stage 1	207	-	-	-	-	-
Stage 2	573	-	-	-	-	-
Critical Hdwy	6.83	6.4	4.14	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.527	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	332	829	1324	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	527	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	295	829	1324	-	-	-
Mov Cap-2 Maneuver	295	-	-	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	527	-	-	-	-	-

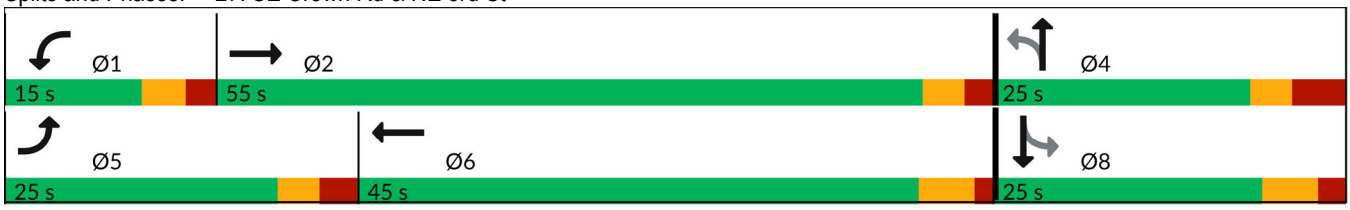
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	12.3	2.88	0
HCM LOS	B		

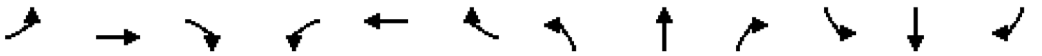
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1324	-	295	829	-	-
HCM Lane V/C Ratio	0.114	-	0.14	0.293	-	-
HCM Ctrl Dly (s/v)	8.1	-	19.2	11.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.5	1.2	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	183	231	9	345	6	4	200	2	247
Future Volume (vph)	183	231	9	345	6	4	200	2	247
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Free
Protected Phases	5	2	1	6		4		8	
Permitted Phases					4		8		Free
Detector Phase	5	2	1	6	4	4	8	8	
Switch Phase									
Minimum Initial (s)	2.0	8.0	5.0	8.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	7.6	23.0	10.2	20.3	32.8	32.8	35.0	35.0	
Total Split (s)	25.0	55.0	15.0	45.0	25.0	25.0	25.0	25.0	
Total Split (%)	26.3%	57.9%	15.8%	47.4%	26.3%	26.3%	26.3%	26.3%	
Yellow Time (s)	3.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.6	2.0	2.2	1.3	3.8	3.8	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	
Total Lost Time (s)	5.6	5.0	5.2	5.3		6.8		6.0	
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	
Act Effct Green (s)	11.9	28.8	5.4	12.6		13.9		14.8	56.8
Actuated g/C Ratio	0.21	0.51	0.10	0.22		0.24		0.26	1.00
v/c Ratio	0.61	0.15	0.06	0.62		0.03		0.62	0.17
Control Delay (s/veh)	30.2	9.1	29.6	23.3		18.8		28.8	0.2
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay (s/veh)	30.2	9.1	29.6	23.3		18.8		28.8	0.2
LOS	C	A	C	C		B		C	A
Approach Delay (s/veh)		18.4		23.4		18.8		13.1	
Approach LOS		B		C		B		B	

Intersection Summary	
Cycle Length: 95	
Actuated Cycle Length: 56.8	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay (s/veh): 18.3	Intersection LOS: B
Intersection Capacity Utilization 54.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: SE Crown Rd & NE 3rd St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	231	2	9	345	79	6	4	0	200	2	247
Future Volume (veh/h)	183	231	2	9	345	79	6	4	0	200	2	247
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1743	1788	1952	1979	1934	1904	1952	1952	1952	1995	2058	2011
Adj Flow Rate, veh/h	201	254	2	10	379	87	7	4	0	220	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	9	6	0	0	3	5	0	0	0	4	0	3
Cap, veh/h	255	1245	10	25	624	142	331	159		472	3	
Arrive On Green	0.15	0.36	0.36	0.01	0.21	0.21	0.19	0.19	0.00	0.19	0.19	0.00
Sat Flow, veh/h	1660	3454	27	1884	2972	675	972	851	1654	1551	14	1704
Grp Volume(v), veh/h	201	125	131	10	233	233	11	0	0	222	0	0
Grp Sat Flow(s),veh/h/ln	1660	1698	1783	1884	1837	1810	1823	0	1654	1565	0	1704
Q Serve(g_s), s	4.6	2.0	2.0	0.2	4.5	4.6	0.0	0.0	0.0	5.1	0.0	0.0
Cycle Q Clear(g_c), s	4.6	2.0	2.0	0.2	4.5	4.6	0.2	0.0	0.0	5.3	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.37	0.64		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	255	612	643	25	385	380	490	0		474	0	
V/C Ratio(X)	0.79	0.20	0.20	0.40	0.60	0.61	0.02	0.00		0.47	0.00	
Avail Cap(c_a), veh/h	818	2157	2264	469	1853	1826	936	0		935	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.0	8.7	8.7	19.3	14.1	14.1	13.1	0.0	0.0	15.1	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.1	0.1	3.9	0.6	0.6	0.0	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.5	0.5	0.1	1.5	1.5	0.1	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.1	8.7	8.7	23.2	14.6	14.7	13.1	0.0	0.0	15.4	0.0	0.0
LnGrp LOS	B	A	A	C	B	B	B			B		
Approach Vol, veh/h		457			476			11			222	
Approach Delay, s/veh		12.9			14.9			13.1			15.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	19.5		14.2	11.6	13.6		14.2				
Change Period (Y+Rc), s	5.2	* 5.3		6.8	5.6	5.3		* 6.8				
Max Green Setting (Gmax), s	9.8	* 50		18.2	19.4	39.7		* 19				
Max Q Clear Time (g_c+I1), s	2.2	4.0		2.2	6.6	6.6		7.3				
Green Ext Time (p_c), s	0.0	0.9		0.0	0.2	1.7		0.6				

Intersection Summary		
HCM 7th Control Delay, s/veh		14.2
HCM 7th LOS		B

Notes

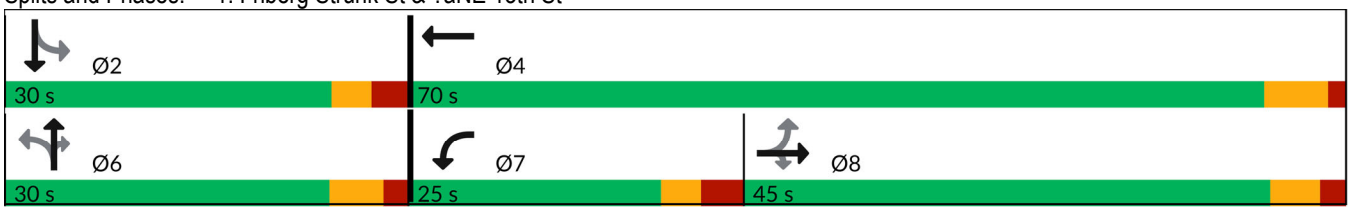
User approved pedestrian interval to be less than phase max green.

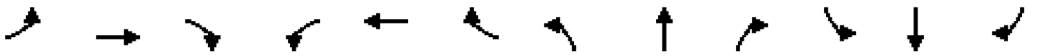
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	1	271	76	161	303	118	8	273	1	5
Future Volume (vph)	1	271	76	161	303	118	8	273	1	5
Turn Type	Perm	NA	Perm	Prot	NA	Perm	NA	Perm	Perm	NA
Protected Phases		8		7	4		6			2
Permitted Phases	8		8			6		6	2	
Detector Phase	8	8	8	7	4	6	6	6	2	2
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.6	23.6	23.6	11.0	24.1	23.8	23.8	23.8	25.6	25.6
Total Split (s)	45.0	45.0	45.0	25.0	70.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	45.0%	45.0%	45.0%	25.0%	70.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.6	3.6	3.6	3.0	4.7	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	3.0	1.4	1.8	1.8	1.8	2.6	2.6
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)		5.6	5.6	6.0	6.1		5.8	5.8		5.6
Lead/Lag	Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	Min	Min	Min	None	Min	None	None	None	None	None
Act Effct Green (s)		14.4	14.4	10.5	30.8		10.9	10.9		11.1
Actuated g/C Ratio		0.27	0.27	0.19	0.57		0.20	0.20		0.20
v/c Ratio		0.63	0.17	0.52	0.33		0.54	0.54		0.03
Control Delay (s/veh)		25.5	4.7	28.1	7.5		30.2	7.4		17.9
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay (s/veh)		25.5	4.7	28.1	7.5		30.2	7.4		17.9
LOS		C	A	C	A		C	A		B
Approach Delay (s/veh)		21.0			14.6		14.6			17.9
Approach LOS		C			B		B			B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 54.3	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay (s/veh): 16.4	Intersection LOS: B
Intersection Capacity Utilization 58.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Friberg Strunk St & ?áNE 13th St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	271	76	161	303	3	118	8	273	1	5	3
Future Volume (veh/h)	1	271	76	161	303	3	118	8	273	1	5	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	0.96	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	401	1885	1856	1885	1841	1900	1781	1900	1900	1900	1900	1411
Adj Flow Rate, veh/h	1	291	82	173	326	3	127	9	294	1	5	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	100	1	3	1	4	0	3	0	0	0	0	33
Cap, veh/h	85	411	343	226	883	8	479	29	380	106	263	138
Arrive On Green	0.22	0.22	0.22	0.13	0.48	0.48	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	2	1882	1572	1795	1821	17	1339	122	1610	53	1117	585
Grp Volume(v), veh/h	292	0	82	173	0	329	136	0	294	9	0	0
Grp Sat Flow(s),veh/h/ln	1884	0	1572	1795	0	1838	1461	0	1610	1755	0	0
Q Serve(g_s), s	0.0	0.0	1.8	4.0	0.0	4.8	3.1	0.0	7.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.1	0.0	1.8	4.0	0.0	4.8	3.3	0.0	7.3	0.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.01	0.93		1.00	0.11		0.33
Lane Grp Cap(c), veh/h	496	0	343	226	0	891	508	0	380	508	0	0
V/C Ratio(X)	0.59	0.00	0.24	0.77	0.00	0.37	0.27	0.00	0.77	0.02	0.00	0.00
Avail Cap(c_a), veh/h	1825	0	1454	801	0	2757	991	0	915	1069	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.4	0.0	13.7	18.0	0.0	6.9	13.7	0.0	15.2	12.5	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.1	2.1	0.0	0.1	0.1	0.0	1.3	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.5	1.5	0.0	1.2	0.9	0.0	2.3	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.8	0.0	13.9	20.1	0.0	7.0	13.8	0.0	16.5	12.5	0.0	0.0
LnGrp LOS	B		B	C		A	B		B	B		
Approach Vol, veh/h		374			502			430			9	
Approach Delay, s/veh		15.4			11.5			15.6			12.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		15.8		26.7		15.8	11.4	15.4				
Change Period (Y+Rc), s		* 5.8		6.1		5.8	6.0	* 6.1				
Max Green Setting (Gmax), s		* 24		63.9		24.2	19.0	* 39				
Max Q Clear Time (g_c+I1), s		2.2		6.8		9.3	6.0	8.1				
Green Ext Time (p_c), s		0.0		1.3		0.8	0.2	1.2				

Intersection Summary	
HCM 7th Control Delay, s/veh	14.0
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	3.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	511	36	71	403	65	137
Future Vol, veh/h	511	36	71	403	65	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	55	-	105	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	4	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	6	1	2	6	4
Mvmt Flow	527	37	73	415	67	141

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	564	0	1089	527
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	562	-
Critical Hdwy	-	-	4.11	-	6.46	6.24
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.209	-	3.554	3.336
Pot Cap-1 Maneuver	-	-	1013	-	234	547
Stage 1	-	-	-	-	584	-
Stage 2	-	-	-	-	563	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1013	-	217	547
Mov Cap-2 Maneuver	-	-	-	-	217	-
Stage 1	-	-	-	-	584	-
Stage 2	-	-	-	-	522	-

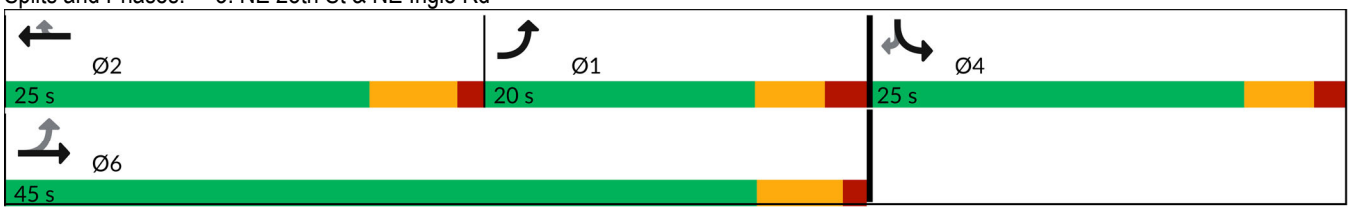
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.32	18.65
HCM LOS			C

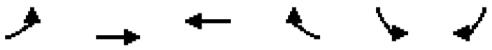
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	217	547	-	-	1013	-
HCM Lane V/C Ratio	0.308	0.258	-	-	0.072	-
HCM Ctrl Dly (s/v)	28.8	13.9	-	-	8.8	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	1.3	1	-	-	0.2	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	269	349	224	71	101	223
Future Volume (vph)	269	349	224	71	101	223
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	10.8	15.7	24.9	24.9	10.3	10.3
Total Split (s)	20.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	28.6%	64.3%	35.7%	35.7%	35.7%	35.7%
Yellow Time (s)	3.6	4.5	4.5	4.5	3.6	3.6
All-Red Time (s)	2.2	1.2	1.4	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.7	5.9	5.9	5.3	5.3
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effct Green (s)	22.0	22.1	11.0	11.0	7.2	7.2
Actuated g/C Ratio	0.54	0.55	0.27	0.27	0.18	0.18
v/c Ratio	0.42	0.37	0.49	0.17	0.36	0.51
Control Delay (s/veh)	8.7	6.9	16.6	5.0	18.5	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.7	6.9	16.6	5.0	18.5	7.3
LOS	A	A	B	A	B	A
Approach Delay (s/veh)		7.7	13.8		10.8	
Approach LOS		A	B		B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 40.4	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay (s/veh): 10.0	Intersection LOS: A
Intersection Capacity Utilization 46.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: NE 28th St & NE Ingle Rd





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	269	349	224	71	101	223
Future Volume (veh/h)	269	349	224	71	101	223
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1885	1856	1841	1870	1900
Adj Flow Rate, veh/h	283	367	236	75	106	235
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	3	4	2	0
Cap, veh/h	496	987	470	395	347	314
Arrive On Green	0.12	0.52	0.25	0.25	0.20	0.20
Sat Flow, veh/h	1767	1885	1856	1560	1781	1610
Grp Volume(v), veh/h	283	367	236	75	106	235
Grp Sat Flow(s),veh/h/ln	1767	1885	1856	1560	1781	1610
Q Serve(g_s), s	0.0	4.5	4.3	1.5	2.0	5.4
Cycle Q Clear(g_c), s	0.0	4.5	4.3	1.5	2.0	5.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	496	987	470	395	347	314
V/C Ratio(X)	0.57	0.37	0.50	0.19	0.31	0.75
Avail Cap(c_a), veh/h	918	1877	898	755	889	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.6	5.6	12.6	11.6	13.6	15.0
Incr Delay (d2), s/veh	0.4	0.1	0.3	0.1	0.2	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.9	1.3	0.4	0.7	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	15.0	5.6	12.9	11.6	13.8	16.3
LnGrp LOS	B	A	B	B	B	B
Approach Vol, veh/h		650	311		341	
Approach Delay, s/veh		9.7	12.6		15.5	
Approach LOS		A	B		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.6	15.9		13.0		26.5
Change Period (Y+Rc), s	5.8	5.9		5.3		* 5.8
Max Green Setting (Gmax), s	14.2	19.1		19.7		* 39
Max Q Clear Time (g_c+I1), s	2.0	6.3		7.4		6.5
Green Ext Time (p_c), s	0.3	0.7		0.5		1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	11.9
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	302	73	6	157	0	60	0	6	1	1	3
Future Vol, veh/h	5	302	73	6	157	0	60	0	6	1	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	1	0	0	3	0	3	0	0	100	0	0
Mvmt Flow	5	321	78	6	167	0	64	0	6	1	1	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	167	0	0	399	0	0	551	551	360	512	589	167
Stage 1	-	-	-	-	-	-	371	371	-	180	180	-
Stage 2	-	-	-	-	-	-	180	180	-	332	410	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.13	6.5	6.2	8.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	7.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	7.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.527	4	3.3	4.4	4	3.3
Pot Cap-1 Maneuver	1423	-	-	1171	-	-	443	445	689	348	423	882
Stage 1	-	-	-	-	-	-	647	623	-	639	754	-
Stage 2	-	-	-	-	-	-	819	754	-	517	599	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1423	-	-	1171	-	-	436	440	689	341	419	882
Mov Cap-2 Maneuver	-	-	-	-	-	-	436	440	-	341	419	-
Stage 1	-	-	-	-	-	-	644	620	-	635	750	-
Stage 2	-	-	-	-	-	-	810	750	-	510	596	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.1	0.3	14.45	11.34
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	451	23	-	-	66	-	-	573
HCM Lane V/C Ratio	0.156	0.004	-	-	0.005	-	-	0.009
HCM Ctrl Dly (s/v)	14.4	7.5	0	-	8.1	0	-	11.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	74	231	0	0	125	101	0	0	0	128	0	40
Future Vol, veh/h	74	231	0	0	125	101	0	0	0	128	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	1	0	0	2	6	0	0	0	3	0	0
Mvmt Flow	82	257	0	0	139	112	0	0	0	142	0	44

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	251	0	0	257	0	0	560	672	257	616	616	195
Stage 1	-	-	-	-	-	-	421	421	-	195	195	-
Stage 2	-	-	-	-	-	-	139	251	-	421	421	-
Critical Hdwy	4.13	-	-	4.1	-	-	7.1	6.5	6.2	7.13	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.13	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.13	5.5	-
Follow-up Hdwy	2.227	-	-	2.2	-	-	3.5	4	3.3	3.527	4	3.3
Pot Cap-1 Maneuver	1308	-	-	1320	-	-	442	380	787	401	409	851
Stage 1	-	-	-	-	-	-	614	592	-	804	743	-
Stage 2	-	-	-	-	-	-	869	703	-	608	592	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1308	-	-	1320	-	-	388	352	787	372	379	851
Mov Cap-2 Maneuver	-	-	-	-	-	-	388	352	-	372	379	-
Stage 1	-	-	-	-	-	-	569	549	-	804	743	-
Stage 2	-	-	-	-	-	-	824	703	-	564	549	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.93	0	0	19.67
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	437	-	-	1320	-	-	429
HCM Lane V/C Ratio	-	0.063	-	-	-	-	-	0.435
HCM Ctrl Dly (s/v)	0	7.9	0	-	0	-	-	19.7
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.2	-	-	0	-	-	2.2

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	76	3	4	2	2	79
Future Vol, veh/h	76	3	4	2	2	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-4	-4	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	5	0	0	0	0	8
Mvmt Flow	94	4	5	2	2	98

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	64	51	100	0	-	0
Stage 1	51	-	-	-	-	-
Stage 2	12	-	-	-	-	-
Critical Hdwy	6.85	6.4	4.1	-	-	-
Critical Hdwy Stg 1	5.85	-	-	-	-	-
Critical Hdwy Stg 2	5.85	-	-	-	-	-
Follow-up Hdwy	3.545	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	928	1020	1505	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	925	1020	1505	-	-	-
Mov Cap-2 Maneuver	925	-	-	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	1001	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.33	4.93	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	928	-	-
HCM Lane V/C Ratio	0.003	-	0.105	-	-
HCM Ctrl Dly (s/v)	7.4	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	20	198	29	19	138
Future Vol, veh/h	50	20	198	29	19	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	140	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	-2
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	1	0	0	2
Mvmt Flow	56	22	222	33	21	155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	437	239	0	0	255	0
Stage 1	239	-	-	-	-	-
Stage 2	198	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	581	805	-	-	1322	-
Stage 1	806	-	-	-	-	-
Stage 2	840	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	572	805	-	-	1322	-
Mov Cap-2 Maneuver	572	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	827	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.61	0	0.94
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	623	1322	-
HCM Lane V/C Ratio	-	-	0.126	0.016	-
HCM Ctrl Dly (s/v)	-	-	11.6	7.8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	104	80	211	180	3
Future Vol, veh/h	9	104	80	211	180	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	110	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	4	-4	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	2	0	1	0
Mvmt Flow	10	113	87	229	196	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	601	197	199	0	-	0
Stage 1	197	-	-	-	-	-
Stage 2	403	-	-	-	-	-
Critical Hdwy	6.8	6.44	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.218	-	-	-
Pot Cap-1 Maneuver	437	830	1373	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	649	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	409	830	1373	-	-	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	649	-	-	-	-	-

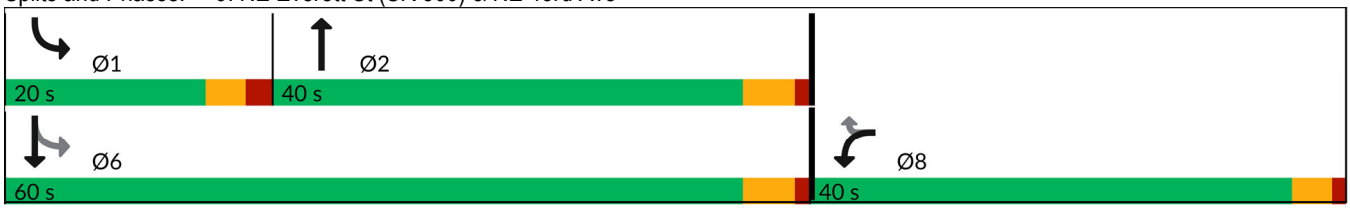
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.59	2.14	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1373	-	767	-	-
HCM Lane V/C Ratio	0.063	-	0.16	-	-
HCM Ctrl Dly (s/v)	7.8	-	10.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	224	19	269	298	22	266
Future Volume (vph)	224	19	269	298	22	266
Turn Type	Prot	Perm	NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		Free	6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	23.0	23.0	30.0		10.0	50.0
Total Split (s)	40.0	40.0	40.0		20.0	60.0
Total Split (%)	40.0%	40.0%	40.0%		20.0%	60.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0
All-Red Time (s)	1.0	1.0	1.0		2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	Min		None	Min
Act Effct Green (s)	12.2	12.2	17.7	41.0	19.3	19.3
Actuated g/C Ratio	0.30	0.30	0.43	1.00	0.47	0.47
v/c Ratio	0.46	0.04	0.37	0.21	0.04	0.33
Control Delay (s/veh)	15.6	7.0	11.6	0.3	6.7	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.6	7.0	11.6	0.3	6.7	8.5
LOS	B	A	B	A	A	A
Approach Delay (s/veh)	14.9		5.7			8.4
Approach LOS	B		A			A

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 41	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.46	
Intersection Signal Delay (s/veh): 8.4	Intersection LOS: A
Intersection Capacity Utilization 38.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: NE Everett St (SR 500) & NE 43rd Ave



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	224	19	269	298	22	266
Future Volume (veh/h)	224	19	269	298	22	266
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1979	1979	1791	1806	2057	2012
Adj Flow Rate, veh/h	238	-1	286	0	23	283
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	1	0	0	3
Cap, veh/h	340	303	565		516	1027
Arrive On Green	0.18	0.00	0.32	0.00	0.02	0.51
Sat Flow, veh/h	1884	1677	1791	1530	1959	2012
Grp Volume(v), veh/h	238	-1	286	0	23	283
Grp Sat Flow(s),veh/h/ln	1884	1677	1791	1530	1959	2012
Q Serve(g_s), s	3.5	0.0	3.8	0.0	0.2	2.3
Cycle Q Clear(g_c), s	3.5	0.0	3.8	0.0	0.2	2.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	340	303	565		516	1027
V/C Ratio(X)	0.70	0.00	0.51		0.04	0.28
Avail Cap(c_a), veh/h	2328	2071	2151		1479	3798
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	11.2	0.0	8.1	0.0	5.8	4.1
Incr Delay (d2), s/veh	2.6	0.0	1.5	0.0	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.1	0.0	0.0	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	13.8	0.0	9.6	0.0	5.8	4.2
LnGrp LOS	B		A		A	A
Approach Vol, veh/h	237		286			306
Approach Delay, s/veh	13.9		9.6			4.4
Approach LOS	B		A			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.7	14.2			19.9	9.3
Change Period (Y+Rc), s	5.0	5.0			5.0	4.0
Max Green Setting (Gmax), s	15.0	35.0			55.0	36.0
Max Q Clear Time (g_c+I1), s	2.2	5.8			4.3	5.5
Green Ext Time (p_c), s	0.0	3.4			2.3	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	8.9
HCM 7th LOS	A

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

MOVEMENT SUMMARY

Site 10 NE Everett St & NW Lake Rd_ExistingPM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett Street															
3	L2	All MCs	281	0.0	281	0.0	0.264	11.5	LOS B	1.6	39.6	0.53	0.66	0.53	32.0
8	T1	All MCs	359	1.0	359	1.0	0.295	4.9	LOS A	1.9	47.1	0.53	0.50	0.53	35.3
Approach			639	0.6	639	0.6	0.295	7.8	LOS A	1.9	47.1	0.53	0.57	0.53	33.7
North: NE Everett Street															
4	T1	All MCs	289	2.0	289	2.0	0.234	4.9	LOS A	1.4	35.9	0.48	0.48	0.48	35.3
14	R2	All MCs	265	0.0	265	0.0	0.208	4.9	LOS A	1.2	31.1	0.46	0.52	0.46	35.3
Approach			554	1.0	554	1.0	0.234	4.9	LOS A	1.4	35.9	0.47	0.50	0.47	35.3
West: NW Lake Road															
5	L2	All MCs	323	1.0	323	1.0	0.258	11.1	LOS B	1.6	39.8	0.49	0.64	0.49	32.0
12	R2	All MCs	371	0.0	371	0.0	0.292	5.0	LOS A	1.8	46.2	0.50	0.53	0.50	35.2
Approach			695	0.5	695	0.5	0.292	7.8	LOS A	1.8	46.2	0.49	0.58	0.49	33.6
All Vehicles			1888	0.7	1888	0.7	0.295	6.9	LOS A	1.9	47.1	0.50	0.55	0.50	34.1

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	18	56	400	425	43
Future Vol, veh/h	50	18	56	400	425	43
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	4	0	0	2
Mvmt Flow	53	19	59	421	447	45

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1015	476	499	0	-	0
Stage 1	476	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.14	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	266	593	1055	-	-	-
Stage 1	629	-	-	-	-	-
Stage 2	589	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	249	590	1050	-	-	-
Mov Cap-2 Maneuver	382	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	586	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	15.29	1.06	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1050	-	421	-	-
HCM Lane V/C Ratio	0.056	-	0.17	-	-
HCM Ctrl Dly (s/v)	8.6	-	15.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	10	33	7	8	28	12	383	3	40	325	78
Future Vol, veh/h	45	10	33	7	8	28	12	383	3	40	325	78
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	10	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	48	11	35	7	9	30	13	407	3	43	346	83

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	912	909	387	871	948	411	429	0	0	411	0	0
Stage 1	472	472	-	435	435	-	-	-	-	-	-	-
Stage 2	439	436	-	436	514	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.6	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.6	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.6	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.09	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	257	267	665	274	263	645	1142	-	-	1159	-	-
Stage 1	576	546	-	604	584	-	-	-	-	-	-	-
Stage 2	600	566	-	603	539	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	225	254	665	237	250	644	1142	-	-	1159	-	-
Mov Cap-2 Maneuver	225	254	-	237	250	-	-	-	-	-	-	-
Stage 1	555	525	-	597	578	-	-	-	-	-	-	-
Stage 2	557	560	-	539	519	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	21.95	14.89	0.25	0.74
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1142	-	-	305	410	1159	-	-
HCM Lane V/C Ratio	0.011	-	-	0.307	0.112	0.037	-	-
HCM Ctrl Dly (s/v)	8.2	-	-	22	14.9	8.2	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	14.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	31	0	0	24	301	0	1	0	325	0	44
Future Vol, veh/h	73	31	0	0	24	301	0	1	0	325	0	44
Conflicting Peds, #/hr	3	0	2	2	0	3	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	3	0	0	0	2	0	0	0	1	0	0
Mvmt Flow	79	34	0	0	26	327	0	1	0	353	0	48

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	748	733	26	-	756	5	48	0	0	2	0	0
Stage 1	730	730	-	-	2	-	-	-	-	-	-	-
Stage 2	17	2	-	-	754	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.53	6.2	-	6.5	6.22	4.1	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.53	-	-	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.53	-	-	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.027	3.3	-	4	3.318	2.2	-	-	2.209	-	-
Pot Cap-1 Maneuver	331	347	1056	0	340	1078	1572	-	-	1627	-	-
Stage 1	417	426	-	0	898	-	-	-	-	-	-	-
Stage 2	1007	892	-	0	420	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	164	269	1054	-	263	1074	1572	-	-	1625	-	-
Mov Cap-2 Maneuver	164	269	-	-	263	-	-	-	-	-	-	-
Stage 1	323	330	-	-	897	-	-	-	-	-	-	-
Stage 2	678	891	-	-	326	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	50.65	11.87	0	6.9
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1572	-	-	186	875	1321	-	-
HCM Lane V/C Ratio	-	-	-	0.609	0.404	0.217	-	-
HCM Ctrl Dly (s/v)	0	-	-	50.7	11.9	7.8	0	-
HCM Lane LOS	A	-	-	F	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	3.4	2	0.8	-	-

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	49	117	9	4	105	6	30	113	6	2	108	55
Future Vol, veh/h	49	117	9	4	105	6	30	113	6	2	108	55
Conflicting Peds, #/hr	1	0	3	3	0	1	0	0	9	9	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	4	-	-	-6	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	2	0	0	2	0	0	1	0	0	0	0
Mvmt Flow	56	133	10	5	119	7	34	128	7	2	123	63

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	416	371	157	406	399	142	185	0	0	144	0	0
Stage 1	159	159	-	209	209	-	-	-	-	-	-	-
Stage 2	257	212	-	197	190	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.1	6.52	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.5	4.018	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	551	559	894	559	539	911	1402	-	-	1451	-	-
Stage 1	848	767	-	798	729	-	-	-	-	-	-	-
Stage 2	752	727	-	810	743	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	411	539	891	403	520	903	1402	-	-	1438	-	-
Mov Cap-2 Maneuver	411	539	-	403	520	-	-	-	-	-	-	-
Stage 1	847	765	-	770	704	-	-	-	-	-	-	-
Stage 2	603	701	-	658	742	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	16.68	14.09	1.54	0.09
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	359	-	-	505	526	20	-	-
HCM Lane V/C Ratio	0.024	-	-	0.394	0.249	0.002	-	-
HCM Ctrl Dly (s/v)	7.6	0	-	16.7	14.1	7.5	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.9	1	0	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	165	686	568	28	8	111
Future Vol, veh/h	165	686	568	28	8	111
Conflicting Peds, #/hr	3	0	0	3	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-8	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	2	0	0	1
Mvmt Flow	174	722	598	29	8	117

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	630	0	-	0	1324	317
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	708	-
Critical Hdwy	4.12	-	-	-	5.2	6.12
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	2.21	-	-	-	3.5	3.31
Pot Cap-1 Maneuver	955	-	-	-	270	732
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	623	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	952	-	-	-	207	730
Mov Cap-2 Maneuver	-	-	-	-	207	-
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	621	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	3.06	0	11.69
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	698	-	-	-	207	730
HCM Lane V/C Ratio	0.182	-	-	-	0.041	0.16
HCM Ctrl Dly (s/v)	9.6	1.5	-	-	23.1	10.9
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.7	-	-	-	0.1	0.6

MOVEMENT SUMMARY

Site: 16 [NW Norwood St & NW 6th Ave_ExistingPM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing AM
Site Category: (None)
Roundabout
Sensitivity Analysis (Critical Gap & Follow-up Headway): Results for Parameter Scale = 120.0 %

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NW 6th Avenue															
3	L2	All MCs	60	5.0	60	5.0	0.419	22.5	LOS C	2.6	67.3	0.93	0.90	1.07	29.1
8	T1	All MCs	6	17.0	6	17.0	0.419	17.8	LOS B	2.6	67.3	0.93	0.90	1.07	29.5
18	R2	All MCs	68	1.0	68	1.0	0.419	15.8	LOS B	2.6	67.3	0.93	0.90	1.07	29.5
Approach			135	3.5	135	3.5	0.419	18.9	LOS B	2.6	67.3	0.93	0.90	1.07	29.3
East: NW 6th Avenue															
1	L2	All MCs	71	1.0	71	1.0	0.701	12.2	LOS B	7.1	182.0	0.63	0.49	0.63	33.8
6	T1	All MCs	587	3.0	587	3.0	0.701	5.9	LOS A	7.1	182.0	0.63	0.49	0.63	34.5
16	R2	All MCs	15	7.0	15	7.0	0.701	6.2	LOS A	7.1	182.0	0.63	0.49	0.63	34.1
Approach			673	2.9	673	2.9	0.701	6.6	LOS A	7.1	182.0	0.63	0.49	0.63	34.4
North: NW Norwood Street															
7	L2	All MCs	14	7.0	14	7.0	0.120	17.0	LOS B	0.6	14.7	0.72	0.74	0.72	31.7
4	T1	All MCs	8	0.0	8	0.0	0.120	10.1	LOS B	0.6	14.7	0.72	0.74	0.72	32.6
14	R2	All MCs	35	3.0	35	3.0	0.120	10.5	LOS B	0.6	14.7	0.72	0.74	0.72	32.2
Approach			57	3.6	57	3.6	0.120	12.1	LOS B	0.6	14.7	0.72	0.74	0.72	32.2
West: NW 6th Avenue															
5	L2	All MCs	46	0.0	46	0.0	0.959	20.9	LOS E	31.4	791.3	1.00	0.85	1.16	30.7
2	T1	All MCs	834	1.0	834	1.0	0.959	14.7	LOS E	31.4	791.3	1.00	0.85	1.16	31.2
12	R2	All MCs	80	1.0	80	1.0	0.959	14.9	LOS E	31.4	791.3	1.00	0.85	1.16	31.0
Approach			959	1.0	959	1.0	0.959	15.0	LOS B	31.4	791.3	1.00	0.85	1.16	31.2
All Vehicles			1824	1.9	1824	1.9	0.959	12.1	LOS B	31.4	791.3	0.85	0.72	0.94	32.2

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	601	3	78	436	10	60
Future Vol, veh/h	601	3	78	436	10	60
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	105	-	85	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-6	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	639	3	83	464	11	64

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	643	0	1271	642
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	630	-
Critical Hdwy	-	-	4.1	-	5.2	5.6
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	952	-	286	532
Stage 1	-	-	-	-	654	-
Stage 2	-	-	-	-	660	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	952	-	261	531
Mov Cap-2 Maneuver	-	-	-	-	261	-
Stage 1	-	-	-	-	654	-
Stage 2	-	-	-	-	602	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.39	13.66
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	261	531	-	-	952	-
HCM Lane V/C Ratio	0.041	0.12	-	-	0.087	-
HCM Ctrl Dly (s/v)	19.4	12.7	-	-	9.1	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.4	-	-	0.3	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	511	145	95	340	72	100
Future Vol, veh/h	511	145	95	340	72	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	3	1
Mvmt Flow	538	153	100	358	76	105

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	691	0	1172	614
Stage 1	-	-	-	-	614	-
Stage 2	-	-	-	-	558	-
Critical Hdwy	-	-	4.11	-	6.43	6.21
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.209	-	3.527	3.309
Pot Cap-1 Maneuver	-	-	909	-	212	494
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	571	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	909	-	188	494
Mov Cap-2 Maneuver	-	-	-	-	188	-
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	508	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.06	23.54
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	188	494	-	-	909	-
HCM Lane V/C Ratio	0.403	0.213	-	-	0.11	-
HCM Ctrl Dly (s/v)	36.4	14.3	-	-	9.5	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	1.8	0.8	-	-	0.4	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	527	6	70	337	6	3	5	115	10	7	13
Future Vol, veh/h	7	527	6	70	337	6	3	5	115	10	7	13
Conflicting Peds, #/hr	0	0	3	3	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	130	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	1	0	0	0	0	0	0	8
Mvmt Flow	8	573	7	76	366	7	3	5	125	11	8	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	373	0	0	582	0	0	1118	1119	579	1113	1119	371
Stage 1	-	-	-	-	-	-	594	594	-	522	522	-
Stage 2	-	-	-	-	-	-	523	525	-	591	598	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.372
Pot Cap-1 Maneuver	1197	-	-	1002	-	-	186	208	519	188	208	662
Stage 1	-	-	-	-	-	-	495	496	-	542	534	-
Stage 2	-	-	-	-	-	-	541	533	-	497	494	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1197	-	-	999	-	-	160	191	517	127	191	661
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	191	-	127	191	-
Stage 1	-	-	-	-	-	-	490	491	-	500	494	-
Stage 2	-	-	-	-	-	-	481	492	-	370	490	-

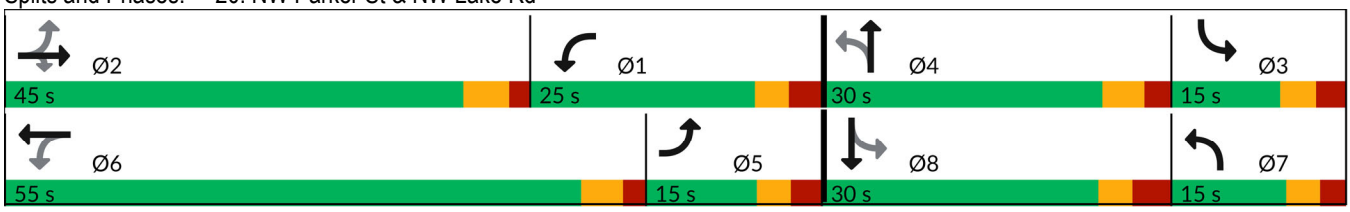
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.1	1.51	16	23.96
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	460	1197	-	-	999	-	-	222
HCM Lane V/C Ratio	0.291	0.006	-	-	0.076	-	-	0.147
HCM Ctrl Dly (s/v)	16	8	-	-	8.9	-	-	24
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.2	-	-	0.5

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	19	415	136	43	295	181	120	43	90
Future Volume (vph)	19	415	136	43	295	181	120	43	90
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		1	6	7	4	3	8
Permitted Phases	2		2	6		4		8	
Detector Phase	5	2	2	1	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	26.7	26.7	10.7	20.5	10.2	29.2	10.6	33.3
Total Split (s)	15.0	45.0	45.0	25.0	55.0	15.0	30.0	15.0	30.0
Total Split (%)	13.0%	39.1%	39.1%	21.7%	47.8%	13.0%	26.1%	13.0%	26.1%
Yellow Time (s)	3.0	4.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0
All-Red Time (s)	2.5	1.7	1.7	2.7	1.9	2.2	2.3	2.6	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.7	5.7	5.7	5.5	5.2	5.9	5.6	6.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)	26.5	22.4	22.4	28.1	24.1	22.5	16.5	14.7	9.7
Actuated g/C Ratio	0.42	0.35	0.35	0.44	0.38	0.36	0.26	0.23	0.15
v/c Ratio	0.04	0.68	0.22	0.13	0.26	0.37	0.50	0.15	0.41
Control Delay (s/veh)	14.6	25.8	2.3	14.0	17.7	19.9	25.8	18.7	33.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.6	25.8	2.3	14.0	17.7	19.9	25.8	18.7	33.3
LOS	B	C	A	B	B	B	C	B	C
Approach Delay (s/veh)		19.9			17.3		23.1		29.2
Approach LOS		B			B		C		C

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 63.2	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay (s/veh): 21.0	Intersection LOS: C
Intersection Capacity Utilization 62.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 20: NW Parker St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	415	136	43	295	25	181	120	98	43	90	17
Future Volume (veh/h)	19	415	136	43	295	25	181	120	98	43	90	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1885	1900	1885	1885	1900	1900	1885	1900
Adj Flow Rate, veh/h	21	456	79	47	324	9	199	132	76	47	99	17
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	1	0	1	0	1	1	0	0	1	0
Cap, veh/h	588	559	468	287	521	14	361	186	107	211	174	30
Arrive On Green	0.24	0.29	0.29	0.09	0.15	0.15	0.09	0.17	0.17	0.05	0.11	0.11
Sat Flow, veh/h	1810	1900	1592	1810	3559	99	1795	1121	645	1810	1565	269
Grp Volume(v), veh/h	21	456	79	47	163	170	199	0	208	47	0	116
Grp Sat Flow(s),veh/h/ln	1810	1900	1592	1810	1791	1867	1795	0	1766	1810	0	1834
Q Serve(g_s), s	0.0	12.6	2.1	0.0	4.8	4.8	0.0	0.0	6.3	0.0	0.0	3.4
Cycle Q Clear(g_c), s	0.0	12.6	2.1	0.0	4.8	4.8	0.0	0.0	6.3	0.0	0.0	3.4
Prop In Lane	1.00		1.00	1.00		0.05	1.00		0.37	1.00		0.15
Lane Grp Cap(c), veh/h	588	559	468	287	262	273	361	0	293	211	0	204
V/C Ratio(X)	0.04	0.82	0.17	0.16	0.62	0.62	0.55	0.00	0.71	0.22	0.00	0.57
Avail Cap(c_a), veh/h	588	1323	1108	746	1570	1637	504	0	754	429	0	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.6	18.5	14.8	23.5	22.6	22.6	22.7	0.0	22.3	25.7	0.0	23.8
Incr Delay (d2), s/veh	0.0	1.1	0.1	0.1	0.9	0.9	1.3	0.0	1.2	0.5	0.0	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.0	0.7	0.5	1.9	2.0	2.3	0.0	2.4	0.6	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.6	19.6	14.9	23.6	23.5	23.5	24.0	0.0	23.5	26.2	0.0	24.8
LnGrp LOS	B	B	B	C	C	C	C		C	C		C
Approach Vol, veh/h		556			380			407			163	
Approach Delay, s/veh		18.8			23.5			23.7			25.2	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	22.3	8.2	15.3	19.2	13.8	10.9	12.6
Change Period (Y+Rc), s	5.7	5.7	* 5.6	5.9	5.7	* 5.5	5.6	* 6.3
Max Green Setting (Gmax), s	19.3	39.3	* 9.4	24.1	9.5	* 50	9.8	* 24
Max Q Clear Time (g_c+I1), s	2.0	14.6	2.0	8.3	2.0	6.8	2.0	5.4
Green Ext Time (p_c), s	0.0	1.9	0.0	0.6	0.0	1.2	0.3	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	22.0
HCM 7th LOS	C

Notes

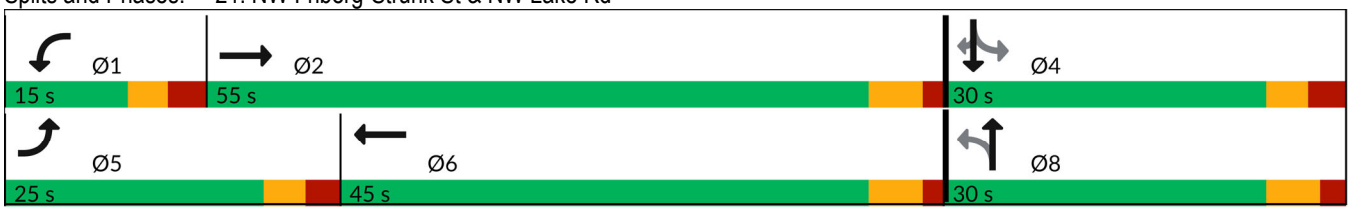
User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	306	519	1	423	4	1	77	0	188
Future Volume (vph)	306	519	1	423	4	1	77	0	188
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2	1	6		8		4	
Permitted Phases					8		4		4
Detector Phase	5	2	1	6	8	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.6	23.5	10.8	26.6	34.0	34.0	33.9	33.9	33.9
Total Split (s)	25.0	55.0	15.0	45.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	25.0%	55.0%	15.0%	45.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.6	1.5	2.8	1.6	2.0	2.0	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.6	5.5	5.8	5.6		6.0		5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	None	None	None	None	None
Act Effct Green (s)	18.0	36.4	5.1	14.4		8.1		8.2	8.2
Actuated g/C Ratio	0.31	0.63	0.09	0.25		0.14		0.14	0.14
v/c Ratio	0.60	0.25	0.01	0.67		0.03		0.43	0.51
Control Delay (s/veh)	23.8	6.1	29.0	22.5		23.6		31.6	9.5
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay (s/veh)	23.8	6.1	29.0	22.5		23.6		31.6	9.5
LOS	C	A	C	C		C		C	A
Approach Delay (s/veh)		12.7		22.5		23.6		15.9	
Approach LOS		B		C		C		B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 58	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay (s/veh): 16.5	Intersection LOS: B
Intersection Capacity Utilization 53.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 21: NW Friberg-Strunk St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	306	519	2	1	423	121	4	1	0	77	0	188
Future Volume (veh/h)	306	519	2	1	423	121	4	1	0	77	0	188
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1900	1900	1900	1885	1900	1900	1900	1900	1856	1900	1885
Adj Flow Rate, veh/h	333	564	2	1	460	132	4	1	0	84	0	204
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	0	0	0	1	0	0	0	0	3	0	1
Cap, veh/h	399	1732	6	4	694	198	273	55	0	415	0	283
Arrive On Green	0.22	0.47	0.47	0.00	0.25	0.25	0.18	0.18	0.00	0.18	0.00	0.18
Sat Flow, veh/h	1795	3689	13	1810	2746	782	799	308	0	1518	0	1592
Grp Volume(v), veh/h	333	276	290	1	299	293	5	0	0	84	0	204
Grp Sat Flow(s),veh/h/ln	1795	1805	1898	1810	1791	1737	1106	0	0	1518	0	1592
Q Serve(g_s), s	8.8	4.7	4.7	0.0	7.4	7.5	0.0	0.0	0.0	0.0	0.0	6.0
Cycle Q Clear(g_c), s	8.8	4.7	4.7	0.0	7.4	7.5	2.0	0.0	0.0	2.0	0.0	6.0
Prop In Lane	1.00		0.01	1.00		0.45	0.80		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	399	847	891	4	453	439	327	0	0	415	0	283
V/C Ratio(X)	0.84	0.33	0.33	0.27	0.66	0.67	0.02	0.00	0.00	0.20	0.00	0.72
Avail Cap(c_a), veh/h	704	1806	1898	336	1426	1383	724	0	0	859	0	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.4	8.2	8.2	24.7	16.6	16.6	16.8	0.0	0.0	17.5	0.0	19.2
Incr Delay (d2), s/veh	1.8	0.1	0.1	14.2	0.6	0.7	0.0	0.0	0.0	0.1	0.0	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	1.3	1.4	0.0	2.7	2.7	0.0	0.0	0.0	0.7	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	20.2	8.3	8.3	38.9	17.2	17.3	16.8	0.0	0.0	17.6	0.0	20.5
LnGrp LOS	C	A	A	D	B	B	B			B		C
Approach Vol, veh/h		899			593			5			288	
Approach Delay, s/veh		12.7			17.3			16.8			19.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	28.8		14.8	16.6	18.1		14.8				
Change Period (Y+Rc), s	5.8	* 5.6		* 6	5.6	5.6		6.0				
Max Green Setting (Gmax), s	9.2	* 50		* 24	19.4	39.4		24.0				
Max Q Clear Time (g_c+I1), s	2.0	6.7		8.0	10.8	9.5		4.0				
Green Ext Time (p_c), s	0.0	2.0		0.5	0.3	2.5		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh	15.4	
HCM 7th LOS	B	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	70	27	301	109	28	285
Future Vol, veh/h	70	27	301	109	28	285
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	175	0	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	2	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	7	2	0	0	1
Mvmt Flow	77	30	331	120	31	313

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	767	393	0	0	453	0
Stage 1	393	-	-	-	-	-
Stage 2	375	-	-	-	-	-
Critical Hdwy	6.01	6.07	-	-	4.1	-
Critical Hdwy Stg 1	5.01	-	-	-	-	-
Critical Hdwy Stg 2	5.01	-	-	-	-	-
Follow-up Hdwy	3.509	3.363	-	-	2.2	-
Pot Cap-1 Maneuver	405	660	-	-	1119	-
Stage 1	715	-	-	-	-	-
Stage 2	727	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	393	658	-	-	1117	-
Mov Cap-2 Maneuver	393	-	-	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	707	-	-	-	-	-

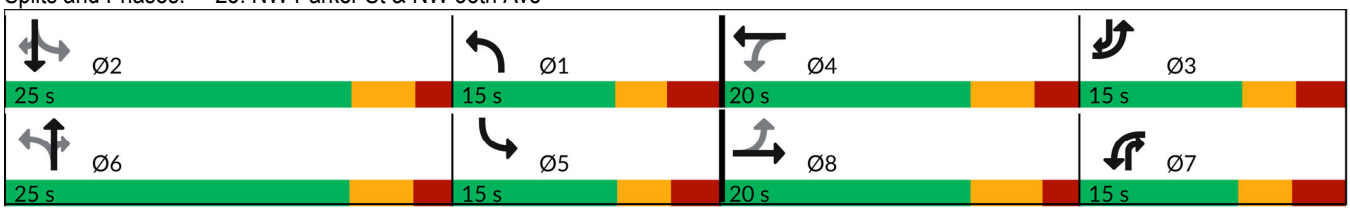
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	14.81	0	0.74
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	393	658	1117	-
HCM Lane V/C Ratio	-	-	0.196	0.045	0.028	-
HCM Ctrl Dly (s/v)	-	-	16.4	10.7	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.1	0.1	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	62	129	161	236	36	252	60	100	266	117
Future Volume (vph)	62	129	161	236	36	252	60	100	266	117
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	7	4	1	6	7	5	2	3
Permitted Phases	8		4		6		6	2		2
Detector Phase	3	8	7	4	1	6	7	5	2	3
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.8	24.0	11.0	23.0	10.9	20.0	11.0	10.7	20.0	10.8
Total Split (s)	15.0	20.0	15.0	20.0	15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	20.0%	26.7%	20.0%	26.7%	20.0%	33.3%	20.0%	20.0%	33.3%	20.0%
Yellow Time (s)	3.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0	3.6	3.0
All-Red Time (s)	2.8	2.0	3.0	2.4	2.9	2.1	3.0	2.7	2.0	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.0	6.0	6.0	5.9	5.7	6.0	5.7	5.6	5.8
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	None	Max	None
Act Effct Green (s)	13.9	9.8	20.5	14.4	24.7	19.8	37.4	27.2	23.9	32.2
Actuated g/C Ratio	0.22	0.16	0.33	0.23	0.39	0.32	0.60	0.43	0.38	0.51
v/c Ratio	0.22	0.59	0.34	0.86	0.08	0.45	0.06	0.21	0.37	0.14
Control Delay (s/veh)	16.6	32.0	17.8	47.2	11.8	22.5	0.3	13.3	18.4	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.6	32.0	17.8	47.2	11.8	22.5	0.3	13.3	18.4	2.6
LOS	B	C	B	D	B	C	A	B	B	A
Approach Delay (s/veh)		27.7		37.9		17.6			13.5	
Approach LOS		C		D		B			B	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 62.7	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay (s/veh): 24.4	Intersection LOS: C
Intersection Capacity Utilization 61.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 23: NW Parker St & NW 38th Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	129	35	161	236	114	36	252	60	100	266	117
Future Volume (veh/h)	62	129	35	161	236	114	36	252	60	100	266	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1900	1811	1885	1900	1900	1900	1900	1900	1885	1976	1900
Adj Flow Rate, veh/h	64	133	36	166	243	118	37	260	62	103	274	121
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	6	1	0	0	0	0	0	1	0	0
Cap, veh/h	248	181	49	408	252	123	418	548	719	429	573	587
Arrive On Green	0.07	0.13	0.13	0.16	0.21	0.21	0.07	0.29	0.29	0.07	0.29	0.29
Sat Flow, veh/h	1882	1437	389	1795	1206	586	1810	1900	1610	1795	1976	1610
Grp Volume(v), veh/h	64	0	169	166	0	361	37	260	62	103	274	121
Grp Sat Flow(s),veh/h/ln	1882	0	1826	1795	0	1791	1810	1900	1610	1795	1976	1610
Q Serve(g_s), s	0.0	0.0	6.0	0.7	0.0	13.4	0.0	7.5	0.0	0.0	7.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	6.0	0.7	0.0	13.4	0.0	7.5	0.0	0.0	7.6	0.0
Prop In Lane	1.00		0.21	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	0	230	408	0	375	418	548	719	429	573	587
V/C Ratio(X)	0.26	0.00	0.73	0.41	0.00	0.96	0.09	0.47	0.09	0.24	0.48	0.21
Avail Cap(c_a), veh/h	366	0	382	408	0	375	529	548	719	545	573	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	0.0	28.2	23.7	0.0	26.2	19.6	19.6	10.7	20.8	19.6	14.6
Incr Delay (d2), s/veh	0.2	0.0	1.7	0.2	0.0	36.5	0.0	2.9	0.2	0.1	2.8	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	2.5	2.1	0.0	9.1	0.4	3.5	0.5	1.2	3.7	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.8	0.0	29.9	23.9	0.0	62.7	19.6	22.5	10.9	20.9	22.4	15.4
LnGrp LOS	C		C	C		E	B	C	B	C	C	B
Approach Vol, veh/h		233			527			359			498	
Approach Delay, s/veh		29.6			50.5			20.2			20.4	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	25.0	11.0	20.0	10.9	25.0	16.6	14.4
Change Period (Y+Rc), s	5.9	5.6	6.0	* 6	5.9	* 5.7	6.0	6.0
Max Green Setting (Gmax), s	9.1	19.4	9.2	* 14	9.3	* 19	9.0	14.0
Max Q Clear Time (g_c+I1), s	2.0	9.6	2.0	15.4	2.0	9.5	2.7	8.0
Green Ext Time (p_c), s	0.0	0.9	0.0	0.0	0.1	0.7	0.1	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	31.5
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	97	43	117	76	9
Future Vol, veh/h	14	97	43	117	76	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	1	5	6	1	0
Mvmt Flow	18	121	54	146	95	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	354	101	106	0	-	0
Stage 1	101	-	-	-	-	-
Stage 2	254	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.245	-	-	-
Pot Cap-1 Maneuver	648	958	1466	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	793	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	622	958	1466	-	-	-
Mov Cap-2 Maneuver	622	-	-	-	-	-
Stage 1	891	-	-	-	-	-
Stage 2	793	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.75	2.03	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	484	-	896	-	-
HCM Lane V/C Ratio	0.037	-	0.155	-	-
HCM Ctrl Dly (s/v)	7.5	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	46	50	129	36	37	127
Future Vol, veh/h	46	50	129	36	37	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	4	6	4	14	5	4
Mvmt Flow	52	57	147	41	42	144

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	395	167	0	0	188	0
Stage 1	167	-	-	-	-	-
Stage 2	228	-	-	-	-	-
Critical Hdwy	6.44	6.26	-	-	4.15	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.354	-	-	2.245	-
Pot Cap-1 Maneuver	606	867	-	-	1369	-
Stage 1	858	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	585	867	-	-	1369	-
Mov Cap-2 Maneuver	585	-	-	-	-	-
Stage 1	858	-	-	-	-	-
Stage 2	778	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.04	0	1.74
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	705	406	-
HCM Lane V/C Ratio	-	-	0.155	0.031	-
HCM Ctrl Dly (s/v)	-	-	11	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	98	126	134	123	32
Future Vol, veh/h	15	98	126	134	123	32
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	1	0	1	1	3
Mvmt Flow	17	109	140	149	137	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	584	155	173	0	-	0
Stage 1	155	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Critical Hdwy	6.8	6.41	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.2	-	-	-
Pot Cap-1 Maneuver	447	885	1416	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	402	884	1415	-	-	-
Mov Cap-2 Maneuver	402	-	-	-	-	-
Stage 1	777	-	-	-	-	-
Stage 2	630	-	-	-	-	-

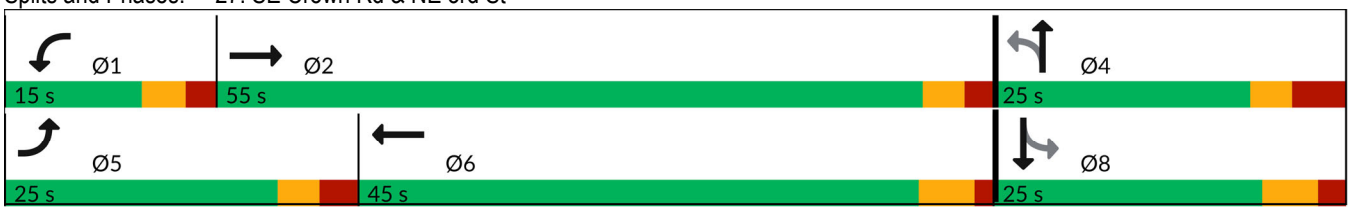
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.26	3.79	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1415	-	402	884	-	-
HCM Lane V/C Ratio	0.099	-	0.041	0.123	-	-
HCM Ctrl Dly (s/v)	7.8	-	14.3	9.6	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	0.4	-	-

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR	Ø1
Lane Configurations									
Traffic Volume (vph)	269	488	411	11	4	78	1	216	
Future Volume (vph)	269	488	411	11	4	78	1	216	
Turn Type	Prot	NA	NA	Perm	NA	Perm	NA	Free	
Protected Phases	5	2	6		4		8		1
Permitted Phases				4		8		Free	
Detector Phase	5	2	6	4	4	8	8		
Switch Phase									
Minimum Initial (s)	2.0	8.0	8.0	2.0	2.0	2.0	2.0		5.0
Minimum Split (s)	7.6	23.0	20.3	32.8	32.8	35.0	35.0		10.2
Total Split (s)	25.0	55.0	45.0	25.0	25.0	25.0	25.0		15.0
Total Split (%)	26.3%	57.9%	47.4%	26.3%	26.3%	26.3%	26.3%		16%
Yellow Time (s)	3.0	3.0	4.0	3.0	3.0	4.0	4.0		3.0
All-Red Time (s)	2.6	2.0	1.3	3.8	3.8	2.0	2.0		2.2
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0		
Total Lost Time (s)	5.6	5.0	5.3		6.8		6.0		
Lead/Lag	Lead	Lag	Lag						Lead
Lead-Lag Optimize?	Yes	Yes	Yes						Yes
Recall Mode	None	None	None	None	None	None	None		None
Act Effct Green (s)	13.5	34.9	13.1		7.3		8.0	49.2	
Actuated g/C Ratio	0.27	0.71	0.27		0.15		0.16	1.00	
v/c Ratio	0.58	0.21	0.57		0.07		0.36	0.13	
Control Delay (s/veh)	23.1	4.1	18.8		23.0		27.0	0.2	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)	23.1	4.1	18.8		23.0		27.0	0.2	
LOS	C	A	B		C		C	A	
Approach Delay (s/veh)		10.7	18.8		23.0		7.4		
Approach LOS		B	B		C		A		

Intersection Summary	
Cycle Length: 95	
Actuated Cycle Length: 49.2	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay (s/veh): 12.8	Intersection LOS: B
Intersection Capacity Utilization 54.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: SE Crown Rd & NE 3rd St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	269	488	12	0	411	106	11	4	0	78	1	216
Future Volume (veh/h)	269	488	12	0	411	106	11	4	0	78	1	216
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1876	1862	1952	1979	1964	1934	1952	1952	1952	2011	2058	2027
Adj Flow Rate, veh/h	274	498	12	0	419	108	11	4	0	80	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	0	0	1	3	0	0	0	3	0	2
Cap, veh/h	351	2086	50	5	698	178	265	32		308	1	
Arrive On Green	0.20	0.59	0.59	0.00	0.24	0.24	0.07	0.07	0.00	0.07	0.07	0.00
Sat Flow, veh/h	1787	3528	85	1884	2942	751	1320	480	1654	1584	20	1717
Grp Volume(v), veh/h	274	249	261	0	264	263	15	0	0	81	0	0
Grp Sat Flow(s),veh/h/ln	1787	1769	1844	1884	1865	1828	1800	0	1654	1603	0	1717
Q Serve(g_s), s	5.2	2.4	2.4	0.0	4.5	4.5	0.0	0.0	0.0	1.5	0.0	0.0
Cycle Q Clear(g_c), s	5.2	2.4	2.4	0.0	4.5	4.5	0.3	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.41	0.73		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	351	1046	1091	5	442	434	297	0		310	0	
V/C Ratio(X)	0.78	0.24	0.24	0.00	0.60	0.61	0.05	0.00		0.26	0.00	
Avail Cap(c_a), veh/h	978	2493	2600	521	2088	2047	1002	0		1040	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.5	3.4	3.4	0.0	12.0	12.0	15.5	0.0	0.0	16.2	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.2	0.2	0.0	1.3	1.3	0.1	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.0	3.5	3.5	0.0	12.5	12.6	15.6	0.0	0.0	16.4	0.0	0.0
LnGrp LOS	B	A	A		B	B	B			B		
Approach Vol, veh/h		784			527			15			81	
Approach Delay, s/veh		7.5			12.5			15.6			16.4	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	26.3		9.2	12.6	13.7		9.2				
Change Period (Y+Rc), s	5.2	* 5.3		6.8	5.6	5.3		* 6.8				
Max Green Setting (Gmax), s	9.8	* 50		18.2	19.4	39.7		* 19				
Max Q Clear Time (g_c+I1), s	0.0	4.4		2.3	7.2	6.5		3.7				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.3	1.9		0.2				

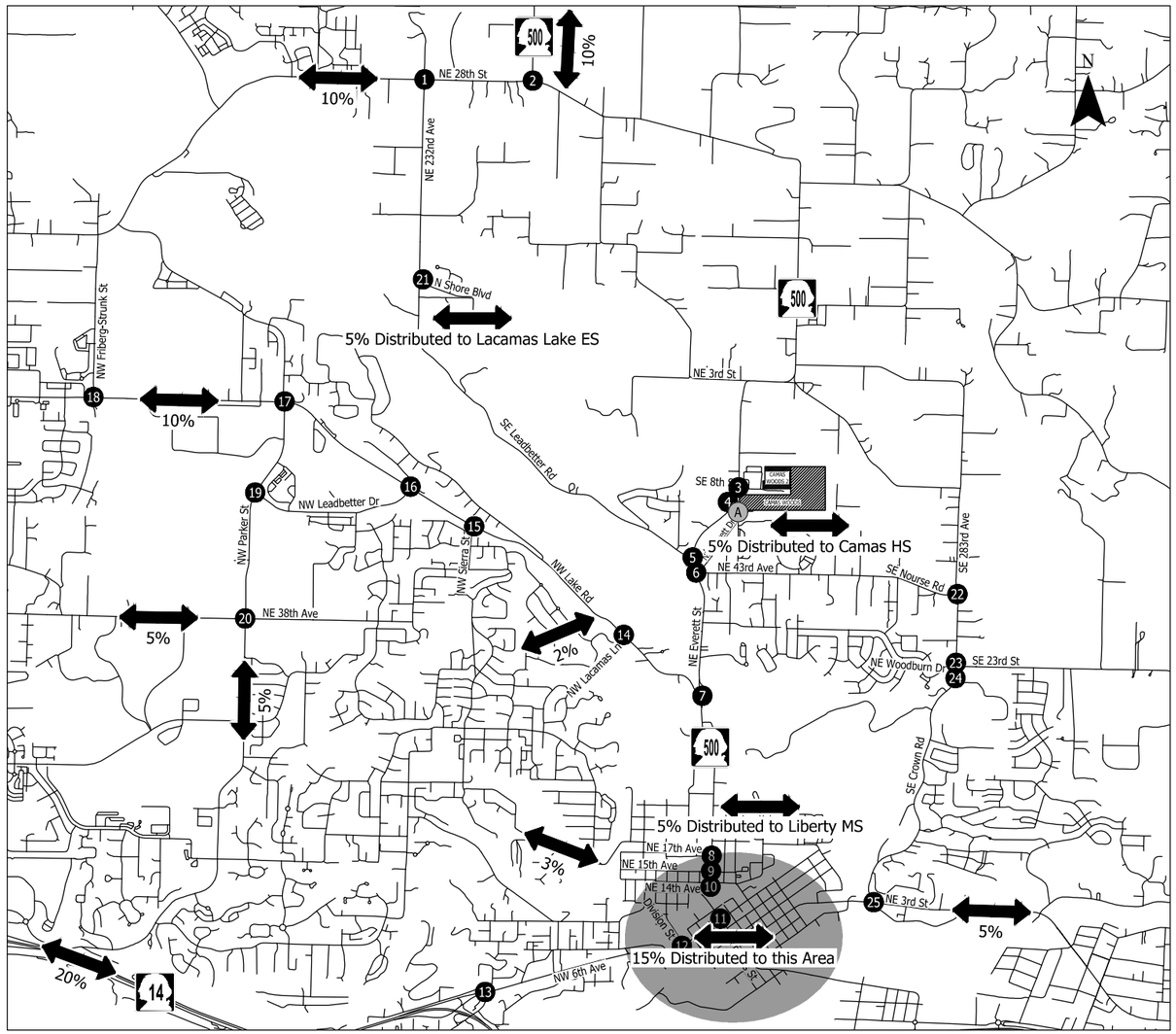
Intersection Summary		
HCM 7th Control Delay, s/veh		10.0
HCM 7th LOS		A

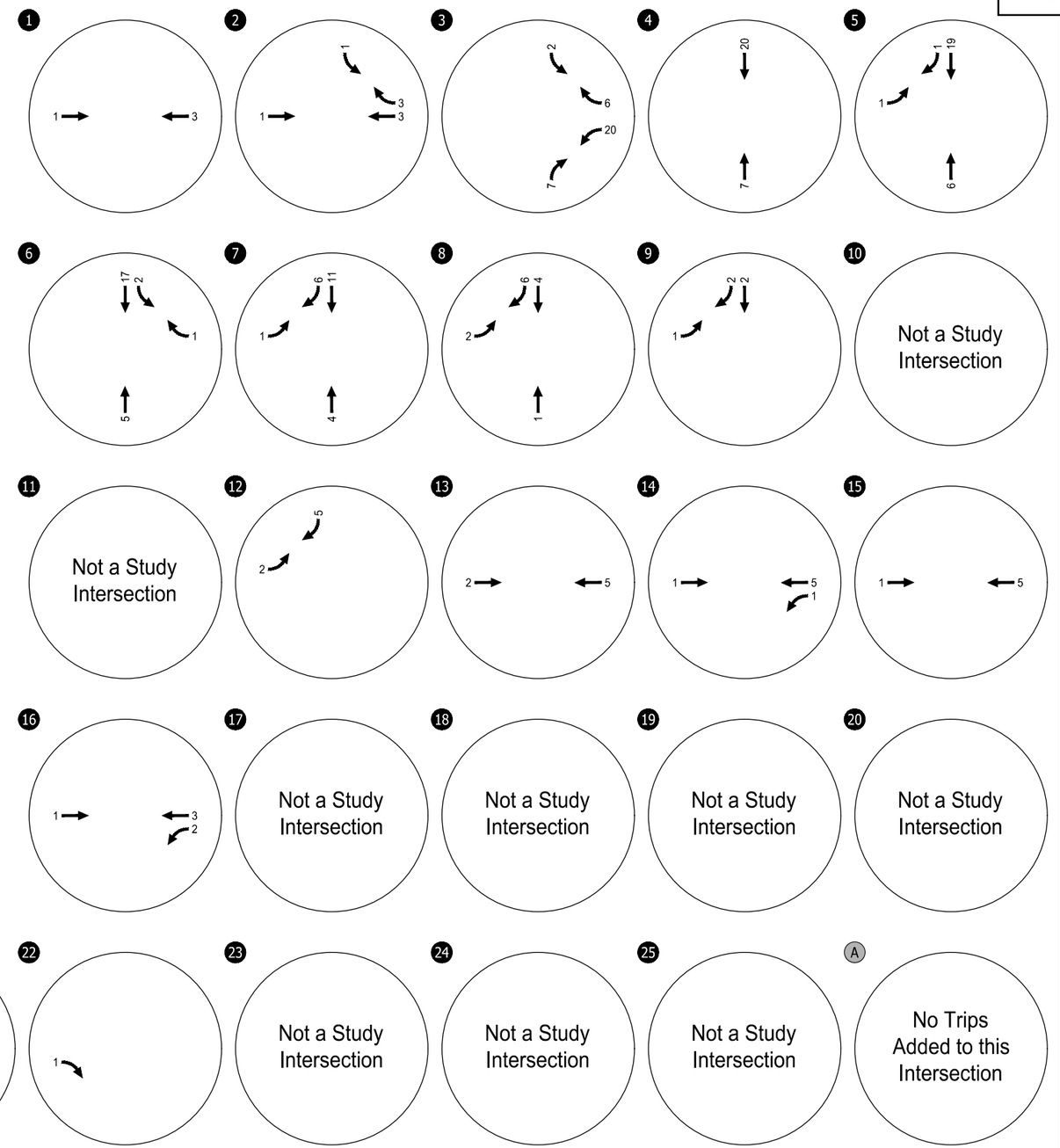
Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix E : In-Process Data

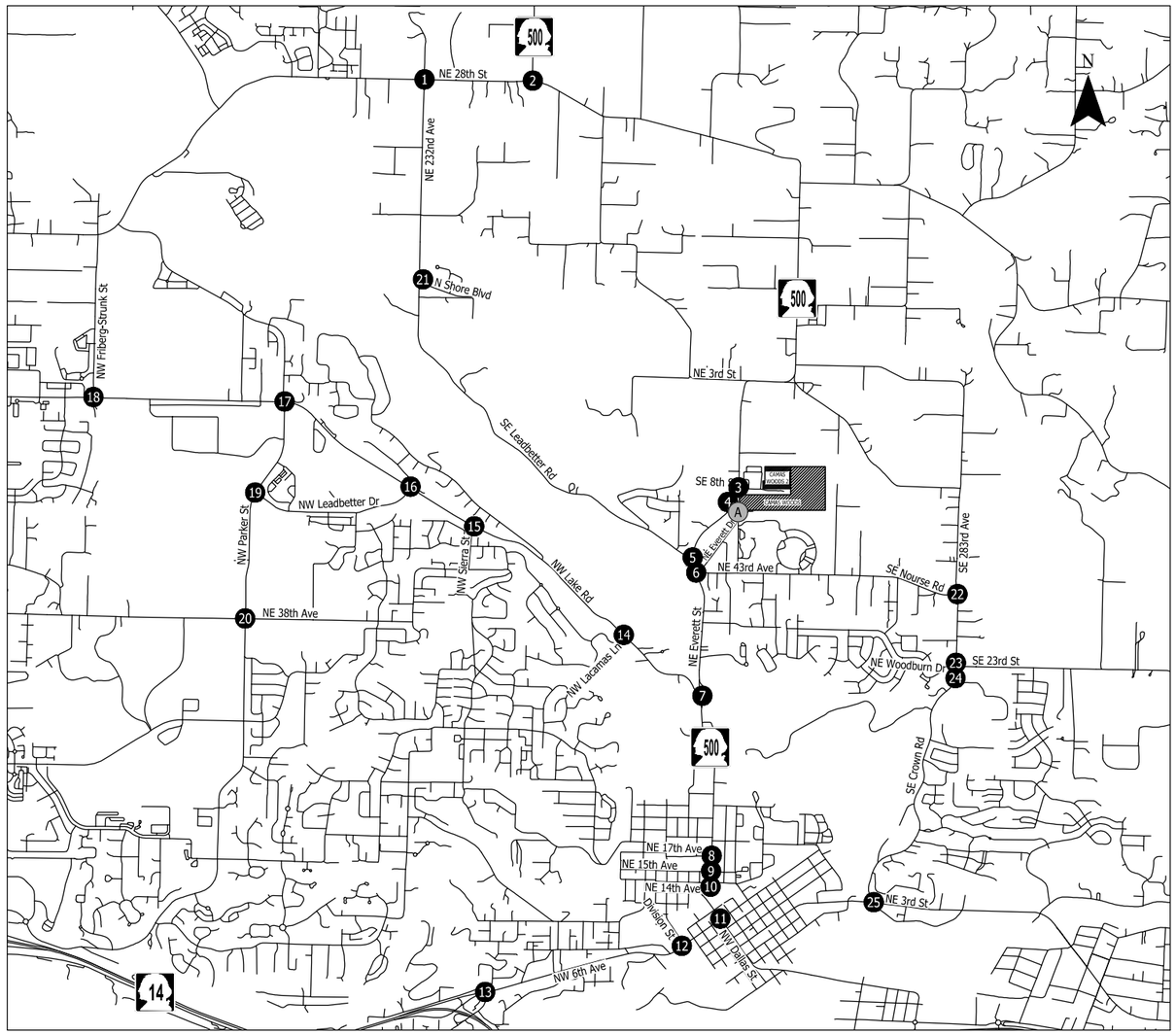


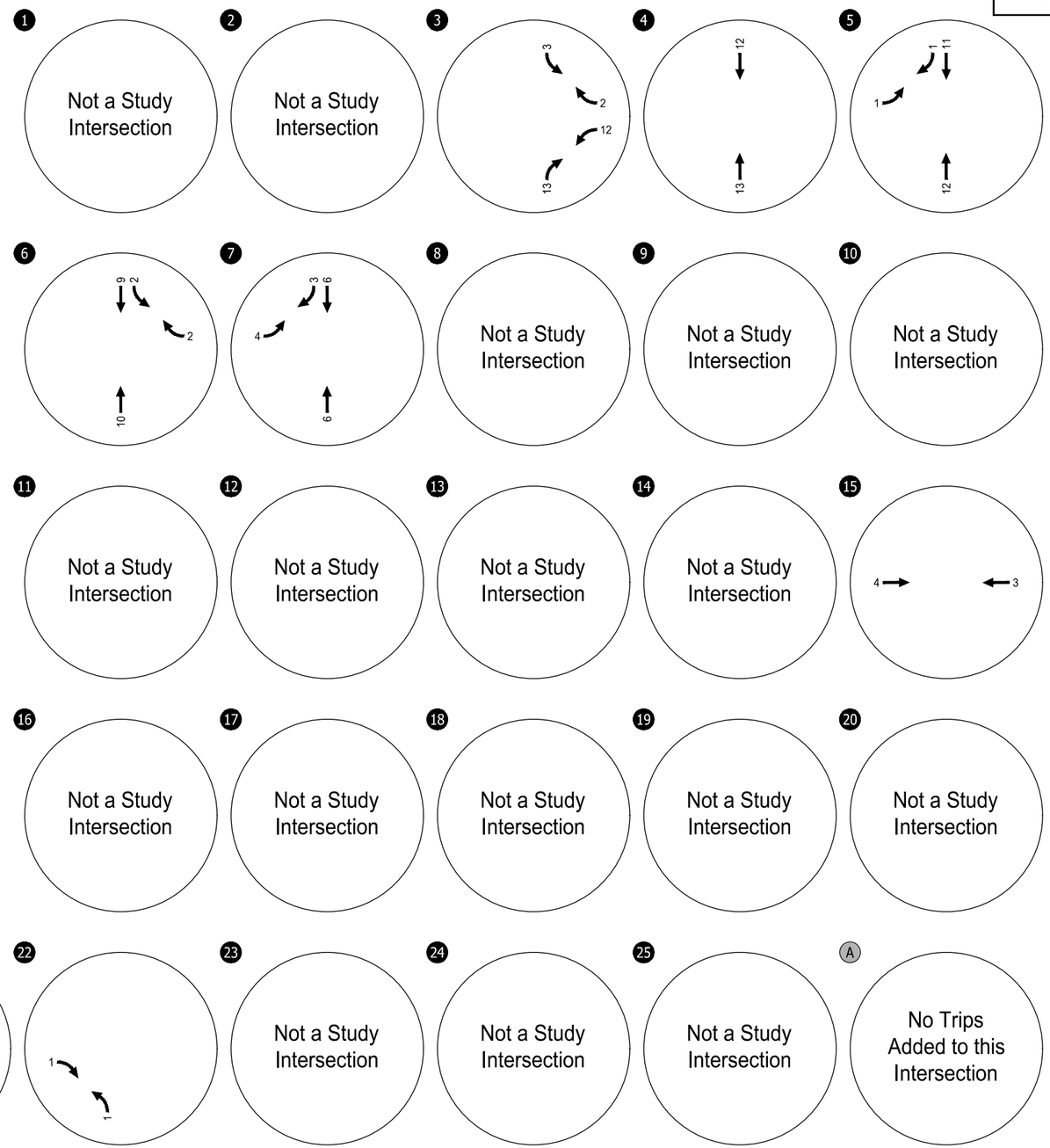


Site-Generated Trip Assignment
Weekday AM Peak Hour
Camas, Washington

Figure 3

(#) Study Intersections
(A) Site Driveway
XX% Trip Distribution Percentage





Site-Generated Trip Assignment
Weekday School PM Peak Hour
Camas, Washington

Figure 4

Study Intersections
A Site Driveway
XX% Trip Distribution Percentage

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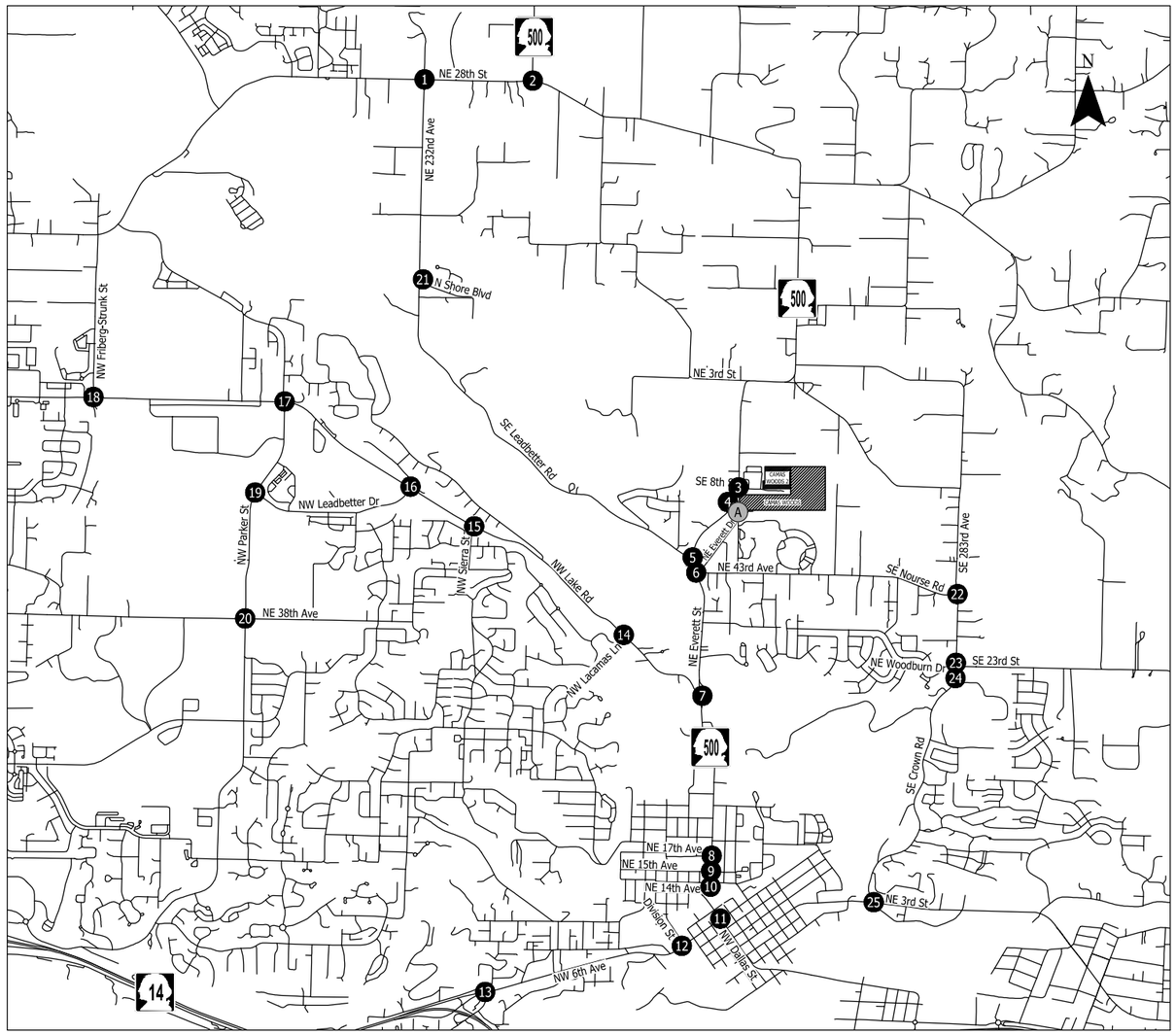


Site-Generated Trip Assignment
Weekday PM Peak Hour
Camas, Washington

Figure 5

Study Intersections
A Site Driveway
XX% Trip Distribution Percentage

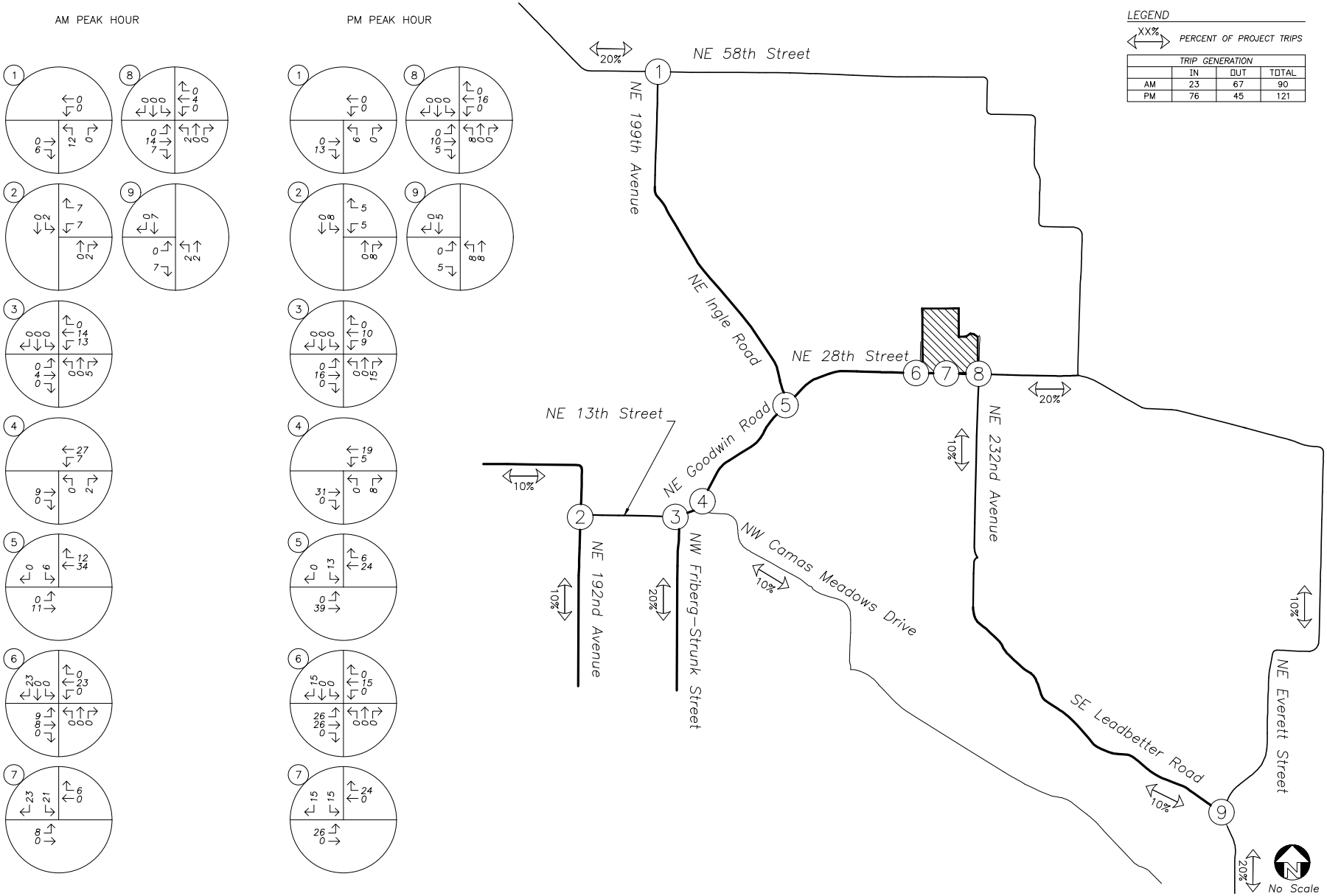


Figure 3
Camas Heights
10/22/2021

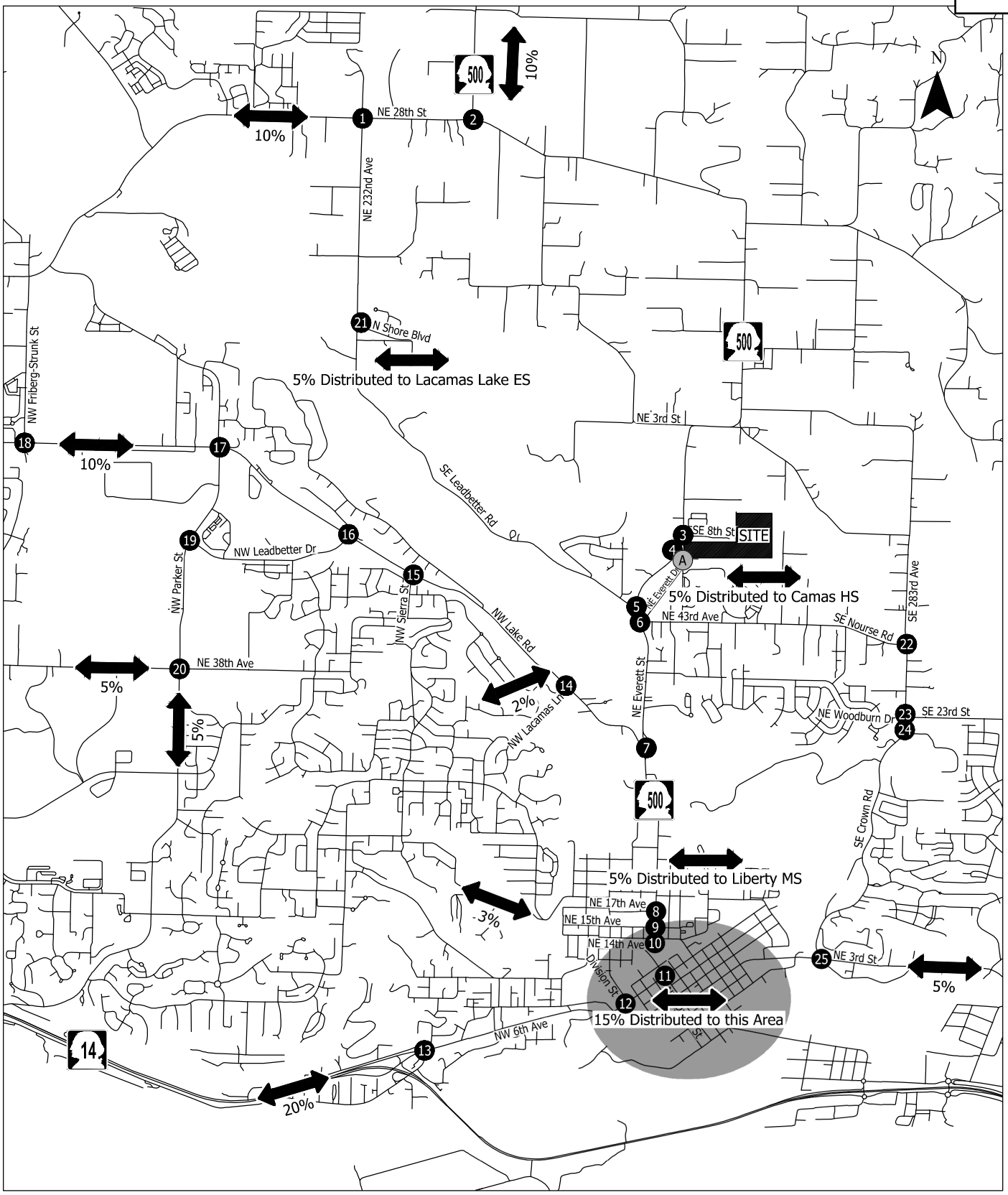
SITE TRIP DISTRIBUTION & ASSIGNMENT

Proposed Development Plan - Site Trips

AM & PM Peak Hours

lancaster mobley

0% Build-Out



Estimated Residential Site Trip Distribution Pattern Camas, Washington

Figure 10

(#) Study Intersections

(A) Site Driveway

XX% Trip Distribution Percentage

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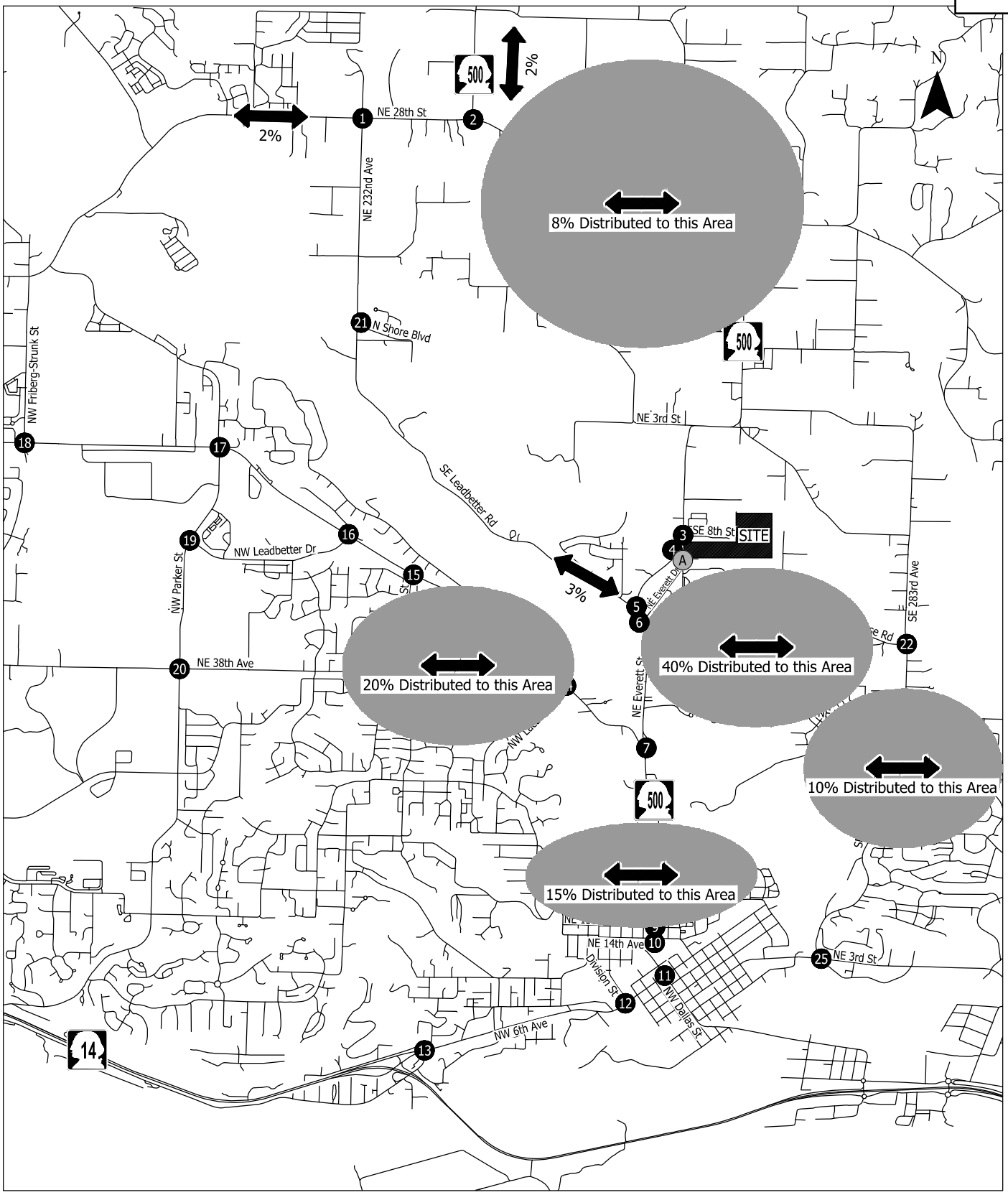
0% Build-Out



Estimated Commercial Site Trip Distribution Pattern Camas, Washington

Figure 11

- # Study Intersections
- A Site Driveway
- XX% Trip Distribution Percentage

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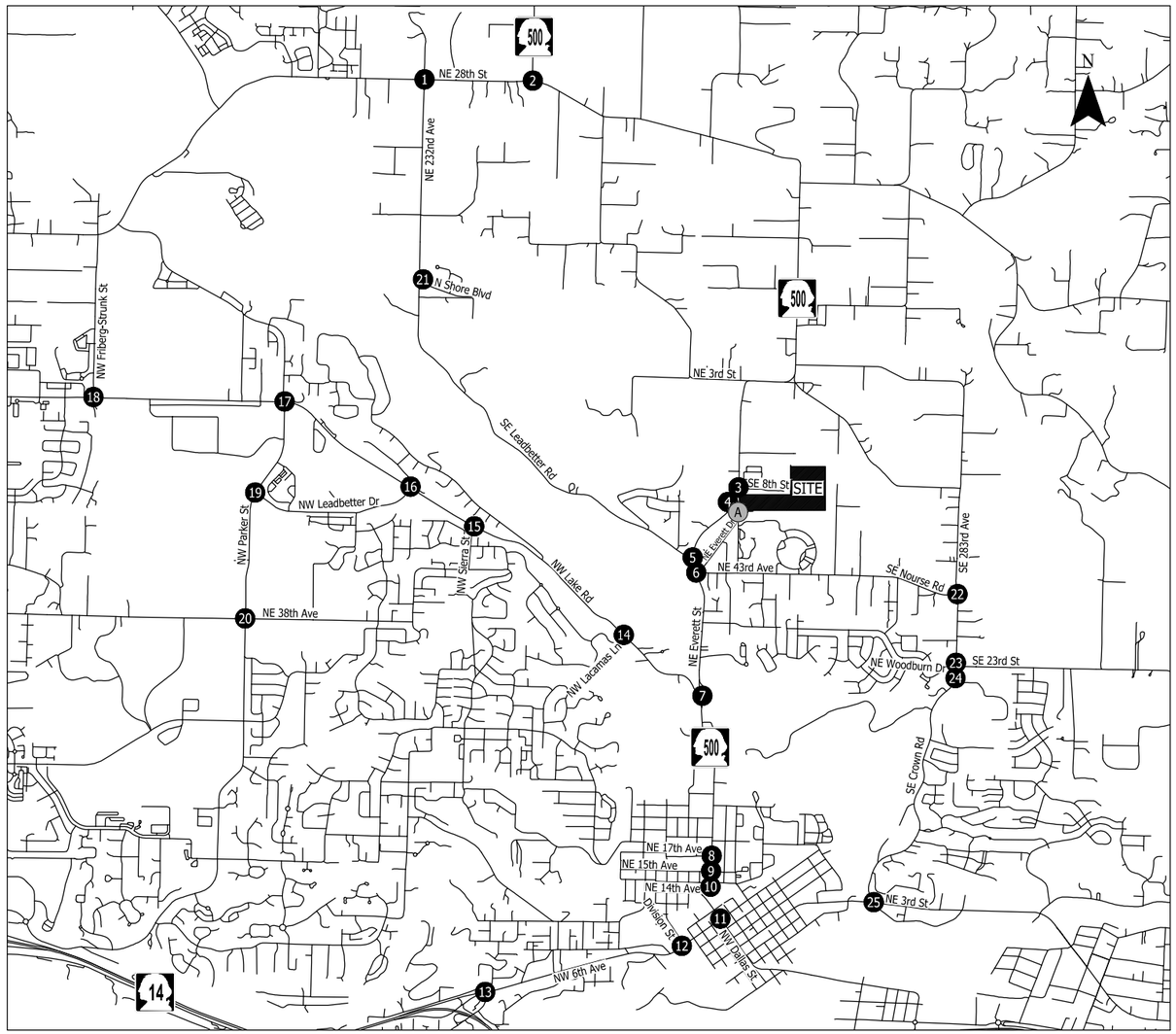

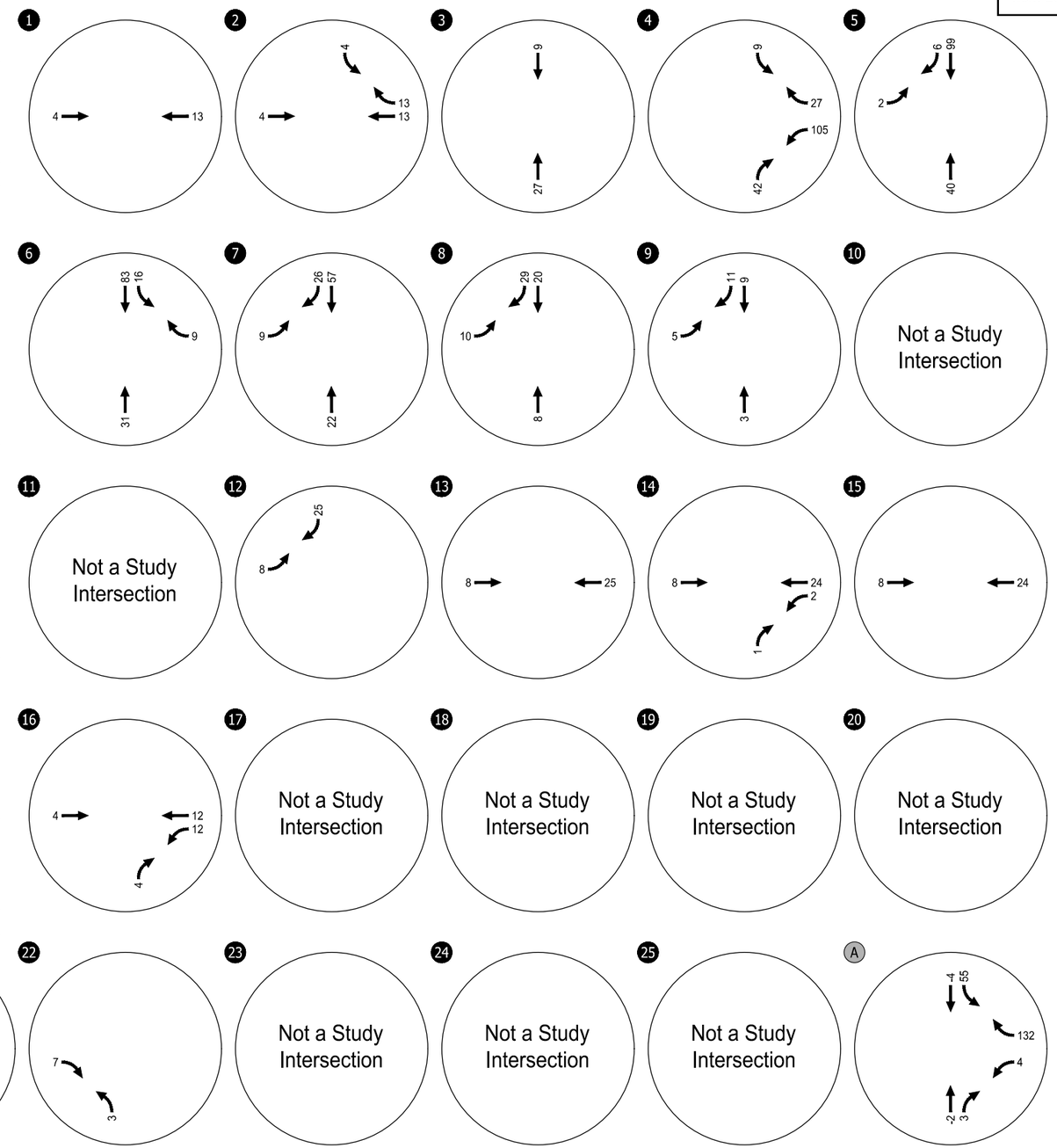

Note: Negative volumes reflect pass-by trips

Study Intersections

A Site Driveway

Weekday AM Peak Hour
Site-Generated Trip Assignment
Camas, Washington

Figure
12

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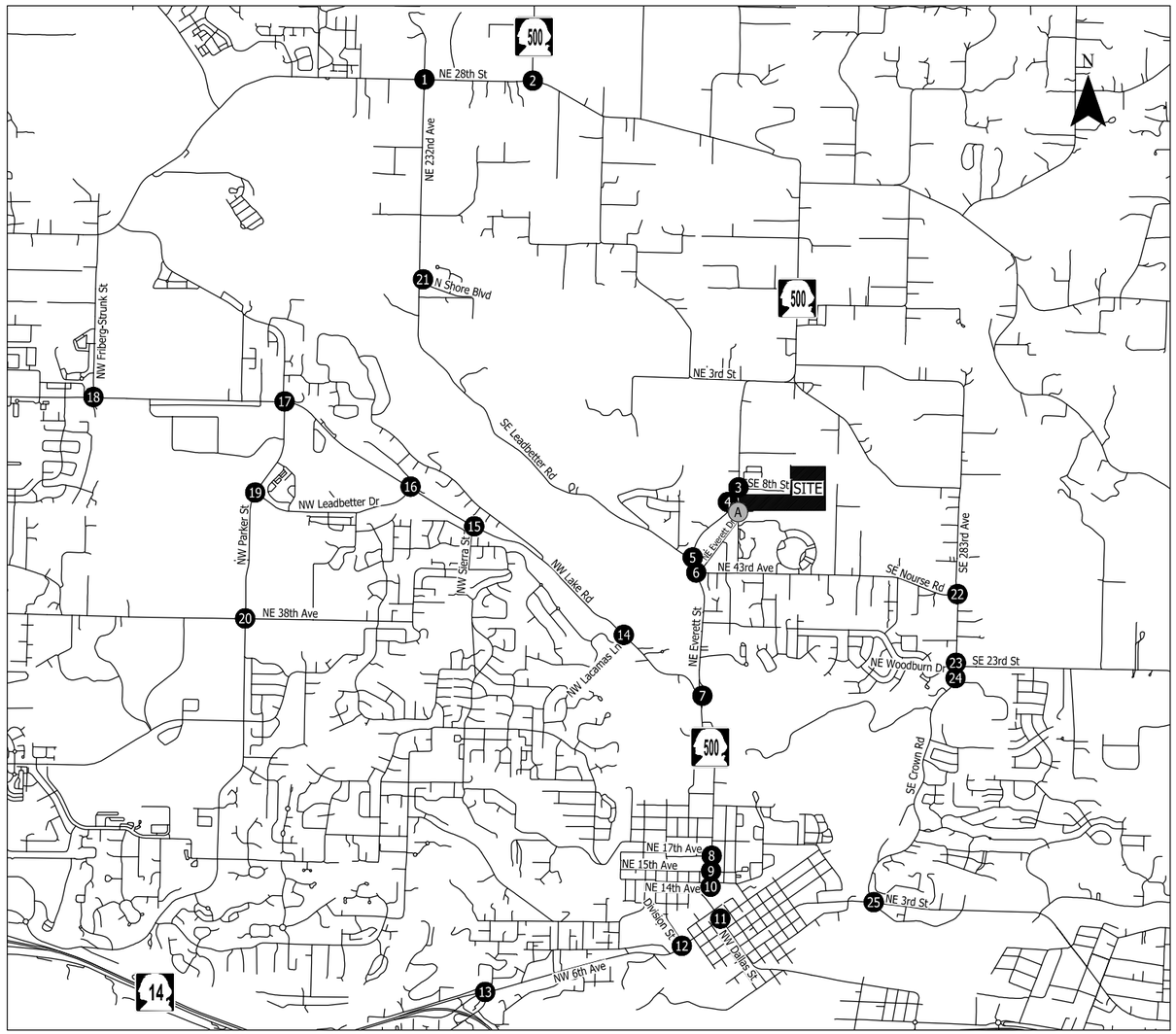
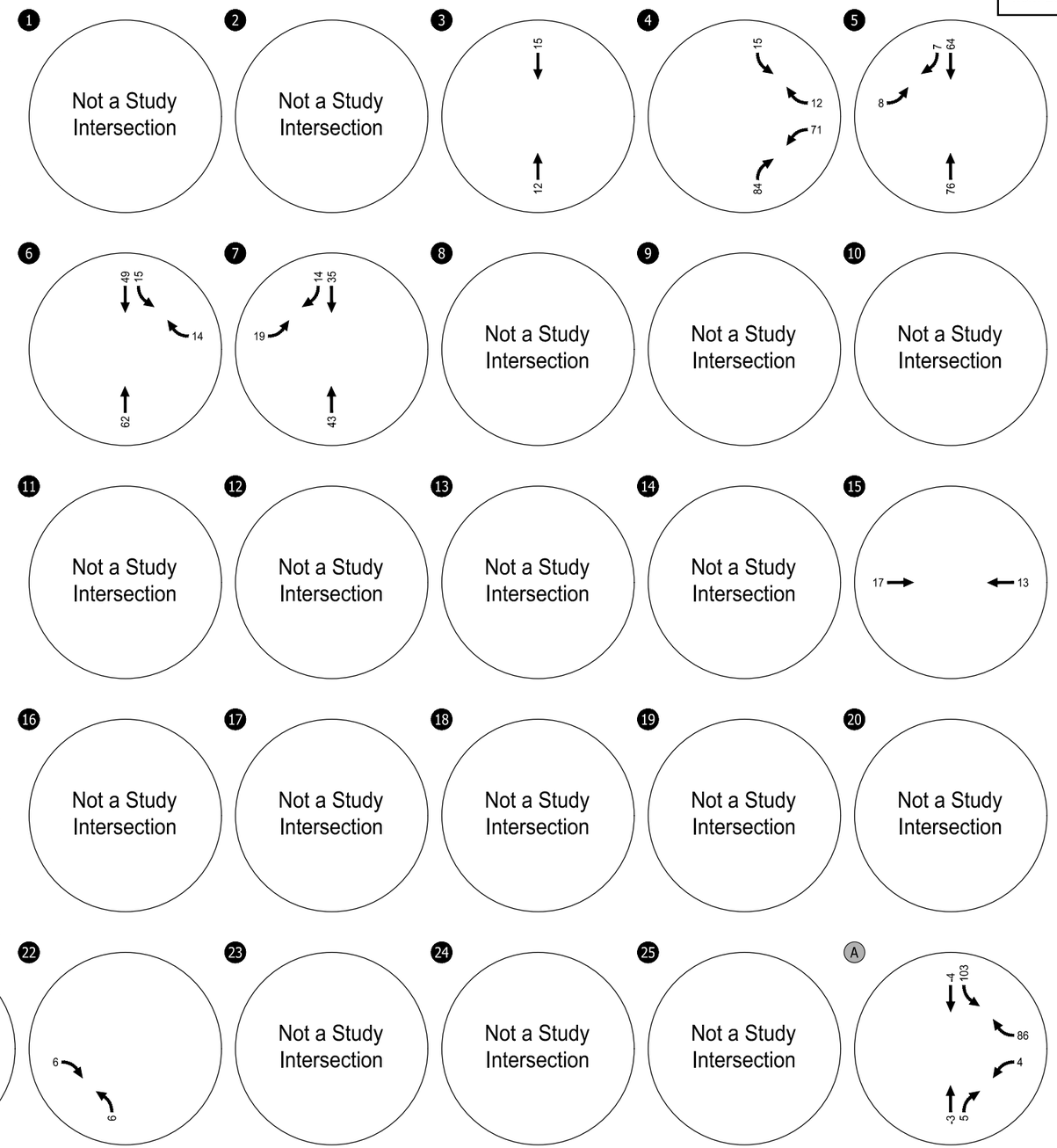
0% Build-Out





Note: Negative volumes reflact pass-by trips

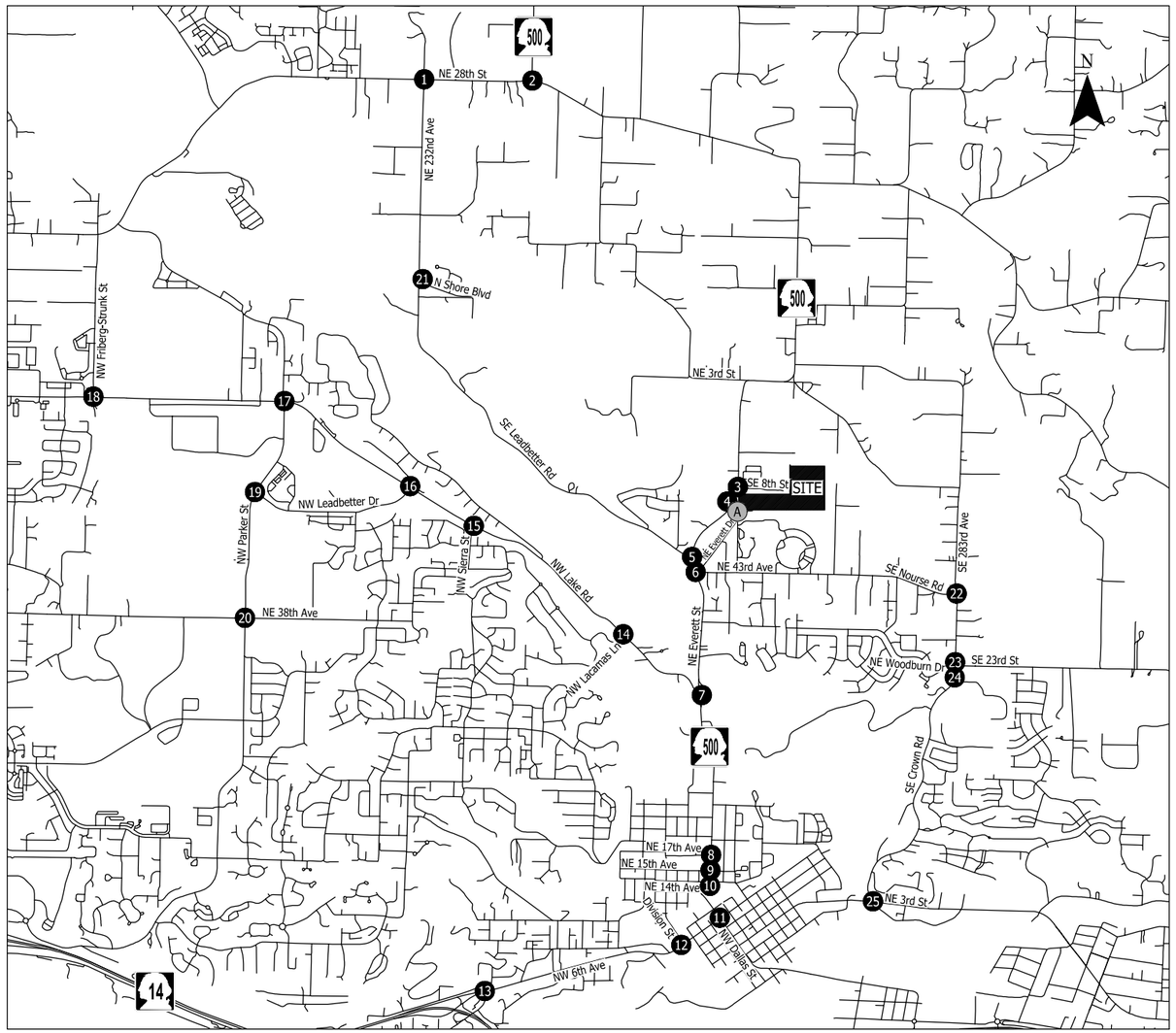
(#) Study Intersections

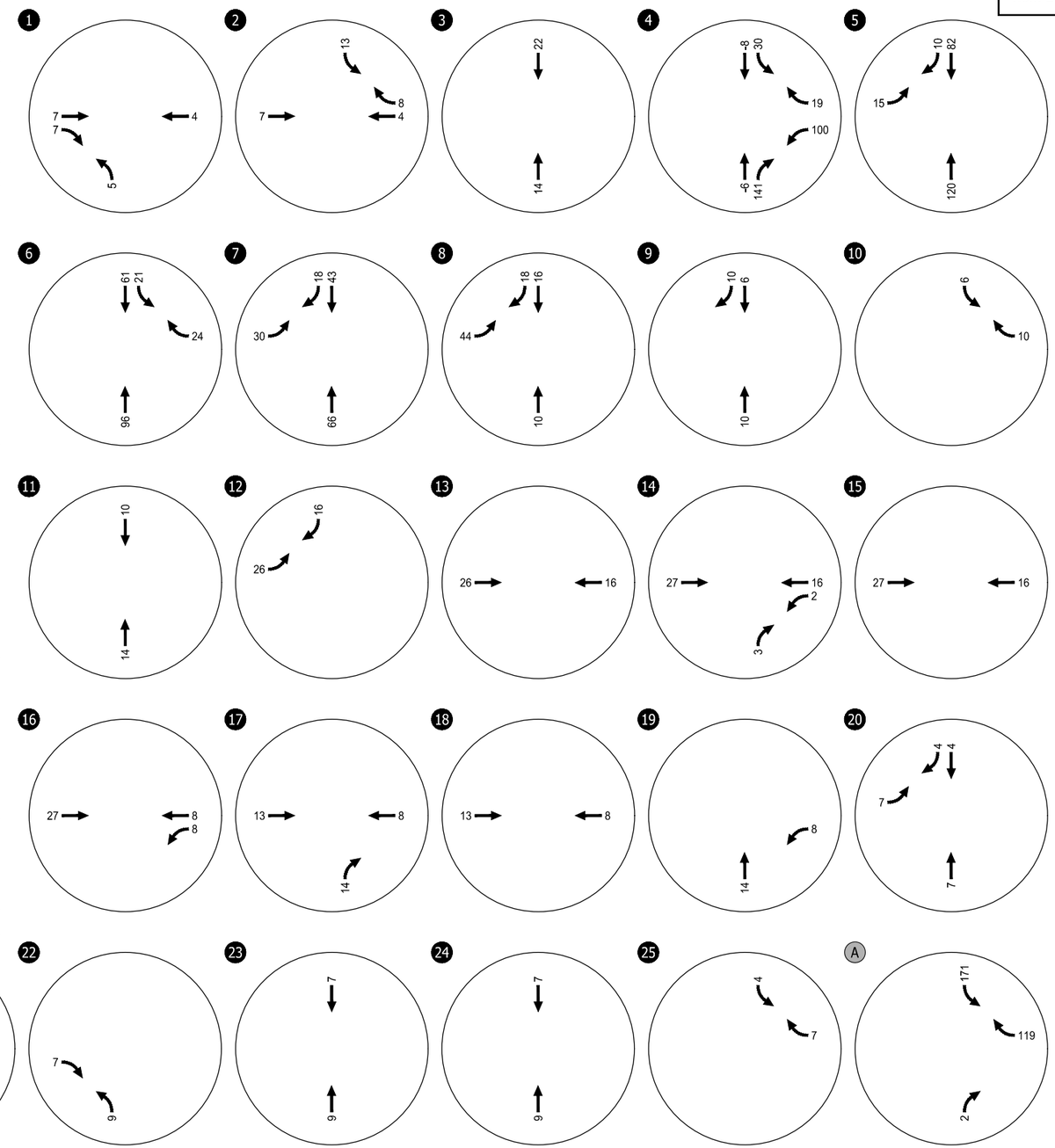
(A) Site Driveway

Weekday School PM Peak Hour
Site-Generated Trip Assignment
Camas, Washington

Figure
13

C:\Users\rdoubleday\appdata\local\temp\AcPublish_23824\30088_figureset.dwg Oct 10, 2024 - 3:30pm - rdoubleday Layout Tab: Fig13 School PM Trip Assignment





Note: Negative volumes reflact pass-by trips

(#) Study Intersections

(A) Site Driveway

Weekday PM Peak Hour
Site-Generated Trip Assignment
Camas, Washington

Figure
14

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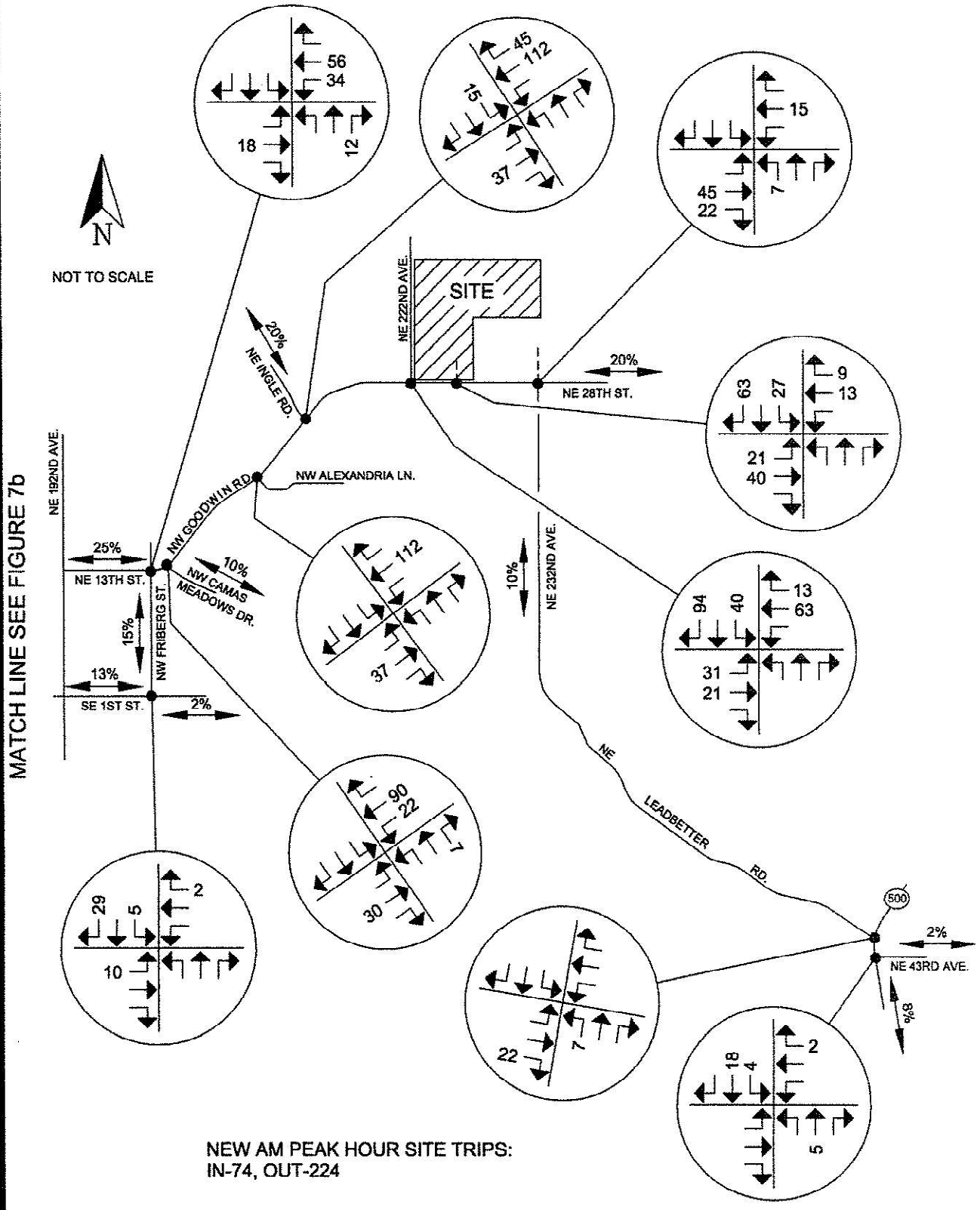


FIGURE 7a
SITE TRAFFIC DISTRIBUTION/ ASSIGNMENT, AM PEAK HOUR

KELLY ENGINEERING
316 E. Fourth Plain, A-2, Vancouver, WA 98663
Phone: 360-433-7530

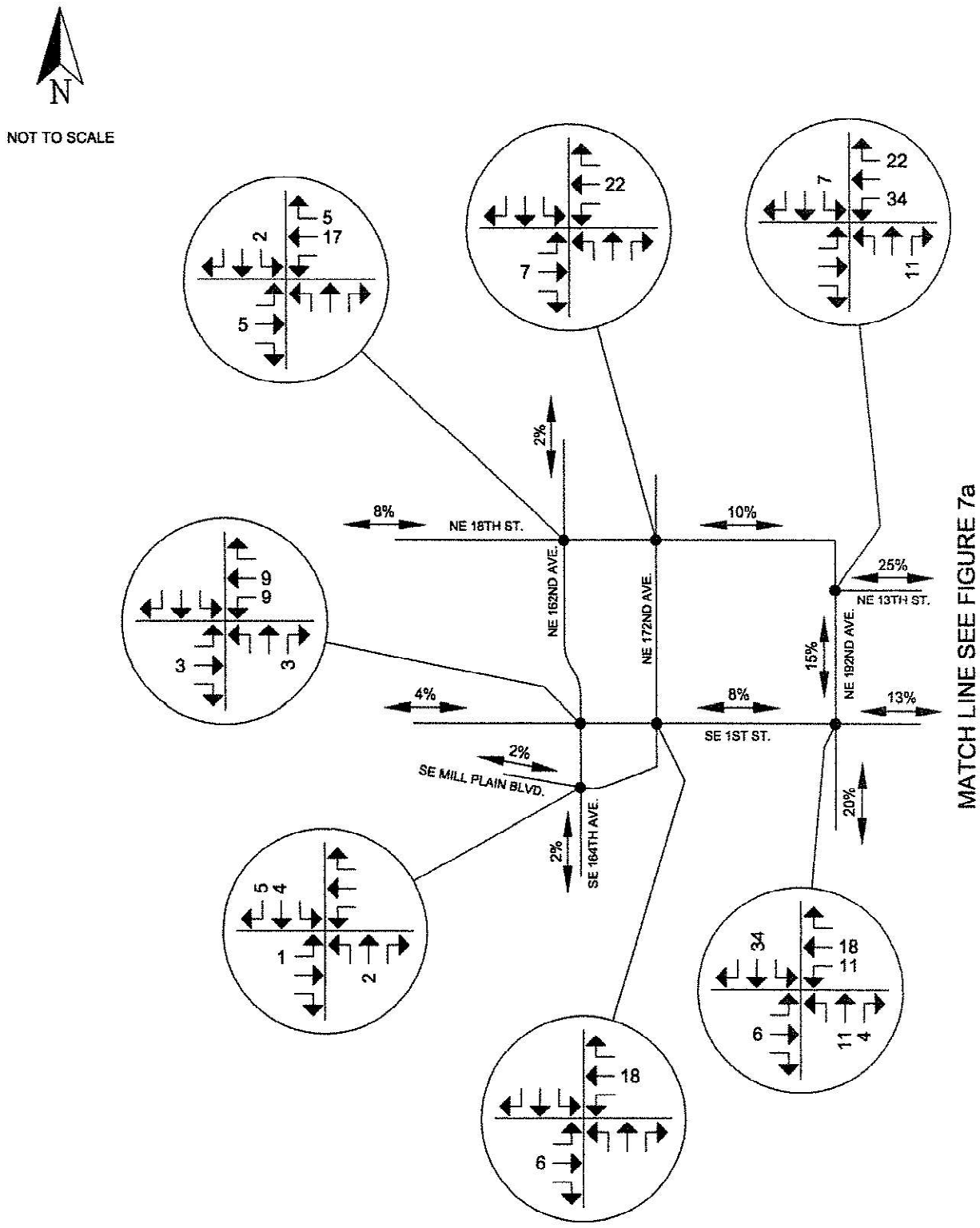


FIGURE 7b
SITE TRAFFIC DISTRIBUTION/ ASSIGNMENT, AM PEAK HOUR

KELLY ENGINEERING
316 E. Fourth Plain, A-2, Vancouver, WA 98663
Phone: 360-433-7530

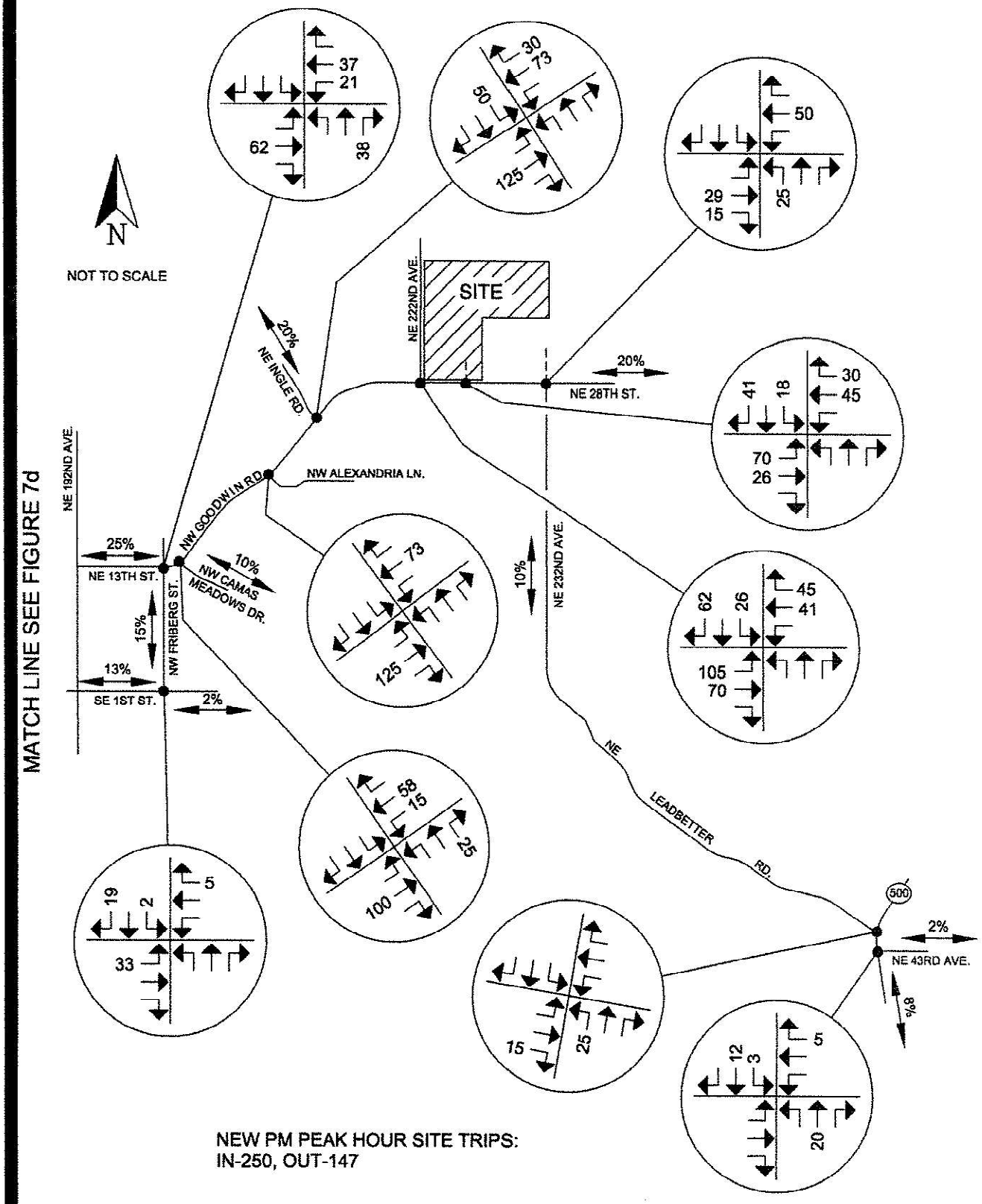


FIGURE 7c
SITE TRAFFIC DISTRIBUTION/ ASSIGNMENT, PM PEAK HOUR

KELLY ENGINEERING
316 E. Fourth Plain, A-2, Vancouver, WA 98663
Phone: 360-433-7530

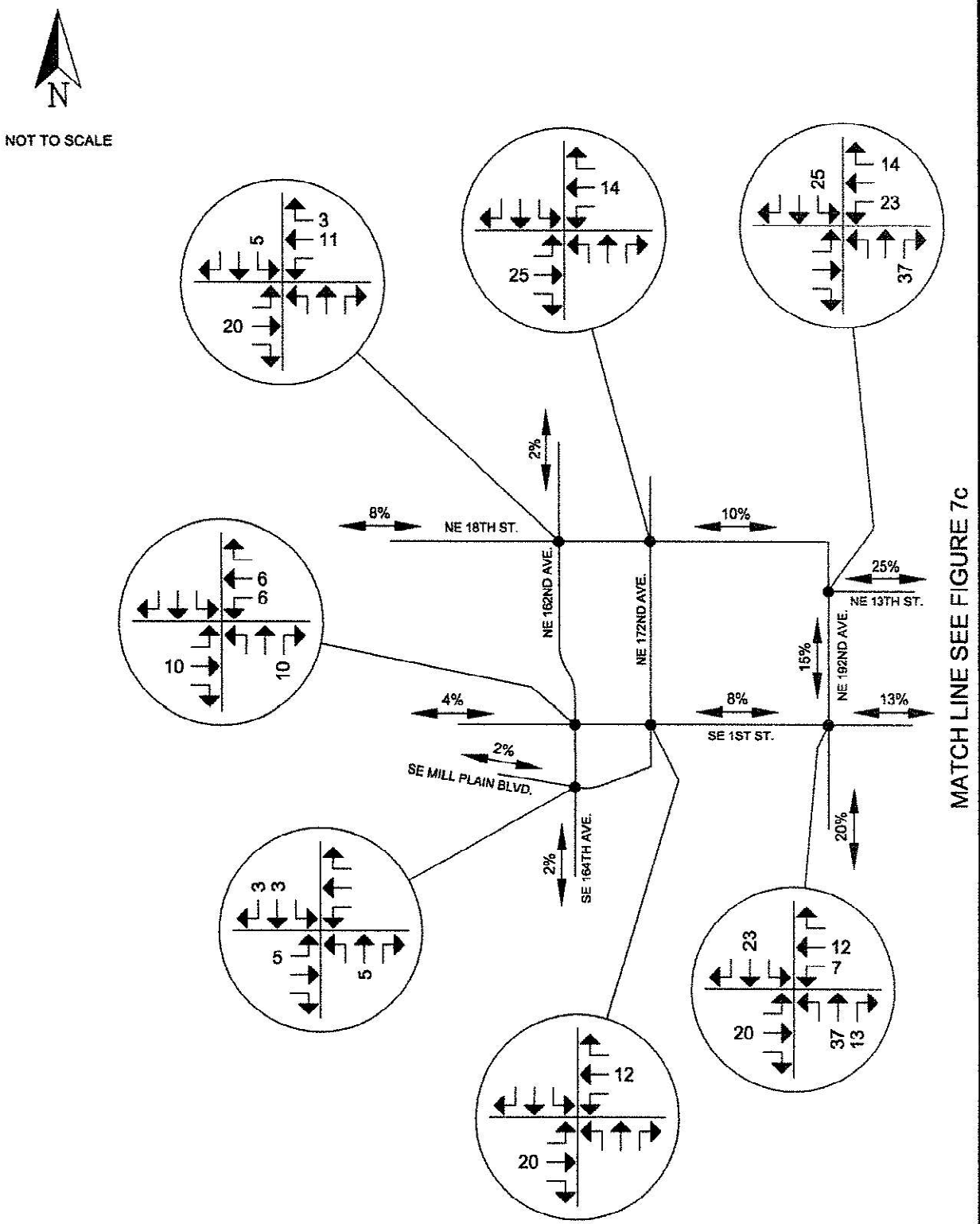
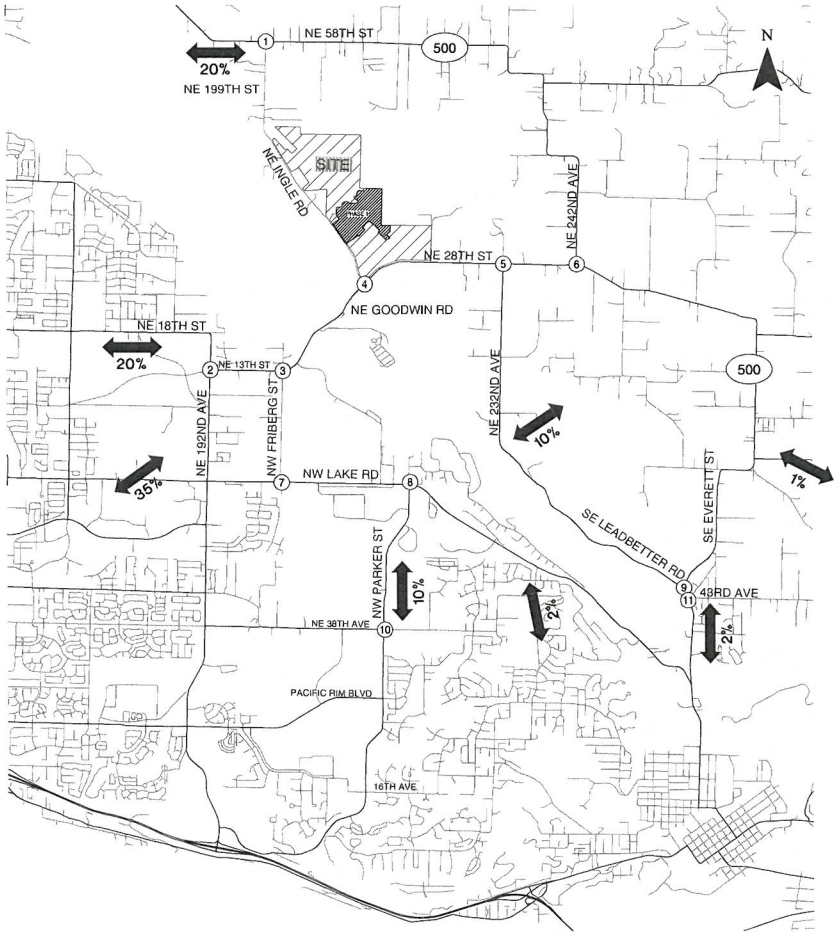


FIGURE 7d
SITE TRAFFIC DISTRIBUTION/ ASSIGNMENT, PM PEAK HOUR

KELLY ENGINEERING
316 E. Fourth Plain, A-2, Vancouver, WA 98663
Phone: 360-433-7530

RESIDENTIAL DISTRIBUTION:



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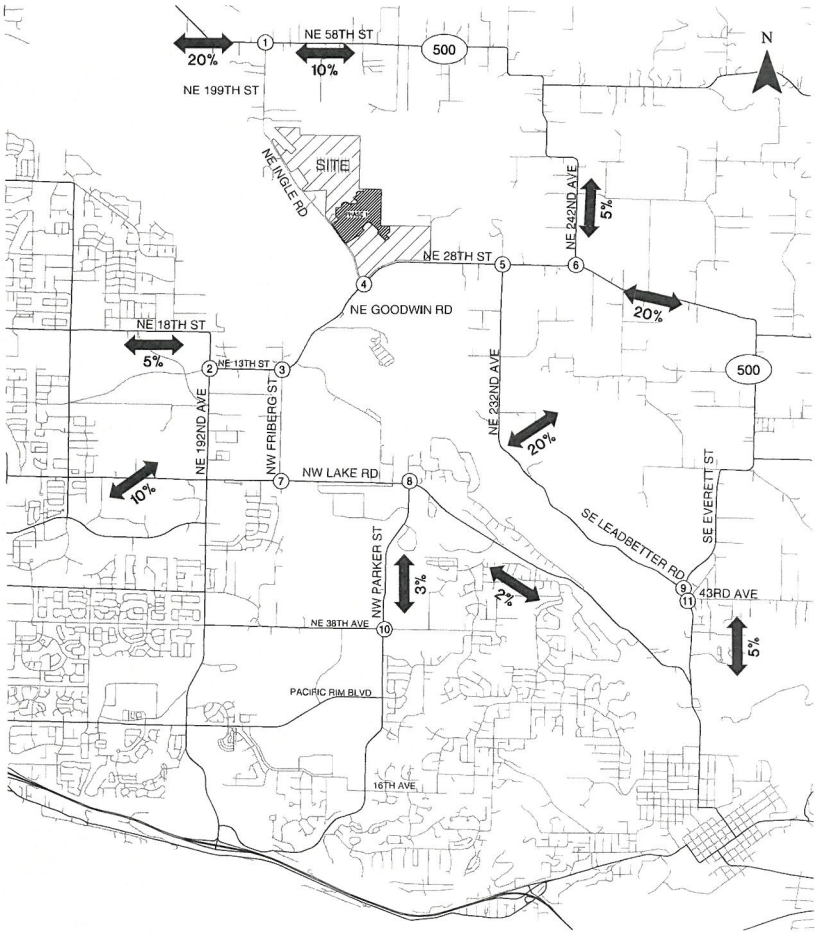
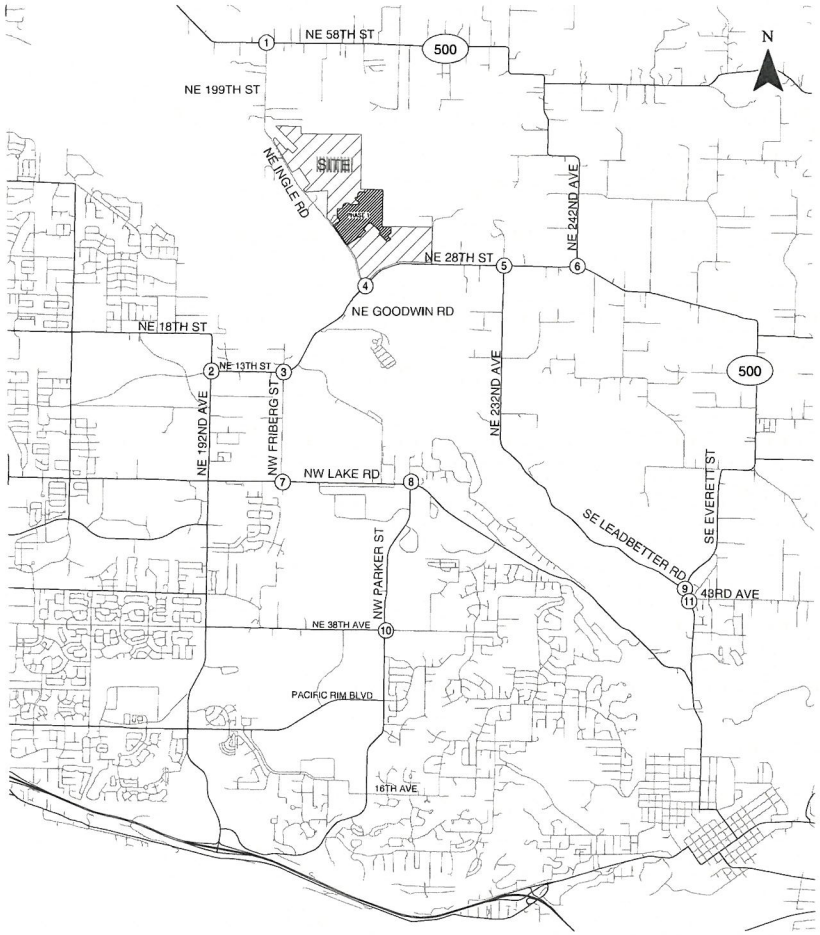


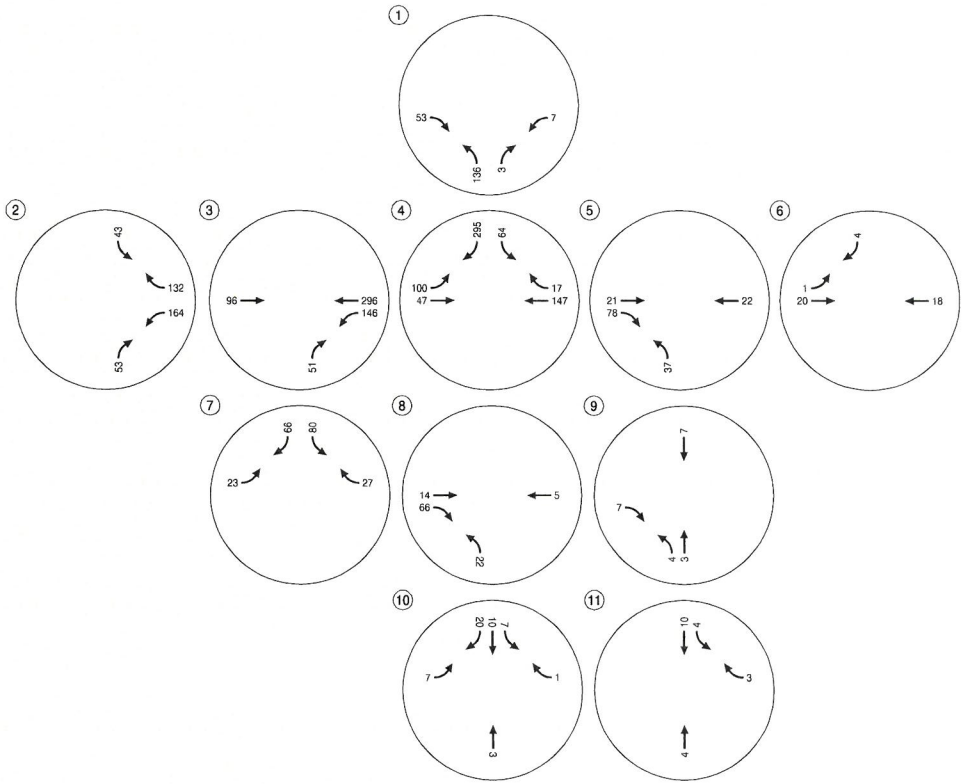
Estimated Trip Distribution Pattern
Camas, Washington

Figure 6

H:\proj\file\13865 - Green Mountain Master Plan\dwg\all\gpt13865_traffic study -Nov update.dwg Nov 20, 2014 - 2:27pm - kkustsen Layout Tab: 6_Dist

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING, PLANNING

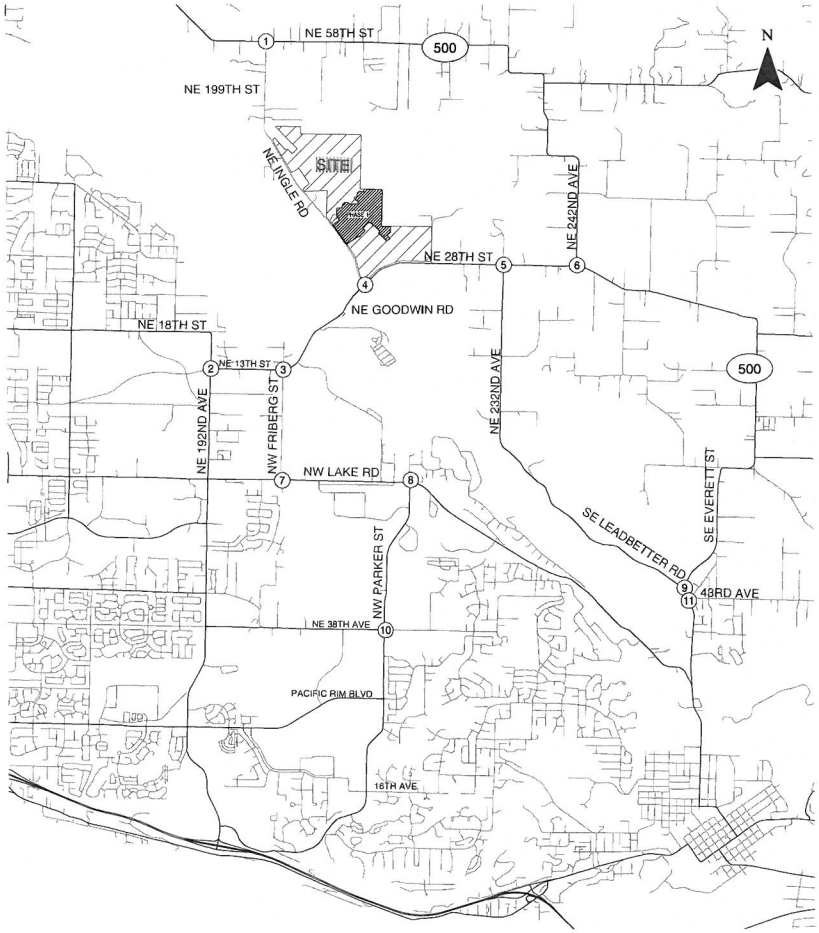


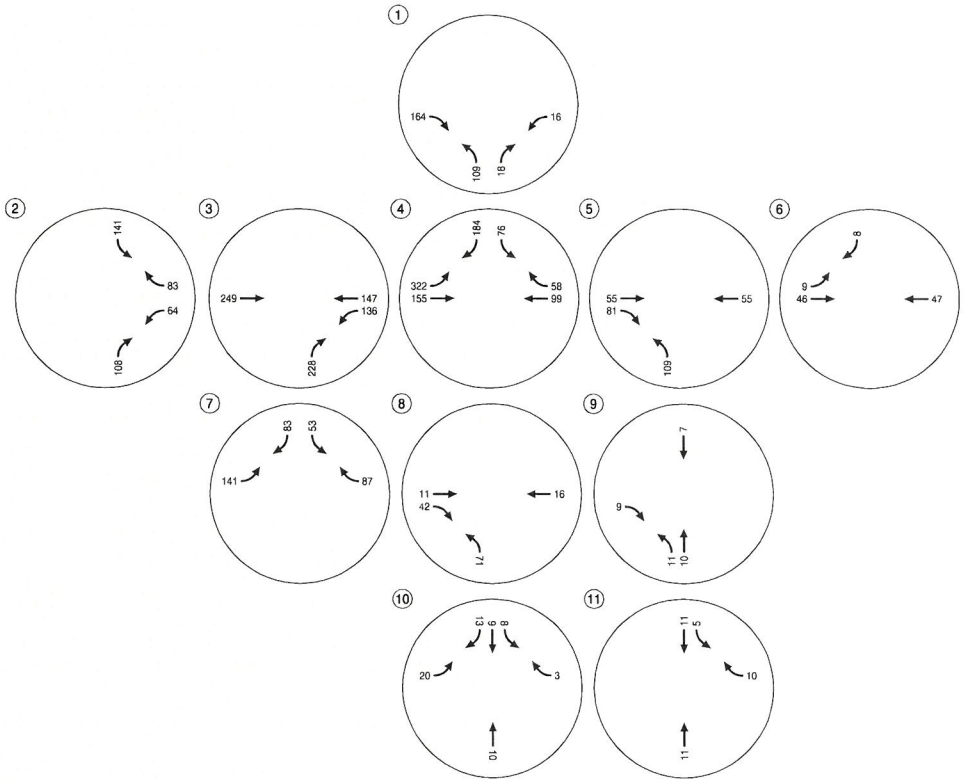


Total Estimated Trip Assignment - Full Build-Out
Weekday AM Peak Hour
Camas, Washington

Figure 9

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING, PLANNING





Total Estimated Trip Assignment - Full Build-Out
Weekday PM Peak Hour
Camas, Washington

Figure 10

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING, PLANNING

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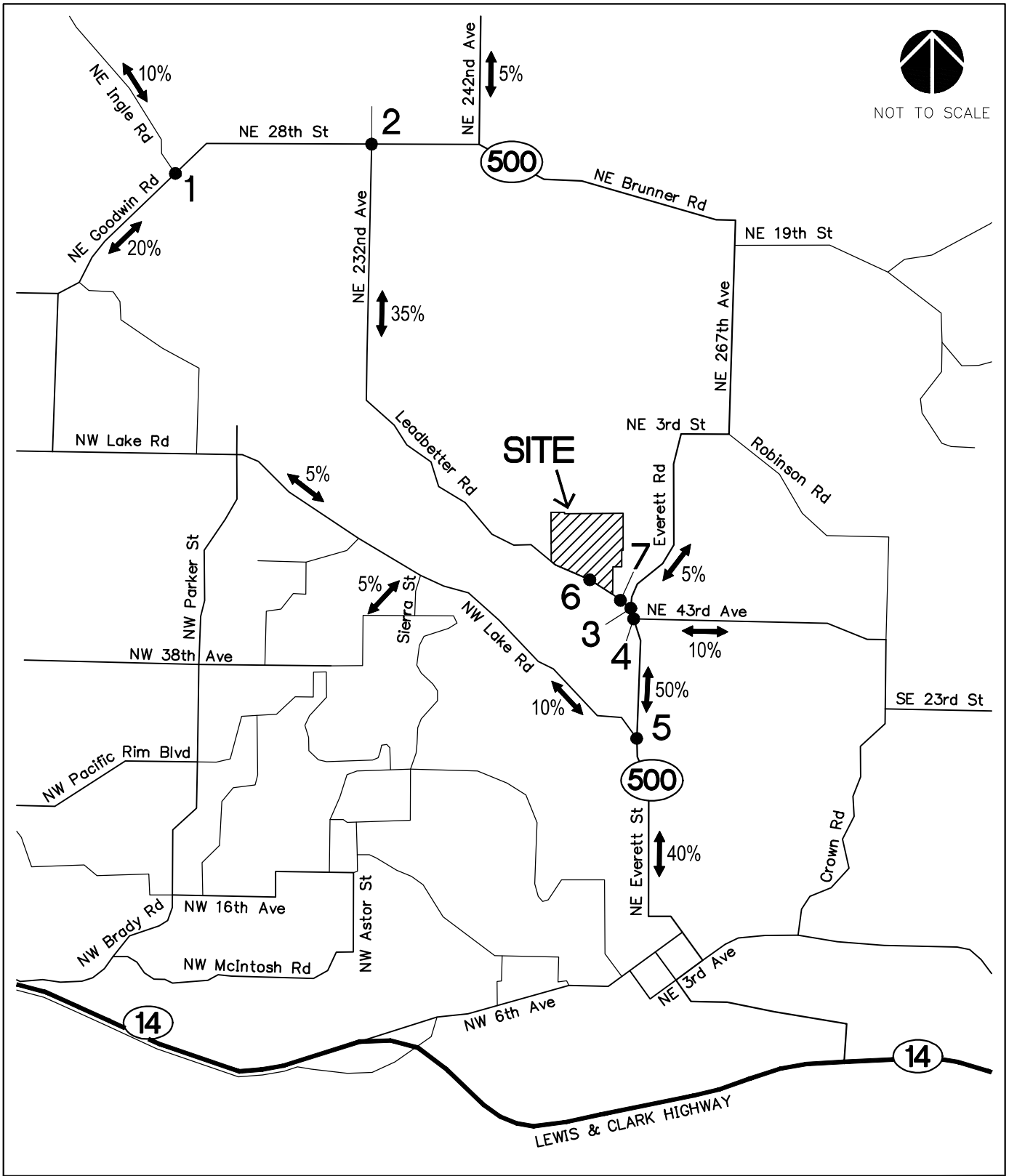

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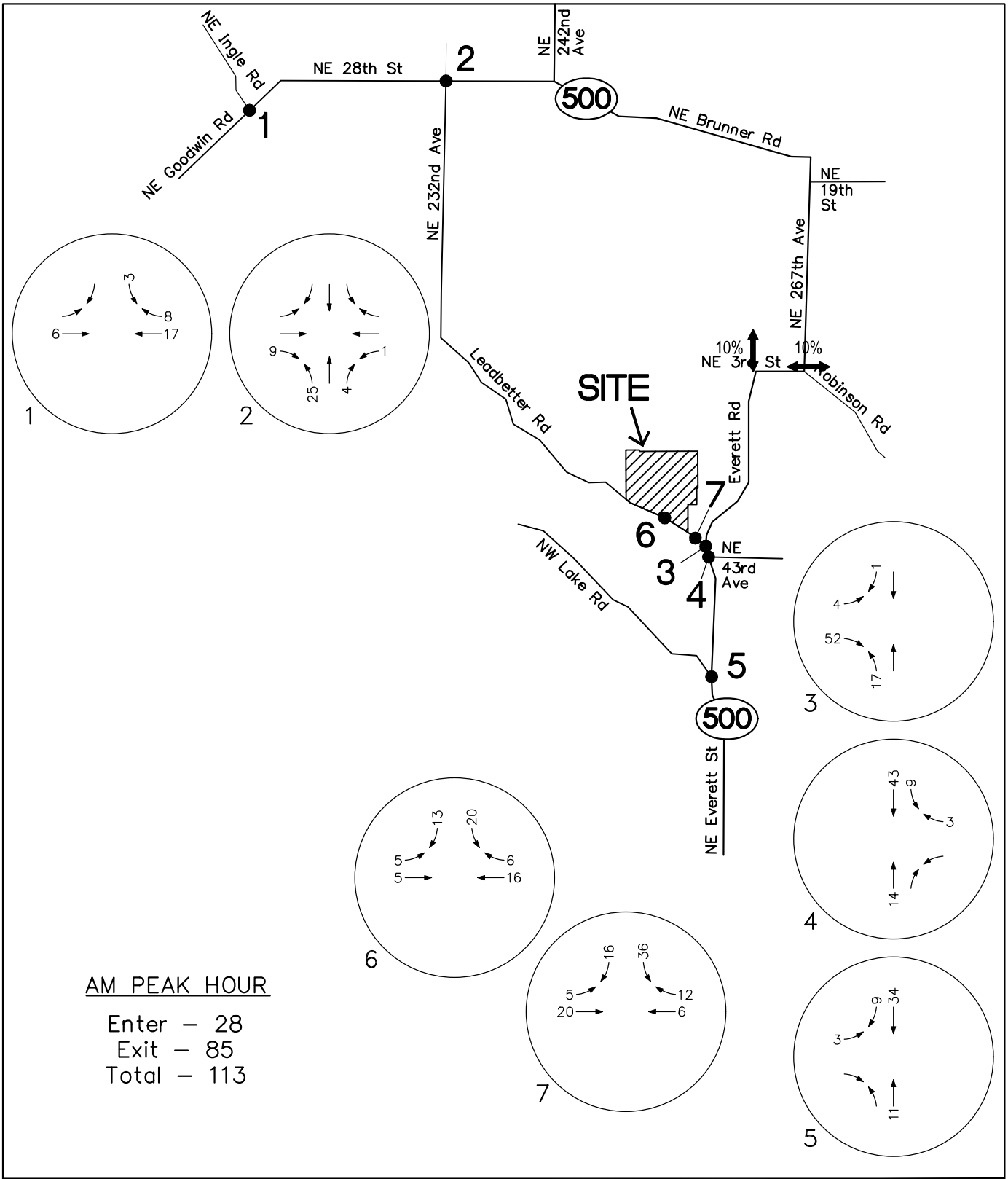
JOB NO: 220038900

TRIP DISTRIBUTION

CJ DENS EAST SUBDIVISION
CAMAS, WASHINGTON

FIGURE 1



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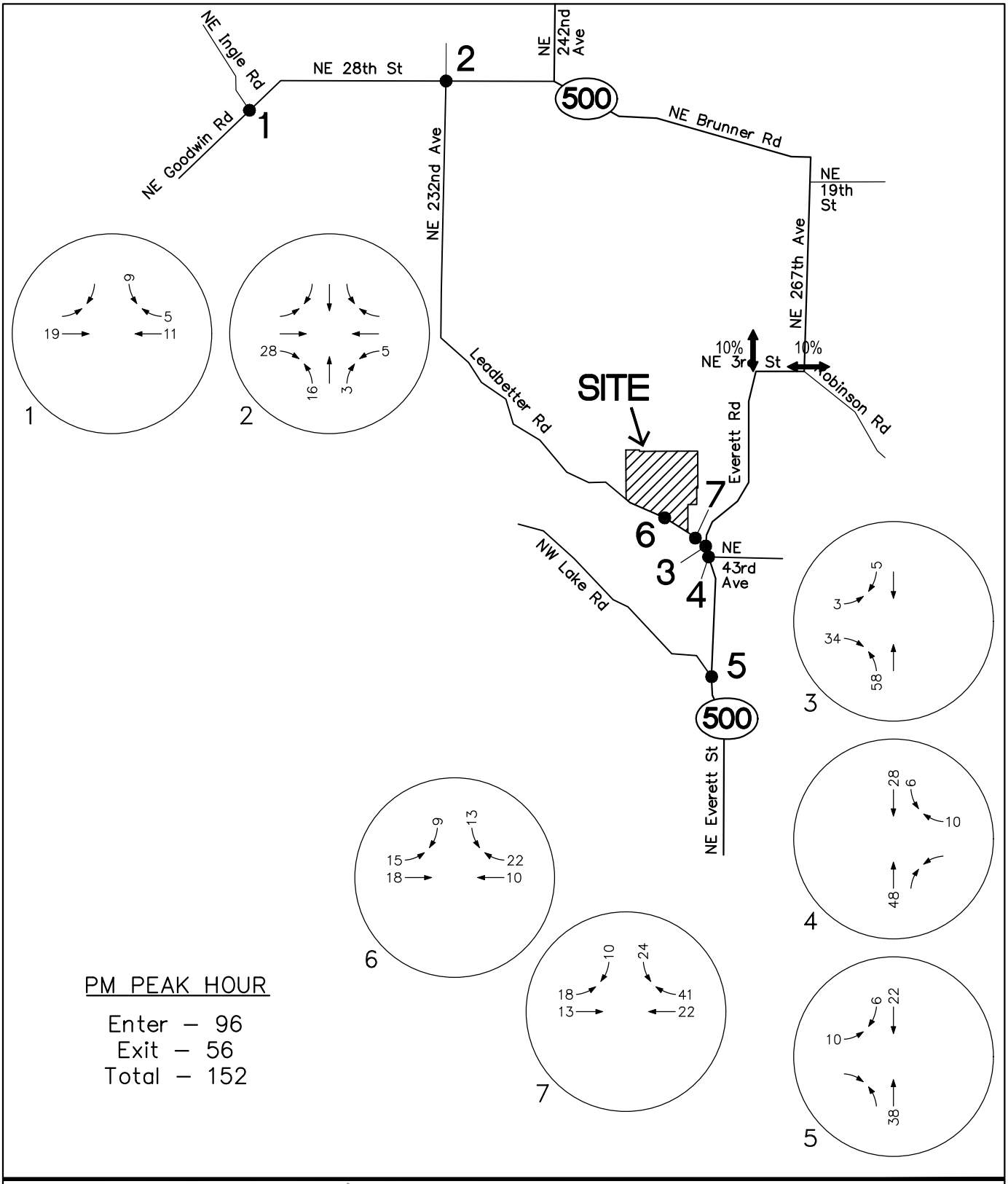
PROJECT TRIP ASSIGNMENT
AM PEAK HOUR

CJ DENS EAST SUBDIVISION
CAMAS, WASHINGTON

FIGURE
2A



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PROJECT TRIP ASSIGNMENT
PM PEAK HOUR

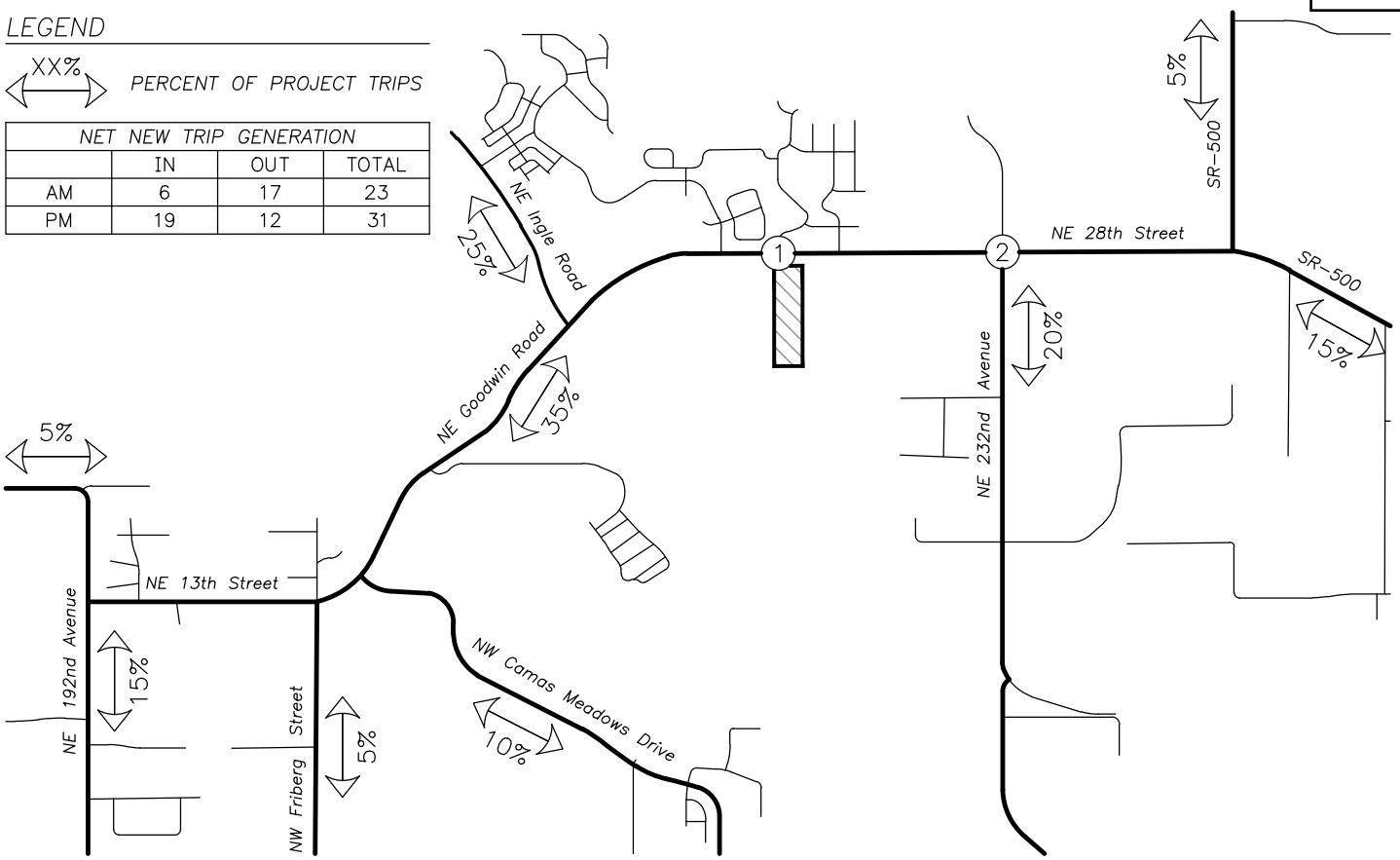
CJ DENS EAST SUBDIVISION
CAMAS, WASHINGTON

FIGURE
2B

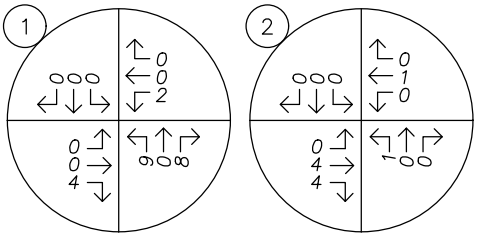
LEGEND

XX% PERCENT OF PROJECT TRIPS

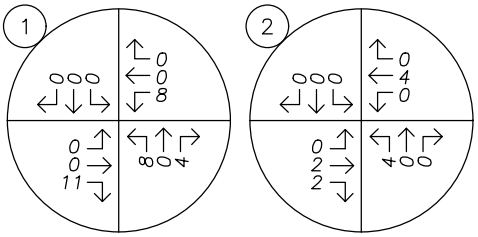
NET NEW TRIP GENERATION			
	IN	OUT	TOTAL
AM	6	17	23
PM	19	12	31



AM PEAK HOUR



PM PEAK HOUR



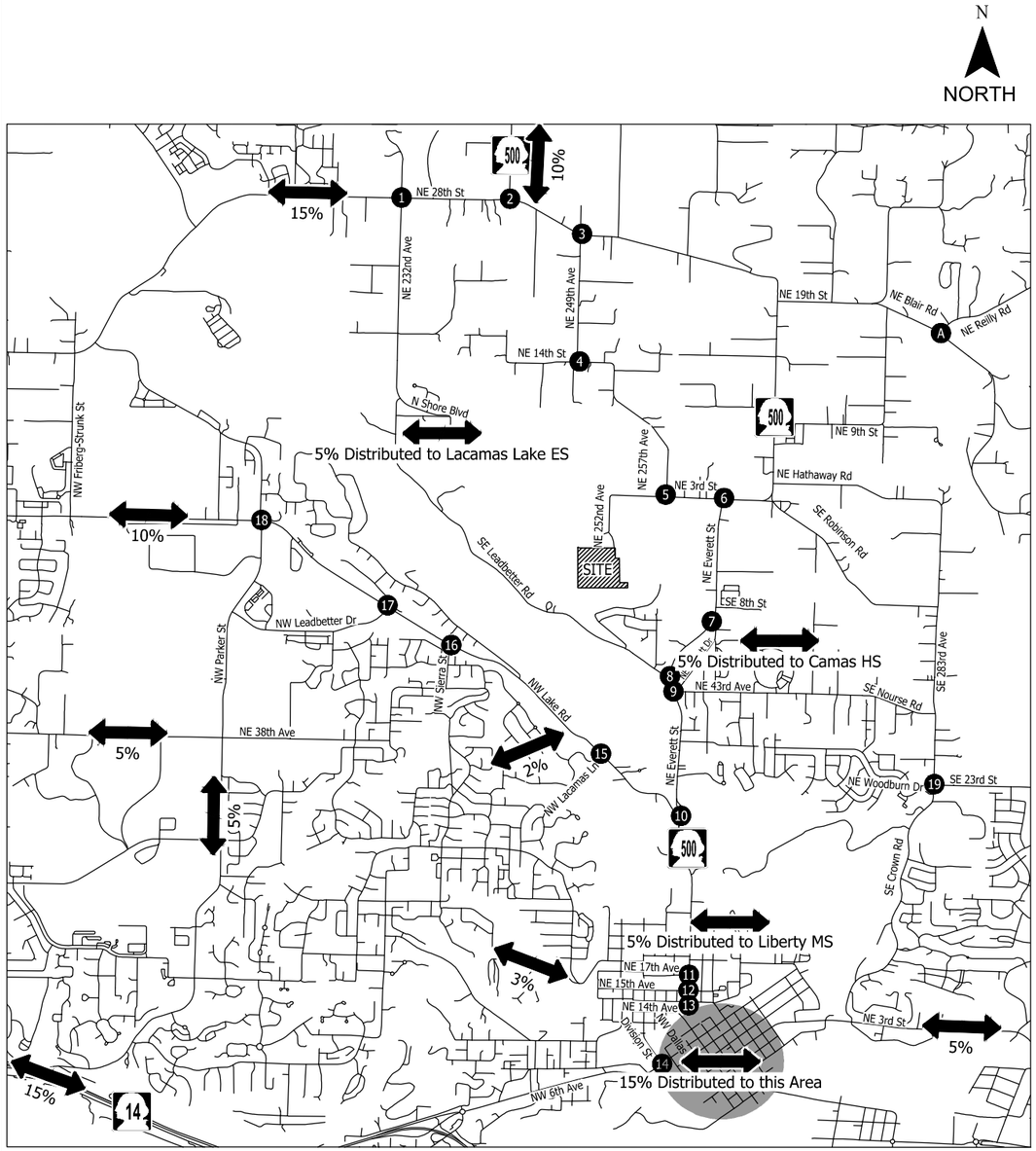
no scale

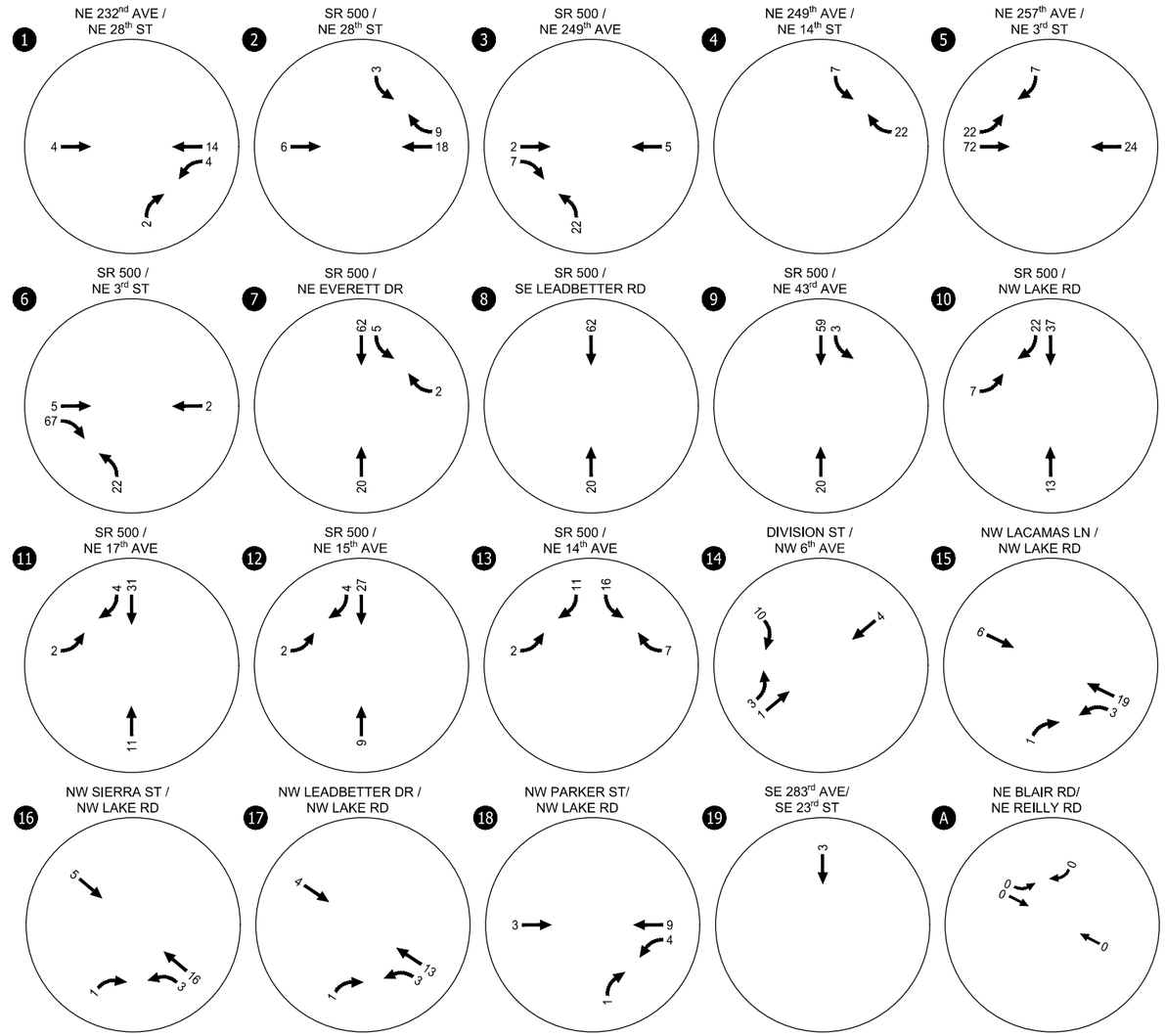
lancaster mobley

SITE TRIP DISTRIBUTION & ASSIGNMENT

Proposed Development Plan - Site Trips
AM & PM Peak Hours

Figure 3



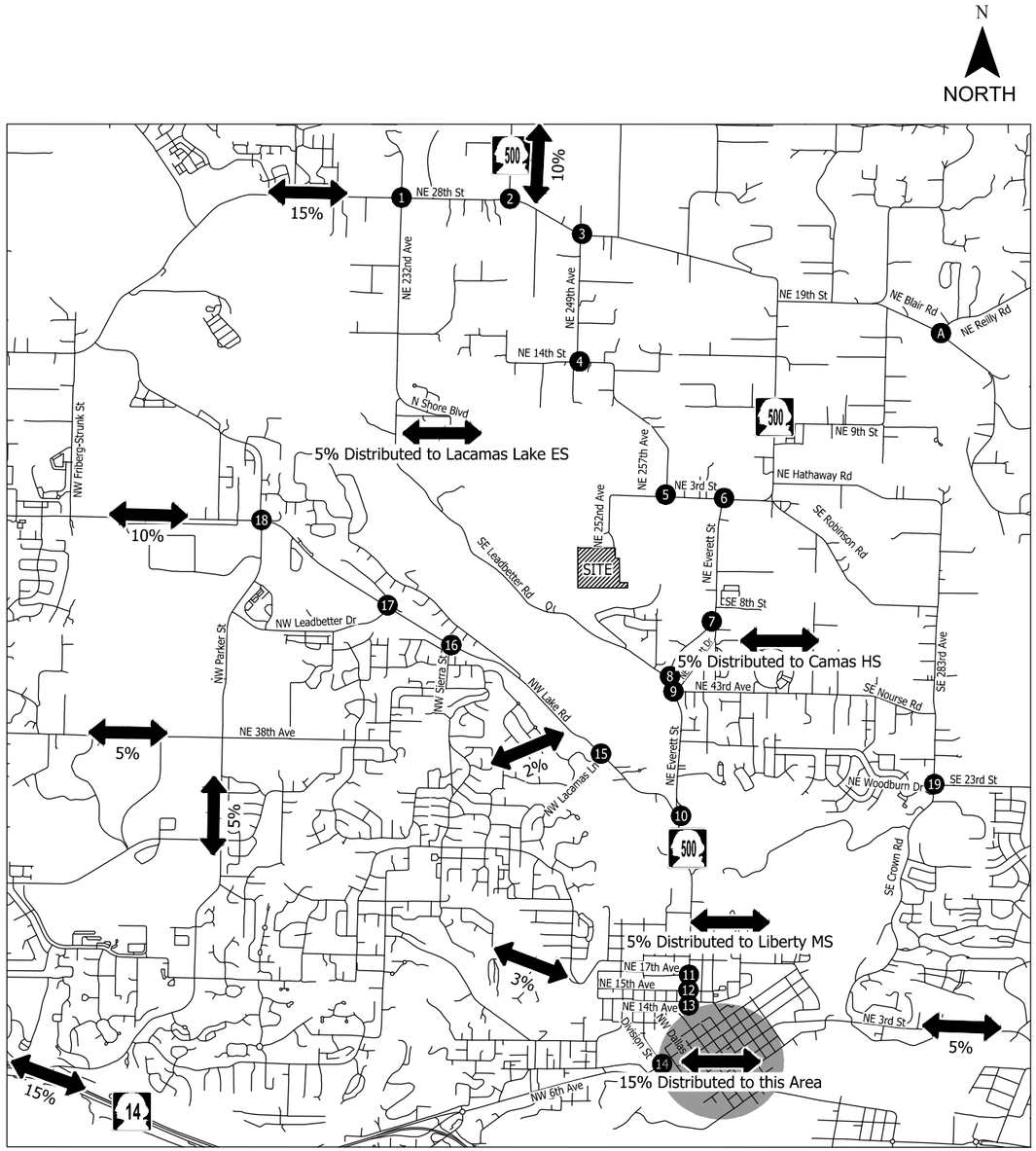


- SITE
- STUDY INTERSECTION
- -TRIP DISTRIBUTION (XX)

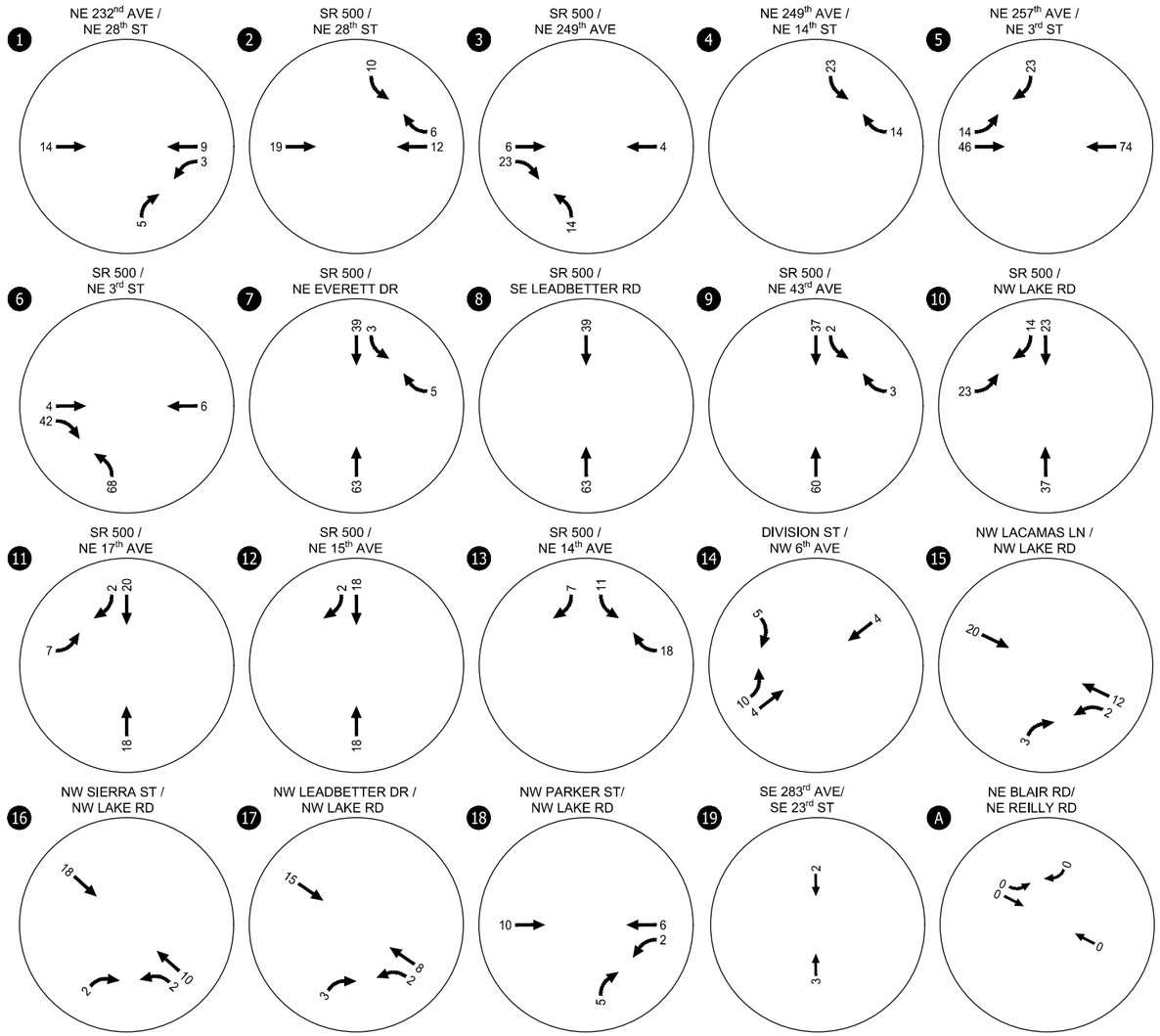
Site Generated Trip Assignment
Weekday AM Peak Hour
Camas, Washington

Figure 8

H:\31\31552 - Village at North Shore\report\figs\31552_Figures.dwg Jun 24, 2025 - 4:09pm - sbanerjee Layout Tab: Fig8 Site Trip Ass AM



KEY MAP

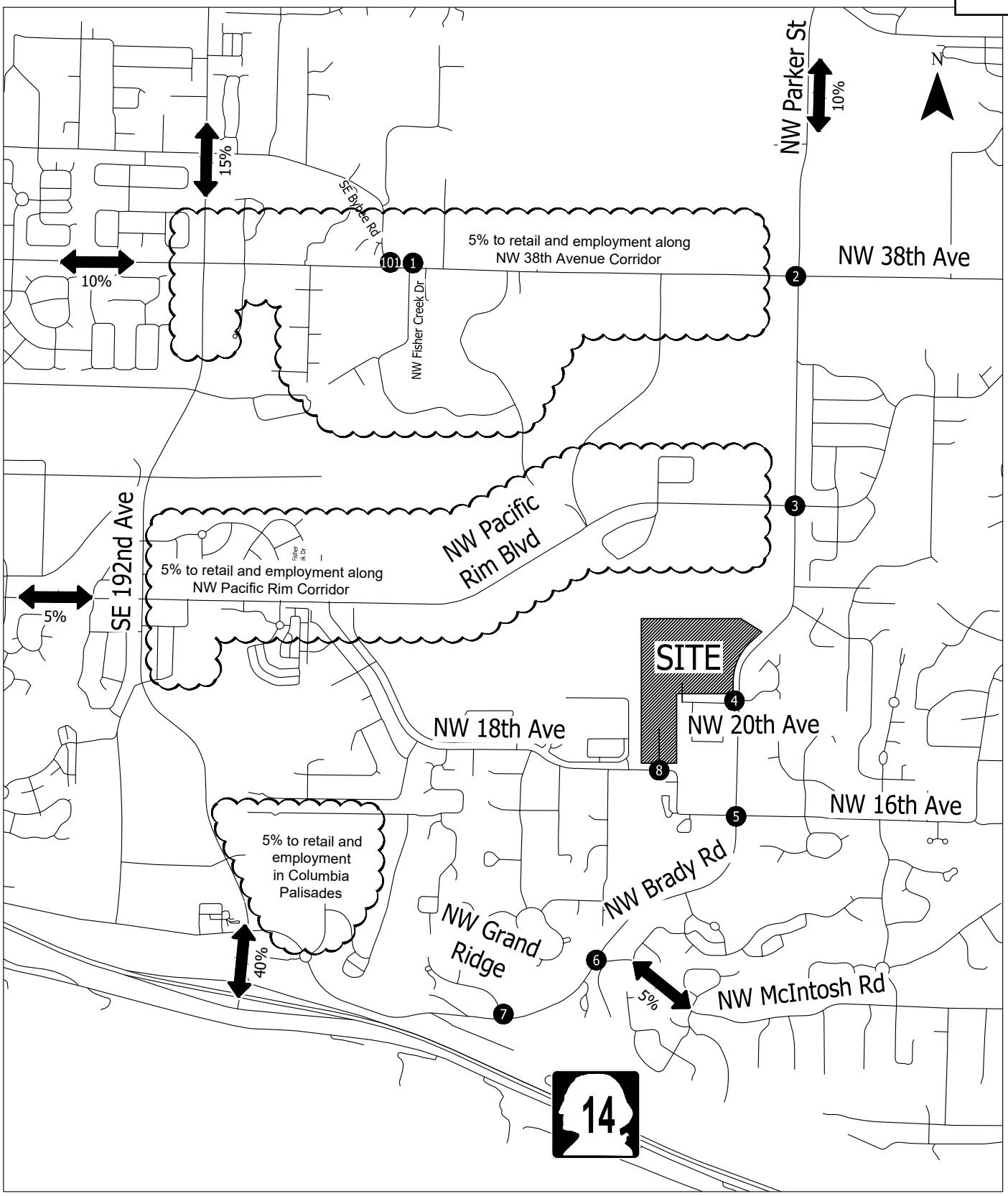


- SITE
- STUDY INTERSECTION
- TRIP DISTRIBUTION (XX%)

Site Generated Trip Assignment
Weekday PM Peak Hour
Camas, Washington

Figure 9

H:\31\31552 - Village at North Shore\report\figs\31552_Figures.dwg Jun 24, 2025 - 4:09pm - sbanerjee Layout Tab: Fig9 Site Trip Ass PM



Study Intersections

XX% Trip Distribution Percentage

Estimated Trip Distribution Pattern
Camas, Washington

Figure
6

C:\Users\creynolds\appdata\local\temp\AcPublish_38380\31765_figureset.dwg Jul 03, 2025 - 11:51am - creynolds Layout Tab: Fig6 Trip Distribution

WEEKDAY AM PEAK HOUR

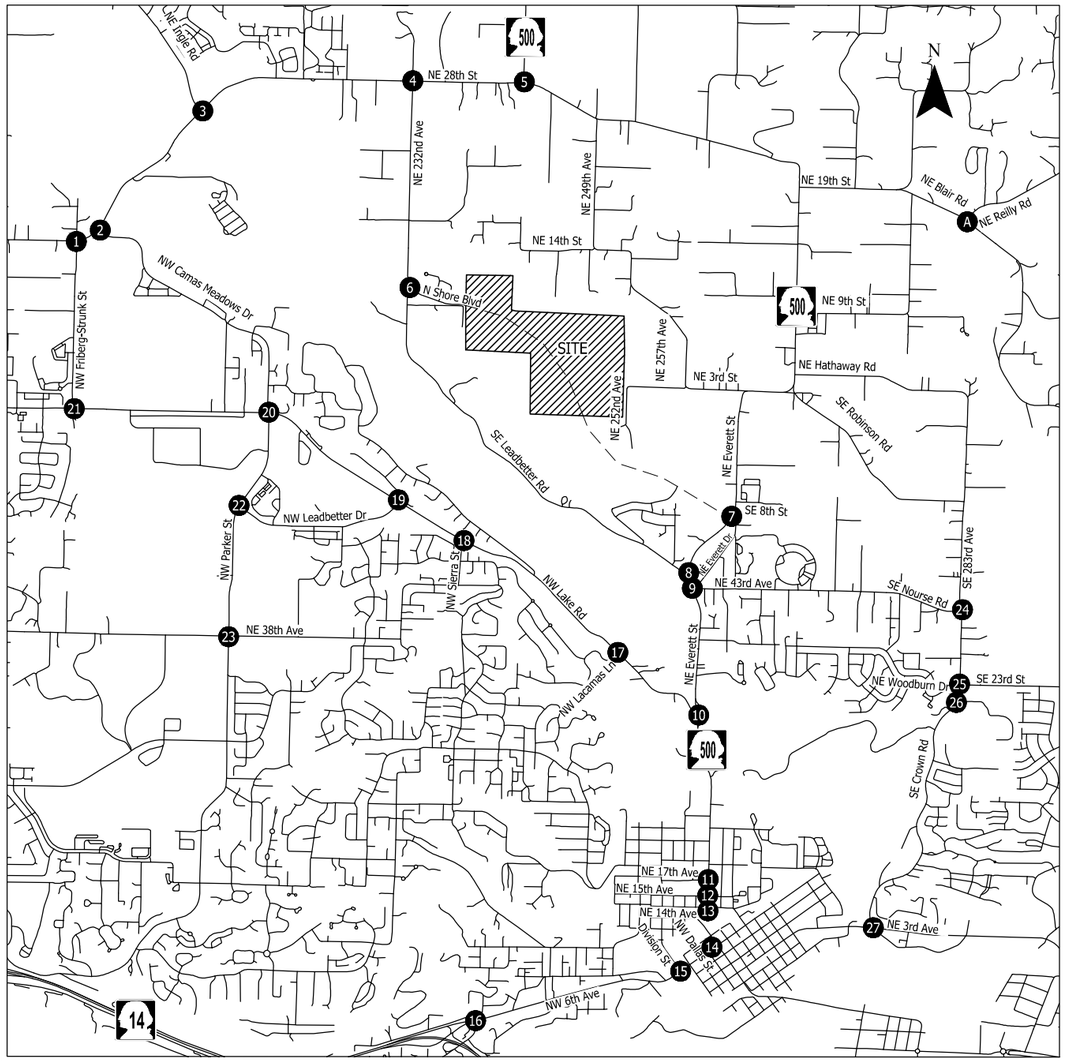
WEEKDAY PM PEAK HOUR

Site-Generated Trip Assignment
Weekday AM & PM Peak Hours
Camas, Washington

Figure
7

C:\Users\creynolds\appdata\local\temp\AcPublish_38380\31765_figureset.dwg Jul 03, 2025 - 11:51am - creynolds Layout Tab: Fig7 Site Trip Assignments

Appendix F : Year 2030 Background Traffic Conditions Analysis Worksheets

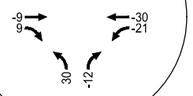


1 NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd

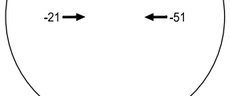
2 NE Camas Meadows Dr/ NE Goodwin Rd

3 NE Ingle Rd/ NE 28thSt-NE Goodwin Rd

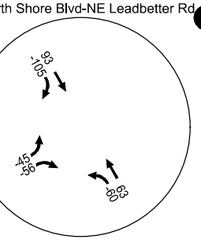
4 NE 232nd Ave/ NE 28th St



5 SR 500/ NE 28th St

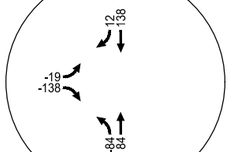


6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd



7 SR 500/ NE Everett Dr

8 SR 500/ SE Leadbetter Rd



9 SR 500/ NE 43rd Ave

10 SR 500/ NW Lake Rd

11 SR 500/ NE 17th Ave

12 SR 500/ NE 15th Ave

13 SR 500/ NE 14th Ave

14 NE Dallas St/ NW 6th Ave

15 Division St/ NW 6th Ave

16 NW 6th Ave/ NW Norwood St- SR 14 Ramps

17 NW Lacamas Ln/ NW Lake Rd

18 NW Sierra St/ NW Lake Rd

19 NW Leadbetter Dr/ NW Lake Rd

20 NW Parker St/ NW Lake Rd

21 NW Friberg-Strunk St/ NW Lake Rd-SE 1st St

22 NW Parker St/ NW Leadbetter Dr

23 NW Parker St/ NE 38th Avenue

24 SE 283rd Ave/ SE Nourse Rd

25 SE 283rd Ave/ SE 23rd St

26 SE 283rd Ave/ NE Woodburn Dr

27 SE Crown Rd/ NE 3rd Ave

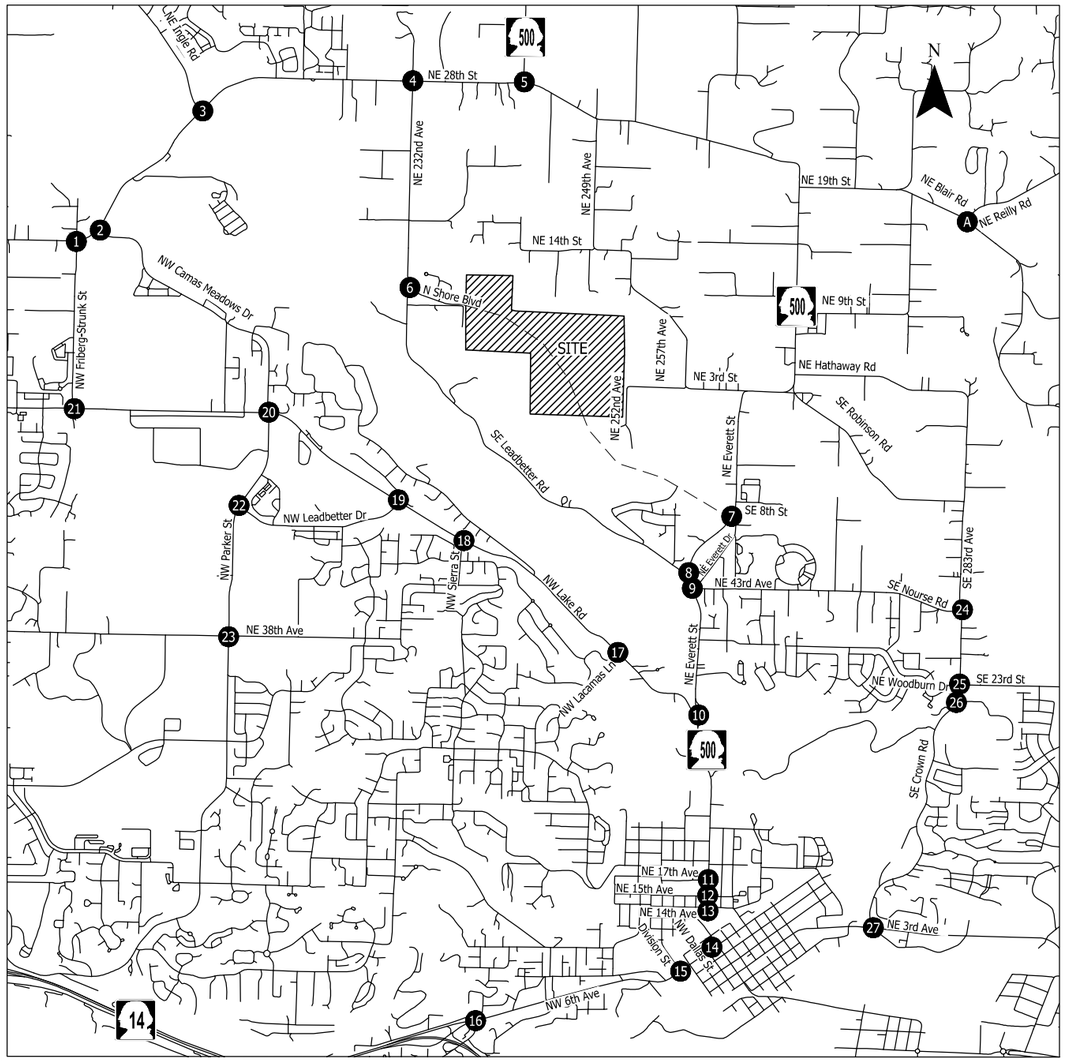
- STUDY INTERSECTION

- SITE

2030 Background Traffic Re-Assignment for North Shore Boulevard
Weekday AM Peak Hour
Camas, Washington

Figure
F-1

H:\31\31612 - Johnston Dairy\report\Figs\31612_TIS Figs.dwg Sep 15, 2025 - 3:00pm - cdougherty Layout Tab: Fig F1 Reassign AM

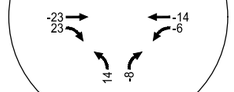


1 NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd

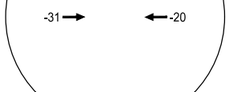
2 NE Camas Meadows Dr/ NE Goodwin Rd

3 NE Ingle Rd/ NE 28thSt-NE Goodwin Rd

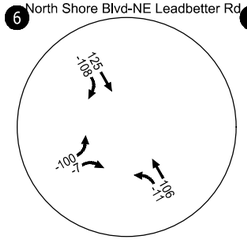
4 NE 232nd Ave/ NE 28th St



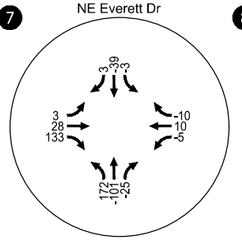
5 SR 500/ NE 28th St



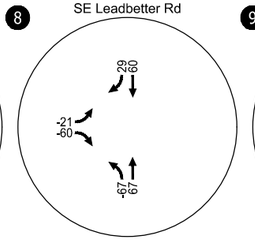
6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd



7 SR 500/ NE Everett Dr



8 SR 500/ SE Leadbetter Rd



9 SR 500/ NE 43rd Ave

10 SR 500/ NW Lake Rd

11 SR 500/ NE 17th Ave

12 SR 500/ NE 15th Ave

13 SR 500/ NE 14th Ave

14 NE Dallas St/ NW 6th Ave

15 Division St/ NW 6th Ave

16 NW 6th Ave/ NW Norwood St- SR 14 Ramps

17 NW Lacamas Ln/ NW Lake Rd

18 NW Sierra St/ NW Lake Rd

19 NW Leadbetter Dr/ NW Lake Rd

20 NW Parker St/ NW Lake Rd

21 NW Friberg-Strunk St/ NW Lake Rd-SE 1st St

22 NW Parker St/ NW Leadbetter Dr

23 NW Parker St/ NE 38th Avenue

24 SE 283rd Ave/ SE Nourse Rd

25 SE 283rd Ave/ SE 23rd St

26 SE 283rd Ave/ NE Woodburn Dr

27 SE Crown Rd/ NE 3rd Ave

- STUDY INTERSECTION

- SITE

2030 Background Traffic Re-Assignment for North Shore Boulevard
Weekday PM Peak Hour
Camas, Washington

Figure
F-2

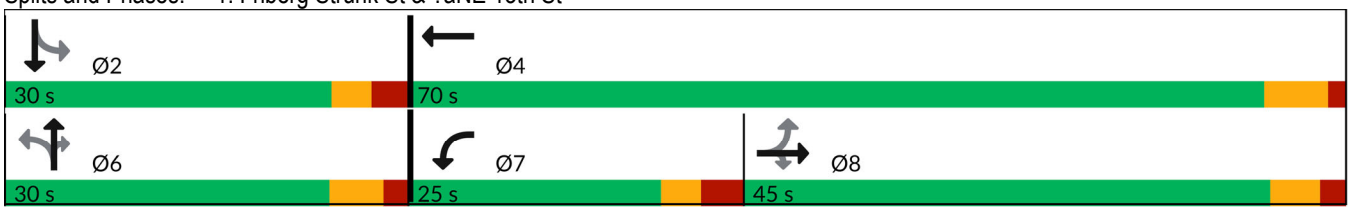
H:\31\31612 - Johnston Dairy\report\figs\31612_TIS Figs.dwg Sep 15, 2025 - 3:01pm - cdougherty Layout Tab: Fig F2 Reassign PM

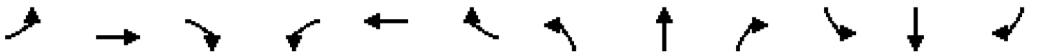
KITTELSON & ASSOCIATES

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Configurations									
Traffic Volume (vph)	1	209	285	315	430	86	2	112	5
Future Volume (vph)	1	209	285	315	430	86	2	112	5
Turn Type	Perm	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases		8		7	4		6		2
Permitted Phases	8		8			6		6	
Detector Phase	8	8	8	7	4	6	6	6	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.6	23.6	23.6	11.0	24.1	23.8	23.8	23.8	25.6
Total Split (s)	45.0	45.0	45.0	25.0	70.0	30.0	30.0	30.0	30.0
Total Split (%)	45.0%	45.0%	45.0%	25.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.6	3.6	3.6	3.0	4.7	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	3.0	1.4	1.8	1.8	1.8	2.6
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		5.6	5.6	6.0	6.1		5.8	5.8	5.6
Lead/Lag	Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	Min	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)		16.4	16.4	19.5	41.5		10.5	10.5	10.7
Actuated g/C Ratio		0.26	0.26	0.30	0.65		0.16	0.16	0.17
v/c Ratio		0.69	0.55	0.79	0.47		0.57	0.39	0.03
Control Delay (s/veh)		32.2	6.0	38.0	7.9		38.4	8.8	23.2
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		32.2	6.0	38.0	7.9		38.4	8.8	23.2
LOS		C	A	D	A		D	A	C
Approach Delay (s/veh)		17.1			20.6		21.8		23.2
Approach LOS		B			C		C		C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 64.3	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay (s/veh): 19.6	Intersection LOS: B
Intersection Capacity Utilization 59.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Friberg Strunk St & ?áNE 13th St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	209	285	315	430	0	86	2	112	0	5	1
Future Volume (veh/h)	1	209	285	315	430	0	86	2	112	0	5	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	0.96	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	401	1604	1811	1796	1826	1900	1682	1900	1826	1900	1604	1900
Adj Flow Rate, veh/h	1	258	352	389	531	0	106	2	138	0	6	1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	100	20	6	7	5	0	10	0	5	0	20	0
Cap, veh/h	66	455	427	443	1190	0	310	5	205	0	179	30
Arrive On Green	0.28	0.28	0.28	0.26	0.65	0.00	0.13	0.13	0.13	0.00	0.13	0.13
Sat Flow, veh/h	1	1601	1502	1711	1826	0	1360	35	1536	0	1338	223
Grp Volume(v), veh/h	259	0	352	389	531	0	108	0	138	0	0	7
Grp Sat Flow(s),veh/h/ln	1602	0	1502	1711	1826	0	1395	0	1536	0	0	1561
Q Serve(g_s), s	0.0	0.0	12.1	12.1	7.9	0.0	3.9	0.0	4.7	0.0	0.0	0.2
Cycle Q Clear(g_c), s	7.6	0.0	12.1	12.1	7.9	0.0	4.1	0.0	4.7	0.0	0.0	0.2
Prop In Lane	0.00		1.00	1.00		0.00	0.98		1.00	0.00		0.14
Lane Grp Cap(c), veh/h	521	0	427	443	1190	0	315	0	205	0	0	209
V/C Ratio(X)	0.50	0.00	0.82	0.88	0.45	0.00	0.34	0.00	0.67	0.00	0.00	0.03
Avail Cap(c_a), veh/h	1202	0	1068	587	2106	0	748	0	671	0	0	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	16.9	0.0	18.5	19.7	4.7	0.0	22.7	0.0	22.8	0.0	0.0	20.9
Incr Delay (d2), s/veh	0.3	0.0	1.6	9.4	0.1	0.0	0.2	0.0	1.4	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	3.8	5.3	1.7	0.0	1.2	0.0	1.6	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.2	0.0	20.1	29.1	4.8	0.0	22.9	0.0	24.3	0.0	0.0	20.9
LnGrp LOS	B		C	C	A		C		C			C
Approach Vol, veh/h		611			920			246			7	
Approach Delay, s/veh		18.9			15.1			23.7			20.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		13.2		42.2		13.2	20.4	21.8				
Change Period (Y+Rc), s		* 5.8		6.1		5.8	6.0	* 6.1				
Max Green Setting (Gmax), s		* 24		63.9		24.2	19.0	* 39				
Max Q Clear Time (g_c+I1), s		2.2		9.9		6.7	14.1	14.1				
Green Ext Time (p_c), s		0.0		2.2		0.5	0.3	1.6				

Intersection Summary	
HCM 7th Control Delay, s/veh	17.6
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	248	61	173	740	19	59
Future Vol, veh/h	248	61	173	740	19	59
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	55	-	105	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	4	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	14	20	8	5	37	4
Mvmt Flow	273	67	190	813	21	65

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	341	0	1467	274
Stage 1	-	-	-	-	274	-
Stage 2	-	-	-	-	1193	-
Critical Hdwy	-	-	4.18	-	6.77	6.24
Critical Hdwy Stg 1	-	-	-	-	5.77	-
Critical Hdwy Stg 2	-	-	-	-	5.77	-
Follow-up Hdwy	-	-	2.272	-	3.833	3.336
Pot Cap-1 Maneuver	-	-	1186	-	118	760
Stage 1	-	-	-	-	698	-
Stage 2	-	-	-	-	245	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1185	-	99	760
Mov Cap-2 Maneuver	-	-	-	-	99	-
Stage 1	-	-	-	-	698	-
Stage 2	-	-	-	-	206	-

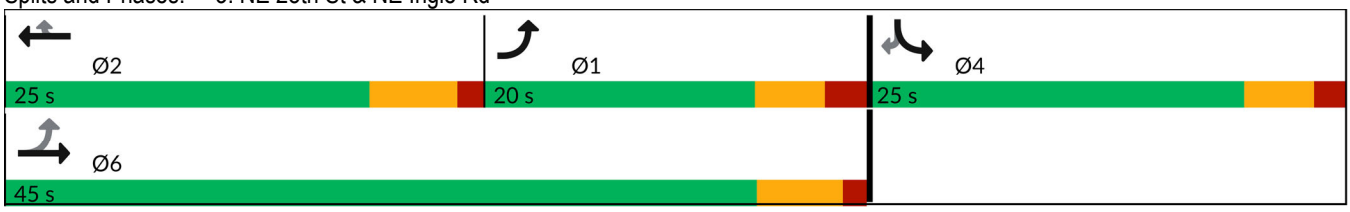
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.63	20.13
HCM LOS			C

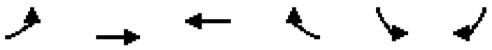
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	99	760	-	-	1185	-
HCM Lane V/C Ratio	0.212	0.085	-	-	0.16	-
HCM Ctrl Dly (s/v)	51	10.2	-	-	8.6	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	0.3	-	-	0.6	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	123	183	426	96	109	480
Future Volume (vph)	123	183	426	96	109	480
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	10.8	15.7	24.9	24.9	10.3	10.3
Total Split (s)	20.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	28.6%	64.3%	35.7%	35.7%	35.7%	35.7%
Yellow Time (s)	3.6	4.5	4.5	4.5	3.6	3.6
All-Red Time (s)	2.2	1.2	1.4	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.7	5.9	5.9	5.3	5.3
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effct Green (s)	28.8	27.4	18.9	18.9	9.1	9.1
Actuated g/C Ratio	0.60	0.57	0.39	0.39	0.19	0.19
v/c Ratio	0.27	0.21	0.68	0.17	0.41	0.75
Control Delay (s/veh)	8.7	6.4	22.0	6.3	22.4	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.7	6.4	22.0	6.3	22.4	9.7
LOS	A	A	C	A	C	A
Approach Delay (s/veh)		7.3	19.1		12.1	
Approach LOS		A	B		B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 48	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay (s/veh): 13.6	Intersection LOS: B
Intersection Capacity Utilization 61.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: NE 28th St & NE Ingle Rd





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	123	183	426	96	109	480
Future Volume (veh/h)	123	183	426	96	109	480
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1707	1737	1811	1796	1752	1841
Adj Flow Rate, veh/h	134	199	463	104	118	522
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	13	11	6	7	10	4
Cap, veh/h	257	813	525	441	568	531
Arrive On Green	0.08	0.47	0.29	0.29	0.34	0.34
Sat Flow, veh/h	1626	1737	1811	1522	1668	1560
Grp Volume(v), veh/h	134	199	463	104	118	522
Grp Sat Flow(s),veh/h/ln	1626	1737	1811	1522	1668	1560
Q Serve(g_s), s	0.0	4.0	14.1	3.0	2.9	19.2
Cycle Q Clear(g_c), s	0.0	4.0	14.1	3.0	2.9	19.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	257	813	525	441	568	531
V/C Ratio(X)	0.52	0.24	0.88	0.24	0.21	0.98
Avail Cap(c_a), veh/h	532	1179	598	502	568	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	9.3	19.6	15.7	13.6	18.9
Incr Delay (d2), s/veh	0.6	0.1	12.3	0.1	0.1	34.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.2	6.8	0.9	1.0	11.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	25.3	9.3	31.9	15.8	13.6	53.5
LnGrp LOS	C	A	C	B	B	D
Approach Vol, veh/h		333	567		640	
Approach Delay, s/veh		15.7	28.9		46.1	
Approach LOS		B	C		D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.2	22.7		25.0		32.9
Change Period (Y+Rc), s	5.8	5.9		5.3		* 5.8
Max Green Setting (Gmax), s	14.2	19.1		19.7		* 39
Max Q Clear Time (g_c+I1), s	2.0	16.1		21.2		6.0
Green Ext Time (p_c), s	0.1	0.6		0.0		0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	33.2
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	153	162	38	248	2	145	2	24	1	3	6
Future Vol, veh/h	2	153	162	38	248	2	145	2	24	1	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	6	8	10	7	0	4	0	21	0	0	20
Mvmt Flow	2	180	191	45	292	2	171	2	28	1	4	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	294	0	0	371	0	0	663	664	275	568	758	293
Stage 1	-	-	-	-	-	-	280	280	-	382	382	-
Stage 2	-	-	-	-	-	-	383	384	-	186	375	-
Critical Hdwy	4.1	-	-	4.2	-	-	7.14	6.5	6.41	7.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.29	-	-	3.536	4	3.489	3.5	4	3.48
Pot Cap-1 Maneuver	1279	-	-	1145	-	-	372	384	720	436	339	706
Stage 1	-	-	-	-	-	-	722	683	-	644	616	-
Stage 2	-	-	-	-	-	-	636	615	-	821	620	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1279	-	-	1145	-	-	347	365	720	396	322	706
Mov Cap-2 Maneuver	-	-	-	-	-	-	347	365	-	396	322	-
Stage 1	-	-	-	-	-	-	721	681	-	614	587	-
Stage 2	-	-	-	-	-	-	596	586	-	784	619	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.05	1.09	25.28	12.5
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	374	10	-	-	237	-	-	492
HCM Lane V/C Ratio	0.538	0.002	-	-	0.039	-	-	0.024
HCM Ctrl Dly (s/v)	25.3	7.8	0	-	8.3	0	-	12.5
HCM Lane LOS	D	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	3.1	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	31	150	0	0	201	120	0	0	0	106	0	87
Future Vol, veh/h	31	150	0	0	201	120	0	0	0	106	0	87
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	13	9	0	0	6	6	0	0	0	4	0	5
Mvmt Flow	36	176	0	0	236	141	0	0	0	125	0	102

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	378	0	0	176	0	0	486	627	176	556	556	307
Stage 1	-	-	-	-	-	-	249	249	-	307	307	-
Stage 2	-	-	-	-	-	-	236	378	-	249	249	-
Critical Hdwy	4.23	-	-	4.1	-	-	7.1	6.5	6.2	7.14	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.317	-	-	2.2	-	-	3.5	4	3.3	3.536	4	3.345
Pot Cap-1 Maneuver	1123	-	-	1412	-	-	495	403	872	438	442	726
Stage 1	-	-	-	-	-	-	759	704	-	699	664	-
Stage 2	-	-	-	-	-	-	771	619	-	750	704	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1123	-	-	1412	-	-	410	388	872	423	426	726
Mov Cap-2 Maneuver	-	-	-	-	-	-	410	388	-	423	426	-
Stage 1	-	-	-	-	-	-	732	679	-	699	664	-
Stage 2	-	-	-	-	-	-	662	619	-	723	679	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.42	0	0	17.16
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	308	-	-	1412	-	-	521
HCM Lane V/C Ratio	-	0.032	-	-	-	-	-	0.436
HCM Ctrl Dly (s/v)	0	8.3	0	-	0	-	-	17.2
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	2.2

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	1	133	176	1
Future Vol, veh/h	1	1	1	133	176	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-4	-4	-
Peak Hour Factor	48	48	48	48	48	48
Heavy Vehicles, %	18	6	5	10	9	8
Mvmt Flow	2	2	2	277	367	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	649	368	369	0	-	0
Stage 1	368	-	-	-	-	-
Stage 2	281	-	-	-	-	-
Critical Hdwy	6.98	6.46	4.15	-	-	-
Critical Hdwy Stg 1	5.98	-	-	-	-	-
Critical Hdwy Stg 2	5.98	-	-	-	-	-
Follow-up Hdwy	3.662	3.354	2.245	-	-	-
Pot Cap-1 Maneuver	382	655	1173	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	708	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	381	655	1173	-	-	-
Mov Cap-2 Maneuver	381	-	-	-	-	-
Stage 1	638	-	-	-	-	-
Stage 2	708	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	12.54	0.06	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	13	-	482	-	-
HCM Lane V/C Ratio	0.002	-	0.009	-	-
HCM Ctrl Dly (s/v)	8.1	0	12.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

MOVEMENT SUMMARY

Site: 7 [Everett St (SR 500) St & NE Everett Dr_BackgroundAM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett St (SR 500)															
3	L2	All MCs	132	0.0	132	0.0	0.498	11.0	LOS B	3.7	93.1	0.49	0.52	0.49	34.1
8	T1	All MCs	230	3.0	230	3.0	0.498	4.8	LOS A	3.7	93.1	0.49	0.52	0.49	34.8
18	R2	All MCs	214	3.0	214	3.0	0.498	4.9	LOS A	3.7	93.1	0.49	0.52	0.49	34.5
Approach			576	2.3	576	2.3	0.498	6.3	LOS A	3.7	93.1	0.49	0.52	0.49	34.5
East: NE Everett Dr															
1	L2	All MCs	189	10.0	189	10.0	0.285	12.3	LOS B	1.6	41.8	0.56	0.66	0.56	32.4
6	T1	All MCs	19	0.0	19	0.0	0.285	5.5	LOS A	1.6	41.8	0.56	0.66	0.56	33.4
16	R2	All MCs	49	3.0	49	3.0	0.285	5.8	LOS A	1.6	41.8	0.56	0.66	0.56	33.0
Approach			258	7.9	258	7.9	0.285	10.6	LOS B	1.6	41.8	0.56	0.66	0.56	32.6
North: NE Everett St (SR 500)															
7	L2	All MCs	138	1.0	138	1.0	0.519	12.4	LOS B	3.7	93.2	0.64	0.63	0.66	33.4
4	T1	All MCs	367	3.0	367	3.0	0.519	6.3	LOS A	3.7	93.2	0.64	0.63	0.66	34.1
14	R2	All MCs	18	0.0	18	0.0	0.519	6.2	LOS A	3.7	93.2	0.64	0.63	0.66	33.8
Approach			523	2.4	523	2.4	0.519	7.9	LOS A	3.7	93.2	0.64	0.63	0.66	33.9
West: NE Everett Dr															
5	L2	All MCs	12	0.0	12	0.0	0.392	14.4	LOS B	2.6	65.2	0.79	0.72	0.79	33.5
2	T1	All MCs	16	0.0	16	0.0	0.392	8.1	LOS A	2.6	65.2	0.79	0.72	0.79	34.2
12	R2	All MCs	270	0.0	270	0.0	0.392	8.3	LOS A	2.6	65.2	0.79	0.72	0.79	33.9
Approach			299	0.0	299	0.0	0.392	8.5	LOS A	2.6	65.2	0.79	0.72	0.79	33.9
All Vehicles			1656	2.8	1656	2.8	0.519	7.9	LOS A	3.7	93.2	0.60	0.61	0.61	33.9

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	17	13	449	671	35
Future Vol, veh/h	12	17	13	449	671	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	110	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	4	-4	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	1	1	3	5	1
Mvmt Flow	14	20	15	516	771	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1337	791	811	0	-	0
Stage 1	791	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Critical Hdwy	6.8	6.41	4.11	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	147	374	819	-	-	-
Stage 1	412	-	-	-	-	-
Stage 2	550	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	144	374	819	-	-	-
Mov Cap-2 Maneuver	144	-	-	-	-	-
Stage 1	405	-	-	-	-	-
Stage 2	550	-	-	-	-	-

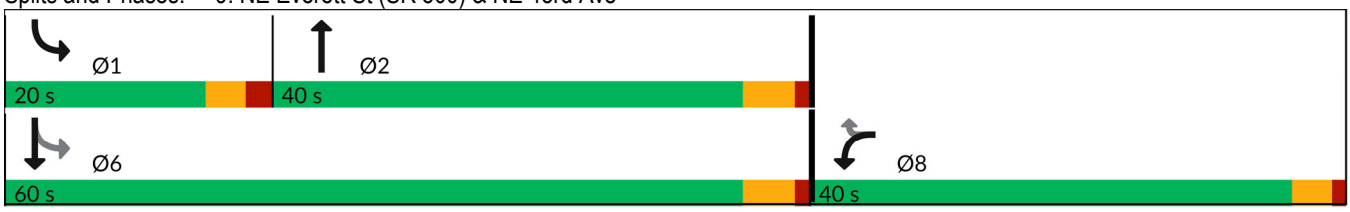
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	23.71	0.27	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	819	-	226	-	-
HCM Lane V/C Ratio	0.018	-	0.148	-	-
HCM Ctrl Dly (s/v)	9.5	-	23.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	333	71	396	485	96	596
Future Volume (vph)	333	71	396	485	96	596
Turn Type	Prot	Perm	NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		Free	6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	23.0	23.0	30.0		10.0	50.0
Total Split (s)	40.0	40.0	40.0		20.0	60.0
Total Split (%)	40.0%	40.0%	40.0%		20.0%	60.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0
All-Red Time (s)	1.0	1.0	1.0		2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	Min		None	Min
Act Effct Green (s)	23.8	23.8	28.6	72.8	38.9	38.9
Actuated g/C Ratio	0.33	0.33	0.39	1.00	0.53	0.53
v/c Ratio	0.75	0.15	0.67	0.38	0.30	0.71
Control Delay (s/veh)	34.0	5.9	26.8	0.7	11.6	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.0	5.9	26.8	0.7	11.6	18.2
LOS	C	A	C	A	B	B
Approach Delay (s/veh)	29.0		12.5			17.3
Approach LOS	C		B			B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 72.8	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay (s/veh): 17.6	Intersection LOS: B
Intersection Capacity Utilization 57.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: NE Everett St (SR 500) & NE 43rd Ave



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	333	71	396	485	96	596
Future Volume (veh/h)	333	71	396	485	96	596
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1799	1874	1746	1776	1802	1997
Adj Flow Rate, veh/h	383	59	455	0	110	685
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	12	7	4	2	17	4
Cap, veh/h	476	441	652		393	1076
Arrive On Green	0.28	0.28	0.37	0.00	0.06	0.54
Sat Flow, veh/h	1713	1588	1746	1505	1716	1997
Grp Volume(v), veh/h	383	59	455	0	110	685
Grp Sat Flow(s),veh/h/ln	1713	1588	1746	1505	1716	1997
Q Serve(g_s), s	10.2	1.4	10.8	0.0	1.8	11.8
Cycle Q Clear(g_c), s	10.2	1.4	10.8	0.0	1.8	11.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	476	441	652		393	1076
V/C Ratio(X)	0.80	0.13	0.70		0.28	0.64
Avail Cap(c_a), veh/h	1258	1166	1247		809	2241
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	16.5	13.3	13.0	0.0	9.1	7.9
Incr Delay (d2), s/veh	3.3	0.1	2.9	0.0	0.4	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.5	4.0	0.0	0.5	3.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	19.7	13.4	15.9	0.0	9.4	8.7
LnGrp LOS	B	B	B		A	A
Approach Vol, veh/h	442		455			795
Approach Delay, s/veh	18.9		15.9			8.8
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.1	23.3			31.4	17.6
Change Period (Y+Rc), s	5.0	5.0			5.0	4.0
Max Green Setting (Gmax), s	15.0	35.0			55.0	36.0
Max Q Clear Time (g_c+I1), s	3.8	12.8			13.8	12.2
Green Ext Time (p_c), s	0.2	5.4			7.0	1.5

Intersection Summary	
HCM 7th Control Delay, s/veh	13.3
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

MOVEMENT SUMMARY

Site 10 NE Everett St & NW Lake Rd_BackgroundAM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett Street															
3	L2	All MCs	231	7.0	231	7.0	0.354	14.1	LOS B	2.3	61.6	0.79	0.75	0.79	31.1
8	T1	All MCs	418	7.0	418	7.0	0.501	7.8	LOS A	4.3	112.7	0.86	0.72	0.93	34.1
Approach			648	7.0	648	7.0	0.501	10.0	LOS A	4.3	112.7	0.84	0.73	0.88	32.9
North: NE Everett Street															
4	T1	All MCs	624	10.0	624	10.0	0.556	5.6	LOS A	4.7	125.9	0.65	0.53	0.65	34.5
14	R2	All MCs	414	2.0	414	2.0	0.334	5.0	LOS A	2.3	58.7	0.51	0.53	0.51	35.1
Approach			1038	6.8	1038	6.8	0.556	5.3	LOS A	4.7	125.9	0.60	0.53	0.60	34.8
West: NW Lake Road															
5	L2	All MCs	563	3.0	563	3.0	0.660	17.8	LOS B	7.5	191.8	0.96	0.90	1.24	29.7
12	R2	All MCs	242	6.0	242	6.0	0.298	7.7	LOS A	2.1	53.9	0.79	0.69	0.79	34.2
Approach			805	3.9	805	3.9	0.660	14.7	LOS B	7.5	191.8	0.91	0.83	1.10	30.9
All Vehicles			2492	5.9	2492	5.9	0.660	9.6	LOS A	7.5	191.8	0.76	0.68	0.83	32.9

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	91	14	24	337	526	83
Future Vol, veh/h	91	14	24	337	526	83
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	7	7	0	6	2	0
Mvmt Flow	100	15	26	370	578	91

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1050	627	672	0	-	0
Stage 1	627	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.1	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.2	-	-	-
Pot Cap-1 Maneuver	246	475	928	-	-	-
Stage 1	523	-	-	-	-	-
Stage 2	650	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	238	474	926	-	-	-
Mov Cap-2 Maneuver	366	-	-	-	-	-
Stage 1	507	-	-	-	-	-
Stage 2	649	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	18.7	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	926	-	377	-	-
HCM Lane V/C Ratio	0.028	-	0.306	-	-
HCM Ctrl Dly (s/v)	9	-	18.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.3	-	-

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	25	19	4	25	78	8	251	6	81	328	130
Future Vol, veh/h	37	25	19	4	25	78	8	251	6	81	328	130
Conflicting Peds, #/hr	13	0	3	3	0	13	0	0	6	6	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	11	0	5	0	0	0	25	6	17	1	4	0
Mvmt Flow	43	29	22	5	29	90	9	289	7	93	377	149

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	972	958	455	897	1029	311	526	0	0	301	0	0
Stage 1	638	638	-	316	316	-	-	-	-	-	-	-
Stage 2	334	320	-	581	713	-	-	-	-	-	-	-
Critical Hdwy	7.21	6.5	6.25	7.1	6.5	6.2	4.35	-	-	4.11	-	-
Critical Hdwy Stg 1	6.21	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.21	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.599	4	3.345	3.5	4	3.3	2.425	-	-	2.209	-	-
Pot Cap-1 Maneuver	223	259	599	263	236	734	933	-	-	1265	-	-
Stage 1	450	474	-	699	658	-	-	-	-	-	-	-
Stage 2	661	656	-	503	439	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	155	237	598	204	215	722	933	-	-	1259	-	-
Mov Cap-2 Maneuver	155	237	-	204	215	-	-	-	-	-	-	-
Stage 1	417	439	-	689	648	-	-	-	-	-	-	-
Stage 2	542	646	-	419	406	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	33.83	16.38	0.27	1.22
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	933	-	-	216	439	1259	-	-
HCM Lane V/C Ratio	0.01	-	-	0.432	0.28	0.074	-	-
HCM Ctrl Dly (s/v)	8.9	-	-	33.8	16.4	8.1	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2	1.1	0.2	-	-

Intersection	
Int Delay, s/veh	11

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	23	1	0	18	209	1	0	0	275	0	74
Future Vol, veh/h	53	23	1	0	18	209	1	0	0	275	0	74
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	8	4	0	0	0	7	0	0	0	4	0	3
Mvmt Flow	62	27	1	0	21	246	1	0	0	324	0	87

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	705	694	44	-	737	2	87	0	0	1	0	0
Stage 1	691	691	-	-	3	-	-	-	-	-	-	-
Stage 2	14	3	-	-	734	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.54	6.2	-	6.5	6.27	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.18	5.54	-	-	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.54	-	-	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.036	3.3	-	4	3.363	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	344	364	1032	0	348	1068	1522	-	-	1609	-	-
Stage 1	425	443	-	0	897	-	-	-	-	-	-	-
Stage 2	991	889	-	0	429	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	195	286	1032	-	273	1066	1522	-	-	1607	-	-
Mov Cap-2 Maneuver	195	286	-	-	273	-	-	-	-	-	-	-
Stage 1	335	348	-	-	896	-	-	-	-	-	-	-
Stage 2	743	888	-	-	337	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	32.84	10.99	7.37	6.15
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1522	-	-	218	866	1182	-	-
HCM Lane V/C Ratio	0.001	-	-	0.416	0.308	0.201	-	-
HCM Ctrl Dly (s/v)	7.4	0	-	32.8	11	7.8	0	-
HCM Lane LOS	A	A	-	D	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.9	1.3	0.8	-	-

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	26	66	8	1	164	4	18	60	3	1	97	91
Future Vol, veh/h	26	66	8	1	164	4	18	60	3	1	97	91
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	4	-	-	-6	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	9	25	0	5	0	22	8	0	0	3	2
Mvmt Flow	30	76	9	1	189	5	21	69	3	1	111	105

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	371	282	164	266	332	73	216	0	0	74	0	0
Stage 1	166	166	-	114	114	-	-	-	-	-	-	-
Stage 2	205	116	-	152	218	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.59	6.45	7.1	6.55	6.2	4.32	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.59	-	6.1	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.59	-	6.1	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.081	3.525	3.5	4.045	3.3	2.398	-	-	2.2	-	-
Pot Cap-1 Maneuver	590	615	824	691	582	995	1244	-	-	1538	-	-
Stage 1	841	748	-	896	795	-	-	-	-	-	-	-
Stage 2	802	786	-	856	717	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	388	603	824	587	571	993	1244	-	-	1535	-	-
Mov Cap-2 Maneuver	388	603	-	587	571	-	-	-	-	-	-	-
Stage 1	840	747	-	878	780	-	-	-	-	-	-	-
Stage 2	595	771	-	759	716	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	13.52	14.38	1.77	0.04
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	396	-	-	537	577	9	-	-
HCM Lane V/C Ratio	0.017	-	-	0.214	0.337	0.001	-	-
HCM Ctrl Dly (s/v)	7.9	0	-	13.5	14.4	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	1.5	0	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	160	413	611	20	11	263
Future Vol, veh/h	160	413	611	20	11	263
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-8	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	7	5	10	0	1
Mvmt Flow	174	449	664	22	12	286

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	686	0	-	0	1247	343
Stage 1	-	-	-	-	675	-
Stage 2	-	-	-	-	572	-
Critical Hdwy	4.2	-	-	-	5.2	6.12
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	2.25	-	-	-	3.5	3.31
Pot Cap-1 Maneuver	884	-	-	-	293	708
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	884	-	-	-	227	708
Mov Cap-2 Maneuver	-	-	-	-	227	-
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	688	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	3.73	0	13.82
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	774	-	-	-	227	708
HCM Lane V/C Ratio	0.197	-	-	-	0.053	0.404
HCM Ctrl Dly (s/v)	10.1	1.3	-	-	21.7	13.5
HCM Lane LOS	B	A	-	-	C	B
HCM 95th %tile Q(veh)	0.7	-	-	-	0.2	2

MOVEMENT SUMMARY

Site: 16 NW Norwood St & NW 6th Ave_BackgroundAM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NW 6th Avenue															
3	L2	All MCs	111	2.0	111	2.0	0.237	13.2	LOS B	1.3	34.7	0.67	0.71	0.67	32.5
8	T1	All MCs	2	0.0	2	0.0	0.237	6.8	LOS A	1.3	34.7	0.67	0.71	0.67	33.2
18	R2	All MCs	75	6.0	75	6.0	0.237	7.4	LOS A	1.3	34.7	0.67	0.71	0.67	32.8
Approach			188	3.6	188	3.6	0.237	10.8	LOS B	1.3	34.7	0.67	0.71	0.67	32.6
East: NW 6th Avenue															
1	L2	All MCs	81	4.0	81	4.0	0.823	12.6	LOS B	12.3	314.9	0.82	0.57	0.85	33.2
6	T1	All MCs	870	3.0	870	3.0	0.823	6.3	LOS A	12.3	314.9	0.82	0.57	0.85	34.0
16	R2	All MCs	11	30.0	11	30.0	0.823	7.8	LOS A	12.3	314.9	0.82	0.57	0.85	33.1
Approach			961	3.4	961	3.4	0.823	6.9	LOS A	12.3	314.9	0.82	0.57	0.85	33.9
North: NW Norwood Street															
7	L2	All MCs	15	7.0	15	7.0	0.176	19.4	LOS B	1.2	30.8	0.93	0.81	0.93	30.8
4	T1	All MCs	5	0.0	5	0.0	0.176	12.2	LOS B	1.2	30.8	0.93	0.81	0.93	31.6
14	R2	All MCs	51	2.0	51	2.0	0.176	12.6	LOS B	1.2	30.8	0.93	0.81	0.93	31.4
Approach			71	2.9	71	2.9	0.176	14.0	LOS B	1.2	30.8	0.93	0.81	0.93	31.3
West: NW 6th Avenue															
5	L2	All MCs	20	26.0	20	26.0	0.564	11.4	LOS B	4.8	129.1	0.46	0.44	0.46	33.7
2	T1	All MCs	526	8.0	526	8.0	0.564	4.6	LOS A	4.8	129.1	0.46	0.44	0.46	35.2
12	R2	All MCs	96	9.0	96	9.0	0.564	4.8	LOS A	4.8	129.1	0.46	0.44	0.46	34.8
Approach			641	8.7	641	8.7	0.564	4.8	LOS A	4.8	129.1	0.46	0.44	0.46	35.1
All Vehicles			1862	5.2	1862	5.2	0.823	6.8	LOS A	12.3	314.9	0.68	0.54	0.70	34.1

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	588	3	68	520	4	174
Future Vol, veh/h	588	3	68	520	4	174
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	105	-	85	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-6	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	0	3	3	0	0
Mvmt Flow	676	3	78	598	5	200

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	679	0	1432	678
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	754	-
Critical Hdwy	-	-	4.13	-	5.2	5.6
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	908	-	241	510
Stage 1	-	-	-	-	637	-
Stage 2	-	-	-	-	602	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	908	-	220	510
Mov Cap-2 Maneuver	-	-	-	-	220	-
Stage 1	-	-	-	-	637	-
Stage 2	-	-	-	-	550	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.08	16.64
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	220	510	-	-	908	-
HCM Lane V/C Ratio	0.021	0.392	-	-	0.086	-
HCM Ctrl Dly (s/v)	21.7	16.5	-	-	9.3	-
HCM Lane LOS	C	C	-	-	A	-
HCM 95th %tile Q(veh)	0.1	1.8	-	-	0.3	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	411	88	76	428	93	166
Future Vol, veh/h	411	88	76	428	93	166
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	7	11	2	3	7
Mvmt Flow	457	98	84	476	103	184

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	554	0	1150	506
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	644	-
Critical Hdwy	-	-	4.21	-	6.43	6.27
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.299	-	3.527	3.363
Pot Cap-1 Maneuver	-	-	972	-	218	557
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	521	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	972	-	199	557
Mov Cap-2 Maneuver	-	-	-	-	199	-
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	476	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.37	24.12
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	199	557	-	-	972	-
HCM Lane V/C Ratio	0.519	0.331	-	-	0.087	-
HCM Ctrl Dly (s/v)	41.1	14.6	-	-	9.1	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	2.6	1.4	-	-	0.3	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	315	12	120	407	6	3	9	176	8	9	8
Future Vol, veh/h	7	315	12	120	407	6	3	9	176	8	9	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	130	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	18	2	2	33	0	22	8	0	0	12
Mvmt Flow	8	342	13	130	442	7	3	10	191	9	10	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	449	0	0	355	0	0	1072	1074	349	1069	1077	446
Stage 1	-	-	-	-	-	-	364	364	-	707	707	-
Stage 2	-	-	-	-	-	-	708	710	-	362	371	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.1	6.72	6.28	7.1	6.5	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.72	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.72	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4.198	3.372	3.5	4	3.408
Pot Cap-1 Maneuver	1122	-	-	1203	-	-	200	203	681	201	221	592
Stage 1	-	-	-	-	-	-	659	590	-	430	441	-
Stage 2	-	-	-	-	-	-	429	408	-	660	623	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1122	-	-	1203	-	-	167	179	681	122	195	592
Mov Cap-2 Maneuver	-	-	-	-	-	-	167	179	-	122	195	-
Stage 1	-	-	-	-	-	-	655	586	-	383	394	-
Stage 2	-	-	-	-	-	-	367	364	-	464	619	-

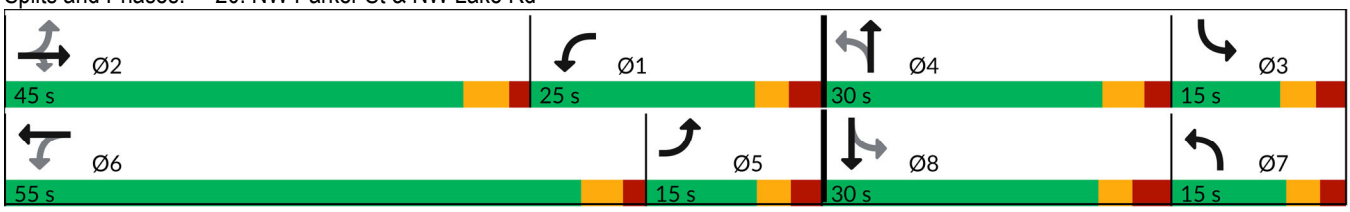
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.17	1.88	14.66	25.87
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	576	1122	-	-	1203	-	-	200
HCM Lane V/C Ratio	0.355	0.007	-	-	0.108	-	-	0.136
HCM Ctrl Dly (s/v)	14.7	8.2	-	-	8.4	-	-	25.9
HCM Lane LOS	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.6	0	-	-	0.4	-	-	0.5

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	9	189	173	106	283	151	61	44	123
Future Volume (vph)	9	189	173	106	283	151	61	44	123
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		1	6	7	4	3	8
Permitted Phases	2		2	6		4		8	
Detector Phase	5	2	2	1	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	26.7	26.7	10.7	20.5	10.2	29.2	10.6	33.3
Total Split (s)	15.0	45.0	45.0	25.0	55.0	15.0	30.0	15.0	30.0
Total Split (%)	13.0%	39.1%	39.1%	21.7%	47.8%	13.0%	26.1%	13.0%	26.1%
Yellow Time (s)	3.0	4.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0
All-Red Time (s)	2.5	1.7	1.7	2.7	1.9	2.2	2.3	2.6	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.7	5.7	5.7	5.5	5.2	5.9	5.6	6.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)	18.8	12.7	12.7	21.0	18.9	22.0	17.2	17.1	10.2
Actuated g/C Ratio	0.33	0.22	0.22	0.37	0.33	0.39	0.30	0.30	0.18
v/c Ratio	0.03	0.56	0.40	0.28	0.33	0.33	0.36	0.13	0.50
Control Delay (s/veh)	13.7	27.2	6.4	15.4	16.4	14.8	16.1	13.4	28.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.7	27.2	6.4	15.4	16.4	14.8	16.1	13.4	28.6
LOS	B	C	A	B	B	B	B	B	C
Approach Delay (s/veh)		17.2			16.1		15.5		24.9
Approach LOS		B			B		B		C

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 56.6	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay (s/veh): 17.5	Intersection LOS: B
Intersection Capacity Utilization 50.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 20: NW Parker St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	189	173	106	283	36	151	61	102	44	123	15
Future Volume (veh/h)	9	189	173	106	283	36	151	61	102	44	123	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1574	1841	1870	1900	1870	1856	1885	1856	1856	1796	1856	1900
Adj Flow Rate, veh/h	11	228	131	128	341	24	182	73	88	53	148	16
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	22	4	2	0	2	3	1	3	3	7	3	0
Cap, veh/h	384	326	281	377	547	38	402	123	148	390	258	28
Arrive On Green	0.12	0.18	0.18	0.10	0.16	0.16	0.09	0.16	0.16	0.10	0.16	0.16
Sat Flow, veh/h	1499	1841	1585	1810	3369	236	1795	762	918	1711	1643	178
Grp Volume(v), veh/h	11	228	131	128	179	186	182	0	161	53	0	164
Grp Sat Flow(s),veh/h/ln	1499	1841	1585	1810	1777	1828	1795	0	1680	1711	0	1820
Q Serve(g_s), s	0.0	5.7	3.7	0.0	4.6	4.7	0.0	0.0	4.4	0.0	0.0	4.1
Cycle Q Clear(g_c), s	0.0	5.7	3.7	0.0	4.6	4.7	0.0	0.0	4.4	0.0	0.0	4.1
Prop In Lane	1.00		1.00	1.00		0.13	1.00		0.55	1.00		0.10
Lane Grp Cap(c), veh/h	384	326	281	377	289	297	402	0	271	390	0	285
V/C Ratio(X)	0.03	0.70	0.47	0.34	0.62	0.63	0.45	0.00	0.59	0.14	0.00	0.57
Avail Cap(c_a), veh/h	492	1465	1261	901	1781	1832	591	0	820	551	0	874
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.5	19.1	18.2	19.5	19.3	19.3	19.4	0.0	19.2	18.1	0.0	19.3
Incr Delay (d2), s/veh	0.0	1.0	0.4	0.2	0.8	0.8	0.8	0.0	0.8	0.2	0.0	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.2	1.2	1.2	1.7	1.8	1.8	0.0	1.6	0.5	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.5	20.1	18.7	19.7	20.1	20.1	20.2	0.0	20.0	18.2	0.0	20.0
LnGrp LOS	B	C	B	B	C	C	C		B	B		B
Approach Vol, veh/h		370			493			343			217	
Approach Delay, s/veh		19.5			20.0			20.1			19.5	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	14.5	10.4	13.9	11.6	13.5	10.2	14.0
Change Period (Y+Rc), s	5.7	5.7	* 5.6	5.9	5.7	* 5.5	5.6	* 6.3
Max Green Setting (Gmax), s	19.3	39.3	* 9.4	24.1	9.5	* 50	9.8	* 24
Max Q Clear Time (g_c+I1), s	2.0	7.7	2.0	6.4	2.0	6.7	2.0	6.1
Green Ext Time (p_c), s	0.1	1.0	0.0	0.5	0.0	1.3	0.3	0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	19.8
HCM 7th LOS	B

Notes

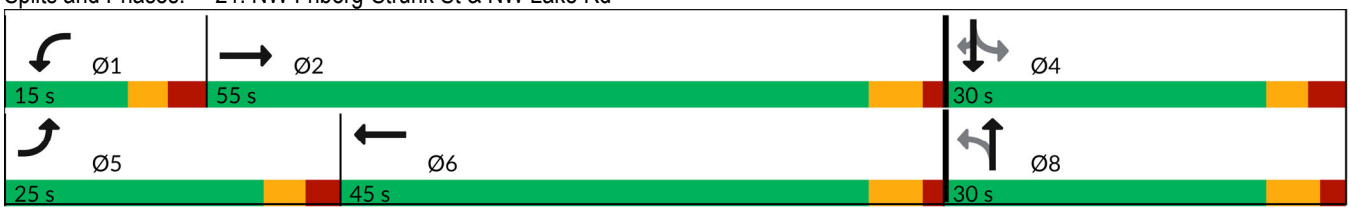
User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	344	281	1	375	0	100	0	339
Future Volume (vph)	344	281	1	375	0	100	0	339
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						4		4
Detector Phase	5	2	1	6	8	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.6	23.5	10.8	26.6	34.0	33.9	33.9	33.9
Total Split (s)	25.0	55.0	15.0	45.0	30.0	30.0	30.0	30.0
Total Split (%)	25.0%	55.0%	15.0%	45.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.6	1.5	2.8	1.6	2.0	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.6	5.5	5.8	5.6	6.0		5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	19.7	39.3	5.1	15.6	10.8		10.9	10.9
Actuated g/C Ratio	0.31	0.62	0.08	0.25	0.17		0.17	0.17
v/c Ratio	0.82	0.18	0.01	0.69	0.00		0.56	0.70
Control Delay (s/veh)	38.6	6.8	32.0	25.4	0.0		34.7	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	38.6	6.8	32.0	25.4	0.0		34.7	9.6
LOS	D	A	C	C	A		C	A
Approach Delay (s/veh)		24.2		25.4			15.3	
Approach LOS		C		C			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 63.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay (s/veh): 22.0	Intersection LOS: C
Intersection Capacity Utilization 59.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 21: NW Friberg-Strunk St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	344	281	3	1	375	85	0	0	1	100	0	339
Future Volume (veh/h)	344	281	3	1	375	85	0	0	1	100	0	339
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1811	1411	1900	1856	1900	1900	1900	1900	1811	1900	1856
Adj Flow Rate, veh/h	447	365	4	1	487	110	0	0	1	130	0	440
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	3	6	33	0	3	0	0	0	0	6	0	3
Cap, veh/h	448	1636	18	2	628	141	0	0	485	527	0	474
Arrive On Green	0.25	0.47	0.47	0.00	0.22	0.22	0.00	0.00	0.30	0.30	0.00	0.30
Sat Flow, veh/h	1767	3487	38	1810	2860	642	0	0	1607	1434	0	1569
Grp Volume(v), veh/h	447	180	189	1	299	298	0	0	1	130	0	440
Grp Sat Flow(s),veh/h/ln	1767	1721	1804	1810	1763	1740	0	0	1607	1434	0	1569
Q Serve(g_s), s	19.3	4.7	4.7	0.0	12.2	12.3	0.0	0.0	0.0	5.3	0.0	20.8
Cycle Q Clear(g_c), s	19.3	4.7	4.7	0.0	12.2	12.3	0.0	0.0	0.0	5.4	0.0	20.8
Prop In Lane	1.00		0.02	1.00		0.37	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	448	807	847	2	387	382	0	0	485	527	0	474
V/C Ratio(X)	1.00	0.22	0.22	0.40	0.77	0.78	0.00	0.00	0.00	0.25	0.00	0.93
Avail Cap(c_a), veh/h	448	1114	1168	218	908	896	0	0	504	546	0	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.5	12.0	12.0	38.2	28.0	28.1	0.0	0.0	18.7	20.5	0.0	25.9
Incr Delay (d2), s/veh	41.7	0.1	0.0	34.6	1.3	1.3	0.0	0.0	0.0	0.1	0.0	23.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	1.6	1.7	0.0	5.1	5.1	0.0	0.0	0.0	1.7	0.0	10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	70.2	12.1	12.1	72.8	29.3	29.4	0.0	0.0	18.7	20.6	0.0	48.9
LnGrp LOS	E	B	B	E	C	C			B	C		D
Approach Vol, veh/h		816			598			1			570	
Approach Delay, s/veh		43.9			29.4			18.7			42.5	
Approach LOS		D			C			B			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	41.5		29.1	25.0	22.4		29.1				
Change Period (Y+Rc), s	5.8	* 5.6		* 6	5.6	5.6		6.0				
Max Green Setting (Gmax), s	9.2	* 50		* 24	19.4	39.4		24.0				
Max Q Clear Time (g_c+I1), s	2.0	6.7		22.8	21.3	14.3		2.0				
Green Ext Time (p_c), s	0.0	1.3		0.2	0.0	2.5		0.0				

Intersection Summary			
HCM 7th Control Delay, s/veh		39.1	
HCM 7th LOS		D	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	149	111	374	147	27	333
Future Vol, veh/h	149	111	374	147	27	333
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	175	0	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	2	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	3	1	3	10	7	3
Mvmt Flow	180	134	451	177	33	401

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1005	539	0	0	628	0
Stage 1	539	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Critical Hdwy	6.03	6.01	-	-	4.17	-
Critical Hdwy Stg 1	5.03	-	-	-	-	-
Critical Hdwy Stg 2	5.03	-	-	-	-	-
Follow-up Hdwy	3.527	3.309	-	-	2.263	-
Pot Cap-1 Maneuver	298	561	-	-	930	-
Stage 1	619	-	-	-	-	-
Stage 2	663	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	287	561	-	-	930	-
Mov Cap-2 Maneuver	287	-	-	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	640	-	-	-	-	-

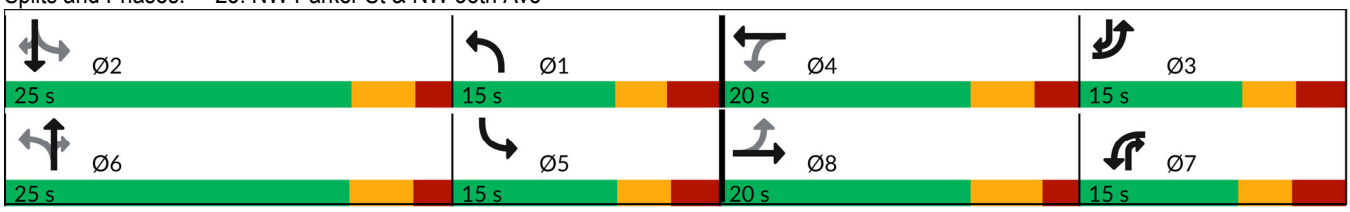
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	26.52	0	0.68
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	287	561	930	-
HCM Lane V/C Ratio	-	-	0.625	0.238	0.035	-
HCM Ctrl Dly (s/v)	-	-	36.3	13.4	9	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	3.9	0.9	0.1	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	104	67	96	111	91	399	76	16	311	135
Future Volume (vph)	104	67	96	111	91	399	76	16	311	135
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	7	4	1	6	7	5	2	3
Permitted Phases	8		4		6		6	2		2
Detector Phase	3	8	7	4	1	6	7	5	2	3
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.8	24.0	11.0	23.0	10.9	20.0	11.0	10.7	20.0	10.8
Total Split (s)	15.0	20.0	15.0	20.0	15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	20.0%	26.7%	20.0%	26.7%	20.0%	33.3%	20.0%	20.0%	33.3%	20.0%
Yellow Time (s)	3.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0	3.6	3.0
All-Red Time (s)	2.8	2.0	3.0	2.4	2.9	2.1	3.0	2.7	2.0	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.0	6.0	6.0	5.9	5.7	6.0	5.7	5.6	5.8
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	None	Max	None
Act Effct Green (s)	12.5	8.1	14.7	9.5	28.8	26.5	33.2	25.8	20.5	26.2
Actuated g/C Ratio	0.21	0.14	0.25	0.16	0.49	0.45	0.57	0.44	0.35	0.45
v/c Ratio	0.36	0.49	0.30	0.56	0.21	0.57	0.09	0.05	0.52	0.20
Control Delay (s/veh)	18.8	25.9	17.7	29.9	12.9	20.5	1.2	11.4	22.4	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.8	25.9	17.7	29.9	12.9	20.5	1.2	11.4	22.4	2.9
LOS	B	C	B	C	B	C	A	B	C	A
Approach Delay (s/veh)		22.4		25.0		16.7			16.3	
Approach LOS		C		C		B			B	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 58.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay (s/veh): 18.8	Intersection LOS: B
Intersection Capacity Utilization 58.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 23: NW Parker St & NW 38th Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	67	43	96	111	34	91	399	76	16	311	135
Future Volume (veh/h)	104	67	43	96	111	34	91	399	76	16	311	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1826	1811	1811	1870	1900	1870	1826	1826	1796	1945	1870
Adj Flow Rate, veh/h	118	76	49	109	126	39	103	453	86	18	353	153
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	5	6	6	2	0	2	5	5	7	2	2
Cap, veh/h	302	115	74	341	177	55	414	580	647	336	621	636
Arrive On Green	0.08	0.11	0.11	0.10	0.13	0.13	0.08	0.32	0.32	0.08	0.32	0.32
Sat Flow, veh/h	1882	1033	666	1725	1367	423	1781	1826	1545	1711	1945	1583
Grp Volume(v), veh/h	118	0	125	109	0	165	103	453	86	18	353	153
Grp Sat Flow(s),veh/h/ln	1882	0	1699	1725	0	1790	1781	1826	1545	1711	1945	1583
Q Serve(g_s), s	0.0	0.0	4.3	0.0	0.0	5.4	0.0	13.7	0.0	0.0	9.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	4.3	0.0	0.0	5.4	0.0	13.7	0.0	0.0	9.2	0.0
Prop In Lane	1.00		0.39	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	302	0	188	341	0	232	414	580	647	336	621	636
V/C Ratio(X)	0.39	0.00	0.66	0.32	0.00	0.71	0.25	0.78	0.13	0.05	0.57	0.24
Avail Cap(c_a), veh/h	432	0	392	423	0	413	534	580	647	457	621	636
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	0.0	25.9	24.0	0.0	25.4	19.4	18.8	10.9	21.1	17.2	12.0
Incr Delay (d2), s/veh	0.3	0.0	1.5	0.2	0.0	1.5	0.1	10.0	0.4	0.0	3.7	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	1.7	1.4	0.0	2.2	1.1	6.7	0.7	0.2	4.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.7	0.0	27.4	24.2	0.0	26.9	19.5	28.8	11.3	21.2	20.9	12.9
LnGrp LOS	C		C	C		C	B	C	B	C	C	B
Approach Vol, veh/h		243			274			642			524	
Approach Delay, s/veh		26.6			25.8			25.0			18.6	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	25.0	11.0	13.9	10.9	25.0	12.1	12.7
Change Period (Y+Rc), s	5.9	5.6	6.0	* 6	5.9	* 5.7	6.0	6.0
Max Green Setting (Gmax), s	9.1	19.4	9.2	* 14	9.3	* 19	9.0	14.0
Max Q Clear Time (g_c+I1), s	2.0	11.2	2.0	7.4	2.0	15.7	2.0	6.3
Green Ext Time (p_c), s	0.1	1.1	0.1	0.3	0.0	0.7	0.1	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	23.4
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	117	250	77	97	22
Future Vol, veh/h	4	117	250	77	97	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	10	5	3	12	20
Mvmt Flow	5	139	298	92	115	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	815	129	142	0	-	0
Stage 1	129	-	-	-	-	-
Stage 2	687	-	-	-	-	-
Critical Hdwy	6.4	6.3	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.39	2.245	-	-	-
Pot Cap-1 Maneuver	350	900	1423	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	272	900	1423	-	-	-
Mov Cap-2 Maneuver	272	-	-	-	-	-
Stage 1	703	-	-	-	-	-
Stage 2	503	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.2	6.27	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1351	-	837	-	-
HCM Lane V/C Ratio	0.209	-	0.172	-	-
HCM Ctrl Dly (s/v)	8.2	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.8	-	0.6	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	96	197	39	49	129
Future Vol, veh/h	44	96	197	39	49	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	14	6	3	18	8	9
Mvmt Flow	49	108	221	44	55	145

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	498	243	0	0	265	0
Stage 1	243	-	-	-	-	-
Stage 2	255	-	-	-	-	-
Critical Hdwy	6.54	6.26	-	-	4.18	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.354	-	-	2.272	-
Pot Cap-1 Maneuver	511	786	-	-	1265	-
Stage 1	770	-	-	-	-	-
Stage 2	760	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	487	786	-	-	1265	-
Mov Cap-2 Maneuver	487	-	-	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	724	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.17	0	2.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	658	496	-
HCM Lane V/C Ratio	-	-	0.239	0.044	-
HCM Ctrl Dly (s/v)	-	-	12.2	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	182	113	209	152	38
Future Vol, veh/h	31	182	113	209	152	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	2	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	3	0	4	8	12	5
Mvmt Flow	41	243	151	279	203	51

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	808	228	253	0	-	0
Stage 1	228	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Critical Hdwy	6.83	6.4	4.14	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.527	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	319	806	1300	-	-	-
Stage 1	787	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	282	806	1300	-	-	-
Mov Cap-2 Maneuver	282	-	-	-	-	-
Stage 1	696	-	-	-	-	-
Stage 2	523	-	-	-	-	-

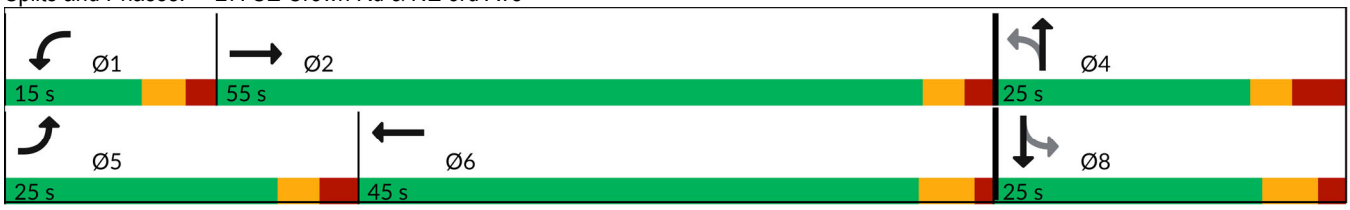
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	12.63	2.85	0
HCM LOS	B		

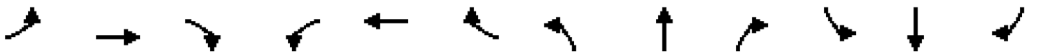
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1300	-	282	806	-	-
HCM Lane V/C Ratio	0.116	-	0.147	0.301	-	-
HCM Ctrl Dly (s/v)	8.1	-	19.9	11.4	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.5	1.3	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	183	233	9	347	6	4	215	2	247
Future Volume (vph)	183	233	9	347	6	4	215	2	247
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Free
Protected Phases	5	2	1	6		4		8	
Permitted Phases					4		8		Free
Detector Phase	5	2	1	6	4	4	8	8	
Switch Phase									
Minimum Initial (s)	2.0	8.0	5.0	8.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	7.6	23.0	10.2	20.3	32.8	32.8	35.0	35.0	
Total Split (s)	25.0	55.0	15.0	45.0	25.0	25.0	25.0	25.0	
Total Split (%)	26.3%	57.9%	15.8%	47.4%	26.3%	26.3%	26.3%	26.3%	
Yellow Time (s)	3.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.6	2.0	2.2	1.3	3.8	3.8	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	
Total Lost Time (s)	5.6	5.0	5.2	5.3		6.8		6.0	
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	
Act Effct Green (s)	12.0	29.0	5.4	12.7		15.1		15.9	58.1
Actuated g/C Ratio	0.21	0.50	0.09	0.22		0.26		0.27	1.00
v/c Ratio	0.61	0.16	0.06	0.63		0.03		0.63	0.17
Control Delay (s/veh)	31.1	9.4	29.8	23.9		18.8		29.2	0.2
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay (s/veh)	31.1	9.4	29.8	23.9		18.8		29.2	0.2
LOS	C	A	C	C		B		C	A
Approach Delay (s/veh)		18.9		24.0		18.8		13.8	
Approach LOS		B		C		B		B	

Intersection Summary	
Cycle Length: 95	
Actuated Cycle Length: 58.1	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay (s/veh): 18.8	Intersection LOS: B
Intersection Capacity Utilization 55.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: SE Crown Rd & NE 3rd Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	233	2	9	347	83	6	4	0	215	2	247
Future Volume (veh/h)	183	233	2	9	347	83	6	4	0	215	2	247
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1743	1788	1952	1979	1934	1904	1952	1952	1952	1995	2058	2011
Adj Flow Rate, veh/h	201	256	2	10	381	91	7	4	0	236	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	9	6	0	0	3	5	0	0	0	4	0	3
Cap, veh/h	255	1245	10	25	619	146	341	166		485	3	
Arrive On Green	0.15	0.36	0.36	0.01	0.21	0.21	0.20	0.20	0.00	0.20	0.20	0.00
Sat Flow, veh/h	1660	3454	27	1884	2947	696	986	837	1654	1551	13	1704
Grp Volume(v), veh/h	201	126	132	10	236	236	11	0	0	238	0	0
Grp Sat Flow(s),veh/h/ln	1660	1698	1783	1884	1837	1806	1824	0	1654	1564	0	1704
Q Serve(g_s), s	4.7	2.1	2.1	0.2	4.7	4.8	0.0	0.0	0.0	5.6	0.0	0.0
Cycle Q Clear(g_c), s	4.7	2.1	2.1	0.2	4.7	4.8	0.2	0.0	0.0	5.8	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.39	0.64		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	255	612	642	25	386	380	507	0		488	0	
V/C Ratio(X)	0.79	0.21	0.21	0.40	0.61	0.62	0.02	0.00		0.49	0.00	
Avail Cap(c_a), veh/h	797	2102	2206	457	1805	1775	916	0		911	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.5	8.9	8.9	19.8	14.5	14.5	13.1	0.0	0.0	15.3	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.1	0.1	3.9	0.6	0.6	0.0	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.5	0.6	0.1	1.6	1.6	0.1	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.5	9.0	9.0	23.7	15.0	15.1	13.1	0.0	0.0	15.6	0.0	0.0
LnGrp LOS	B	A	A	C	B	B	B			B		
Approach Vol, veh/h		459			482			11			238	
Approach Delay, s/veh		13.2			15.3			13.1			15.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	19.9		14.8	11.8	13.8		14.8				
Change Period (Y+Rc), s	5.2	* 5.3		6.8	5.6	5.3		* 6.8				
Max Green Setting (Gmax), s	9.8	* 50		18.2	19.4	39.7		* 19				
Max Q Clear Time (g_c+I1), s	2.2	4.1		2.2	6.7	6.8		7.8				
Green Ext Time (p_c), s	0.0	0.9		0.0	0.2	1.7		0.6				

Intersection Summary		
HCM 7th Control Delay, s/veh	14.5	
HCM 7th LOS	B	

Notes

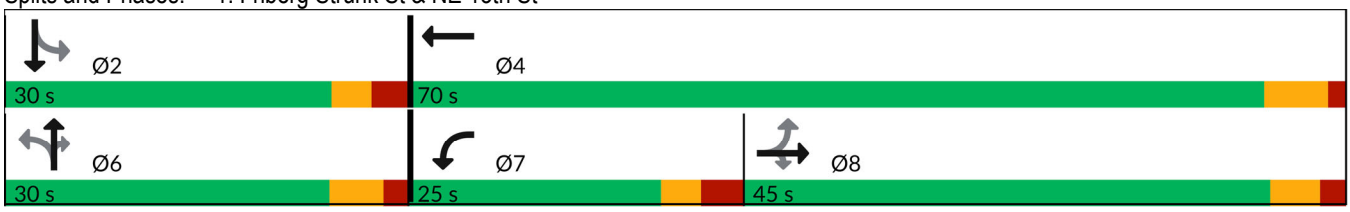
User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	1	358	76	212	415	118	8	311	1	5
Future Volume (vph)	1	358	76	212	415	118	8	311	1	5
Turn Type	Perm	NA	Perm	Prot	NA	Perm	NA	Perm	Perm	NA
Protected Phases		8		7	4		6			2
Permitted Phases	8		8			6		6	2	
Detector Phase	8	8	8	7	4	6	6	6	2	2
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.6	23.6	23.6	11.0	24.1	23.8	23.8	23.8	25.6	25.6
Total Split (s)	45.0	45.0	45.0	25.0	70.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	45.0%	45.0%	45.0%	25.0%	70.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.6	3.6	3.6	3.0	4.7	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	3.0	1.4	1.8	1.8	1.8	2.6	2.6
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)		5.6	5.6	6.0	6.1		5.8	5.8		5.6
Lead/Lag	Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	Min	Min	Min	None	Min	None	None	None	None	None
Act Effct Green (s)		19.6	19.6	13.2	38.7		12.1	12.1		12.3
Actuated g/C Ratio		0.31	0.31	0.21	0.61		0.19	0.19		0.19
v/c Ratio		0.72	0.15	0.64	0.42		0.57	0.59		0.03
Control Delay (s/veh)		29.0	4.3	34.8	8.1		36.3	8.3		21.6
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay (s/veh)		29.0	4.3	34.8	8.1		36.3	8.3		21.6
LOS		C	A	C	A		D	A		C
Approach Delay (s/veh)		24.6			17.1		16.4			21.6
Approach LOS		C			B		B			C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 63.6	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay (s/veh): 19.1	Intersection LOS: B
Intersection Capacity Utilization 69.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Friberg Strunk St & NE 13th St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	358	76	212	415	3	118	8	311	1	5	3
Future Volume (veh/h)	1	358	76	212	415	3	118	8	311	1	5	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	0.96	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	401	1885	1856	1885	1841	1900	1781	1900	1900	1900	1900	1411
Adj Flow Rate, veh/h	1	385	82	228	446	3	127	9	334	1	5	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	100	1	3	1	4	0	3	0	0	0	0	33
Cap, veh/h	68	486	405	285	965	6	465	29	402	91	274	145
Arrive On Green	0.26	0.26	0.26	0.16	0.53	0.53	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1	1883	1572	1795	1826	12	1344	115	1610	64	1099	581
Grp Volume(v), veh/h	386	0	82	228	0	449	136	0	334	9	0	0
Grp Sat Flow(s),veh/h/ln	1884	0	1572	1795	0	1839	1460	0	1610	1744	0	0
Q Serve(g_s), s	0.0	0.0	2.2	6.6	0.0	8.2	3.9	0.0	10.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.2	0.0	2.2	6.6	0.0	8.2	4.1	0.0	10.5	0.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.01	0.93		1.00	0.11		0.33
Lane Grp Cap(c), veh/h	553	0	405	285	0	972	494	0	402	510	0	0
V/C Ratio(X)	0.70	0.00	0.20	0.80	0.00	0.46	0.28	0.00	0.83	0.02	0.00	0.00
Avail Cap(c_a), veh/h	1452	0	1157	637	0	2194	788	0	728	851	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.5	0.0	15.6	21.7	0.0	7.9	16.6	0.0	19.0	15.2	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.1	2.0	0.0	0.1	0.1	0.0	1.7	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	0.7	2.6	0.0	2.4	1.2	0.0	3.6	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.1	0.0	15.7	23.7	0.0	8.0	16.7	0.0	20.8	15.2	0.0	0.0
LnGrp LOS	B		B	C		A	B		C	B		
Approach Vol, veh/h		468			677			470			9	
Approach Delay, s/veh		18.5			13.3			19.6			15.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	4	6	7	8
Phs Duration (G+Y+Rc), s	19.2	34.4	19.2	14.5	19.9
Change Period (Y+Rc), s	* 5.8	6.1	5.8	6.0	* 6.1
Max Green Setting (Gmax), s	* 24	63.9	24.2	19.0	* 39
Max Q Clear Time (g_c+I1), s	2.2	10.2	12.5	8.6	12.2
Green Ext Time (p_c), s	0.0	1.8	0.8	0.2	1.6

Intersection Summary	
HCM 7th Control Delay, s/veh	16.6
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	4.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	636	36	79	566	65	150
Future Vol, veh/h	636	36	79	566	65	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	55	-	105	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	4	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	6	1	2	6	4
Mvmt Flow	656	37	81	584	67	155

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	693	0	1402	656
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	746	-
Critical Hdwy	-	-	4.11	-	6.46	6.24
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.209	-	3.554	3.336
Pot Cap-1 Maneuver	-	-	907	-	151	462
Stage 1	-	-	-	-	509	-
Stage 2	-	-	-	-	462	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	907	-	138	462
Mov Cap-2 Maneuver	-	-	-	-	138	-
Stage 1	-	-	-	-	509	-
Stage 2	-	-	-	-	420	-

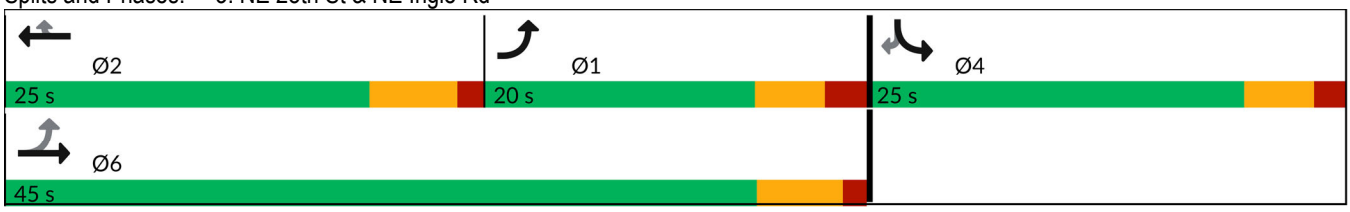
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.15	27.89
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	138	462	-	-	907	-
HCM Lane V/C Ratio	0.487	0.335	-	-	0.09	-
HCM Ctrl Dly (s/v)	53.8	16.7	-	-	9.4	-
HCM Lane LOS	F	C	-	-	A	-
HCM 95th %tile Q(veh)	2.3	1.5	-	-	0.3	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	294	462	321	97	152	297
Future Volume (vph)	294	462	321	97	152	297
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	10.8	15.7	24.9	24.9	10.3	10.3
Total Split (s)	20.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	28.6%	64.3%	35.7%	35.7%	35.7%	35.7%
Yellow Time (s)	3.6	4.5	4.5	4.5	3.6	3.6
All-Red Time (s)	2.2	1.2	1.4	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.7	5.9	5.9	5.3	5.3
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effct Green (s)	25.2	25.3	13.5	13.5	9.1	9.1
Actuated g/C Ratio	0.55	0.55	0.30	0.30	0.20	0.20
v/c Ratio	0.51	0.48	0.64	0.20	0.49	0.57
Control Delay (s/veh)	11.6	8.6	21.2	4.9	22.6	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	11.6	8.6	21.2	4.9	22.6	7.3
LOS	B	A	C	A	C	A
Approach Delay (s/veh)		9.7	17.4		12.5	
Approach LOS		A	B		B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 45.7	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay (s/veh): 12.5	Intersection LOS: B
Intersection Capacity Utilization 55.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: NE 28th St & NE Ingle Rd



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	294	462	321	97	152	297
Future Volume (veh/h)	294	462	321	97	152	297
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1885	1856	1841	1870	1900
Adj Flow Rate, veh/h	309	486	338	102	160	313
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	3	4	2	0
Cap, veh/h	395	932	446	375	434	392
Arrive On Green	0.11	0.49	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1767	1885	1856	1560	1781	1610
Grp Volume(v), veh/h	309	486	338	102	160	313
Grp Sat Flow(s),veh/h/ln	1767	1885	1856	1560	1781	1610
Q Serve(g_s), s	2.4	7.4	7.2	2.3	3.2	7.7
Cycle Q Clear(g_c), s	2.4	7.4	7.2	2.3	3.2	7.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	395	932	446	375	434	392
V/C Ratio(X)	0.78	0.52	0.76	0.27	0.37	0.80
Avail Cap(c_a), veh/h	785	1749	837	703	829	749
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	7.3	15.0	13.1	13.3	15.0
Incr Delay (d2), s/veh	1.3	0.2	1.0	0.1	0.2	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.8	2.4	0.6	1.0	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	18.2	7.5	16.0	13.2	13.5	16.5
LnGrp LOS	B	A	B	B	B	B
Approach Vol, veh/h		795	440		473	
Approach Delay, s/veh		11.6	15.3		15.5	
Approach LOS		B	B		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.7	16.1		15.6		26.7
Change Period (Y+Rc), s	5.8	5.9		5.3		* 5.8
Max Green Setting (Gmax), s	14.2	19.1		19.7		* 39
Max Q Clear Time (g_c+I1), s	4.4	9.2		9.7		9.4
Green Ext Time (p_c), s	0.3	1.0		0.6		1.8

Intersection Summary	
HCM 7th Control Delay, s/veh	13.6
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	364	155	7	217	0	133	0	6	1	1	3
Future Vol, veh/h	6	364	155	7	217	0	133	0	6	1	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	1	0	0	3	0	3	0	0	100	0	0
Mvmt Flow	6	387	165	7	231	0	141	0	6	1	1	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	231	0	0	552	0	0	729	728	470	646	811	231
Stage 1	-	-	-	-	-	-	482	482	-	246	246	-
Stage 2	-	-	-	-	-	-	246	246	-	400	565	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.13	6.5	6.2	8.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	7.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	7.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.527	4	3.3	4.4	4	3.3
Pot Cap-1 Maneuver	1349	-	-	1028	-	-	337	352	598	277	316	813
Stage 1	-	-	-	-	-	-	563	556	-	583	707	-
Stage 2	-	-	-	-	-	-	755	707	-	470	511	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1349	-	-	1028	-	-	330	347	598	270	311	813
Mov Cap-2 Maneuver	-	-	-	-	-	-	330	347	-	270	311	-
Stage 1	-	-	-	-	-	-	559	552	-	579	701	-
Stage 2	-	-	-	-	-	-	745	701	-	462	508	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.09	0.27	23.85	12.73
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	336	19	-	-	56	-	-	471
HCM Lane V/C Ratio	0.44	0.005	-	-	0.007	-	-	0.011
HCM Ctrl Dly (s/v)	23.9	7.7	0	-	8.5	0	-	12.7
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	2.2	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	10.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	93	273	0	0	165	127	0	0	0	167	0	61
Future Vol, veh/h	93	273	0	0	165	127	0	0	0	167	0	61
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	1	0	0	2	6	0	0	0	3	0	0
Mvmt Flow	103	303	0	0	183	141	0	0	0	186	0	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	324	0	0	303	0	0	693	834	303	764	764	254
Stage 1	-	-	-	-	-	-	510	510	-	254	254	-
Stage 2	-	-	-	-	-	-	183	324	-	510	510	-
Critical Hdwy	4.13	-	-	4.1	-	-	7.1	6.5	6.2	7.13	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.13	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.13	5.5	-
Follow-up Hdwy	2.227	-	-	2.2	-	-	3.5	4	3.3	3.527	4	3.3
Pot Cap-1 Maneuver	1230	-	-	1269	-	-	360	306	741	319	336	790
Stage 1	-	-	-	-	-	-	550	541	-	748	701	-
Stage 2	-	-	-	-	-	-	823	653	-	544	541	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1230	-	-	1269	-	-	296	275	741	287	302	790
Mov Cap-2 Maneuver	-	-	-	-	-	-	296	275	-	287	302	-
Stage 1	-	-	-	-	-	-	494	486	-	748	701	-
Stage 2	-	-	-	-	-	-	752	653	-	489	486	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	2.08	0	0	39.17
HCM LOS			A	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	457	-	-	1269	-	-	346
HCM Lane V/C Ratio	-	0.084	-	-	-	-	-	0.732
HCM Ctrl Dly (s/v)	0	8.2	0	-	0	-	-	39.2
HCM Lane LOS	A	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	-	0.3	-	-	0	-	-	5.5

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	1	113	130	1
Future Vol, veh/h	1	1	1	113	130	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-4	-4	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	5	0	0	0	0	8
Mvmt Flow	1	1	1	140	160	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	303	161	162	0	-	0
Stage 1	161	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.85	6.4	4.1	-	-	-
Critical Hdwy Stg 1	5.85	-	-	-	-	-
Critical Hdwy Stg 2	5.85	-	-	-	-	-
Follow-up Hdwy	3.545	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	660	881	1429	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	864	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	659	881	1429	-	-	-
Mov Cap-2 Maneuver	659	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	864	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.79	0.07	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	16	-	754	-	-
HCM Lane V/C Ratio	0.001	-	0.003	-	-
HCM Ctrl Dly (s/v)	7.5	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

MOVEMENT SUMMARY

Site: 7 [Everett St (SR 500) St & NE Everett Dr_BackgroundPM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett St (SR 500)															
3	L2	All MCs	185	0.0	185	0.0	0.472	10.5	LOS B	3.3	83.0	0.33	0.49	0.33	34.3
8	T1	All MCs	255	1.0	255	1.0	0.472	4.2	LOS A	3.3	83.0	0.33	0.49	0.33	35.0
18	R2	All MCs	159	0.0	159	0.0	0.472	4.3	LOS A	3.3	83.0	0.33	0.49	0.33	34.7
Approach			599	0.4	599	0.4	0.472	6.2	LOS A	3.3	83.0	0.33	0.49	0.33	34.7
East: NE Everett Dr															
1	L2	All MCs	161	0.0	161	0.0	0.214	12.0	LOS B	1.2	28.9	0.55	0.67	0.55	32.6
6	T1	All MCs	11	0.0	11	0.0	0.214	5.7	LOS A	1.2	28.9	0.55	0.67	0.55	33.3
16	R2	All MCs	39	0.0	39	0.0	0.214	5.9	LOS A	1.2	28.9	0.55	0.67	0.55	33.0
Approach			211	0.0	211	0.0	0.214	10.5	LOS B	1.2	28.9	0.55	0.67	0.55	32.7
North: NE Everett St (SR 500)															
7	L2	All MCs	55	0.0	55	0.0	0.232	11.5	LOS B	1.2	30.8	0.49	0.56	0.49	34.0
4	T1	All MCs	182	2.0	182	2.0	0.232	5.4	LOS A	1.2	30.8	0.49	0.56	0.49	34.7
14	R2	All MCs	3	0.0	3	0.0	0.232	5.4	LOS A	1.2	30.8	0.49	0.56	0.49	34.4
Approach			240	1.5	240	1.5	0.232	6.8	LOS A	1.2	30.8	0.49	0.56	0.49	34.5
West: NE Everett Dr															
5	L2	All MCs	3	0.0	3	0.0	0.180	11.7	LOS B	0.9	23.4	0.51	0.56	0.51	34.7
2	T1	All MCs	31	0.0	31	0.0	0.180	5.4	LOS A	0.9	23.4	0.51	0.56	0.51	35.4
12	R2	All MCs	149	0.0	149	0.0	0.180	5.6	LOS A	0.9	23.4	0.51	0.56	0.51	35.1
Approach			184	0.0	184	0.0	0.180	5.7	LOS A	0.9	23.4	0.51	0.56	0.51	35.2
All Vehicles			1234	0.5	1234	0.5	0.472	7.0	LOS A	3.3	83.0	0.43	0.55	0.43	34.4

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	73	58	488	381	47
Future Vol, veh/h	9	73	58	488	381	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	110	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	4	-4	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	2	0	1	0
Mvmt Flow	10	79	63	530	414	51

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1096	440	465	0	-	0
Stage 1	440	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Critical Hdwy	6.8	6.44	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.218	-	-	-
Pot Cap-1 Maneuver	211	598	1096	-	-	-
Stage 1	622	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	199	598	1096	-	-	-
Mov Cap-2 Maneuver	199	-	-	-	-	-
Stage 1	587	-	-	-	-	-
Stage 2	483	-	-	-	-	-

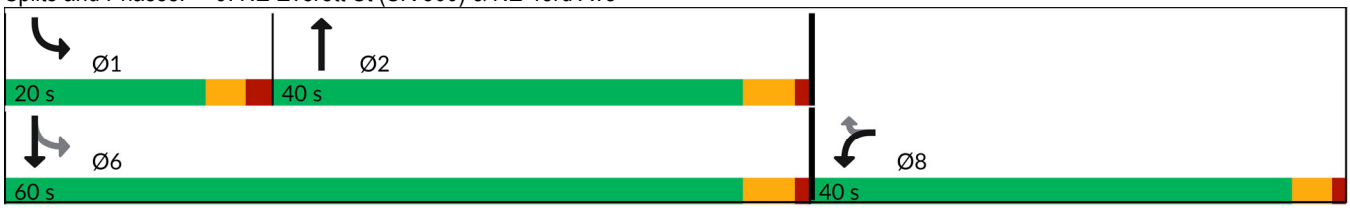
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	13.97	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1096	-	490	-	-
HCM Lane V/C Ratio	0.058	-	0.182	-	-
HCM Ctrl Dly (s/v)	8.5	-	14	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	224	57	486	298	53	405
Future Volume (vph)	224	57	486	298	53	405
Turn Type	Prot	Perm	NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		Free	6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	23.0	23.0	30.0		10.0	50.0
Total Split (s)	40.0	40.0	40.0		20.0	60.0
Total Split (%)	40.0%	40.0%	40.0%		20.0%	60.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0
All-Red Time (s)	1.0	1.0	1.0		2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	Min		None	Min
Act Effct Green (s)	14.6	14.6	29.2	59.4	35.3	35.3
Actuated g/C Ratio	0.25	0.25	0.49	1.00	0.59	0.59
v/c Ratio	0.55	0.14	0.59	0.21	0.12	0.40
Control Delay (s/veh)	27.0	7.5	16.5	0.3	5.9	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.0	7.5	16.5	0.3	5.9	7.9
LOS	C	A	B	A	A	A
Approach Delay (s/veh)	23.0		10.3			7.6
Approach LOS	C		B			A

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 59.4	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay (s/veh): 11.9	Intersection LOS: B
Intersection Capacity Utilization 53.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: NE Everett St (SR 500) & NE 43rd Ave



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	224	57	486	298	53	405
Future Volume (veh/h)	224	57	486	298	53	405
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1979	1979	1791	1806	2057	2012
Adj Flow Rate, veh/h	238	40	517	0	56	431
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	1	0	0	3
Cap, veh/h	339	302	779		464	1211
Arrive On Green	0.18	0.18	0.43	0.00	0.05	0.60
Sat Flow, veh/h	1884	1677	1791	1530	1959	2012
Grp Volume(v), veh/h	238	40	517	0	56	431
Grp Sat Flow(s),veh/h/ln	1884	1677	1791	1530	1959	2012
Q Serve(g_s), s	4.9	0.8	9.5	0.0	0.6	4.5
Cycle Q Clear(g_c), s	4.9	0.8	9.5	0.0	0.6	4.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	339	302	779		464	1211
V/C Ratio(X)	0.70	0.13	0.66		0.12	0.36
Avail Cap(c_a), veh/h	1645	1464	1520		1087	2683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	14.2	9.3	0.0	6.4	4.2
Incr Delay (d2), s/veh	2.6	0.2	2.1	0.0	0.1	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.3	3.1	0.0	0.2	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	18.5	14.4	11.3	0.0	6.5	4.4
LnGrp LOS	B	B	B		A	A
Approach Vol, veh/h	278		517			487
Approach Delay, s/veh	17.9		11.3			4.6
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.9	22.9			29.8	11.4
Change Period (Y+Rc), s	5.0	5.0			5.0	4.0
Max Green Setting (Gmax), s	15.0	35.0			55.0	36.0
Max Q Clear Time (g_c+I1), s	2.6	11.5			6.5	6.9
Green Ext Time (p_c), s	0.1	6.5			3.8	0.9

Intersection Summary	
HCM 7th Control Delay, s/veh	10.2
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

MOVEMENT SUMMARY

Site 10 NE Everett St & NW Lake Rd_BackgroundPM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett Street															
3	L2	All MCs	279	0.0	279	0.0	0.300	12.1	LOS B	1.9	46.7	0.61	0.69	0.61	31.8
8	T1	All MCs	517	1.0	517	1.0	0.450	5.5	LOS A	3.3	84.4	0.66	0.57	0.66	34.8
Approach			796	0.6	796	0.6	0.450	7.8	LOS A	3.3	84.4	0.65	0.61	0.65	33.7
North: NE Everett Street															
4	T1	All MCs	392	2.0	392	2.0	0.318	5.0	LOS A	2.1	53.3	0.52	0.49	0.52	35.1
14	R2	All MCs	303	0.0	303	0.0	0.239	4.9	LOS A	1.5	37.4	0.48	0.53	0.48	35.3
Approach			695	1.1	695	1.1	0.318	4.9	LOS A	2.1	53.3	0.50	0.51	0.50	35.2
West: NW Lake Road															
5	L2	All MCs	390	1.0	390	1.0	0.336	11.7	LOS B	2.2	56.6	0.60	0.67	0.60	31.8
12	R2	All MCs	371	0.0	371	0.0	0.315	5.5	LOS A	2.1	52.1	0.59	0.58	0.59	35.0
Approach			762	0.5	762	0.5	0.336	8.7	LOS A	2.2	56.6	0.60	0.62	0.60	33.2
All Vehicles			2252	0.8	2252	0.8	0.450	7.2	LOS A	3.3	84.4	0.58	0.58	0.58	34.0

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	123	18	56	463	485	72
Future Vol, veh/h	123	18	56	463	485	72
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	4	0	0	2
Mvmt Flow	129	19	59	487	511	76

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1160	554	592	0	-	0
Stage 1	554	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.14	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	218	536	974	-	-	-
Stage 1	579	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	203	533	969	-	-	-
Mov Cap-2 Maneuver	341	-	-	-	-	-
Stage 1	541	-	-	-	-	-
Stage 2	546	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	22.07	0.97	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	969	-	357	-	-
HCM Lane V/C Ratio	0.061	-	0.416	-	-
HCM Ctrl Dly (s/v)	9	-	22.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	10	33	7	8	28	12	438	3	40	365	98
Future Vol, veh/h	53	10	33	7	8	28	12	438	3	40	365	98
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	10	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	56	11	35	7	9	30	13	466	3	43	388	104

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1023	1020	440	972	1071	470	493	0	0	469	0	0
Stage 1	526	526	-	493	493	-	-	-	-	-	-	-
Stage 2	498	495	-	479	578	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.6	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.6	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.6	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.09	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	216	229	621	234	223	598	1081	-	-	1103	-	-
Stage 1	539	516	-	561	550	-	-	-	-	-	-	-
Stage 2	558	533	-	572	505	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	187	218	621	200	212	597	1081	-	-	1103	-	-
Mov Cap-2 Maneuver	187	218	-	200	212	-	-	-	-	-	-	-
Stage 1	518	496	-	555	544	-	-	-	-	-	-	-
Stage 2	515	527	-	507	485	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	28.85	16.48	0.22	0.67
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1081	-	-	251	359	1103	-	-
HCM Lane V/C Ratio	0.012	-	-	0.407	0.127	0.039	-	-
HCM Ctrl Dly (s/v)	8.4	-	-	28.8	16.5	8.4	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.9	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	17.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	31	0	0	24	352	0	1	0	355	0	54
Future Vol, veh/h	73	31	0	0	24	352	0	1	0	355	0	54
Conflicting Peds, #/hr	3	0	2	2	0	3	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	3	0	0	0	2	0	0	0	1	0	0
Mvmt Flow	79	34	0	0	26	383	0	1	0	386	0	59

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	818	803	31	-	833	5	59	0	0	2	0	0
Stage 1	801	801	-	-	2	-	-	-	-	-	-	-
Stage 2	17	2	-	-	830	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.53	6.2	-	6.5	6.22	4.1	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.53	-	-	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.53	-	-	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.027	3.3	-	4	3.318	2.2	-	-	2.209	-	-
Pot Cap-1 Maneuver	297	316	1048	0	307	1078	1558	-	-	1627	-	-
Stage 1	381	395	-	0	898	-	-	-	-	-	-	-
Stage 2	1007	892	-	0	388	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	131	237	1046	-	231	1074	1558	-	-	1625	-	-
Mov Cap-2 Maneuver	131	237	-	-	231	-	-	-	-	-	-	-
Stage 1	287	298	-	-	897	-	-	-	-	-	-	-
Stage 2	628	891	-	-	292	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	78.05	12.74	0	6.86
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1558	-	-	151	871	1302	-	-
HCM Lane V/C Ratio	-	-	-	0.748	0.469	0.237	-	-
HCM Ctrl Dly (s/v)	0	-	-	78.1	12.7	7.9	0	-
HCM Lane LOS	A	-	-	F	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	4.6	2.5	0.9	-	-

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	49	131	9	4	115	6	30	136	6	2	125	56
Future Vol, veh/h	49	131	9	4	115	6	30	136	6	2	125	56
Conflicting Peds, #/hr	1	0	3	3	0	1	0	0	9	9	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	4	-	-	-6	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	2	0	0	2	0	0	1	0	0	0	0
Mvmt Flow	56	149	10	5	131	7	34	155	7	2	142	64

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	467	417	177	459	445	168	206	0	0	170	0	0
Stage 1	178	178	-	235	235	-	-	-	-	-	-	-
Stage 2	289	239	-	224	210	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.1	6.52	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.5	4.018	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	509	527	871	516	508	881	1378	-	-	1419	-	-
Stage 1	828	752	-	772	710	-	-	-	-	-	-	-
Stage 2	723	708	-	783	728	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	362	507	869	348	489	873	1378	-	-	1407	-	-
Mov Cap-2 Maneuver	362	507	-	348	489	-	-	-	-	-	-	-
Stage 1	827	750	-	745	685	-	-	-	-	-	-	-
Stage 2	564	683	-	617	727	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	19.07	15.24	1.34	0.08
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	311	-	-	468	493	19	-	-
HCM Lane V/C Ratio	0.025	-	-	0.459	0.288	0.002	-	-
HCM Ctrl Dly (s/v)	7.7	0	-	19.1	15.2	7.6	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2.4	1.2	0	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	228	700	579	28	8	149
Future Vol, veh/h	228	700	579	28	8	149
Conflicting Peds, #/hr	3	0	0	3	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-8	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	2	0	0	1
Mvmt Flow	240	737	609	29	8	157

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	642	0	-	0	1476	322
Stage 1	-	-	-	-	627	-
Stage 2	-	-	-	-	848	-
Critical Hdwy	4.12	-	-	-	5.2	6.12
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	2.21	-	-	-	3.5	3.31
Pot Cap-1 Maneuver	945	-	-	-	230	726
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	561	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	943	-	-	-	155	724
Mov Cap-2 Maneuver	-	-	-	-	155	-
Stage 1	-	-	-	-	448	-
Stage 2	-	-	-	-	560	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	3.97	0	12.26
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	750	-	-	-	155	724
HCM Lane V/C Ratio	0.255	-	-	-	0.054	0.217
HCM Ctrl Dly (s/v)	10.1	2	-	-	29.5	11.3
HCM Lane LOS	B	A	-	-	D	B
HCM 95th %tile Q(veh)	1	-	-	-	0.2	0.8

MOVEMENT SUMMARY

Site: 16 [NW Norwood St & NW 6th Ave_BackgroundPM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NW 6th Avenue															
3	L2	All MCs	61	5.0	61	5.0	0.290	17.6	LOS B	2.0	50.9	0.91	0.81	0.91	31.0
8	T1	All MCs	6	17.0	6	17.0	0.290	12.8	LOS B	2.0	50.9	0.91	0.81	0.91	31.5
18	R2	All MCs	70	1.0	70	1.0	0.290	10.9	LOS B	2.0	50.9	0.91	0.81	0.91	31.5
Approach			138	3.5	138	3.5	0.290	14.0	LOS B	2.0	50.9	0.91	0.81	0.91	31.3
East: NW 6th Avenue															
1	L2	All MCs	73	1.0	73	1.0	0.617	10.9	LOS B	5.6	144.0	0.50	0.46	0.50	34.2
6	T1	All MCs	650	3.0	650	3.0	0.617	4.7	LOS A	5.6	144.0	0.50	0.46	0.50	35.0
16	R2	All MCs	16	7.0	16	7.0	0.617	4.9	LOS A	5.6	144.0	0.50	0.46	0.50	34.5
Approach			739	2.9	739	2.9	0.617	5.3	LOS A	5.6	144.0	0.50	0.46	0.50	34.9
North: NW Norwood Street															
7	L2	All MCs	15	7.0	15	7.0	0.090	14.9	LOS B	0.5	13.1	0.73	0.72	0.73	32.7
4	T1	All MCs	8	0.0	8	0.0	0.090	8.0	LOS A	0.5	13.1	0.73	0.72	0.73	33.6
14	R2	All MCs	35	3.0	35	3.0	0.090	8.4	LOS A	0.5	13.1	0.73	0.72	0.73	33.2
Approach			58	3.6	58	3.6	0.090	10.0	LOS A	0.5	13.1	0.73	0.72	0.73	33.1
West: NW 6th Avenue															
5	L2	All MCs	46	0.0	46	0.0	0.831	11.4	LOS B	12.5	314.3	0.73	0.48	0.73	33.7
2	T1	All MCs	912	1.0	912	1.0	0.831	5.1	LOS A	12.5	314.3	0.73	0.48	0.73	34.4
12	R2	All MCs	80	1.0	80	1.0	0.831	5.3	LOS A	12.5	314.3	0.73	0.48	0.73	34.1
Approach			1038	1.0	1038	1.0	0.831	5.4	LOS A	12.5	314.3	0.73	0.48	0.73	34.4
All Vehicles			1972	1.9	1972	1.9	0.831	6.1	LOS A	12.5	314.3	0.66	0.50	0.66	34.3

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	657	4	82	472	10	67
Future Vol, veh/h	657	4	82	472	10	67
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	105	-	85	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-6	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	699	4	87	502	11	71

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	703	0	1378	702
Stage 1	-	-	-	-	701	-
Stage 2	-	-	-	-	677	-
Critical Hdwy	-	-	4.1	-	5.2	5.6
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	904	-	255	496
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	637	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	904	-	231	496
Mov Cap-2 Maneuver	-	-	-	-	231	-
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	576	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.39	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	231	496	-	-	904	-
HCM Lane V/C Ratio	0.046	0.144	-	-	0.097	-
HCM Ctrl Dly (s/v)	21.4	13.5	-	-	9.4	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.5	-	-	0.3	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	564	146	98	373	72	104
Future Vol, veh/h	564	146	98	373	72	104
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	3	1
Mvmt Flow	594	154	103	393	76	109

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	747	0	1269	671
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	599	-
Critical Hdwy	-	-	4.11	-	6.43	6.21
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.209	-	3.527	3.309
Pot Cap-1 Maneuver	-	-	866	-	185	458
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	547	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	866	-	163	458
Mov Cap-2 Maneuver	-	-	-	-	163	-
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	482	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.02	27.48
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	163	458	-	-	866	-
HCM Lane V/C Ratio	0.466	0.239	-	-	0.119	-
HCM Ctrl Dly (s/v)	45.1	15.3	-	-	9.7	-
HCM Lane LOS	E	C	-	-	A	-
HCM 95th %tile Q(veh)	2.2	0.9	-	-	0.4	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	575	7	83	357	6	3	5	121	10	7	13
Future Vol, veh/h	7	575	7	83	357	6	3	5	121	10	7	13
Conflicting Peds, #/hr	0	0	3	3	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	130	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	1	0	0	0	0	0	0	8
Mvmt Flow	8	625	8	90	388	7	3	5	132	11	8	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	395	0	0	636	0	0	1220	1222	632	1215	1223	392
Stage 1	-	-	-	-	-	-	647	647	-	572	572	-
Stage 2	-	-	-	-	-	-	573	575	-	643	651	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.372
Pot Cap-1 Maneuver	1175	-	-	957	-	-	158	181	484	160	181	644
Stage 1	-	-	-	-	-	-	463	470	-	509	508	-
Stage 2	-	-	-	-	-	-	508	506	-	465	468	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1175	-	-	955	-	-	133	162	483	101	162	643
Mov Cap-2 Maneuver	-	-	-	-	-	-	133	162	-	101	162	-
Stage 1	-	-	-	-	-	-	459	465	-	461	460	-
Stage 2	-	-	-	-	-	-	442	458	-	332	463	-

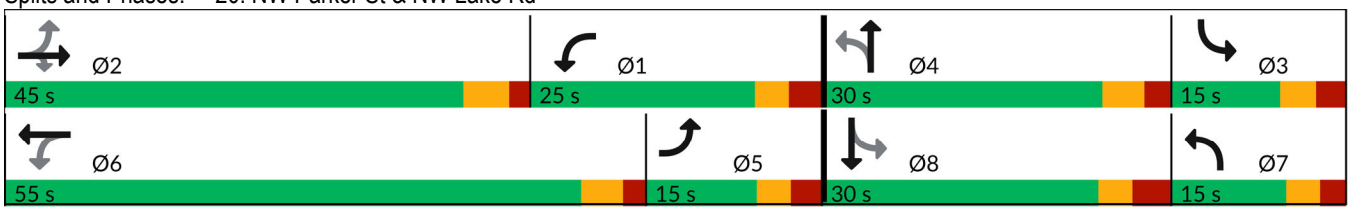
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.1	1.71	17.61	28.55
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	424	1175	-	-	955	-	-	185
HCM Lane V/C Ratio	0.33	0.006	-	-	0.094	-	-	0.176
HCM Ctrl Dly (s/v)	17.6	8.1	-	-	9.2	-	-	28.5
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.4	0	-	-	0.3	-	-	0.6

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	19	446	162	45	313	192	128	43	95
Future Volume (vph)	19	446	162	45	313	192	128	43	95
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		1	6	7	4	3	8
Permitted Phases	2		2	6		4		8	
Detector Phase	5	2	2	1	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	26.7	26.7	10.7	20.5	10.2	29.2	10.6	33.3
Total Split (s)	15.0	45.0	45.0	25.0	55.0	15.0	30.0	15.0	30.0
Total Split (%)	13.0%	39.1%	39.1%	21.7%	47.8%	13.0%	26.1%	13.0%	26.1%
Yellow Time (s)	3.0	4.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0
All-Red Time (s)	2.5	1.7	1.7	2.7	1.9	2.2	2.3	2.6	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.7	5.7	5.7	5.5	5.2	5.9	5.6	6.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)	28.9	24.9	24.9	30.3	26.2	23.9	17.6	15.1	10.1
Actuated g/C Ratio	0.43	0.37	0.37	0.45	0.39	0.36	0.26	0.23	0.15
v/c Ratio	0.04	0.69	0.25	0.14	0.27	0.39	0.56	0.16	0.44
Control Delay (s/veh)	14.7	26.5	3.7	14.9	18.6	21.6	28.0	20.1	36.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.7	26.5	3.7	14.9	18.6	21.6	28.0	20.1	36.1
LOS	B	C	A	B	B	C	C	C	D
Approach Delay (s/veh)		20.3			18.1		25.2		31.7
Approach LOS		C			B		C		C

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 67	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay (s/veh): 22.2	Intersection LOS: C
Intersection Capacity Utilization 65.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 20: NW Parker St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	446	162	45	313	25	192	128	117	43	95	17
Future Volume (veh/h)	19	446	162	45	313	25	192	128	117	43	95	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1885	1900	1885	1885	1900	1900	1885	1900
Adj Flow Rate, veh/h	21	490	108	49	344	9	211	141	97	47	104	17
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	1	0	1	0	1	1	0	0	1	0
Cap, veh/h	592	587	492	271	532	14	376	188	129	202	176	29
Arrive On Green	0.25	0.31	0.31	0.08	0.15	0.15	0.11	0.18	0.18	0.05	0.11	0.11
Sat Flow, veh/h	1810	1900	1592	1810	3565	93	1795	1039	715	1810	1578	258
Grp Volume(v), veh/h	21	490	108	49	172	181	211	0	238	47	0	121
Grp Sat Flow(s),veh/h/ln	1810	1900	1592	1810	1791	1868	1795	0	1754	1810	0	1836
Q Serve(g_s), s	0.0	14.4	3.0	0.0	5.4	5.5	0.2	0.0	7.7	0.0	0.0	3.8
Cycle Q Clear(g_c), s	0.0	14.4	3.0	0.0	5.4	5.5	0.2	0.0	7.7	0.0	0.0	3.8
Prop In Lane	1.00		1.00	1.00		0.05	1.00		0.41	1.00		0.14
Lane Grp Cap(c), veh/h	592	587	492	271	267	279	376	0	317	202	0	205
V/C Ratio(X)	0.04	0.83	0.22	0.18	0.65	0.65	0.56	0.00	0.75	0.23	0.00	0.59
Avail Cap(c_a), veh/h	592	1244	1042	702	1477	1540	475	0	704	403	0	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.3	19.3	15.4	25.2	24.0	24.1	23.4	0.0	23.3	27.4	0.0	25.4
Incr Delay (d2), s/veh	0.0	1.2	0.1	0.1	1.0	0.9	1.3	0.0	1.3	0.6	0.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.8	1.0	0.6	2.2	2.3	2.6	0.0	3.0	0.6	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.3	20.5	15.5	25.3	25.0	25.0	24.8	0.0	24.6	27.9	0.0	26.4
LnGrp LOS	B	C	B	C	C	C	C		C	C		C
Approach Vol, veh/h		619			402			449			168	
Approach Delay, s/veh		19.5			25.1			24.7			26.8	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	24.3	8.3	16.8	20.5	14.5	12.1	13.0
Change Period (Y+Rc), s	5.7	5.7	* 5.6	5.9	5.7	* 5.5	5.6	* 6.3
Max Green Setting (Gmax), s	19.3	39.3	* 9.4	24.1	9.5	* 50	9.8	* 24
Max Q Clear Time (g_c+I1), s	2.0	16.4	2.0	9.7	2.0	7.5	2.2	5.8
Green Ext Time (p_c), s	0.0	2.1	0.0	0.7	0.0	1.3	0.3	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	23.0
HCM 7th LOS	C

Notes

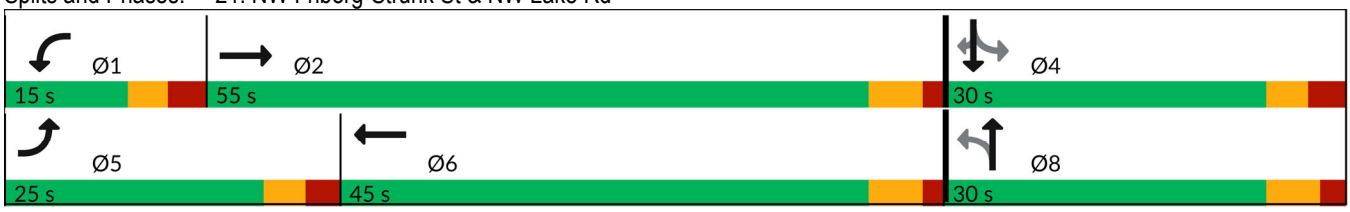
User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	336	554	1	444	4	1	97	0	219
Future Volume (vph)	336	554	1	444	4	1	97	0	219
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2	1	6		8		4	
Permitted Phases					8		4		4
Detector Phase	5	2	1	6	8	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.6	23.5	10.8	26.6	34.0	34.0	33.9	33.9	33.9
Total Split (s)	25.0	55.0	15.0	45.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	25.0%	55.0%	15.0%	45.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.6	1.5	2.8	1.6	2.0	2.0	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.6	5.5	5.8	5.6		6.0		5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	None	None	None	None	None
Act Effct Green (s)	19.7	39.2	5.1	15.6		9.1		9.2	9.2
Actuated g/C Ratio	0.32	0.63	0.08	0.25		0.15		0.15	0.15
v/c Ratio	0.64	0.26	0.01	0.69		0.02		0.51	0.54
Control Delay (s/veh)	27.1	6.4	30.0	24.0		24.0		34.3	9.2
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay (s/veh)	27.1	6.4	30.0	24.0		24.0		34.3	9.2
LOS	C	A	C	C		C		C	A
Approach Delay (s/veh)		14.2		24.0		24.0		16.9	
Approach LOS		B		C		C		B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 61.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay (s/veh): 17.8	Intersection LOS: B
Intersection Capacity Utilization 56.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 21: NW Friberg-Strunk St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	336	554	2	1	444	129	4	1	0	97	0	219
Future Volume (veh/h)	336	554	2	1	444	129	4	1	0	97	0	219
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1900	1900	1900	1885	1900	1900	1900	1900	1856	1900	1885
Adj Flow Rate, veh/h	365	602	2	1	483	140	4	1	0	105	0	238
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	0	0	0	1	0	0	0	0	3	0	1
Cap, veh/h	425	1792	6	3	696	200	265	54	0	431	0	312
Arrive On Green	0.24	0.49	0.49	0.00	0.25	0.25	0.20	0.20	0.00	0.20	0.00	0.20
Sat Flow, veh/h	1795	3690	12	1810	2738	788	750	276	0	1529	0	1593
Grp Volume(v), veh/h	365	294	310	1	315	308	5	0	0	105	0	238
Grp Sat Flow(s),veh/h/ln	1795	1805	1898	1810	1791	1736	1026	0	0	1529	0	1593
Q Serve(g_s), s	10.7	5.5	5.5	0.0	8.7	8.8	0.0	0.0	0.0	0.0	0.0	7.7
Cycle Q Clear(g_c), s	10.7	5.5	5.5	0.0	8.7	8.8	2.7	0.0	0.0	2.7	0.0	7.7
Prop In Lane	1.00		0.01	1.00		0.45	0.80		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	425	876	921	3	455	441	319	0	0	431	0	312
V/C Ratio(X)	0.86	0.34	0.34	0.30	0.69	0.70	0.02	0.00	0.00	0.24	0.00	0.76
Avail Cap(c_a), veh/h	635	1629	1713	303	1286	1247	623	0	0	780	0	700
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.1	8.7	8.7	27.4	18.5	18.6	17.8	0.0	0.0	18.8	0.0	20.8
Incr Delay (d2), s/veh	5.2	0.1	0.1	18.0	0.7	0.8	0.0	0.0	0.0	0.1	0.0	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	1.6	1.7	0.0	3.3	3.3	0.0	0.0	0.0	1.0	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.3	8.8	8.8	45.4	19.2	19.3	17.8	0.0	0.0	18.9	0.0	22.3
LnGrp LOS	C	A	A	D	B	B	B			B		C
Approach Vol, veh/h		969			624			5			343	
Approach Delay, s/veh		15.0			19.3			17.8			21.3	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	32.2		16.7	18.6	19.5		16.7				
Change Period (Y+Rc), s	5.8	* 5.6		* 6	5.6	5.6		6.0				
Max Green Setting (Gmax), s	9.2	* 50		* 24	19.4	39.4		24.0				
Max Q Clear Time (g_c+I1), s	2.0	7.5		9.7	12.7	10.8		4.7				
Green Ext Time (p_c), s	0.0	2.2		0.6	0.3	2.6		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh	17.5	
HCM 7th LOS	B	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	80	27	323	126	28	315
Future Vol, veh/h	80	27	323	126	28	315
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	175	0	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	2	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	7	2	0	0	1
Mvmt Flow	88	30	355	138	31	346

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	834	426	0	0	495	0
Stage 1	426	-	-	-	-	-
Stage 2	408	-	-	-	-	-
Critical Hdwy	6.01	6.07	-	-	4.1	-
Critical Hdwy Stg 1	5.01	-	-	-	-	-
Critical Hdwy Stg 2	5.01	-	-	-	-	-
Follow-up Hdwy	3.509	3.363	-	-	2.2	-
Pot Cap-1 Maneuver	373	633	-	-	1079	-
Stage 1	693	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	361	631	-	-	1077	-
Mov Cap-2 Maneuver	361	-	-	-	-	-
Stage 1	692	-	-	-	-	-
Stage 2	685	-	-	-	-	-

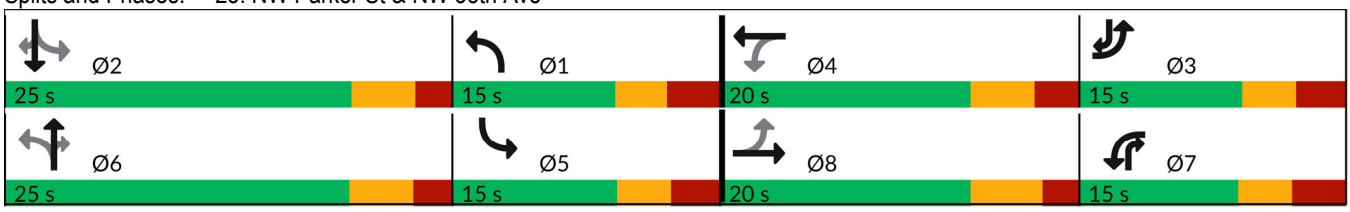
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	16.34	0	0.69
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	361	631	1077	-
HCM Lane V/C Ratio	-	-	0.243	0.047	0.029	-
HCM Ctrl Dly (s/v)	-	-	18.1	11	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0.1	0.1	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	74	131	161	238	51	277	60	102	290	127
Future Volume (vph)	74	131	161	238	51	277	60	102	290	127
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	7	4	1	6	7	5	2	3
Permitted Phases	8		4		6		6	2		2
Detector Phase	3	8	7	4	1	6	7	5	2	3
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.8	24.0	11.0	23.0	10.9	20.0	11.0	10.7	20.0	10.8
Total Split (s)	15.0	20.0	15.0	20.0	15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	20.0%	26.7%	20.0%	26.7%	20.0%	33.3%	20.0%	20.0%	33.3%	20.0%
Yellow Time (s)	3.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0	3.6	3.0
All-Red Time (s)	2.8	2.0	3.0	2.4	2.9	2.1	3.0	2.7	2.0	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.0	6.0	6.0	5.9	5.7	6.0	5.7	5.6	5.8
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	None	Max	None
Act Effct Green (s)	18.5	12.6	21.0	14.4	24.8	19.8	31.2	26.1	22.0	30.3
Actuated g/C Ratio	0.29	0.20	0.33	0.23	0.39	0.31	0.50	0.41	0.35	0.48
v/c Ratio	0.26	0.54	0.37	0.87	0.12	0.49	0.07	0.24	0.44	0.15
Control Delay (s/veh)	18.4	27.9	18.4	48.5	12.5	23.4	0.4	13.9	21.0	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.4	27.9	18.4	48.5	12.5	23.4	0.4	13.9	21.0	2.9
LOS	B	C	B	D	B	C	A	B	C	A
Approach Delay (s/veh)		25.2		39.1		18.4			15.1	
Approach LOS		C		D		B			B	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 62.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay (s/veh): 24.8	Intersection LOS: C
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 23: NW Parker St & NW 38th Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	131	62	161	238	114	51	277	60	102	290	127
Future Volume (veh/h)	74	131	62	161	238	114	51	277	60	102	290	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1900	1811	1885	1900	1900	1900	1900	1900	1885	1976	1900
Adj Flow Rate, veh/h	76	135	64	166	245	118	53	286	62	105	299	131
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	6	1	0	0	0	0	0	1	0	0
Cap, veh/h	248	174	83	396	253	122	400	548	691	411	573	587
Arrive On Green	0.07	0.14	0.14	0.14	0.21	0.21	0.07	0.29	0.29	0.07	0.29	0.29
Sat Flow, veh/h	1882	1215	576	1795	1209	582	1810	1900	1610	1795	1976	1610
Grp Volume(v), veh/h	76	0	199	166	0	363	53	286	62	105	299	131
Grp Sat Flow(s),veh/h/ln	1882	0	1792	1795	0	1792	1810	1900	1610	1795	1976	1610
Q Serve(g_s), s	0.0	0.0	7.2	0.0	0.0	13.4	0.0	8.4	0.0	0.0	8.5	0.0
Cycle Q Clear(g_c), s	0.0	0.0	7.2	0.0	0.0	13.4	0.0	8.4	0.0	0.0	8.5	0.0
Prop In Lane	1.00		0.32	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	0	257	396	0	375	400	548	691	411	573	587
V/C Ratio(X)	0.31	0.00	0.77	0.42	0.00	0.97	0.13	0.52	0.09	0.26	0.52	0.22
Avail Cap(c_a), veh/h	366	0	375	396	0	375	511	548	691	526	573	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	0.0	27.6	24.5	0.0	26.2	20.6	19.9	11.3	21.6	19.9	14.7
Incr Delay (d2), s/veh	0.3	0.0	3.2	0.3	0.0	37.8	0.1	3.5	0.3	0.1	3.4	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	3.0	2.2	0.0	9.3	0.6	3.9	0.5	1.3	4.1	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.9	0.0	30.8	24.7	0.0	64.0	20.7	23.5	11.6	21.8	23.2	15.6
LnGrp LOS	C		C	C		E	C	C	B	C	C	B
Approach Vol, veh/h		275			529			401			535	
Approach Delay, s/veh		30.3			51.7			21.3			21.1	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	25.0	11.0	20.0	10.9	25.0	15.4	15.6
Change Period (Y+Rc), s	5.9	5.6	6.0	* 6	5.9	* 5.7	6.0	6.0
Max Green Setting (Gmax), s	9.1	19.4	9.2	* 14	9.3	* 19	9.0	14.0
Max Q Clear Time (g_c+I1), s	2.0	10.5	2.0	15.4	2.0	10.4	2.0	9.2
Green Ext Time (p_c), s	0.0	0.9	0.0	0.0	0.1	0.8	0.1	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	31.9
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	123	69	129	84	10
Future Vol, veh/h	15	123	69	129	84	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	1	5	6	1	0
Mvmt Flow	19	154	86	161	105	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	445	111	118	0	-	0
Stage 1	111	-	-	-	-	-
Stage 2	334	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.245	-	-	-
Pot Cap-1 Maneuver	574	945	1452	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	730	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	537	945	1452	-	-	-
Mov Cap-2 Maneuver	537	-	-	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	730	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.14	2.66	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	627	-	873	-	-
HCM Lane V/C Ratio	0.059	-	0.198	-	-
HCM Ctrl Dly (s/v)	7.6	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	46	50	145	36	37	143
Future Vol, veh/h	46	50	145	36	37	143
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	4	6	4	14	5	4
Mvmt Flow	52	57	165	41	42	163

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	432	185	0	0	206	0
Stage 1	185	-	-	-	-	-
Stage 2	247	-	-	-	-	-
Critical Hdwy	6.44	6.26	-	-	4.15	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.354	-	-	2.245	-
Pot Cap-1 Maneuver	577	847	-	-	1348	-
Stage 1	842	-	-	-	-	-
Stage 2	790	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	557	847	-	-	1348	-
Mov Cap-2 Maneuver	557	-	-	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	763	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.33	0	1.59
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	678	370	-
HCM Lane V/C Ratio	-	-	0.161	0.031	-
HCM Ctrl Dly (s/v)	-	-	11.3	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	98	126	155	138	32
Future Vol, veh/h	15	98	126	155	138	32
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	1	0	1	1	3
Mvmt Flow	17	109	140	172	153	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	624	172	190	0	-	0
Stage 1	172	-	-	-	-	-
Stage 2	452	-	-	-	-	-
Critical Hdwy	6.8	6.41	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.2	-	-	-
Pot Cap-1 Maneuver	422	866	1396	-	-	-
Stage 1	847	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	379	865	1395	-	-	-
Mov Cap-2 Maneuver	379	-	-	-	-	-
Stage 1	761	-	-	-	-	-
Stage 2	613	-	-	-	-	-

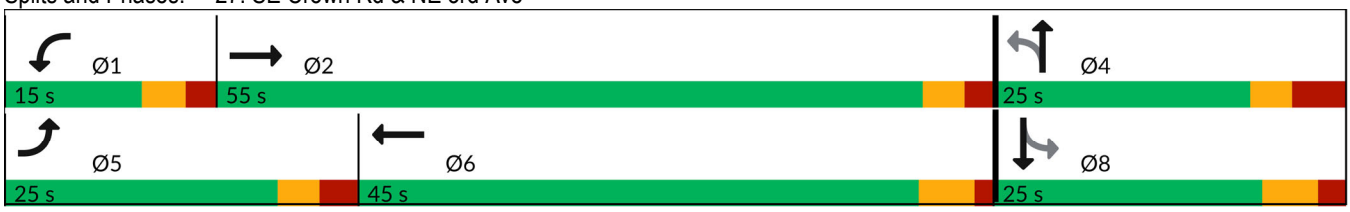
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.45	3.53	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1395	-	379	865	-	-
HCM Lane V/C Ratio	0.1	-	0.044	0.126	-	-
HCM Ctrl Dly (s/v)	7.9	-	14.9	9.8	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	0.4	-	-

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR	Ø1
Lane Configurations									
Traffic Volume (vph)	269	489	413	11	4	93	1	216	
Future Volume (vph)	269	489	413	11	4	93	1	216	
Turn Type	Prot	NA	NA	Perm	NA	Perm	NA	Free	
Protected Phases	5	2	6		4		8		1
Permitted Phases				4		8		Free	
Detector Phase	5	2	6	4	4	8	8		
Switch Phase									
Minimum Initial (s)	2.0	8.0	8.0	2.0	2.0	2.0	2.0		5.0
Minimum Split (s)	7.6	23.0	20.3	32.8	32.8	35.0	35.0		10.2
Total Split (s)	25.0	55.0	45.0	25.0	25.0	25.0	25.0		15.0
Total Split (%)	26.3%	57.9%	47.4%	26.3%	26.3%	26.3%	26.3%		16%
Yellow Time (s)	3.0	3.0	4.0	3.0	3.0	4.0	4.0		3.0
All-Red Time (s)	2.6	2.0	1.3	3.8	3.8	2.0	2.0		2.2
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0		
Total Lost Time (s)	5.6	5.0	5.3		6.8		6.0		
Lead/Lag	Lead	Lag	Lag						Lead
Lead-Lag Optimize?	Yes	Yes	Yes						Yes
Recall Mode	None	None	None	None	None	None	None		None
Act Effct Green (s)	13.6	35.5	13.4		7.9		8.6	50.3	
Actuated g/C Ratio	0.27	0.71	0.27		0.16		0.17	1.00	
v/c Ratio	0.59	0.21	0.58		0.06		0.41	0.13	
Control Delay (s/veh)	23.9	4.3	19.1		22.9		27.9	0.2	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)	23.9	4.3	19.1		22.9		27.9	0.2	
LOS	C	A	B		C		C	A	
Approach Delay (s/veh)		11.2	19.1		22.9		8.6		
Approach LOS		B	B		C		A		

Intersection Summary	
Cycle Length: 95	
Actuated Cycle Length: 50.3	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay (s/veh): 13.4	Intersection LOS: B
Intersection Capacity Utilization 55.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 27: SE Crown Rd & NE 3rd Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	269	489	12	0	413	121	11	4	0	93	1	216
Future Volume (veh/h)	269	489	12	0	413	121	11	4	0	93	1	216
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1876	1862	1952	1979	1964	1934	1952	1952	1952	2011	2058	2027
Adj Flow Rate, veh/h	274	499	12	0	421	123	11	4	0	95	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	0	0	1	3	0	0	0	3	0	2
Cap, veh/h	350	2080	50	5	688	199	259	56		322	1	
Arrive On Green	0.20	0.59	0.59	0.00	0.24	0.24	0.08	0.08	0.00	0.08	0.08	0.00
Sat Flow, veh/h	1787	3528	85	1884	2854	826	1109	702	1654	1577	17	1717
Grp Volume(v), veh/h	274	250	261	0	274	270	15	0	0	96	0	0
Grp Sat Flow(s),veh/h/ln	1787	1769	1844	1884	1865	1815	1811	0	1654	1594	0	1717
Q Serve(g_s), s	5.3	2.5	2.5	0.0	4.8	4.9	0.0	0.0	0.0	1.9	0.0	0.0
Cycle Q Clear(g_c), s	5.3	2.5	2.5	0.0	4.8	4.9	0.3	0.0	0.0	2.1	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.46	0.73		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	350	1042	1087	5	449	437	316	0		324	0	
V/C Ratio(X)	0.78	0.24	0.24	0.00	0.61	0.62	0.05	0.00		0.30	0.00	
Avail Cap(c_a), veh/h	946	2413	2517	504	2021	1967	974	0		1006	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.0	3.6	3.6	0.0	12.4	12.4	15.6	0.0	0.0	16.5	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.3	0.3	0.0	1.5	1.5	0.1	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.5	3.6	3.6	0.0	12.9	12.9	15.6	0.0	0.0	16.6	0.0	0.0
LnGrp LOS	B	A	A		B	B	B			B		
Approach Vol, veh/h		785			544			15			96	
Approach Delay, s/veh		7.8			12.9			15.6			16.6	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	26.9		9.7	12.8	14.1		9.7				
Change Period (Y+Rc), s	5.2	* 5.3		6.8	5.6	5.3		* 6.8				
Max Green Setting (Gmax), s	9.8	* 50		18.2	19.4	39.7		* 19				
Max Q Clear Time (g_c+I1), s	0.0	4.5		2.3	7.3	6.9		4.1				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.3	2.0		0.2				

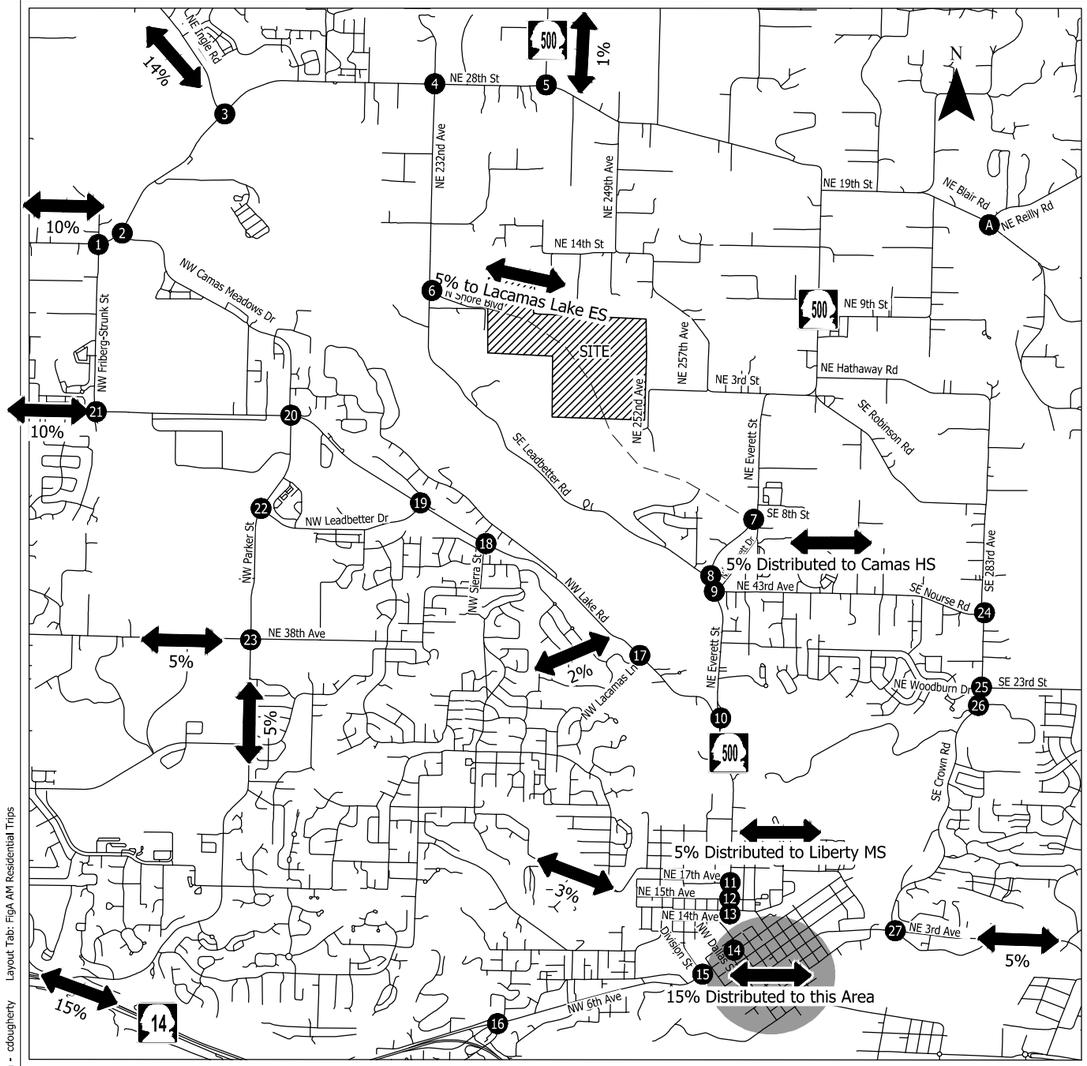
Intersection Summary		
HCM 7th Control Delay, s/veh		10.4
HCM 7th LOS		B

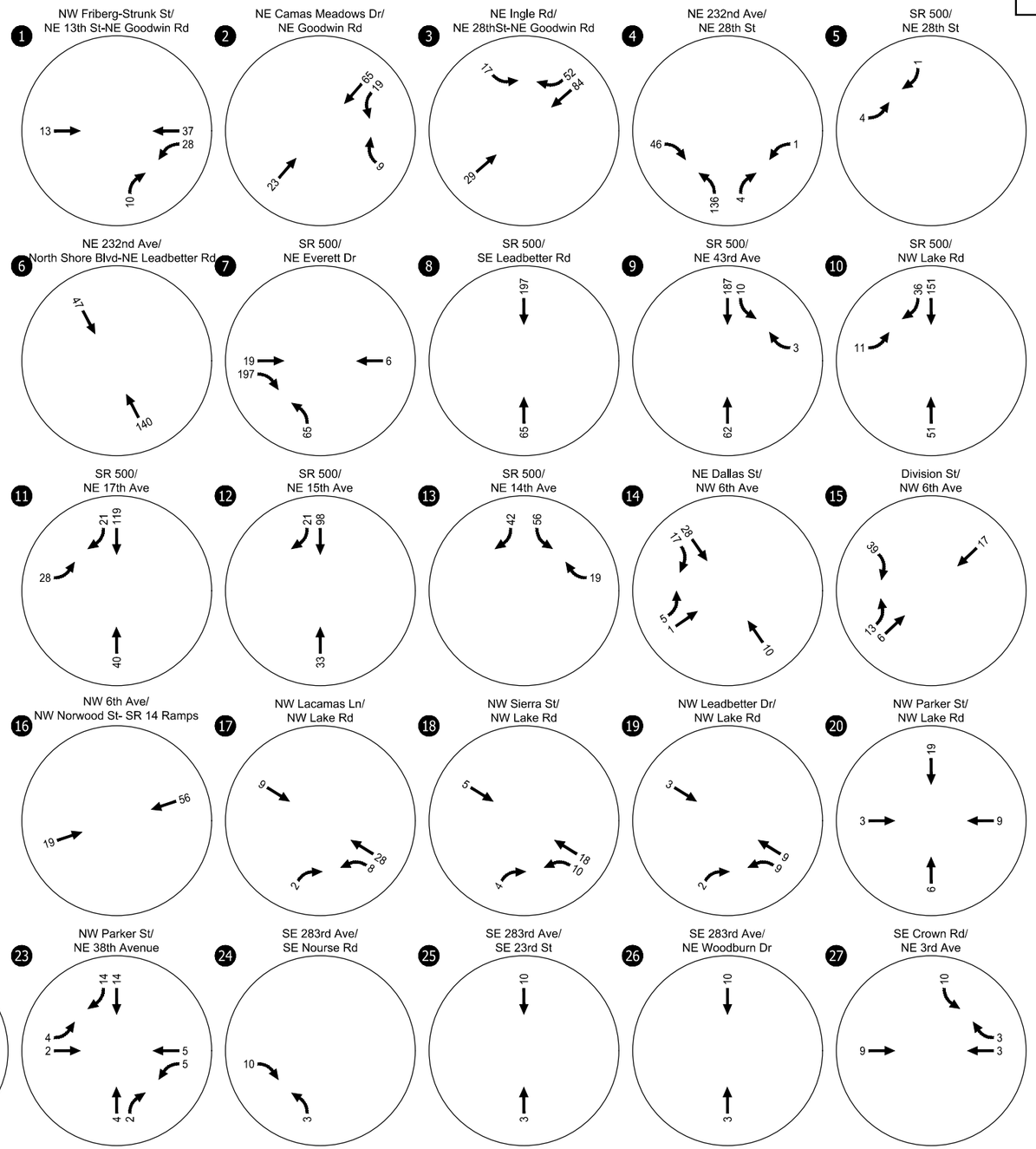
Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix G : Site-Generated Trip Assignment by Land Use

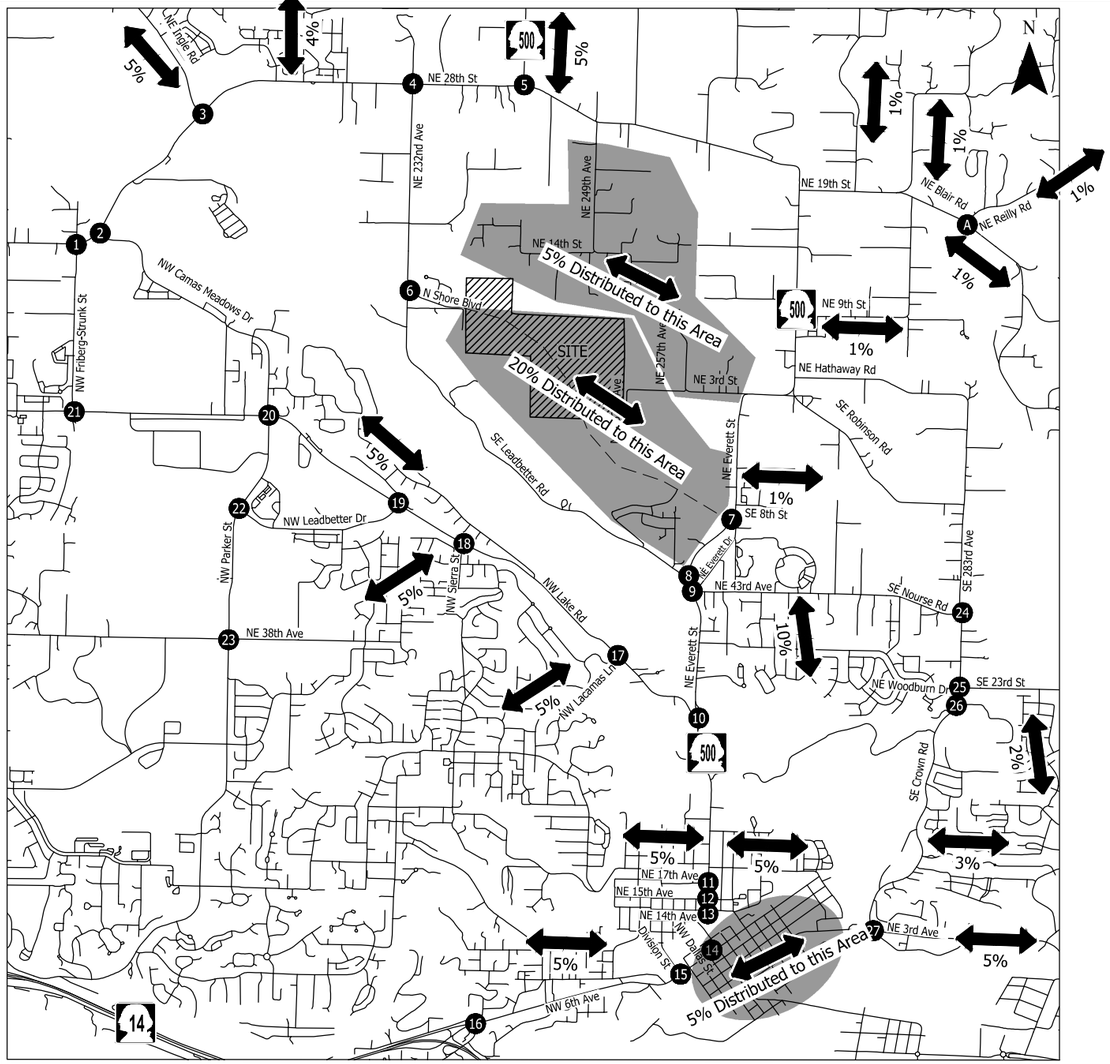




Study Intersections

Weekday AM Peak Hour Residential Trip Assignment Camas, Washington

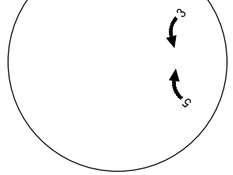
Figure G-1



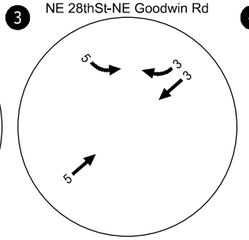
1 NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd

NO SITE TRIPS

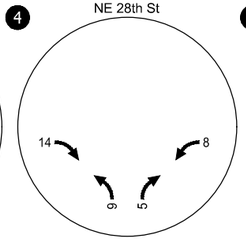
2 NE Camas Meadows Dr/ NE Goodwin Rd



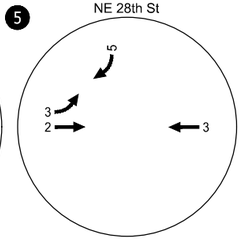
3 NE Ingle Rd/ NE 28thSt-NE Goodwin Rd



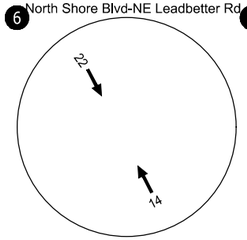
4 NE 232nd Ave/ NE 28th St



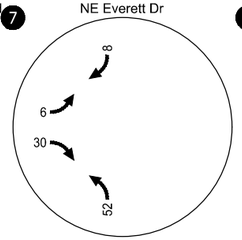
5 SR 500/ NE 28th St



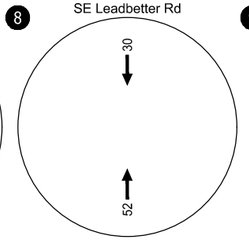
6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd



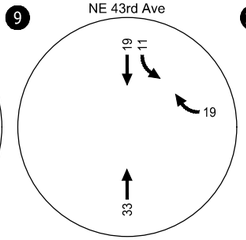
7 SR 500/ NE Everett Dr



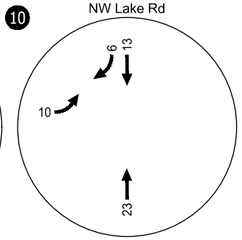
8 SR 500/ SE Leadbetter Rd



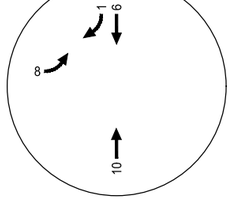
9 SR 500/ NE 43rd Ave



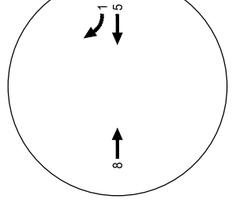
10 SR 500/ NW Lake Rd



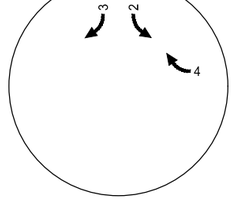
11 SR 500/ NE 17th Ave



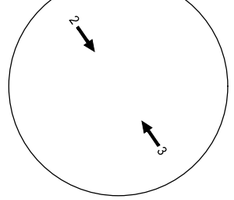
12 SR 500/ NE 15th Ave



13 SR 500/ NE 14th Ave



14 NE Dallas St/ NW 6th Ave



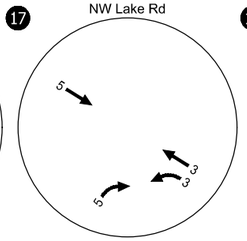
15 Division St/ NW 6th Ave

NO SITE TRIPS

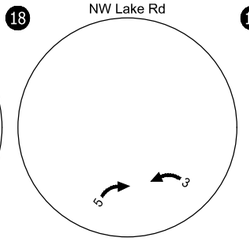
16 NW 6th Ave/ NW Norwood St- SR 14 Ramps

NO SITE TRIPS

17 NW Lacamas Ln/ NW Lake Rd



18 NW Sierra St/ NW Lake Rd



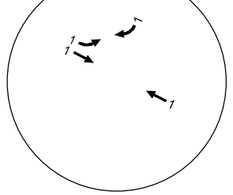
19 NW Leadbetter Dr/ NW Lake Rd

NO SITE TRIPS

20 NW Parker St/ NW Lake Rd

NO SITE TRIPS

A NE Blair Rd/ NE Reilly Rd



21 NW Friberg-Strunk St/ NW Lake Rd-SE 1st St

NO SITE TRIPS

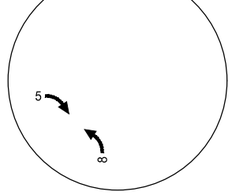
22 NW Parker St/ NW Leadbetter Dr

NO SITE TRIPS

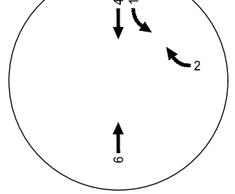
23 NW Parker St/ NE 38th Avenue

NO SITE TRIPS

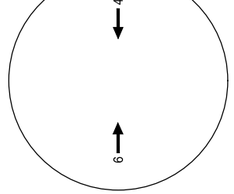
24 SE 283rd Ave/ SE Nourse Rd



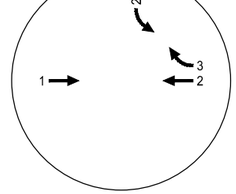
25 SE 283rd Ave/ SE 23rd St



26 SE 283rd Ave/ NE Woodburn Dr



27 SE Crown Rd/ NE 3rd Ave

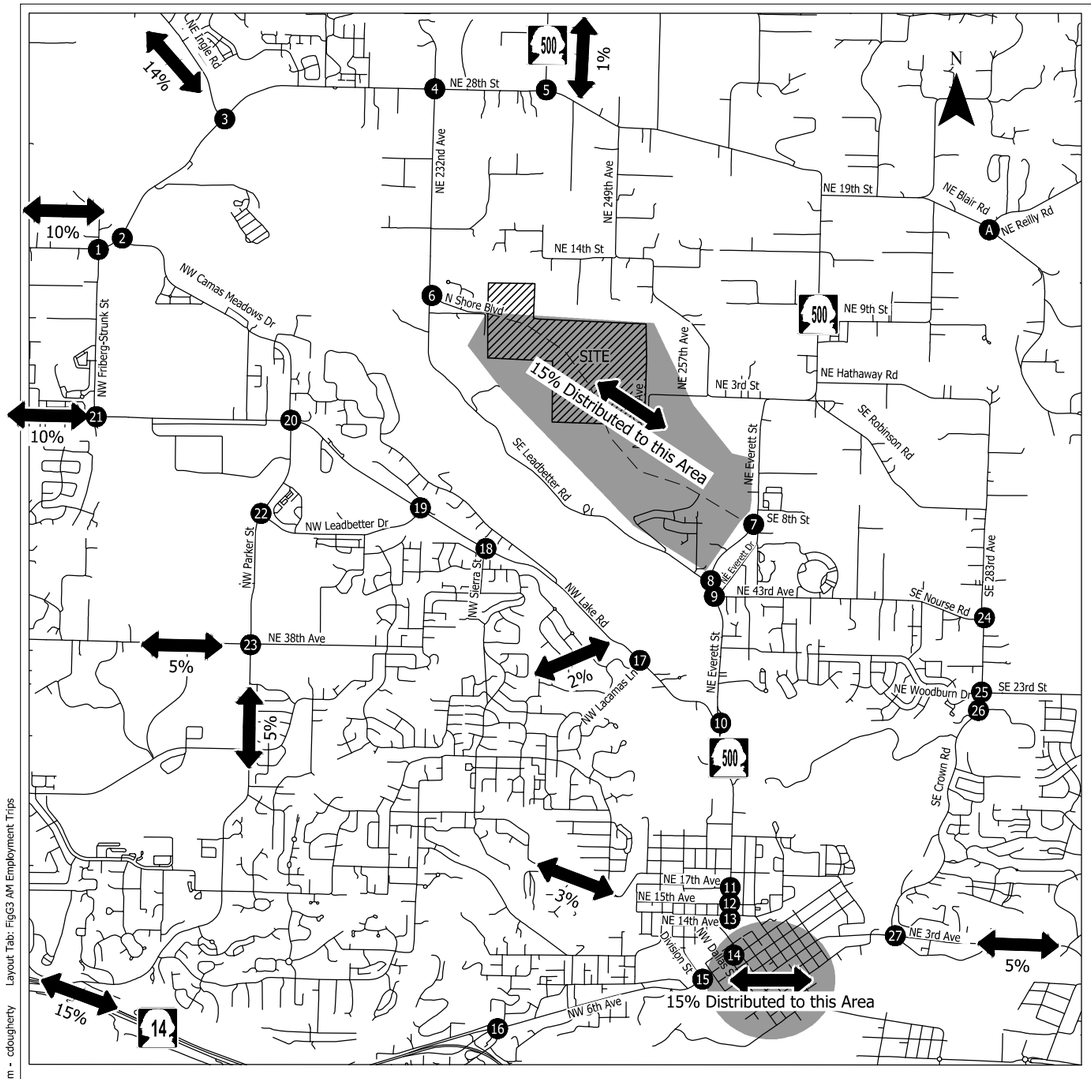


(#) Study Intersections

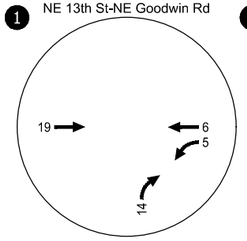
Weekday AM Peak Hour
Commercial Net New Trip Assignment
Camas, Washington

Figure
G-2

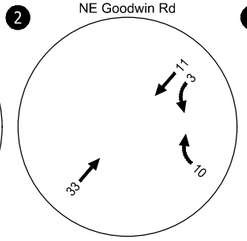
H:\31\31612 - Johnston Dairy\report\figs\31612_TIS Figs.dwg Sep 15, 2025 - 3:06pm - cdougherty Layout Tab: Fig G2 AM Commercial Trips



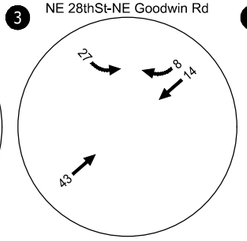
1 NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd



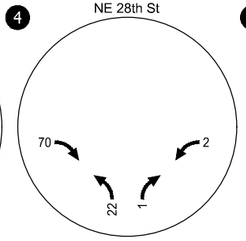
2 NE Camas Meadows Dr/ NE Goodwin Rd



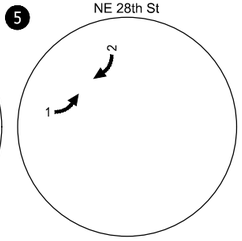
3 NE Ingle Rd/ NE 28thSt-NE Goodwin Rd



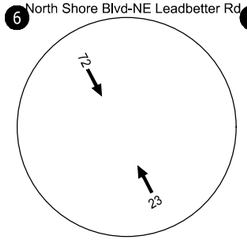
4 NE 232nd Ave/ NE 28th St



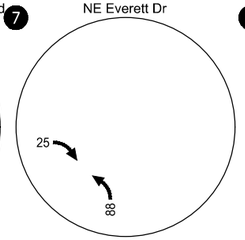
5 SR 500/ NE 28th St



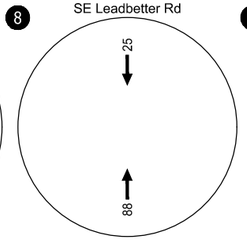
6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd



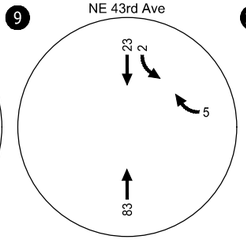
7 SR 500/ NE Everett Dr



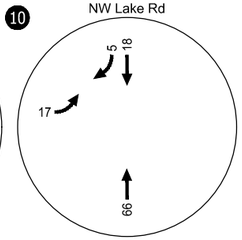
8 SR 500/ SE Leadbetter Rd



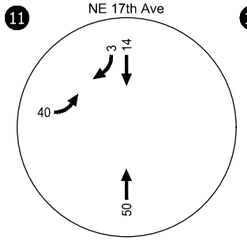
9 SR 500/ NE 43rd Ave



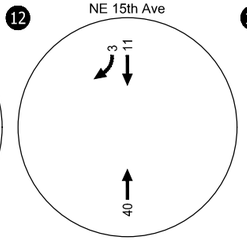
10 SR 500/ NW Lake Rd



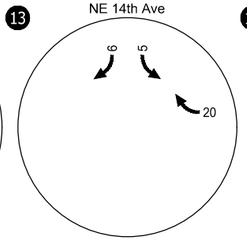
11 SR 500/ NE 17th Ave



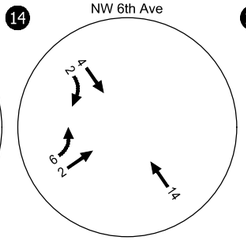
12 SR 500/ NE 15th Ave



13 SR 500/ NE 14th Ave



14 NE Dallas St/ NW 6th Ave



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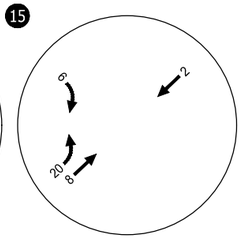
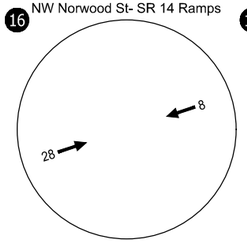
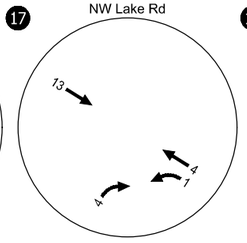


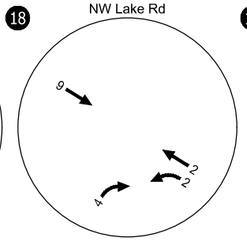
16 NW 6th Ave/ NW Norwood St- SR 14 Ramps



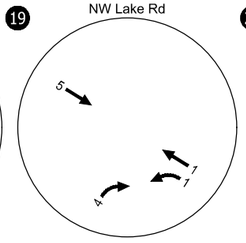
17 NW Lacamas Ln/ NW Lake Rd



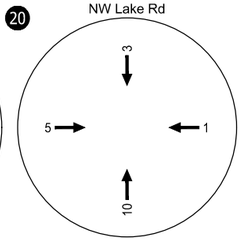
18 NW Sierra St/ NW Lake Rd



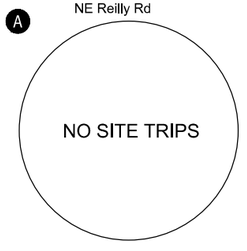
19 NW Leadbetter Dr/ NW Lake Rd



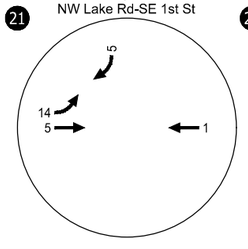
20 NW Parker St/ NW Lake Rd



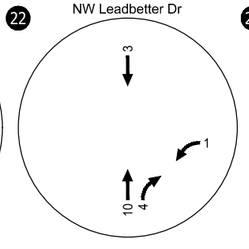
A NE Blair Rd/ NE Reilly Rd



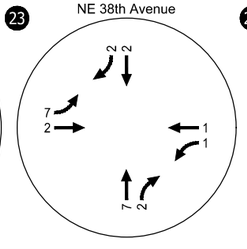
21 NW Friberg-Strunk St/ NW Lake Rd-SE 1st St



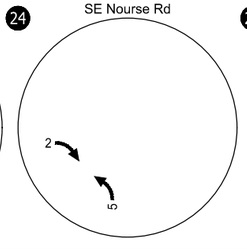
22 NW Parker St/ NW Leadbetter Dr



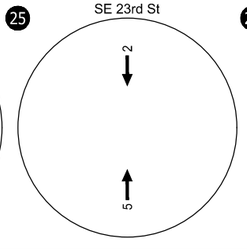
23 NW Parker St/ NE 38th Avenue



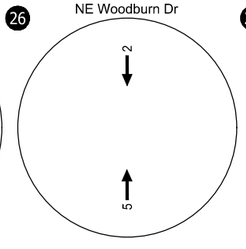
24 SE 283rd Ave/ SE Nourse Rd



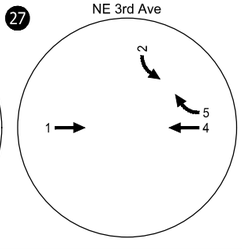
25 SE 283rd Ave/ SE 23rd St



26 SE 283rd Ave/ NE Woodburn Dr



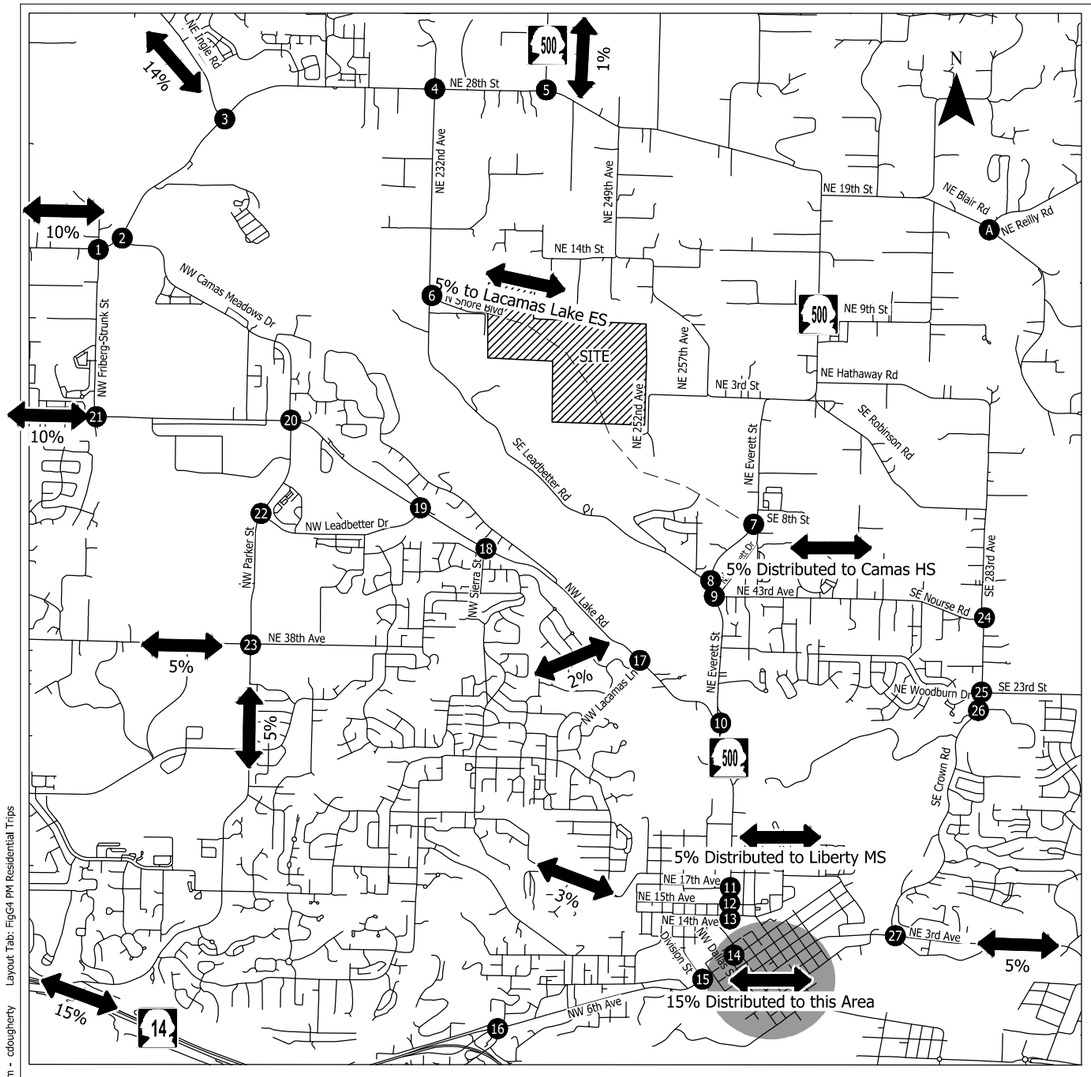
27 SE Crown Rd/ NE 3rd Ave

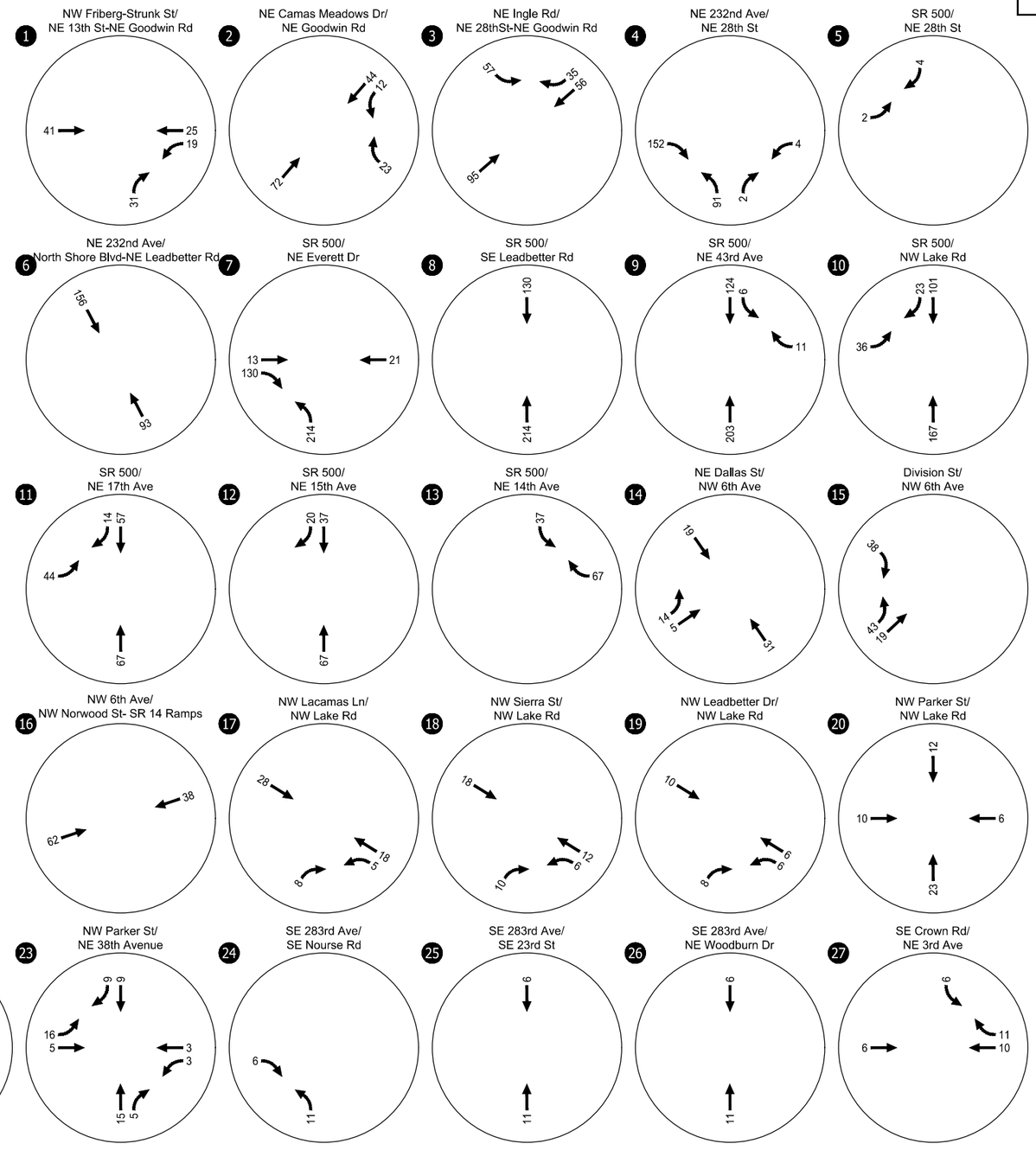


(#) Study Intersections

Weekday AM Peak Hour Employment Trip Assignment Camas, Washington

Figure G-3



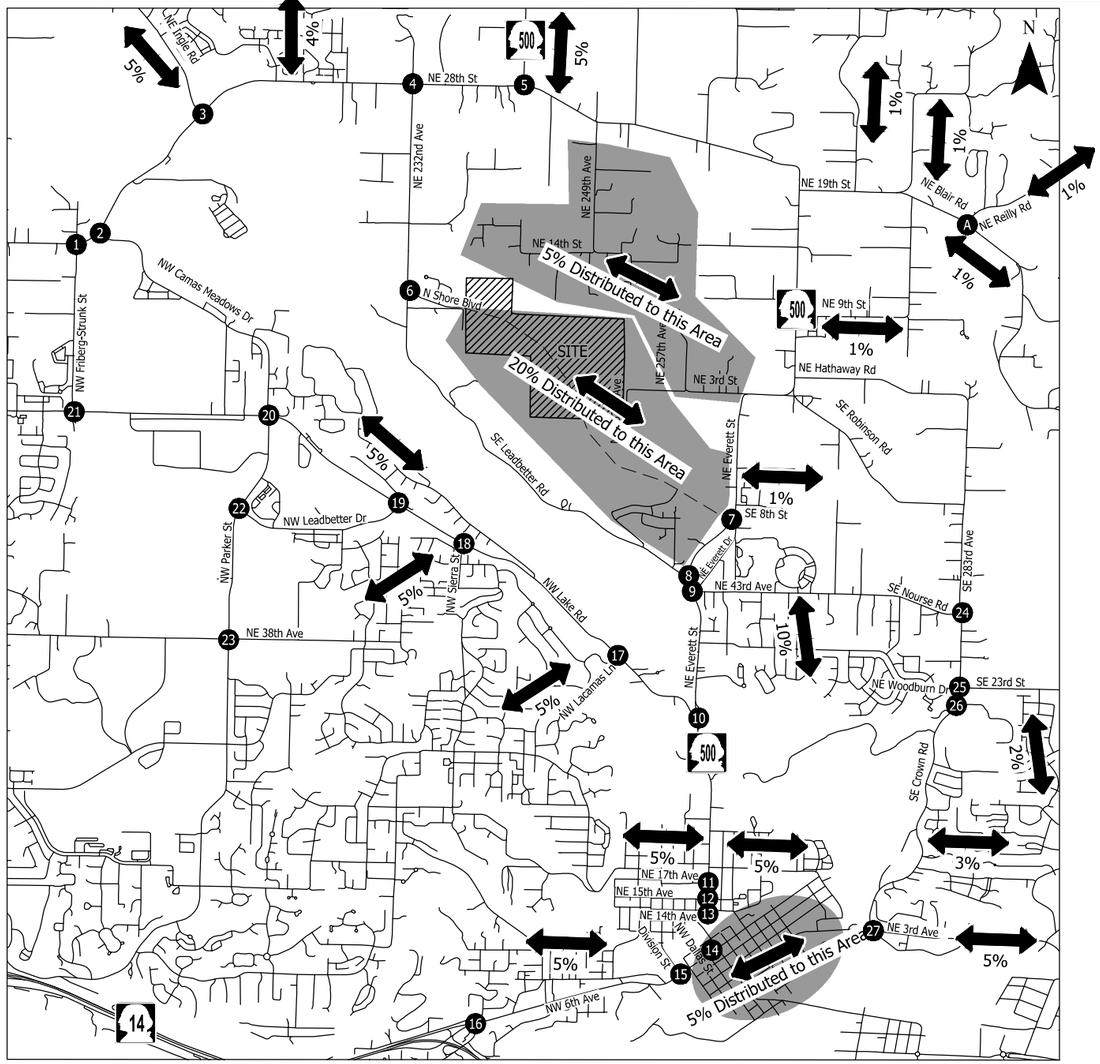


Study Intersections

Weekday PM Peak Hour Residential Trip Assignment Camas, Washington

Figure G-4

H:\31\31612 - Johnston Dairy\report\figs\31612_TIS Figs.dwg Sep 15, 2025 - 3:08pm - cdougherty Layout Tab: Fig04 PM Residential Trips



1 NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd

NO SITE TRIPS

2 NE Camas Meadows Dr/ NE Goodwin Rd

15 14

3 NE Ingle Rd/ NE 28thSt-NE Goodwin Rd

14 15 15 14

4 NE 232nd Ave/ NE 28th St

39 21 42 23

5 SR 500/ NE 28th St

14 15 8 7

6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd

60 65

7 SR 500/ NE Everett Dr

24 25 151 139

8 SR 500/ SE Leadbetter Rd

151 139

9 SR 500/ NE 43rd Ave

98 53 48 91

10 SR 500/ NW Lake Rd

30 68 28 63

11 SR 500/ NE 17th Ave

6 22 10 14

12 SR 500/ NE 15th Ave

8 14 14

13 SR 500/ NE 14th Ave

14 14

14 NE Dallas St/ NW 6th Ave

8 7

15 Division St/ NW 6th Ave

NO SITE TRIPS

16 NW 6th Ave/ NW Norwood St- SR 14 Ramps

NO SITE TRIPS

17 NW Lacamas Ln/ NW Lake Rd

14 14 15 15

18 NW Sierra St/ NW Lake Rd

14 15

19 NW Leadbetter Dr/ NW Lake Rd

NO SITE TRIPS

20 NW Parker St/ NW Lake Rd

NO SITE TRIPS

A NE Blair Rd/ NE Reilly Rd

3 3 3 3

21 NW Friberg-Strunk St/ NW Lake Rd-SE 1st St

NO SITE TRIPS

22 NW Parker St/ NW Leadbetter Dr

NO SITE TRIPS

23 NW Parker St/ NE 38th Avenue

NO SITE TRIPS

24 SE 283rd Ave/ SE Nourse Rd

23 20

25 SE 283rd Ave/ SE 23rd St

17 6 5 15

26 SE 283rd Ave/ NE Woodburn Dr

17 15

27 SE Crown Rd/ NE 3rd Ave

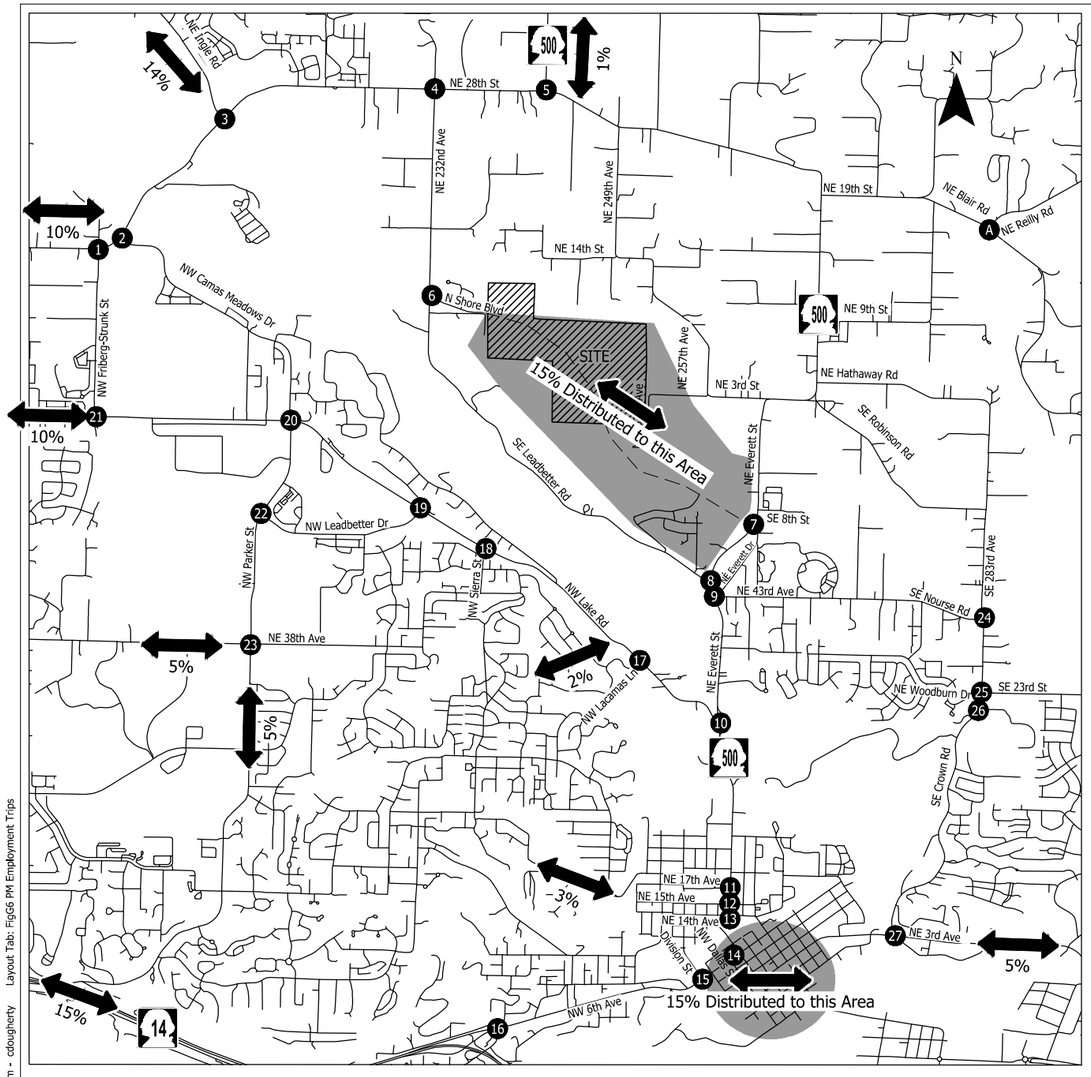
8 7 7 7

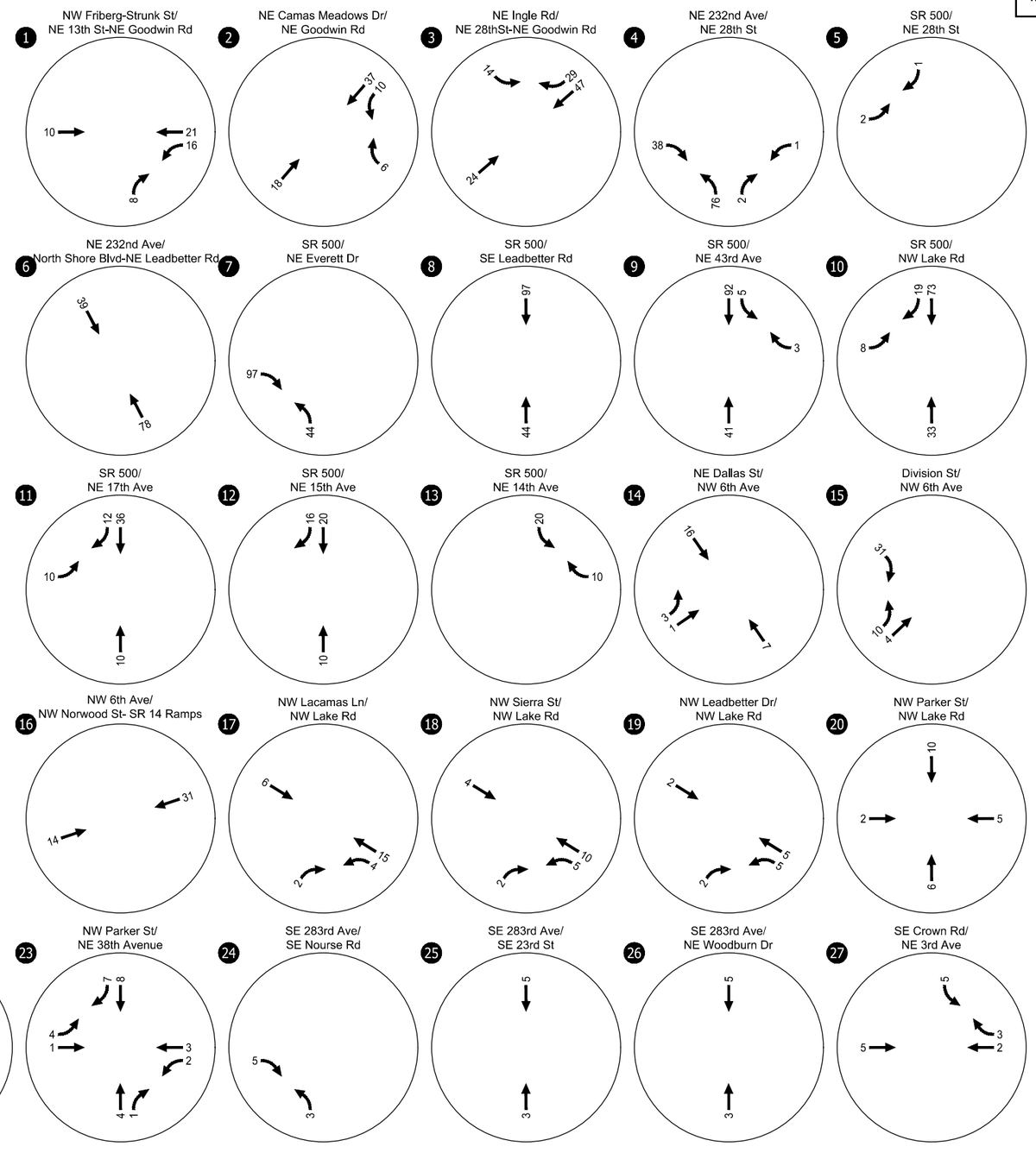
(#) Study Intersections

Weekday PM Peak Hour
Commercial Net New Trip Assignment
Camas, Washington

Figure
G-5

H:\31\31612 - Johnston Dairy\report\figs\31612_TIS Figs.dwg Sep 15, 2025 - 3:09pm - cdougherty Layout Tab: Fig5 PM Commercial Trips





Study Intersections

Weekday PM Peak Hour Employment Trip Assignment Camas, Washington

Figure G-6

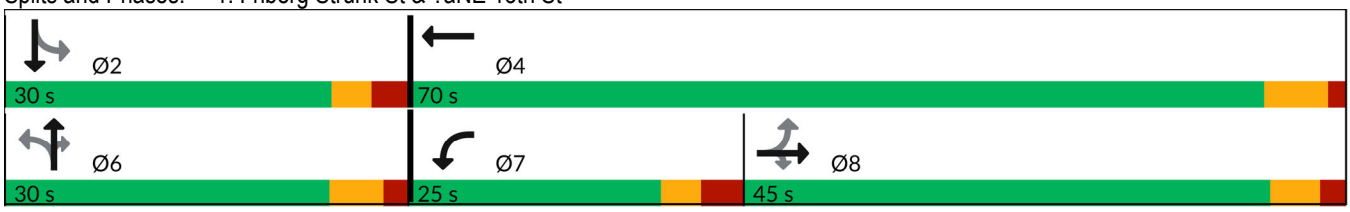
H:\31\31612 - Johnston Dairy\report\figs\31612_TIS Figs.dwg Sep 15, 2025 - 3:09pm - cdougherty Layout Tab: Fig06 PM Employment Trips

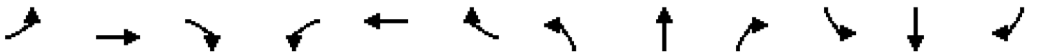
Appendix H : Year 2030 Total Traffic Conditions Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Configurations									
Traffic Volume (vph)	1	241	285	348	473	86	2	136	5
Future Volume (vph)	1	241	285	348	473	86	2	136	5
Turn Type	Perm	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases		8		7	4		6		2
Permitted Phases	8		8			6		6	
Detector Phase	8	8	8	7	4	6	6	6	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.6	23.6	23.6	11.0	24.1	23.8	23.8	23.8	25.6
Total Split (s)	45.0	45.0	45.0	25.0	70.0	30.0	30.0	30.0	30.0
Total Split (%)	45.0%	45.0%	45.0%	25.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.6	3.6	3.6	3.0	4.7	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	3.0	1.4	1.8	1.8	1.8	2.6
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		5.6	5.6	6.0	6.1		5.8	5.8	5.6
Lead/Lag	Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	Min	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)		18.7	18.7	19.6	44.0		10.9	10.9	11.1
Actuated g/C Ratio		0.28	0.28	0.29	0.66		0.16	0.16	0.17
v/c Ratio		0.73	0.53	0.91	0.51		0.57	0.44	0.03
Control Delay (s/veh)		33.1	5.5	52.4	8.4		40.2	9.0	24.5
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		33.1	5.5	52.4	8.4		40.2	9.0	24.5
LOS		C	A	D	A		D	A	C
Approach Delay (s/veh)		18.2			27.0		21.2		24.5
Approach LOS		B			C		C		C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 67.1	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay (s/veh): 23.2	Intersection LOS: C
Intersection Capacity Utilization 63.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Friberg Strunk St & ?áNE 13th St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	241	285	348	473	0	86	2	136	0	5	1
Future Volume (veh/h)	1	241	285	348	473	0	86	2	136	0	5	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	0.96	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	401	1604	1811	1796	1826	1900	1682	1900	1826	1900	1604	1900
Adj Flow Rate, veh/h	1	298	352	430	584	0	106	2	168	0	6	1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	100	20	6	7	5	0	10	0	5	0	20	0
Cap, veh/h	59	451	423	476	1200	0	320	5	229	0	200	33
Arrive On Green	0.28	0.28	0.28	0.28	0.66	0.00	0.15	0.15	0.15	0.00	0.15	0.15
Sat Flow, veh/h	1	1602	1502	1711	1826	0	1366	34	1537	0	1339	223
Grp Volume(v), veh/h	299	0	352	430	584	0	108	0	168	0	0	7
Grp Sat Flow(s),veh/h/ln	1603	0	1502	1711	1826	0	1399	0	1537	0	0	1562
Q Serve(g_s), s	0.0	0.0	13.5	14.9	9.9	0.0	4.2	0.0	6.4	0.0	0.0	0.2
Cycle Q Clear(g_c), s	10.1	0.0	13.5	14.9	9.9	0.0	4.5	0.0	6.4	0.0	0.0	0.2
Prop In Lane	0.00		1.00	1.00		0.00	0.98		1.00	0.00		0.14
Lane Grp Cap(c), veh/h	510	0	423	476	1200	0	325	0	229	0	0	233
V/C Ratio(X)	0.59	0.00	0.83	0.90	0.49	0.00	0.33	0.00	0.73	0.00	0.00	0.03
Avail Cap(c_a), veh/h	1085	0	964	530	1901	0	675	0	606	0	0	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	19.5	0.0	20.7	21.4	5.3	0.0	24.2	0.0	24.9	0.0	0.0	22.3
Incr Delay (d2), s/veh	0.4	0.0	1.7	16.8	0.1	0.0	0.2	0.0	1.7	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	4.4	7.5	2.4	0.0	1.3	0.0	2.3	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.9	0.0	22.4	38.2	5.4	0.0	24.4	0.0	26.7	0.0	0.0	22.3
LnGrp LOS	B		C	D	A		C		C			C
Approach Vol, veh/h		651			1014			276			7	
Approach Delay, s/veh		21.2			19.3			25.8			22.3	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	2	4	6	7	8
Phs Duration (G+Y+Rc), s	15.0	46.4	15.0	23.1	23.4
Change Period (Y+Rc), s	* 5.8	6.1	5.8	6.0	* 6.1
Max Green Setting (Gmax), s	* 24	63.9	24.2	19.0	* 39
Max Q Clear Time (g_c+I1), s	2.2	11.9	8.4	16.9	15.5
Green Ext Time (p_c), s	0.0	2.5	0.5	0.2	1.8

Intersection Summary	
HCM 7th Control Delay, s/veh	20.9
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	304	61	198	816	19	80
Future Vol, veh/h	304	61	198	816	19	80
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	55	-	105	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	4	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	14	20	8	5	37	4
Mvmt Flow	334	67	218	897	21	88

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	402	0	1667	335
Stage 1	-	-	-	-	335	-
Stage 2	-	-	-	-	1332	-
Critical Hdwy	-	-	4.18	-	6.77	6.24
Critical Hdwy Stg 1	-	-	-	-	5.77	-
Critical Hdwy Stg 2	-	-	-	-	5.77	-
Follow-up Hdwy	-	-	2.272	-	3.833	3.336
Pot Cap-1 Maneuver	-	-	1125	-	87	702
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	208	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1124	-	70	702
Mov Cap-2 Maneuver	-	-	-	-	70	-
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	168	-

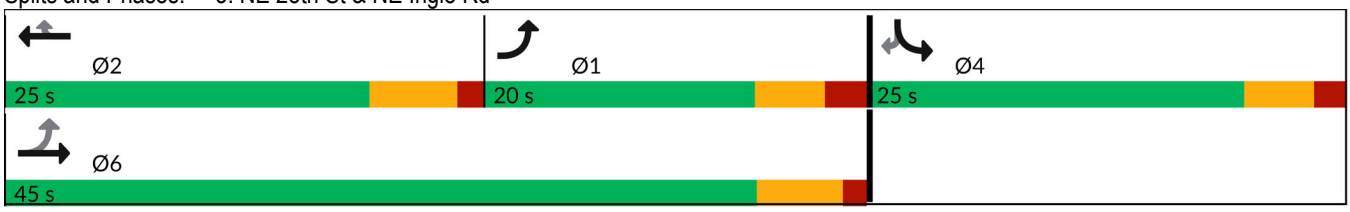
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.75	23.45
HCM LOS			C

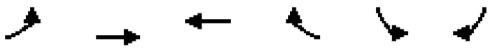
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	70	702	-	-	1124	-
HCM Lane V/C Ratio	0.297	0.125	-	-	0.194	-
HCM Ctrl Dly (s/v)	76.5	10.9	-	-	9	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	1.1	0.4	-	-	0.7	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	123	260	527	159	158	480
Future Volume (vph)	123	260	527	159	158	480
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	10.8	15.7	24.9	24.9	10.3	10.3
Total Split (s)	20.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	28.6%	64.3%	35.7%	35.7%	35.7%	35.7%
Yellow Time (s)	3.6	4.5	4.5	4.5	3.6	3.6
All-Red Time (s)	2.2	1.2	1.4	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.7	5.9	5.9	5.3	5.3
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effct Green (s)	30.5	29.2	19.9	19.9	10.7	10.7
Actuated g/C Ratio	0.59	0.57	0.39	0.39	0.21	0.21
v/c Ratio	0.33	0.30	0.86	0.28	0.54	0.75
Control Delay (s/veh)	11.9	7.6	34.6	8.4	25.6	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	11.9	7.6	34.6	8.4	25.6	10.1
LOS	B	A	C	A	C	B
Approach Delay (s/veh)		9.0	28.5		13.9	
Approach LOS		A	C		B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 51.3	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay (s/veh): 18.7	Intersection LOS: B
Intersection Capacity Utilization 66.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: NE 28th St & NE Ingle Rd





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	123	260	527	159	158	480
Future Volume (veh/h)	123	260	527	159	158	480
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1707	1737	1811	1796	1752	1841
Adj Flow Rate, veh/h	134	283	573	173	172	522
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	13	11	6	7	10	4
Cap, veh/h	240	849	574	482	545	510
Arrive On Green	0.07	0.49	0.32	0.32	0.33	0.33
Sat Flow, veh/h	1626	1737	1811	1522	1668	1560
Grp Volume(v), veh/h	134	283	573	173	172	522
Grp Sat Flow(s),veh/h/ln	1626	1737	1811	1522	1668	1560
Q Serve(g_s), s	0.2	6.0	19.1	5.3	4.7	19.7
Cycle Q Clear(g_c), s	0.2	6.0	19.1	5.3	4.7	19.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	240	849	574	482	545	510
V/C Ratio(X)	0.56	0.33	1.00	0.36	0.32	1.02
Avail Cap(c_a), veh/h	503	1133	574	482	545	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	9.4	20.6	15.9	15.2	20.3
Incr Delay (d2), s/veh	0.8	0.1	37.1	0.2	0.1	46.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.8	12.7	1.6	1.6	12.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	26.6	9.5	57.7	16.0	15.3	66.3
LnGrp LOS	C	A	E	B	B	F
Approach Vol, veh/h		417	746		694	
Approach Delay, s/veh		15.0	48.0		53.7	
Approach LOS		B	D		D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.3	25.0		25.0		35.3
Change Period (Y+Rc), s	5.8	5.9		5.3		* 5.8
Max Green Setting (Gmax), s	14.2	19.1		19.7		* 39
Max Q Clear Time (g_c+I1), s	2.2	21.1		21.7		8.0
Green Ext Time (p_c), s	0.1	0.0		0.0		1.0

Intersection Summary	
HCM 7th Control Delay, s/veh	42.7
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	64.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	153	292	49	248	2	312	2	34	1	3	6
Future Vol, veh/h	2	153	292	49	248	2	312	2	34	1	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	6	4	10	7	0	2	0	18	0	0	20
Mvmt Flow	2	180	344	58	292	2	367	2	40	1	4	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	294	0	0	524	0	0	765	766	352	594	936	293
Stage 1	-	-	-	-	-	-	356	356	-	408	408	-
Stage 2	-	-	-	-	-	-	409	409	-	186	528	-
Critical Hdwy	4.1	-	-	4.2	-	-	7.12	6.5	6.38	7.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.29	-	-	3.518	4	3.462	3.5	4	3.48
Pot Cap-1 Maneuver	1279	-	-	1003	-	-	~ 320	335	657	420	267	706
Stage 1	-	-	-	-	-	-	661	632	-	624	600	-
Stage 2	-	-	-	-	-	-	619	599	-	821	531	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1279	-	-	1003	-	-	~ 290	311	657	363	248	706
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 290	311	-	363	248	-
Stage 1	-	-	-	-	-	-	659	631	-	581	559	-
Stage 2	-	-	-	-	-	-	568	558	-	766	529	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.03	1.44	204.16	13.65
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	307	7	-	-	295	-	-	428
HCM Lane V/C Ratio	1.333	0.002	-	-	0.057	-	-	0.027
HCM Ctrl Dly (s/v)	204.2	7.8	0	-	8.8	0	-	13.6
HCM Lane LOS	F	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	20.3	0	-	-	0.2	-	-	0.1

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	39	152	0	0	204	120	0	0	0	106	0	95
Future Vol, veh/h	39	152	0	0	204	120	0	0	0	106	0	95
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	13	9	0	0	6	6	0	0	0	4	0	5
Mvmt Flow	46	179	0	0	240	141	0	0	0	125	0	112

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	381	0	0	179	0	0	511	652	179	581	581	311
Stage 1	-	-	-	-	-	-	271	271	-	311	311	-
Stage 2	-	-	-	-	-	-	240	381	-	271	271	-
Critical Hdwy	4.23	-	-	4.1	-	-	7.1	6.5	6.2	7.14	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.317	-	-	2.2	-	-	3.5	4	3.3	3.536	4	3.345
Pot Cap-1 Maneuver	1120	-	-	1409	-	-	477	390	869	422	428	723
Stage 1	-	-	-	-	-	-	740	689	-	695	662	-
Stage 2	-	-	-	-	-	-	768	617	-	731	689	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1120	-	-	1409	-	-	385	372	869	403	408	723
Mov Cap-2 Maneuver	-	-	-	-	-	-	385	372	-	403	408	-
Stage 1	-	-	-	-	-	-	706	658	-	695	662	-
Stage 2	-	-	-	-	-	-	649	617	-	698	658	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.71	0	0	18.05
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	368	-	-	1409	-	-	509
HCM Lane V/C Ratio	-	0.041	-	-	-	-	-	0.464
HCM Ctrl Dly (s/v)	0	8.4	0	-	0	-	-	18
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	2.4

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	1	310	317	1
Future Vol, veh/h	1	1	1	310	317	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-4	-4	-
Peak Hour Factor	48	48	48	48	48	48
Heavy Vehicles, %	18	6	5	10	9	8
Mvmt Flow	2	2	2	646	660	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1311	661	663	0	-	0
Stage 1	661	-	-	-	-	-
Stage 2	650	-	-	-	-	-
Critical Hdwy	6.98	6.46	4.15	-	-	-
Critical Hdwy Stg 1	5.98	-	-	-	-	-
Critical Hdwy Stg 2	5.98	-	-	-	-	-
Follow-up Hdwy	3.662	3.354	2.245	-	-	-
Pot Cap-1 Maneuver	140	439	912	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	140	439	912	-	-	-
Mov Cap-2 Maneuver	140	-	-	-	-	-
Stage 1	449	-	-	-	-	-
Stage 2	456	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	22.34	0.03	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	6	-	212	-	-
HCM Lane V/C Ratio	0.002	-	0.02	-	-
HCM Ctrl Dly (s/v)	9	0	22.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

MOVEMENT SUMMARY

Site: 7 [Everett St (SR 500) St & NE Everett Dr_Total AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett St (SR 500)															
3	L2	All MCs	353	0.0	353	0.0	0.703	12.1	LOS B	7.4	187.9	0.70	0.61	0.72	33.1
8	T1	All MCs	230	3.0	230	3.0	0.703	6.0	LOS A	7.4	187.9	0.70	0.61	0.72	33.8
18	R2	All MCs	214	3.0	214	3.0	0.703	6.1	LOS A	7.4	187.9	0.70	0.61	0.72	33.4
Approach			797	1.7	797	1.7	0.703	8.7	LOS A	7.4	187.9	0.70	0.61	0.72	33.4
East: NE Everett Dr															
1	L2	All MCs	189	10.0	189	10.0	0.371	14.2	LOS B	2.3	61.6	0.76	0.74	0.76	31.7
6	T1	All MCs	26	0.0	26	0.0	0.371	7.1	LOS A	2.3	61.6	0.76	0.74	0.76	32.6
16	R2	All MCs	49	3.0	49	3.0	0.371	7.5	LOS A	2.3	61.6	0.76	0.74	0.76	32.3
Approach			265	7.7	265	7.7	0.371	12.3	LOS B	2.3	61.6	0.76	0.74	0.76	31.9
North: NE Everett St (SR 500)															
7	L2	All MCs	138	1.0	138	1.0	0.637	16.6	LOS B	6.1	155.5	0.85	0.84	1.08	32.0
4	T1	All MCs	367	3.0	367	3.0	0.637	10.5	LOS B	6.1	155.5	0.85	0.84	1.08	32.6
14	R2	All MCs	27	0.0	27	0.0	0.637	10.3	LOS B	6.1	155.5	0.85	0.84	1.08	32.4
Approach			531	2.3	531	2.3	0.637	12.0	LOS B	6.1	155.5	0.85	0.84	1.08	32.4
West: NE Everett Dr															
5	L2	All MCs	20	0.0	20	0.0	0.875	29.0	LOS D	15.0	375.1	1.00	1.25	1.90	27.5
2	T1	All MCs	40	0.0	40	0.0	0.875	22.7	LOS D	15.0	375.1	1.00	1.25	1.90	28.0
12	R2	All MCs	581	0.0	581	0.0	0.875	22.8	LOS D	15.0	375.1	1.00	1.25	1.90	27.8
Approach			641	0.0	641	0.0	0.875	23.0	LOS C	15.0	375.1	1.00	1.25	1.90	27.8
All Vehicles			2233	2.1	2233	2.1	0.875	14.0	LOS B	15.0	375.1	0.83	0.86	1.15	31.2

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	17	13	654	923	35
Future Vol, veh/h	12	17	13	654	923	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	110	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	4	-4	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	1	1	3	5	1
Mvmt Flow	14	20	15	752	1061	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1863	1081	1101	0	-	0
Stage 1	1081	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Critical Hdwy	6.8	6.41	4.11	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	66	250	638	-	-	-
Stage 1	291	-	-	-	-	-
Stage 2	417	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	64	250	638	-	-	-
Mov Cap-2 Maneuver	64	-	-	-	-	-
Stage 1	284	-	-	-	-	-
Stage 2	417	-	-	-	-	-

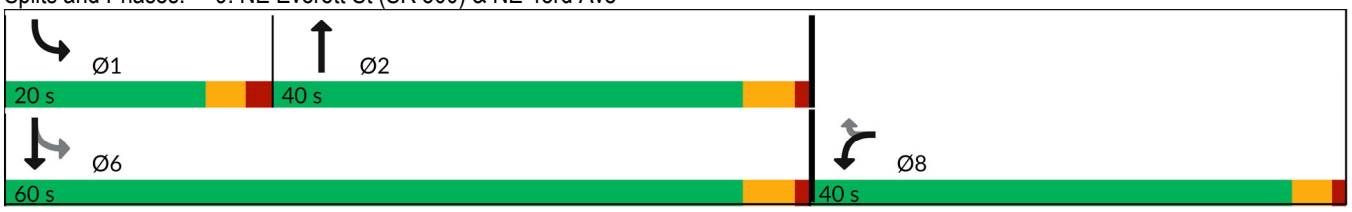
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	49.04	0.21	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	638	-	114	-	-
HCM Lane V/C Ratio	0.023	-	0.292	-	-
HCM Ctrl Dly (s/v)	10.8	-	49	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	333	98	574	485	119	825
Future Volume (vph)	333	98	574	485	119	825
Turn Type	Prot	Perm	NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		Free	6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	23.0	23.0	30.0		10.0	50.0
Total Split (s)	40.0	40.0	40.0		20.0	60.0
Total Split (%)	40.0%	40.0%	40.0%		20.0%	60.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0
All-Red Time (s)	1.0	1.0	1.0		2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	Min		None	Min
Act Effct Green (s)	26.2	26.2	38.2	88.2	52.9	52.9
Actuated g/C Ratio	0.30	0.30	0.43	1.00	0.60	0.60
v/c Ratio	0.82	0.21	0.88	0.38	0.50	0.88
Control Delay (s/veh)	44.2	5.5	40.9	0.7	15.8	28.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.2	5.5	40.9	0.7	15.8	28.0
LOS	D	A	D	A	B	C
Approach Delay (s/veh)	35.4		22.5			26.5
Approach LOS	D		C			C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 88.2	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay (s/veh): 26.3	Intersection LOS: C
Intersection Capacity Utilization 69.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 9: NE Everett St (SR 500) & NE 43rd Ave



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	333	98	574	485	119	825
Future Volume (veh/h)	333	98	574	485	119	825
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1799	1874	1746	1776	1802	1997
Adj Flow Rate, veh/h	383	90	660	0	137	948
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	12	7	4	2	17	4
Cap, veh/h	455	422	787		314	1189
Arrive On Green	0.27	0.27	0.45	0.00	0.07	0.60
Sat Flow, veh/h	1713	1588	1746	1505	1716	1997
Grp Volume(v), veh/h	383	90	660	0	137	948
Grp Sat Flow(s),veh/h/ln	1713	1588	1746	1505	1716	1997
Q Serve(g_s), s	13.7	2.9	21.6	0.0	2.5	23.7
Cycle Q Clear(g_c), s	13.7	2.9	21.6	0.0	2.5	23.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	455	422	787		314	1189
V/C Ratio(X)	0.84	0.21	0.84		0.44	0.80
Avail Cap(c_a), veh/h	952	882	943		596	1695
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	18.5	15.7	0.0	12.4	10.1
Incr Delay (d2), s/veh	4.3	0.2	7.3	0.0	1.0	2.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	1.0	9.0	0.0	0.9	8.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	26.8	18.8	23.0	0.0	13.4	12.1
LnGrp LOS	C	B	C		B	B
Approach Vol, veh/h	473		660			1085
Approach Delay, s/veh	25.2		23.0			12.3
Approach LOS	C		C			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	9.4	34.2			43.6	21.2
Change Period (Y+Rc), s	5.0	5.0			5.0	4.0
Max Green Setting (Gmax), s	15.0	35.0			55.0	36.0
Max Q Clear Time (g_c+I1), s	4.5	23.6			25.7	15.7
Green Ext Time (p_c), s	0.2	5.6			10.9	1.5

Intersection Summary	
HCM 7th Control Delay, s/veh	18.2
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

MOVEMENT SUMMARY

Site 10 NE Everett St & NW Lake Rd_TotalAM (Site Folder: General)

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett Street															
3	L2	All MCs	238	7.0	238	7.0	0.414	15.3	LOS B	2.9	76.0	0.84	0.80	0.88	30.6
8	T1	All MCs	584	7.0	584	7.0	0.746	13.2	LOS B	9.7	255.5	1.00	0.96	1.38	32.0
Approach			822	7.0	822	7.0	0.746	13.8	LOS B	9.7	255.5	0.95	0.92	1.24	31.6
North: NE Everett Street															
4	T1	All MCs	796	10.0	796	10.0	0.718	7.3	LOS A	8.7	235.6	0.81	0.64	0.89	34.0
14	R2	All MCs	451	2.0	451	2.0	0.367	5.0	LOS A	2.6	67.1	0.54	0.53	0.54	35.1
Approach			1246	7.1	1246	7.1	0.718	6.5	LOS A	8.7	235.6	0.71	0.60	0.76	34.4
West: NW Lake Road															
5	L2	All MCs	603	3.0	603	3.0	0.936	42.6	LOS D	20.3	519.1	1.00	1.50	2.35	22.6
12	R2	All MCs	242	6.0	242	6.0	0.396	9.8	LOS A	3.1	81.4	0.95	0.77	0.96	33.1
Approach			845	3.9	845	3.9	0.936	33.2	LOS C	20.3	519.1	0.99	1.30	1.96	24.8
All Vehicles			2913	6.1	2913	6.1	0.936	16.3	LOS B	20.3	519.1	0.86	0.89	1.24	30.2

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: H:\31\31612 - Johnston Dairy\analysis\TIA\Sidra\31612_SIDRA.sip9

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	167	14	24	380	665	108
Future Vol, veh/h	167	14	24	380	665	108
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	7	7	0	6	2	0
Mvmt Flow	184	15	26	418	731	119

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1263	793	852	0	-	0
Stage 1	793	-	-	-	-	-
Stage 2	470	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.1	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.2	-	-	-
Pot Cap-1 Maneuver	~ 183	381	795	-	-	-
Stage 1	437	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 176	380	793	-	-	-
Mov Cap-2 Maneuver	304	-	-	-	-	-
Stage 1	421	-	-	-	-	-
Stage 2	617	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	35.44	0.58	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	793	-	309	-	-
HCM Lane V/C Ratio	0.033	-	0.643	-	-
HCM Ctrl Dly (s/v)	9.7	-	35.4	-	-
HCM Lane LOS	A	-	E	-	-
HCM 95th %tile Q(veh)	0.1	-	4.2	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	25	19	4	25	78	8	294	6	81	442	155
Future Vol, veh/h	37	25	19	4	25	78	8	294	6	81	442	155
Conflicting Peds, #/hr	13	0	3	3	0	13	0	0	6	6	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	11	0	5	0	0	0	25	6	17	1	4	0
Mvmt Flow	43	29	22	5	29	90	9	338	7	93	508	178

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1167	1153	600	1077	1238	360	686	0	0	351	0	0
Stage 1	783	783	-	366	366	-	-	-	-	-	-	-
Stage 2	384	369	-	712	872	-	-	-	-	-	-	-
Critical Hdwy	7.21	6.5	6.25	7.1	6.5	6.2	4.35	-	-	4.11	-	-
Critical Hdwy Stg 1	6.21	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.21	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.599	4	3.345	3.5	4	3.3	2.425	-	-	2.209	-	-
Pot Cap-1 Maneuver	164	199	495	198	177	689	809	-	-	1214	-	-
Stage 1	373	407	-	658	626	-	-	-	-	-	-	-
Stage 2	621	624	-	427	371	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	107	181	494	146	161	677	809	-	-	1207	-	-
Mov Cap-2 Maneuver	107	181	-	146	161	-	-	-	-	-	-	-
Stage 1	345	376	-	647	616	-	-	-	-	-	-	-
Stage 2	502	614	-	347	342	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	58.24	20.16	0.25	0.98
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	809	-	-	155	359	1207	-	-
HCM Lane V/C Ratio	0.011	-	-	0.601	0.343	0.077	-	-
HCM Ctrl Dly (s/v)	9.5	-	-	58.2	20.2	8.2	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	3.2	1.5	0.3	-	-

Intersection	
Int Delay, s/veh	13.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	23	1	0	18	252	1	0	0	338	0	125
Future Vol, veh/h	53	23	1	0	18	252	1	0	0	338	0	125
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	8	4	0	0	0	7	0	0	0	4	0	3
Mvmt Flow	62	27	1	0	21	296	1	0	0	398	0	147

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	883	872	74	-	946	2	147	0	0	1	0	0
Stage 1	869	869	-	-	3	-	-	-	-	-	-	-
Stage 2	14	3	-	-	942	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.54	6.2	-	6.5	6.27	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.18	5.54	-	-	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.54	-	-	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.036	3.3	-	4	3.363	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	260	287	994	0	264	1068	1447	-	-	1609	-	-
Stage 1	338	367	-	0	897	-	-	-	-	-	-	-
Stage 2	991	889	-	0	344	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	125	208	994	-	191	1066	1447	-	-	1607	-	-
Mov Cap-2 Maneuver	125	208	-	-	191	-	-	-	-	-	-	-
Stage 1	246	266	-	-	895	-	-	-	-	-	-	-
Stage 2	697	887	-	-	250	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	65.51	12.19	7.49	5.82
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1447	-	-	143	816	1095	-	-
HCM Lane V/C Ratio	0.001	-	-	0.631	0.389	0.247	-	-
HCM Ctrl Dly (s/v)	7.5	0	-	65.5	12.2	8	0	-
HCM Lane LOS	A	A	-	F	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	3.4	1.9	1	-	-

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	37	69	8	1	164	4	18	87	3	1	131	110
Future Vol, veh/h	37	69	8	1	164	4	18	87	3	1	131	110
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	4	-	-	-6	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	9	25	0	5	0	22	8	0	0	3	2
Mvmt Flow	43	79	9	1	189	5	21	100	3	1	151	126

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	452	363	214	338	424	104	277	0	0	105	0	0
Stage 1	216	216	-	145	145	-	-	-	-	-	-	-
Stage 2	236	147	-	193	279	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.59	6.45	7.1	6.55	6.2	4.32	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.59	-	6.1	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.59	-	6.1	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.081	3.525	3.5	4.045	3.3	2.398	-	-	2.2	-	-
Pot Cap-1 Maneuver	521	554	772	620	517	957	1179	-	-	1498	-	-
Stage 1	791	711	-	862	771	-	-	-	-	-	-	-
Stage 2	772	762	-	814	674	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	322	542	772	513	506	955	1179	-	-	1496	-	-
Mov Cap-2 Maneuver	322	542	-	513	506	-	-	-	-	-	-	-
Stage 1	790	710	-	845	755	-	-	-	-	-	-	-
Stage 2	566	747	-	714	674	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	16.22	16.28	1.35	0.03
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	298	-	-	451	512	7	-	-
HCM Lane V/C Ratio	0.018	-	-	0.291	0.38	0.001	-	-
HCM Ctrl Dly (s/v)	8.1	0	-	16.2	16.3	7.4	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	1.8	0	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	193	427	630	20	11	308
Future Vol, veh/h	193	427	630	20	11	308
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-8	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	7	5	10	0	1
Mvmt Flow	210	464	685	22	12	335

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	707	0	-	0	1347	353
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	652	-
Critical Hdwy	4.2	-	-	-	5.2	6.12
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	2.25	-	-	-	3.5	3.31
Pot Cap-1 Maneuver	868	-	-	-	264	699
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	649	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	868	-	-	-	190	699
Mov Cap-2 Maneuver	-	-	-	-	190	-
Stage 1	-	-	-	-	454	-
Stage 2	-	-	-	-	649	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	4.31	0	15.16
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	756	-	-	-	190	699
HCM Lane V/C Ratio	0.242	-	-	-	0.063	0.479
HCM Ctrl Dly (s/v)	10.5	1.5	-	-	25.2	14.8
HCM Lane LOS	B	A	-	-	D	B
HCM 95th %tile Q(veh)	0.9	-	-	-	0.2	2.6

MOVEMENT SUMMARY

Site: 16 [NW Norwood St & NW 6th Ave_TotalAM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NW 6th Avenue															
3	L2	All MCs	110	2.0	110	2.0	0.251	13.7	LOS B	1.5	38.1	0.72	0.73	0.72	32.2
8	T1	All MCs	2	0.0	2	0.0	0.251	7.2	LOS A	1.5	38.1	0.72	0.73	0.72	33.0
18	R2	All MCs	74	6.0	74	6.0	0.251	7.9	LOS A	1.5	38.1	0.72	0.73	0.72	32.6
Approach			186	3.6	186	3.6	0.251	11.3	LOS B	1.5	38.1	0.72	0.73	0.72	32.4
East: NW 6th Avenue															
1	L2	All MCs	81	4.0	81	4.0	0.882	14.2	LOS D	17.3	443.1	0.97	0.63	1.05	32.7
6	T1	All MCs	939	3.0	939	3.0	0.882	7.8	LOS D	17.3	443.1	0.97	0.63	1.05	33.5
16	R2	All MCs	11	30.0	11	30.0	0.882	9.6	LOS D	17.3	443.1	0.97	0.63	1.05	32.6
Approach			1030	3.4	1030	3.4	0.882	8.4	LOS A	17.3	443.1	0.97	0.63	1.05	33.4
North: NW Norwood Street															
7	L2	All MCs	15	7.0	15	7.0	0.218	21.2	LOS C	1.6	40.1	0.99	0.84	0.99	30.2
4	T1	All MCs	5	0.0	5	0.0	0.218	13.8	LOS B	1.6	40.1	0.99	0.84	0.99	30.9
14	R2	All MCs	51	2.0	51	2.0	0.218	14.3	LOS B	1.6	40.1	0.99	0.84	0.99	30.6
Approach			71	2.9	71	2.9	0.218	15.7	LOS B	1.6	40.1	0.99	0.84	0.99	30.6
West: NW 6th Avenue															
5	L2	All MCs	20	26.0	20	26.0	0.616	11.5	LOS B	5.9	158.2	0.51	0.44	0.51	33.6
2	T1	All MCs	582	8.0	582	8.0	0.616	4.7	LOS A	5.9	158.2	0.51	0.44	0.51	35.0
12	R2	All MCs	97	9.0	97	9.0	0.616	4.9	LOS A	5.9	158.2	0.51	0.44	0.51	34.6
Approach			699	8.7	699	8.7	0.616	4.9	LOS A	5.9	158.2	0.51	0.44	0.51	34.9
All Vehicles			1986	5.2	1986	5.2	0.882	7.7	LOS A	17.3	443.1	0.79	0.58	0.83	33.7

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	615	3	80	555	4	185
Future Vol, veh/h	615	3	80	555	4	185
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	105	-	85	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-6	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	0	3	3	0	0
Mvmt Flow	707	3	92	638	5	213

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	710	0	1530	709
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	822	-
Critical Hdwy	-	-	4.13	-	5.2	5.6
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	884	-	217	493
Stage 1	-	-	-	-	623	-
Stage 2	-	-	-	-	573	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	884	-	194	493
Mov Cap-2 Maneuver	-	-	-	-	194	-
Stage 1	-	-	-	-	623	-
Stage 2	-	-	-	-	513	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.2	17.88
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	194	493	-	-	884	-
HCM Lane V/C Ratio	0.024	0.432	-	-	0.104	-
HCM Ctrl Dly (s/v)	24	17.7	-	-	9.5	-
HCM Lane LOS	C	C	-	-	A	-
HCM 95th %tile Q(veh)	0.1	2.1	-	-	0.3	-

Intersection	
Int Delay, s/veh	6.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	425	88	91	448	93	179
Future Vol, veh/h	425	88	91	448	93	179
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	7	11	2	3	7
Mvmt Flow	472	98	101	498	103	199

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	570	0	1221	521
Stage 1	-	-	-	-	521	-
Stage 2	-	-	-	-	700	-
Critical Hdwy	-	-	4.21	-	6.43	6.27
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.299	-	3.527	3.363
Pot Cap-1 Maneuver	-	-	959	-	198	546
Stage 1	-	-	-	-	594	-
Stage 2	-	-	-	-	491	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	959	-	177	546
Mov Cap-2 Maneuver	-	-	-	-	177	-
Stage 1	-	-	-	-	594	-
Stage 2	-	-	-	-	439	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.55	27.39
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	177	546	-	-	959	-
HCM Lane V/C Ratio	0.584	0.365	-	-	0.105	-
HCM Ctrl Dly (s/v)	50.6	15.3	-	-	9.2	-
HCM Lane LOS	F	C	-	-	A	-
HCM 95th %tile Q(veh)	3.1	1.7	-	-	0.4	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	323	12	130	417	6	3	9	182	8	9	8
Future Vol, veh/h	7	323	12	130	417	6	3	9	182	8	9	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	130	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	18	2	2	33	0	22	8	0	0	12
Mvmt Flow	8	351	13	141	453	7	3	10	198	9	10	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	460	0	0	364	0	0	1114	1115	358	1110	1118	457
Stage 1	-	-	-	-	-	-	373	373	-	739	739	-
Stage 2	-	-	-	-	-	-	741	742	-	371	379	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.1	6.72	6.28	7.1	6.5	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.72	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.72	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4.198	3.372	3.5	4	3.408
Pot Cap-1 Maneuver	1112	-	-	1194	-	-	187	191	673	188	209	584
Stage 1	-	-	-	-	-	-	652	585	-	412	427	-
Stage 2	-	-	-	-	-	-	411	394	-	653	618	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1112	-	-	1194	-	-	154	167	673	110	183	584
Mov Cap-2 Maneuver	-	-	-	-	-	-	154	167	-	110	183	-
Stage 1	-	-	-	-	-	-	647	581	-	363	376	-
Stage 2	-	-	-	-	-	-	348	347	-	450	614	-

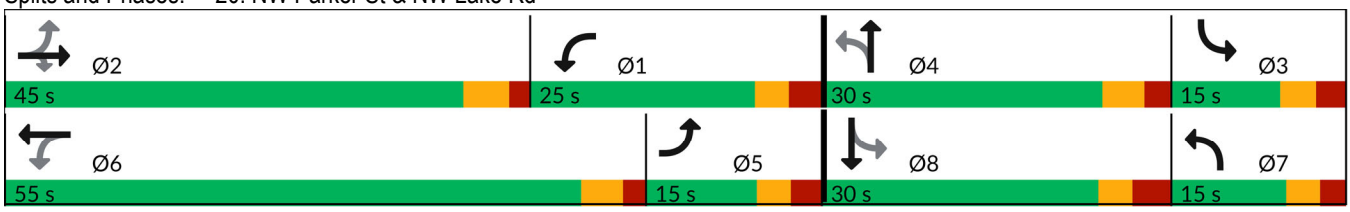
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.17	1.98	15.13	27.84
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	565	1112	-	-	1194	-	-	185
HCM Lane V/C Ratio	0.373	0.007	-	-	0.118	-	-	0.147
HCM Ctrl Dly (s/v)	15.1	8.3	-	-	8.4	-	-	27.8
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.7	0	-	-	0.4	-	-	0.5

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	9	197	173	106	293	151	77	44	145
Future Volume (vph)	9	197	173	106	293	151	77	44	145
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		1	6	7	4	3	8
Permitted Phases	2		2	6		4		8	
Detector Phase	5	2	2	1	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	26.7	26.7	10.7	20.5	10.2	29.2	10.6	33.3
Total Split (s)	15.0	45.0	45.0	25.0	55.0	15.0	30.0	15.0	30.0
Total Split (%)	13.0%	39.1%	39.1%	21.7%	47.8%	13.0%	26.1%	13.0%	26.1%
Yellow Time (s)	3.0	4.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0
All-Red Time (s)	2.5	1.7	1.7	2.7	1.9	2.2	2.3	2.6	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.7	5.7	5.7	5.5	5.2	5.9	5.6	6.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)	19.3	13.1	13.1	21.4	19.3	23.0	18.1	18.1	11.2
Actuated g/C Ratio	0.33	0.23	0.23	0.37	0.33	0.40	0.31	0.31	0.19
v/c Ratio	0.03	0.57	0.40	0.28	0.34	0.33	0.39	0.13	0.54
Control Delay (s/veh)	13.9	27.8	6.4	15.8	16.8	15.1	18.1	13.5	29.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.9	27.8	6.4	15.8	16.8	15.1	18.1	13.5	29.1
LOS	B	C	A	B	B	B	B	B	C
Approach Delay (s/veh)		17.7			16.5		16.7		25.7
Approach LOS		B			B		B		C

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 57.9	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay (s/veh): 18.3	Intersection LOS: B
Intersection Capacity Utilization 52.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 20: NW Parker St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	197	173	106	293	36	151	77	102	44	145	15
Future Volume (veh/h)	9	197	173	106	293	36	151	77	102	44	145	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1574	1841	1870	1900	1870	1856	1885	1856	1856	1796	1856	1900
Adj Flow Rate, veh/h	11	237	131	128	353	24	182	93	88	53	175	16
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	22	4	2	0	2	3	1	3	3	7	3	0
Cap, veh/h	377	333	287	365	556	38	392	149	141	392	284	26
Arrive On Green	0.12	0.18	0.18	0.10	0.16	0.16	0.09	0.17	0.17	0.10	0.17	0.17
Sat Flow, veh/h	1499	1841	1585	1810	3377	229	1795	873	826	1711	1672	153
Grp Volume(v), veh/h	11	237	131	128	185	192	182	0	181	53	0	191
Grp Sat Flow(s),veh/h/ln	1499	1841	1585	1810	1777	1829	1795	0	1698	1711	0	1825
Q Serve(g_s), s	0.0	6.1	3.7	0.0	4.9	5.0	0.0	0.0	5.0	0.0	0.0	4.9
Cycle Q Clear(g_c), s	0.0	6.1	3.7	0.0	4.9	5.0	0.0	0.0	5.0	0.0	0.0	4.9
Prop In Lane	1.00		1.00	1.00		0.12	1.00		0.49	1.00		0.08
Lane Grp Cap(c), veh/h	377	333	287	365	293	301	392	0	290	392	0	310
V/C Ratio(X)	0.03	0.71	0.46	0.35	0.63	0.64	0.46	0.00	0.63	0.14	0.00	0.62
Avail Cap(c_a), veh/h	479	1426	1228	876	1734	1785	576	0	807	541	0	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.0	19.5	18.5	20.2	19.7	19.8	20.1	0.0	19.5	18.3	0.0	19.5
Incr Delay (d2), s/veh	0.0	1.1	0.4	0.2	0.8	0.8	0.9	0.0	0.8	0.2	0.0	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.4	1.3	1.3	1.9	1.9	1.9	0.0	1.8	0.5	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.0	20.6	19.0	20.4	20.6	20.6	20.9	0.0	20.4	18.5	0.0	20.3
LnGrp LOS	B	C	B	C	C	C	C		C	B		C
Approach Vol, veh/h		379			505			363			244	
Approach Delay, s/veh		19.9			20.6			20.6			19.9	
Approach LOS		B			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	14.9	10.6	14.5	11.7	13.9	10.2	14.9
Change Period (Y+Rc), s	5.7	5.7	* 5.6	5.9	5.7	* 5.5	5.6	* 6.3
Max Green Setting (Gmax), s	19.3	39.3	* 9.4	24.1	9.5	* 50	9.8	* 24
Max Q Clear Time (g_c+I1), s	2.0	8.1	2.0	7.0	2.0	7.0	2.0	6.9
Green Ext Time (p_c), s	0.1	1.0	0.0	0.6	0.0	1.4	0.3	0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	20.3
HCM 7th LOS	C

Notes

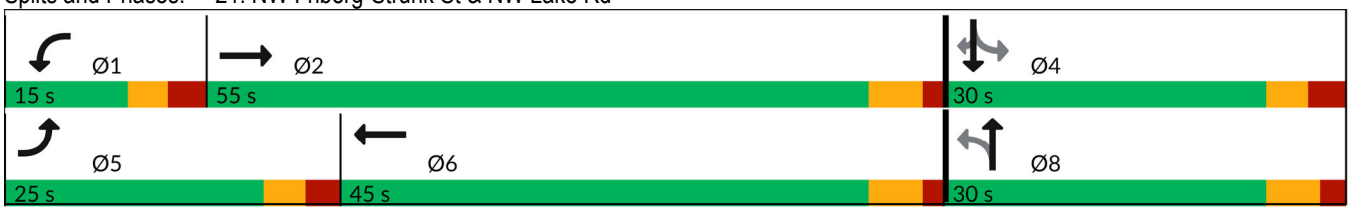
User approved pedestrian interval to be less than phase max green.

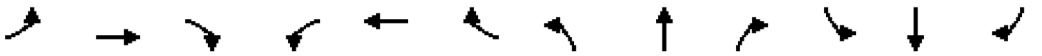
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	368	289	1	385	0	100	0	372
Future Volume (vph)	368	289	1	385	0	100	0	372
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						4		4
Detector Phase	5	2	1	6	8	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.6	23.5	10.8	26.6	34.0	33.9	33.9	33.9
Total Split (s)	25.0	55.0	15.0	45.0	30.0	30.0	30.0	30.0
Total Split (%)	25.0%	55.0%	15.0%	45.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.6	1.5	2.8	1.6	2.0	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.6	5.5	5.8	5.6	6.0		5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	19.8	40.2	5.1	16.3	11.4		11.5	11.5
Actuated g/C Ratio	0.30	0.62	0.08	0.25	0.18		0.18	0.18
v/c Ratio	0.90	0.18	0.01	0.69	0.00		0.54	0.77
Control Delay (s/veh)	47.5	7.2	34.0	25.8	0.0		34.0	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	47.5	7.2	34.0	25.8	0.0		34.0	13.4
LOS	D	A	C	C	A		C	B
Approach Delay (s/veh)		29.7		25.9			17.8	
Approach LOS		C		C			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 65.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay (s/veh): 25.0	Intersection LOS: C
Intersection Capacity Utilization 60.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 21: NW Friberg-Strunk St & NW Lake Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	368	289	3	1	385	85	0	0	1	100	0	372
Future Volume (veh/h)	368	289	3	1	385	85	0	0	1	100	0	372
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1811	1411	1900	1856	1900	1900	1900	1900	1811	1900	1856
Adj Flow Rate, veh/h	478	375	4	1	500	110	0	0	1	130	0	483
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	3	6	33	0	3	0	0	0	0	6	0	3
Cap, veh/h	439	1629	17	2	640	140	0	0	496	535	0	484
Arrive On Green	0.25	0.47	0.47	0.00	0.22	0.22	0.00	0.00	0.31	0.31	0.00	0.31
Sat Flow, veh/h	1767	3488	37	1810	2876	629	0	0	1607	1434	0	1569
Grp Volume(v), veh/h	478	185	194	1	305	305	0	0	1	130	0	483
Grp Sat Flow(s),veh/h/ln	1767	1721	1804	1810	1763	1742	0	0	1607	1434	0	1569
Q Serve(g_s), s	19.4	5.0	5.0	0.0	12.7	12.9	0.0	0.0	0.0	5.4	0.0	24.0
Cycle Q Clear(g_c), s	19.4	5.0	5.0	0.0	12.7	12.9	0.0	0.0	0.0	5.4	0.0	24.0
Prop In Lane	1.00		0.02	1.00		0.36	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	439	804	843	2	392	388	0	0	496	535	0	484
V/C Ratio(X)	1.09	0.23	0.23	0.40	0.78	0.79	0.00	0.00	0.00	0.24	0.00	1.00
Avail Cap(c_a), veh/h	439	1091	1144	213	890	879	0	0	496	535	0	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.3	12.4	12.4	38.9	28.5	28.6	0.0	0.0	18.7	20.5	0.0	26.9
Incr Delay (d2), s/veh	69.0	0.1	0.1	34.6	1.3	1.3	0.0	0.0	0.0	0.1	0.0	40.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.0	1.7	1.8	0.0	5.3	5.3	0.0	0.0	0.0	1.7	0.0	14.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	98.3	12.5	12.5	73.6	29.8	29.9	0.0	0.0	18.7	20.6	0.0	67.0
LnGrp LOS	F	B	B	E	C	C			B	C		E
Approach Vol, veh/h		857			611			1			613	
Approach Delay, s/veh		60.3			30.0			18.7			57.2	
Approach LOS		E			C			B			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	42.1		30.1	25.0	23.0		30.1				
Change Period (Y+Rc), s	5.8	* 5.6		* 6	5.6	5.6		6.0				
Max Green Setting (Gmax), s	9.2	* 50		* 24	19.4	39.4		24.0				
Max Q Clear Time (g_c+I1), s	2.0	7.0		26.0	21.4	14.9		2.0				
Green Ext Time (p_c), s	0.0	1.3		0.0	0.0	2.5		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh	50.5	
HCM 7th LOS	D	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	159	111	390	153	27	355
Future Vol, veh/h	159	111	390	153	27	355
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	175	0	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	2	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	3	1	3	10	7	3
Mvmt Flow	192	134	470	184	33	428

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1055	562	0	0	654	0
Stage 1	562	-	-	-	-	-
Stage 2	493	-	-	-	-	-
Critical Hdwy	6.03	6.01	-	-	4.17	-
Critical Hdwy Stg 1	5.03	-	-	-	-	-
Critical Hdwy Stg 2	5.03	-	-	-	-	-
Follow-up Hdwy	3.527	3.309	-	-	2.263	-
Pot Cap-1 Maneuver	280	545	-	-	909	-
Stage 1	605	-	-	-	-	-
Stage 2	646	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	270	545	-	-	909	-
Mov Cap-2 Maneuver	270	-	-	-	-	-
Stage 1	605	-	-	-	-	-
Stage 2	623	-	-	-	-	-

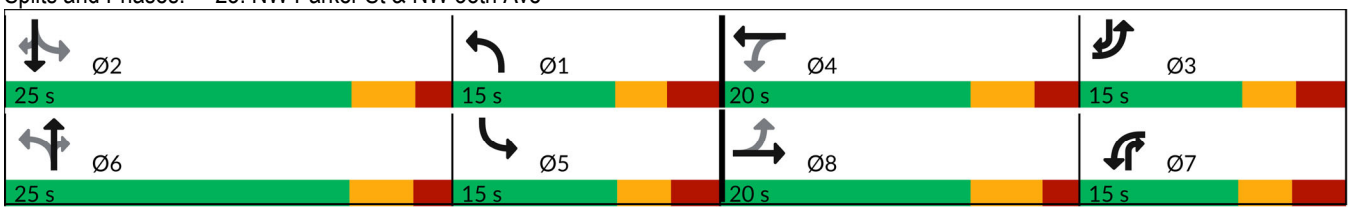
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	32.39	0	0.64
HCM LOS	D		

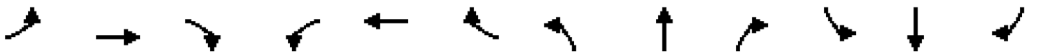
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	270	545	909	-
HCM Lane V/C Ratio	-	-	0.71	0.245	0.036	-
HCM Ctrl Dly (s/v)	-	-	45.4	13.7	9.1	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	4.9	1	0.1	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	115	71	102	117	91	410	80	16	327	151
Future Volume (vph)	115	71	102	117	91	410	80	16	327	151
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	7	4	1	6	7	5	2	3
Permitted Phases	8		4		6		6	2		2
Detector Phase	3	8	7	4	1	6	7	5	2	3
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.8	24.0	11.0	23.0	10.9	20.0	11.0	10.7	20.0	10.8
Total Split (s)	15.0	20.0	15.0	20.0	15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	20.0%	26.7%	20.0%	26.7%	20.0%	33.3%	20.0%	20.0%	33.3%	20.0%
Yellow Time (s)	3.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0	3.6	3.0
All-Red Time (s)	2.8	2.0	3.0	2.4	2.9	2.1	3.0	2.7	2.0	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.0	6.0	6.0	5.9	5.7	6.0	5.7	5.6	5.8
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	None	Max	None
Act Effct Green (s)	12.9	8.3	18.1	9.7	28.2	26.0	35.6	25.0	19.8	25.3
Actuated g/C Ratio	0.21	0.14	0.29	0.16	0.46	0.42	0.58	0.41	0.32	0.41
v/c Ratio	0.41	0.52	0.27	0.60	0.24	0.63	0.10	0.06	0.60	0.23
Control Delay (s/veh)	19.9	27.5	17.3	31.6	13.7	22.5	1.3	11.8	24.8	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.9	27.5	17.3	31.6	13.7	22.5	1.3	11.8	24.8	3.0
LOS	B	C	B	C	B	C	A	B	C	A
Approach Delay (s/veh)		23.7		25.9		18.2			17.7	
Approach LOS		C		C		B			B	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 61.4	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay (s/veh): 20.1	Intersection LOS: C
Intersection Capacity Utilization 59.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 23: NW Parker St & NW 38th Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	71	43	102	117	34	91	410	80	16	327	151
Future Volume (veh/h)	115	71	43	102	117	34	91	410	80	16	327	151
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1826	1811	1811	1870	1900	1870	1826	1826	1796	1945	1870
Adj Flow Rate, veh/h	131	81	49	116	133	39	103	466	91	18	372	172
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	5	6	6	2	0	2	5	5	7	2	2
Cap, veh/h	299	120	73	342	184	54	398	578	646	326	619	633
Arrive On Green	0.08	0.11	0.11	0.10	0.13	0.13	0.08	0.32	0.32	0.08	0.32	0.32
Sat Flow, veh/h	1882	1061	642	1725	1387	407	1781	1826	1545	1711	1945	1583
Grp Volume(v), veh/h	131	0	130	116	0	172	103	466	91	18	372	172
Grp Sat Flow(s),veh/h/ln	1882	0	1704	1725	0	1794	1781	1826	1545	1711	1945	1583
Q Serve(g_s), s	0.0	0.0	4.5	0.0	0.0	5.6	0.0	14.3	0.0	0.0	9.8	0.0
Cycle Q Clear(g_c), s	0.0	0.0	4.5	0.0	0.0	5.6	0.0	14.3	0.0	0.0	9.8	0.0
Prop In Lane	1.00		0.38	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	299	0	193	342	0	238	398	578	646	326	619	633
V/C Ratio(X)	0.44	0.00	0.67	0.34	0.00	0.72	0.26	0.81	0.14	0.06	0.60	0.27
Avail Cap(c_a), veh/h	429	0	391	421	0	412	518	578	646	446	619	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	0.0	26.0	24.1	0.0	25.4	20.2	19.1	11.0	21.8	17.5	12.3
Incr Delay (d2), s/veh	0.4	0.0	1.5	0.2	0.0	1.6	0.1	11.5	0.5	0.0	4.3	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	1.7	1.5	0.0	2.3	1.2	7.1	0.7	0.2	4.6	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.9	0.0	27.5	24.3	0.0	26.9	20.3	30.6	11.4	21.8	21.8	13.4
LnGrp LOS	C		C	C		C	C	C	B	C	C	B
Approach Vol, veh/h		261			288			660			562	
Approach Delay, s/veh		26.7			25.9			26.4			19.2	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	25.0	11.0	14.1	10.9	25.0	12.2	12.9
Change Period (Y+Rc), s	5.9	5.6	6.0	* 6	5.9	* 5.7	6.0	6.0
Max Green Setting (Gmax), s	9.1	19.4	9.2	* 14	9.3	* 19	9.0	14.0
Max Q Clear Time (g_c+I1), s	2.0	11.8	2.0	7.6	2.0	16.3	2.0	6.5
Green Ext Time (p_c), s	0.1	1.1	0.1	0.3	0.0	0.7	0.1	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	24.1
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	134	266	77	97	22
Future Vol, veh/h	4	134	266	77	97	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	10	5	3	12	20
Mvmt Flow	5	160	317	92	115	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	854	129	142	0	-	0
Stage 1	129	-	-	-	-	-
Stage 2	725	-	-	-	-	-
Critical Hdwy	6.4	6.3	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.39	2.245	-	-	-
Pot Cap-1 Maneuver	332	900	1423	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	254	900	1423	-	-	-
Mov Cap-2 Maneuver	254	-	-	-	-	-
Stage 1	691	-	-	-	-	-
Stage 2	483	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.34	6.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1351	-	839	-	-
HCM Lane V/C Ratio	0.223	-	0.196	-	-
HCM Ctrl Dly (s/v)	8.3	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.9	-	0.7	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	98	211	39	50	145
Future Vol, veh/h	44	98	211	39	50	145
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	14	6	3	18	8	9
Mvmt Flow	49	110	237	44	56	163

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	534	259	0	0	281	0
Stage 1	259	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Critical Hdwy	6.54	6.26	-	-	4.18	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.354	-	-	2.272	-
Pot Cap-1 Maneuver	486	770	-	-	1248	-
Stage 1	757	-	-	-	-	-
Stage 2	744	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	462	770	-	-	1248	-
Mov Cap-2 Maneuver	462	-	-	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	707	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.51	0	2.06
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	638	462	-
HCM Lane V/C Ratio	-	-	0.25	0.045	-
HCM Ctrl Dly (s/v)	-	-	12.5	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1	0.1	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	182	113	223	168	38
Future Vol, veh/h	31	182	113	223	168	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	2	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	3	0	4	8	12	5
Mvmt Flow	41	243	151	297	224	51

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	848	249	275	0	-	0
Stage 1	249	-	-	-	-	-
Stage 2	599	-	-	-	-	-
Critical Hdwy	6.83	6.4	4.14	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.527	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	301	783	1277	-	-	-
Stage 1	768	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	265	783	1277	-	-	-
Mov Cap-2 Maneuver	265	-	-	-	-	-
Stage 1	678	-	-	-	-	-
Stage 2	512	-	-	-	-	-

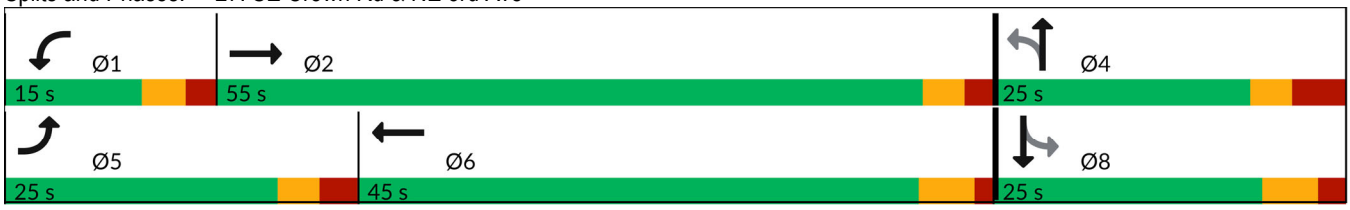
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	13.01	2.76	0
HCM LOS	B		

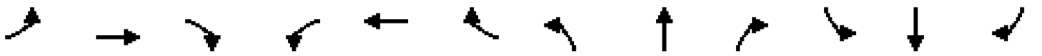
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1277	-	265	783	-	-
HCM Lane V/C Ratio	0.118	-	0.156	0.31	-	-
HCM Ctrl Dly (s/v)	8.2	-	21.1	11.6	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.5	1.3	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	183	244	9	356	6	4	229	2	247
Future Volume (vph)	183	244	9	356	6	4	229	2	247
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Free
Protected Phases	5	2	1	6		4		8	
Permitted Phases					4		8		Free
Detector Phase	5	2	1	6	4	4	8	8	
Switch Phase									
Minimum Initial (s)	2.0	8.0	5.0	8.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	7.6	23.0	10.2	20.3	32.8	32.8	35.0	35.0	
Total Split (s)	25.0	55.0	15.0	45.0	25.0	25.0	25.0	25.0	
Total Split (%)	26.3%	57.9%	15.8%	47.4%	26.3%	26.3%	26.3%	26.3%	
Yellow Time (s)	3.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.6	2.0	2.2	1.3	3.8	3.8	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	
Total Lost Time (s)	5.6	5.0	5.2	5.3		6.8		6.0	
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	
Act Effct Green (s)	12.1	29.5	5.3	13.2		16.6		17.4	60.0
Actuated g/C Ratio	0.20	0.49	0.09	0.22		0.28		0.29	1.00
v/c Ratio	0.63	0.17	0.06	0.65		0.02		0.64	0.17
Control Delay (s/veh)	32.5	9.6	30.4	24.7		19.1		29.6	0.2
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay (s/veh)	32.5	9.6	30.4	24.7		19.1		29.6	0.2
LOS	C	A	C	C		B		C	A
Approach Delay (s/veh)		19.4		24.8		19.1		14.5	
Approach LOS		B		C		B		B	

Intersection Summary	
Cycle Length: 95	
Actuated Cycle Length: 60	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay (s/veh): 19.5	Intersection LOS: B
Intersection Capacity Utilization 56.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 27: SE Crown Rd & NE 3rd Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	244	2	9	356	94	6	4	0	229	2	247
Future Volume (veh/h)	183	244	2	9	356	94	6	4	0	229	2	247
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1743	1788	1952	1979	1934	1904	1952	1952	1952	1995	2058	2011
Adj Flow Rate, veh/h	201	268	2	10	391	103	7	4	0	252	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	9	6	0	0	3	5	0	0	0	4	0	3
Cap, veh/h	254	1261	9	25	621	162	350	172		495	3	
Arrive On Green	0.15	0.36	0.36	0.01	0.22	0.22	0.21	0.21	0.00	0.21	0.21	0.00
Sat Flow, veh/h	1660	3455	26	1884	2882	751	1001	824	1654	1551	12	1704
Grp Volume(v), veh/h	201	132	138	10	248	246	11	0	0	254	0	0
Grp Sat Flow(s),veh/h/ln	1660	1698	1783	1884	1837	1796	1826	0	1654	1563	0	1704
Q Serve(g_s), s	4.9	2.2	2.2	0.2	5.1	5.2	0.0	0.0	0.0	6.2	0.0	0.0
Cycle Q Clear(g_c), s	4.9	2.2	2.2	0.2	5.1	5.2	0.2	0.0	0.0	6.4	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.42	0.64		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	254	620	651	25	396	387	522	0		498	0	
V/C Ratio(X)	0.79	0.21	0.21	0.40	0.63	0.64	0.02	0.00		0.51	0.00	
Avail Cap(c_a), veh/h	769	2027	2128	441	1741	1703	887	0		878	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.1	9.2	9.2	20.5	14.9	14.9	13.2	0.0	0.0	15.6	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.1	0.1	3.9	0.6	0.7	0.0	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.6	0.6	0.1	1.7	1.7	0.1	0.0	0.0	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.2	9.2	9.2	24.4	15.5	15.6	13.2	0.0	0.0	15.9	0.0	0.0
LnGrp LOS	B	A	A	C	B	B	B			B		
Approach Vol, veh/h		471			504			11			254	
Approach Delay, s/veh		13.5			15.7			13.2			15.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	20.6		15.6	12.0	14.3		15.6				
Change Period (Y+Rc), s	5.2	* 5.3		6.8	5.6	5.3		* 6.8				
Max Green Setting (Gmax), s	9.8	* 50		18.2	19.4	39.7		* 19				
Max Q Clear Time (g_c+I1), s	2.2	4.2		2.2	6.9	7.2		8.4				
Green Ext Time (p_c), s	0.0	0.9		0.0	0.2	1.8		0.6				

Intersection Summary		
HCM 7th Control Delay, s/veh	14.9	
HCM 7th LOS	B	

Notes

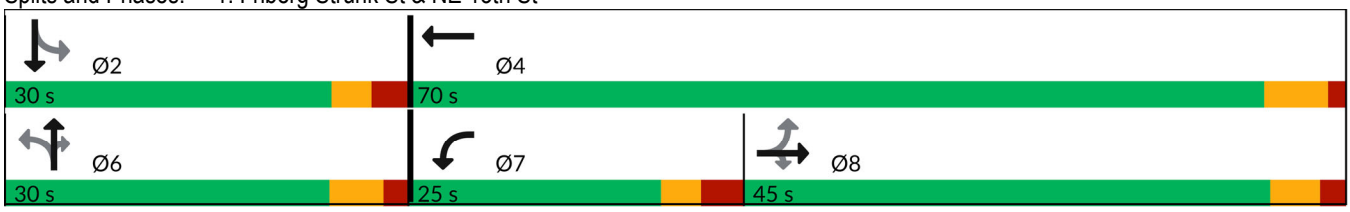
User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	1	409	76	247	461	118	8	350	1	5
Future Volume (vph)	1	409	76	247	461	118	8	350	1	5
Turn Type	Perm	NA	Perm	Prot	NA	Perm	NA	Perm	Perm	NA
Protected Phases		8		7	4		6			2
Permitted Phases	8		8			6		6	2	
Detector Phase	8	8	8	7	4	6	6	6	2	2
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.6	23.6	23.6	11.0	24.1	23.8	23.8	23.8	25.6	25.6
Total Split (s)	45.0	45.0	45.0	25.0	70.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	45.0%	45.0%	45.0%	25.0%	70.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.6	3.6	3.6	3.0	4.7	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	3.0	1.4	1.8	1.8	1.8	2.6	2.6
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)		5.6	5.6	6.0	6.1		5.8	5.8		5.6
Lead/Lag	Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	Min	Min	Min	None	Min	None	None	None	None	None
Act Effct Green (s)		22.9	22.9	15.5	44.3		12.8	12.8		13.0
Actuated g/C Ratio		0.33	0.33	0.22	0.63		0.18	0.18		0.19
v/c Ratio		0.77	0.14	0.69	0.45		0.59	0.64		0.03
Control Delay (s/veh)		31.8	4.0	39.6	8.3		40.2	8.9		23.6
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay (s/veh)		31.8	4.0	39.6	8.3		40.2	8.9		23.6
LOS		C	A	D	A		D	A		C
Approach Delay (s/veh)		27.5			19.2		17.2			23.6
Approach LOS		C			B		B			C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 69.9	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay (s/veh): 21.1	Intersection LOS: C
Intersection Capacity Utilization 74.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Friberg Strunk St & NE 13th St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	409	76	247	461	3	118	8	350	1	5	3
Future Volume (veh/h)	1	409	76	247	461	3	118	8	350	1	5	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	0.96	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	401	1885	1856	1885	1841	1900	1781	1900	1900	1900	1900	1411
Adj Flow Rate, veh/h	1	440	82	266	496	3	127	9	376	1	5	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	100	1	3	1	4	0	3	0	0	0	0	33
Cap, veh/h	56	526	439	317	1003	6	467	30	429	82	288	154
Arrive On Green	0.28	0.28	0.28	0.18	0.55	0.55	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1	1884	1572	1795	1828	11	1348	111	1610	74	1080	577
Grp Volume(v), veh/h	441	0	82	266	0	499	136	0	376	9	0	0
Grp Sat Flow(s),veh/h/ln	1884	0	1572	1795	0	1839	1459	0	1610	1731	0	0
Q Serve(g_s), s	0.0	0.0	2.6	9.2	0.0	10.8	4.6	0.0	14.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.2	0.0	2.6	9.2	0.0	10.8	4.8	0.0	14.4	0.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.01	0.93		1.00	0.11		0.33
Lane Grp Cap(c), veh/h	582	0	439	317	0	1009	497	0	429	524	0	0
V/C Ratio(X)	0.76	0.00	0.19	0.84	0.00	0.49	0.27	0.00	0.88	0.02	0.00	0.00
Avail Cap(c_a), veh/h	1207	0	962	530	0	1824	656	0	605	708	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.9	0.0	17.7	25.6	0.0	9.0	19.1	0.0	22.6	17.4	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.1	2.4	0.0	0.1	0.1	0.0	7.9	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	0.9	3.8	0.0	3.4	1.5	0.0	5.8	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.6	0.0	17.7	28.1	0.0	9.1	19.2	0.0	30.5	17.4	0.0	0.0
LnGrp LOS	C		B	C		A	B		C	B		
Approach Vol, veh/h		523			765			512			9	
Approach Delay, s/veh		21.9			15.7			27.5			17.4	
Approach LOS		C			B			C			B	

Timer - Assigned Phs	2	4	6	7	8
Phs Duration (G+Y+Rc), s	23.0	41.4	23.0	17.4	24.1
Change Period (Y+Rc), s	* 5.8	6.1	5.8	6.0	* 6.1
Max Green Setting (Gmax), s	* 24	63.9	24.2	19.0	* 39
Max Q Clear Time (g_c+I1), s	2.2	12.8	16.4	11.2	16.2
Green Ext Time (p_c), s	0.0	2.1	0.8	0.2	1.8

Intersection Summary	
HCM 7th Control Delay, s/veh	20.8
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	726	36	116	647	65	193
Future Vol, veh/h	726	36	116	647	65	193
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	55	-	105	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	4	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	6	1	2	6	3
Mvmt Flow	748	37	120	667	67	199

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	786	0	1655	748
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	906	-
Critical Hdwy	-	-	4.11	-	6.46	6.23
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.209	-	3.554	3.327
Pot Cap-1 Maneuver	-	-	838	-	106	410
Stage 1	-	-	-	-	460	-
Stage 2	-	-	-	-	388	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	838	-	91	410
Mov Cap-2 Maneuver	-	-	-	-	91	-
Stage 1	-	-	-	-	460	-
Stage 2	-	-	-	-	332	-

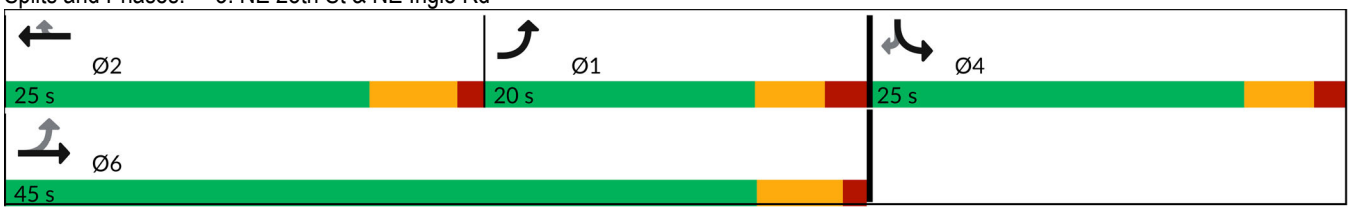
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.52	45.36
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	91	410	-	-	838	-
HCM Lane V/C Ratio	0.74	0.485	-	-	0.143	-
HCM Ctrl Dly (s/v)	115.5	21.7	-	-	10	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	3.8	2.6	-	-	0.5	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	294	595	439	176	237	297
Future Volume (vph)	294	595	439	176	237	297
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	10.8	15.7	24.9	24.9	10.3	10.3
Total Split (s)	20.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	28.6%	64.3%	35.7%	35.7%	35.7%	35.7%
Yellow Time (s)	3.6	4.5	4.5	4.5	3.6	3.6
All-Red Time (s)	2.2	1.2	1.4	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.7	5.9	5.9	5.3	5.3
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effct Green (s)	32.6	32.7	18.5	18.5	12.8	12.8
Actuated g/C Ratio	0.57	0.58	0.33	0.33	0.23	0.23
v/c Ratio	0.61	0.60	0.80	0.33	0.67	0.54
Control Delay (s/veh)	17.8	11.5	32.7	7.9	30.2	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.8	11.5	32.7	7.9	30.2	6.6
LOS	B	B	C	A	C	A
Approach Delay (s/veh)		13.6	25.6		17.1	
Approach LOS		B	C		B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 56.8	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay (s/veh): 18.1	Intersection LOS: B
Intersection Capacity Utilization 66.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: NE 28th St & NE Ingle Rd



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	294	595	439	176	237	297
Future Volume (veh/h)	294	595	439	176	237	297
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1885	1856	1841	1870	1900
Adj Flow Rate, veh/h	309	626	462	185	249	313
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	3	4	2	0
Cap, veh/h	375	1010	551	463	425	384
Arrive On Green	0.12	0.54	0.30	0.30	0.24	0.24
Sat Flow, veh/h	1767	1885	1856	1560	1781	1610
Grp Volume(v), veh/h	309	626	462	185	249	313
Grp Sat Flow(s),veh/h/ln	1767	1885	1856	1560	1781	1610
Q Serve(g_s), s	3.6	11.4	11.5	4.7	6.1	9.0
Cycle Q Clear(g_c), s	3.6	11.4	11.5	4.7	6.1	9.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	375	1010	551	463	425	384
V/C Ratio(X)	0.82	0.62	0.84	0.40	0.59	0.81
Avail Cap(c_a), veh/h	674	1505	720	605	713	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.7	7.9	16.2	13.8	16.6	17.7
Incr Delay (d2), s/veh	1.8	0.2	5.4	0.2	0.5	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	2.9	4.7	1.3	2.2	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	21.5	8.2	21.6	14.0	17.1	19.3
LnGrp LOS	C	A	C	B	B	B
Approach Vol, veh/h		935	647		562	
Approach Delay, s/veh		12.6	19.4		18.3	
Approach LOS		B	B		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.7	20.5		17.0		32.2
Change Period (Y+Rc), s	5.8	5.9		5.3		* 5.8
Max Green Setting (Gmax), s	14.2	19.1		19.7		* 39
Max Q Clear Time (g_c+I1), s	5.6	13.5		11.0		13.4
Green Ext Time (p_c), s	0.3	1.1		0.7		2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	16.1
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	86.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	364	384	33	217	0	342	0	33	1	1	3
Future Vol, veh/h	6	364	384	33	217	0	342	0	33	1	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	1	0	0	3	0	3	0	0	100	0	0
Mvmt Flow	6	387	409	35	231	0	364	0	35	1	1	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	231	0	0	796	0	0	906	905	591	701	1110	231
Stage 1	-	-	-	-	-	-	604	604	-	301	301	-
Stage 2	-	-	-	-	-	-	302	301	-	400	809	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.13	6.5	6.2	8.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	7.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	7.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.527	4	3.3	4.4	4	3.3
Pot Cap-1 Maneuver	1349	-	-	835	-	-	~ 256	278	510	252	211	813
Stage 1	-	-	-	-	-	-	483	491	-	540	668	-
Stage 2	-	-	-	-	-	-	705	668	-	470	397	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1349	-	-	835	-	-	~ 239	262	510	221	199	813
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 239	262	-	221	199	-
Stage 1	-	-	-	-	-	-	479	486	-	514	636	-
Stage 2	-	-	-	-	-	-	668	636	-	434	393	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.06	1.25	$ 318.82	14.67
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	251	13	-	-	238	-	-	378
HCM Lane V/C Ratio	1.589	0.005	-	-	0.042	-	-	0.014
HCM Ctrl Dly (s/v)	$ 318.8	7.7	0	-	9.5	0	-	14.7
HCM Lane LOS	F	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	24.6	0	-	-	0.1	-	-	0

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	15.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	112	281	0	0	172	127	0	0	0	167	0	80
Future Vol, veh/h	112	281	0	0	172	127	0	0	0	167	0	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	1	0	0	2	6	0	0	0	3	0	0
Mvmt Flow	124	312	0	0	191	141	0	0	0	186	0	89

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	332	0	0	312	0	0	752	893	312	823	823	262
Stage 1	-	-	-	-	-	-	561	561	-	262	262	-
Stage 2	-	-	-	-	-	-	191	332	-	561	561	-
Critical Hdwy	4.13	-	-	4.1	-	-	7.1	6.5	6.2	7.13	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.13	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.13	5.5	-
Follow-up Hdwy	2.227	-	-	2.2	-	-	3.5	4	3.3	3.527	4	3.3
Pot Cap-1 Maneuver	1222	-	-	1260	-	-	329	283	733	291	311	782
Stage 1	-	-	-	-	-	-	516	513	-	741	695	-
Stage 2	-	-	-	-	-	-	815	648	-	510	513	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1222	-	-	1260	-	-	256	248	733	256	273	782
Mov Cap-2 Maneuver	-	-	-	-	-	-	256	248	-	256	273	-
Stage 1	-	-	-	-	-	-	452	450	-	741	695	-
Stage 2	-	-	-	-	-	-	723	648	-	447	450	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	2.36	0	0	53.9
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	513	-	-	1260	-	-	327
HCM Lane V/C Ratio	-	0.102	-	-	-	-	-	0.84
HCM Ctrl Dly (s/v)	0	8.3	0	-	0	-	-	53.9
HCM Lane LOS	A	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0.3	-	-	0	-	-	7.4

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	1	349	385	1
Future Vol, veh/h	1	1	1	349	385	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-4	-4	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	5	0	0	0	0	8
Mvmt Flow	1	1	1	431	475	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	909	476	477	0	-	0
Stage 1	476	-	-	-	-	-
Stage 2	433	-	-	-	-	-
Critical Hdwy	6.85	6.4	4.1	-	-	-
Critical Hdwy Stg 1	5.85	-	-	-	-	-
Critical Hdwy Stg 2	5.85	-	-	-	-	-
Follow-up Hdwy	3.545	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	272	578	1096	-	-	-
Stage 1	587	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	272	578	1096	-	-	-
Mov Cap-2 Maneuver	272	-	-	-	-	-
Stage 1	586	-	-	-	-	-
Stage 2	617	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	14.8	0.02	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	5	-	370	-	-
HCM Lane V/C Ratio	0.001	-	0.007	-	-
HCM Ctrl Dly (s/v)	8.3	0	14.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

MOVEMENT SUMMARY

Site: 7 [Everett St (SR 500) St & NE Everett Dr_Total PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett St (SR 500)															
3	L2	All MCs	612	0.0	612	0.0	0.840	12.3	LOS B	12.9	323.5	0.82	0.59	0.84	32.5
8	T1	All MCs	255	1.0	255	1.0	0.840	6.1	LOS A	12.9	323.5	0.82	0.59	0.84	33.1
18	R2	All MCs	159	0.0	159	0.0	0.840	6.2	LOS A	12.9	323.5	0.82	0.59	0.84	32.9
Approach			1026	0.2	1026	0.2	0.840	9.8	LOS A	12.9	323.5	0.82	0.59	0.84	32.7
East: NE Everett Dr															
1	L2	All MCs	161	0.0	161	0.0	0.424	17.0	LOS B	3.3	82.5	0.94	0.83	1.01	30.7
6	T1	All MCs	33	0.0	33	0.0	0.424	10.8	LOS B	3.3	82.5	0.94	0.83	1.01	31.3
16	R2	All MCs	39	0.0	39	0.0	0.424	10.9	LOS B	3.3	82.5	0.94	0.83	1.01	31.1
Approach			233	0.0	233	0.0	0.424	15.1	LOS B	3.3	82.5	0.94	0.83	1.01	30.9
North: NE Everett St (SR 500)															
7	L2	All MCs	55	0.0	55	0.0	0.412	15.6	LOS B	3.0	74.7	0.86	0.78	0.91	32.5
4	T1	All MCs	182	2.0	182	2.0	0.412	9.6	LOS A	3.0	74.7	0.86	0.78	0.91	33.2
14	R2	All MCs	29	0.0	29	0.0	0.412	9.5	LOS A	3.0	74.7	0.86	0.78	0.91	32.9
Approach			266	1.4	266	1.4	0.412	10.8	LOS B	3.0	74.7	0.86	0.78	0.91	33.0
West: NE Everett Dr															
5	L2	All MCs	31	0.0	31	0.0	0.656	14.3	LOS B	6.5	162.6	0.78	0.73	0.91	33.5
2	T1	All MCs	46	0.0	46	0.0	0.656	8.0	LOS A	6.5	162.6	0.78	0.73	0.91	34.2
12	R2	All MCs	574	0.0	574	0.0	0.656	8.2	LOS A	6.5	162.6	0.78	0.73	0.91	33.9
Approach			652	0.0	652	0.0	0.656	8.5	LOS A	6.5	162.6	0.78	0.73	0.91	33.9
All Vehicles			2176	0.3	2176	0.3	0.840	10.1	LOS B	12.9	323.5	0.83	0.68	0.89	32.9

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	73	58	885	759	47
Future Vol, veh/h	9	73	58	885	759	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	110	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	4	-4	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	2	0	1	0
Mvmt Flow	10	79	63	962	825	51

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1939	851	876	0	-	0
Stage 1	851	-	-	-	-	-
Stage 2	1088	-	-	-	-	-
Critical Hdwy	6.8	6.44	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.218	-	-	-
Pot Cap-1 Maneuver	59	341	771	-	-	-
Stage 1	384	-	-	-	-	-
Stage 2	289	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	54	341	771	-	-	-
Mov Cap-2 Maneuver	54	-	-	-	-	-
Stage 1	353	-	-	-	-	-
Stage 2	289	-	-	-	-	-

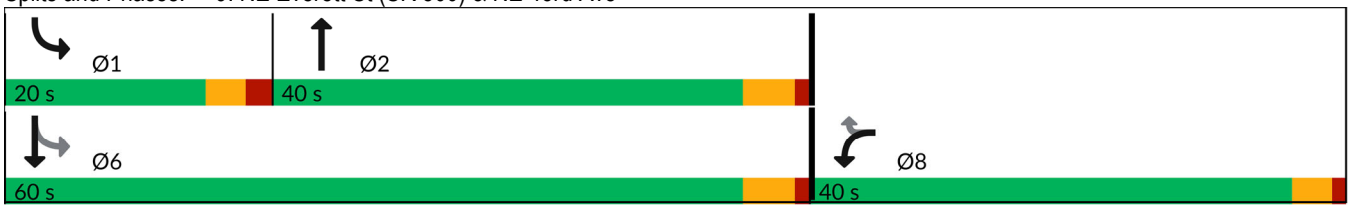
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	33.1	0.62	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	771	-	215	-	-
HCM Lane V/C Ratio	0.082	-	0.414	-	-
HCM Ctrl Dly (s/v)	10.1	-	33.1	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.3	-	1.9	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	224	119	821	298	117	719
Future Volume (vph)	224	119	821	298	117	719
Turn Type	Prot	Perm	NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		Free	6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	23.0	23.0	30.0		10.0	50.0
Total Split (s)	40.0	40.0	40.0		20.0	60.0
Total Split (%)	40.0%	40.0%	40.0%		20.0%	60.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0
All-Red Time (s)	1.0	1.0	1.0		2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	Min		None	Min
Act Effct Green (s)	15.2	15.2	36.4	70.7	46.4	46.4
Actuated g/C Ratio	0.21	0.21	0.51	1.00	0.66	0.66
v/c Ratio	0.63	0.28	0.95	0.21	0.43	0.64
Control Delay (s/veh)	33.7	6.7	41.8	0.3	11.6	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.7	6.7	41.8	0.3	11.6	11.1
LOS	C	A	D	A	B	B
Approach Delay (s/veh)	24.3		30.7			11.2
Approach LOS	C		C			B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 70.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay (s/veh): 22.7	Intersection LOS: C
Intersection Capacity Utilization 73.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9: NE Everett St (SR 500) & NE 43rd Ave



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	224	119	821	298	117	719
Future Volume (veh/h)	224	119	821	298	117	719
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1979	1979	1791	1806	2057	2012
Adj Flow Rate, veh/h	238	106	873	0	124	765
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	1	0	0	3
Cap, veh/h	320	285	973		306	1373
Arrive On Green	0.17	0.17	0.54	0.00	0.06	0.68
Sat Flow, veh/h	1884	1677	1791	1530	1959	2012
Grp Volume(v), veh/h	238	106	873	0	124	765
Grp Sat Flow(s),veh/h/ln	1884	1677	1791	1530	1959	2012
Q Serve(g_s), s	7.3	3.4	26.5	0.0	1.5	11.9
Cycle Q Clear(g_c), s	7.3	3.4	26.5	0.0	1.5	11.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	320	285	973		306	1373
V/C Ratio(X)	0.74	0.37	0.90		0.40	0.56
Avail Cap(c_a), veh/h	1112	989	1027		675	1814
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	24.1	22.4	12.4	0.0	12.5	5.0
Incr Delay (d2), s/veh	3.4	0.8	11.0	0.0	0.9	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	1.4	11.2	0.0	0.8	3.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	27.5	23.2	23.4	0.0	13.3	5.4
LnGrp LOS	C	C	C		B	A
Approach Vol, veh/h	344		873			889
Approach Delay, s/veh	26.2		23.4			6.5
Approach LOS	C		C			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.5	38.1			46.6	14.4
Change Period (Y+Rc), s	5.0	5.0			5.0	4.0
Max Green Setting (Gmax), s	15.0	35.0			55.0	36.0
Max Q Clear Time (g_c+I1), s	3.5	28.5			13.9	9.3
Green Ext Time (p_c), s	0.2	4.6			8.4	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	16.7
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

MOVEMENT SUMMARY

Site 10 NE Everett St & NW Lake Rd_TotalPM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett Street															
3	L2	All MCs	279	0.0	279	0.0	0.374	13.2	LOS B	2.5	61.6	0.73	0.73	0.73	31.5
8	T1	All MCs	794	1.0	794	1.0	0.765	10.3	LOS B	10.9	273.8	0.97	0.87	1.25	33.4
Approach			1073	0.7	1073	0.7	0.765	11.0	LOS B	10.9	273.8	0.90	0.83	1.11	32.9
North: NE Everett Street															
4	T1	All MCs	646	2.0	646	2.0	0.532	5.3	LOS A	4.4	111.5	0.64	0.54	0.64	34.7
14	R2	All MCs	379	0.0	379	0.0	0.303	5.0	LOS A	2.0	51.0	0.52	0.53	0.52	35.2
Approach			1025	1.3	1025	1.3	0.532	5.2	LOS A	4.4	111.5	0.60	0.54	0.60	34.9
West: NW Lake Road															
5	L2	All MCs	467	1.0	467	1.0	0.513	14.5	LOS B	4.6	114.7	0.87	0.78	0.95	31.0
12	R2	All MCs	371	0.0	371	0.0	0.401	7.3	LOS A	3.1	76.6	0.81	0.69	0.81	34.5
Approach			838	0.6	838	0.6	0.513	11.3	LOS B	4.6	114.7	0.84	0.74	0.89	32.4
All Vehicles			2936	0.9	2936	0.9	0.765	9.1	LOS A	10.9	273.8	0.78	0.70	0.87	33.4

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	187	18	56	554	600	104
Future Vol, veh/h	187	18	56	554	600	104
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	4	0	0	2
Mvmt Flow	197	19	59	583	632	109

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1393	692	747	0	-	0
Stage 1	692	-	-	-	-	-
Stage 2	701	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.14	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	~ 158	447	852	-	-	-
Stage 1	500	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 145	445	848	-	-	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	493	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	44.93	0.88	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	848	-	293	-	-
HCM Lane V/C Ratio	0.07	-	0.735	-	-
HCM Ctrl Dly (s/v)	9.6	-	44.9	-	-
HCM Lane LOS	A	-	E	-	-
HCM 95th %tile Q(veh)	0.2	-	5.4	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	10	33	7	8	28	12	529	3	40	436	142
Future Vol, veh/h	53	10	33	7	8	28	12	529	3	40	436	142
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	10	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	56	11	35	7	8	29	13	557	3	42	459	149

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1206	1203	534	1132	1276	560	608	0	0	560	0	0
Stage 1	618	618	-	584	584	-	-	-	-	-	-	-
Stage 2	588	585	-	548	693	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.6	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.6	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.6	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.09	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	162	178	550	182	168	531	980	-	-	1021	-	-
Stage 1	480	468	-	501	501	-	-	-	-	-	-	-
Stage 2	498	485	-	524	448	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	137	168	550	152	159	530	980	-	-	1021	-	-
Mov Cap-2 Maneuver	137	168	-	152	159	-	-	-	-	-	-	-
Stage 1	460	449	-	495	495	-	-	-	-	-	-	-
Stage 2	456	479	-	460	429	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	43.71	19.81	0.19	0.56
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	980	-	-	190	288	1021	-	-
HCM Lane V/C Ratio	0.013	-	-	0.532	0.157	0.041	-	-
HCM Ctrl Dly (s/v)	8.7	-	-	43.7	19.8	8.7	-	-
HCM Lane LOS	A	-	-	E	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2.7	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	27

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	31	0	0	24	443	0	1	0	426	0	54
Future Vol, veh/h	73	31	0	0	24	443	0	1	0	426	0	54
Conflicting Peds, #/hr	3	0	2	2	0	3	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	3	0	0	0	2	0	0	0	1	0	0
Mvmt Flow	77	33	0	0	25	466	0	1	0	448	0	57

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	942	927	30	-	956	5	57	0	0	2	0	0
Stage 1	925	925	-	-	2	-	-	-	-	-	-	-
Stage 2	17	2	-	-	954	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.53	6.2	-	6.5	6.22	4.1	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.53	-	-	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.53	-	-	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.027	3.3	-	4	3.318	2.2	-	-	2.209	-	-
Pot Cap-1 Maneuver	245	267	1050	0	260	1078	1561	-	-	1627	-	-
Stage 1	325	346	-	0	898	-	-	-	-	-	-	-
Stage 2	1008	892	-	0	340	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	89	190	1048	-	185	1074	1561	-	-	1625	-	-
Mov Cap-2 Maneuver	89	190	-	-	185	-	-	-	-	-	-	-
Stage 1	232	247	-	-	897	-	-	-	-	-	-	-
Stage 2	553	891	-	-	242	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	174.42	14.58	0	7.15
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1561	-	-	105	862	1331	-	-
HCM Lane V/C Ratio	-	-	-	1.038	0.57	0.276	-	-
HCM Ctrl Dly (s/v)	0	-	-	174.4	14.6	8.1	0	-
HCM Lane LOS	A	-	-	F	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	6.7	3.7	1.1	-	-

Intersection	
Int Delay, s/veh	10.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	66	137	9	4	115	6	30	181	6	2	168	56
Future Vol, veh/h	66	137	9	4	115	6	30	181	6	2	168	56
Conflicting Peds, #/hr	1	0	3	3	0	1	0	0	9	9	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	4	-	-	-6	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	2	0	0	2	0	0	1	0	0	0	0
Mvmt Flow	75	156	10	5	131	7	34	206	7	2	191	64

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	567	517	226	563	545	219	255	0	0	222	0	0
Stage 1	227	227	-	286	286	-	-	-	-	-	-	-
Stage 2	340	290	-	276	259	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.1	6.52	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.5	4.018	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	437	462	819	440	445	826	1322	-	-	1360	-	-
Stage 1	780	716	-	725	675	-	-	-	-	-	-	-
Stage 2	679	673	-	734	693	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	294	444	816	273	428	818	1322	-	-	1348	-	-
Mov Cap-2 Maneuver	294	444	-	273	428	-	-	-	-	-	-	-
Stage 1	778	715	-	698	649	-	-	-	-	-	-	-
Stage 2	521	647	-	564	692	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	28.07	17.45	1.08	0.07
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	247	-	-	390	430	15	-	-
HCM Lane V/C Ratio	0.026	-	-	0.618	0.33	0.002	-	-
HCM Ctrl Dly (s/v)	7.8	0	-	28.1	17.4	7.7	0	-
HCM Lane LOS	A	A	-	D	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	4	1.4	0	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	281	723	579	28	8	218
Future Vol, veh/h	281	723	579	28	8	218
Conflicting Peds, #/hr	3	0	0	3	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-8	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	2	0	0	1
Mvmt Flow	296	761	609	29	8	229

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	642	0	-	0	1599	322
Stage 1	-	-	-	-	627	-
Stage 2	-	-	-	-	972	-
Critical Hdwy	4.12	-	-	-	5.2	6.12
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	2.21	-	-	-	3.5	3.31
Pot Cap-1 Maneuver	945	-	-	-	201	726
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	512	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	943	-	-	-	120	724
Mov Cap-2 Maneuver	-	-	-	-	120	-
Stage 1	-	-	-	-	397	-
Stage 2	-	-	-	-	510	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	4.66	0	13.14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	743	-	-	-	120	724
HCM Lane V/C Ratio	0.314	-	-	-	0.07	0.317
HCM Ctrl Dly (s/v)	10.6	2.4	-	-	37.1	12.3
HCM Lane LOS	B	A	-	-	E	B
HCM 95th %tile Q(veh)	1.3	-	-	-	0.2	1.4

MOVEMENT SUMMARY

Site: 16 NW Norwood St & NW 6th Ave_TotalPM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NW 6th Avenue															
3	L2	All MCs	61	5.0	61	5.0	0.368	19.6	LOS B	2.7	70.0	0.99	0.85	1.02	30.2
8	T1	All MCs	6	17.0	6	17.0	0.368	15.0	LOS B	2.7	70.0	0.99	0.85	1.02	30.7
18	R2	All MCs	70	1.0	70	1.0	0.368	12.9	LOS B	2.7	70.0	0.99	0.85	1.02	30.6
Approach			138	3.5	138	3.5	0.368	16.0	LOS B	2.7	70.0	0.99	0.85	1.02	30.4
East: NW 6th Avenue															
1	L2	All MCs	73	1.0	73	1.0	0.678	11.0	LOS B	7.0	179.0	0.57	0.47	0.57	34.1
6	T1	All MCs	722	3.0	722	3.0	0.678	4.8	LOS A	7.0	179.0	0.57	0.47	0.57	34.8
16	R2	All MCs	16	7.0	16	7.0	0.678	5.1	LOS A	7.0	179.0	0.57	0.47	0.57	34.4
Approach			810	2.9	810	2.9	0.678	5.4	LOS A	7.0	179.0	0.57	0.47	0.57	34.7
North: NW Norwood Street															
7	L2	All MCs	15	7.0	15	7.0	0.100	15.8	LOS B	0.6	15.2	0.78	0.86	0.78	29.6
4	T1	All MCs	8	0.0	8	0.0	0.100	8.8	LOS A	0.6	15.2	0.78	0.86	0.78	30.4
14	R2	All MCs	35	3.0	35	3.0	0.100	18.8	LOS B	0.6	15.2	0.78	0.86	0.78	7.1
Approach			58	3.6	58	3.6	0.100	16.6	LOS B	0.6	15.2	0.78	0.86	0.78	10.1
West: NW 6th Avenue															
5	L2	All MCs	46	0.0	46	0.0	0.894	11.8	LOS D	17.2	433.8	0.93	0.52	0.93	33.1
2	T1	All MCs	990	1.0	990	1.0	0.894	5.6	LOS D	17.2	433.8	0.93	0.52	0.93	33.8
12	R2	All MCs	80	1.0	80	1.0	0.894	5.8	LOS D	17.2	433.8	0.93	0.52	0.93	33.5
Approach			1115	1.0	1115	1.0	0.894	5.9	LOS A	17.2	433.8	0.93	0.52	0.93	33.7
All Vehicles			2122	1.9	2122	1.9	0.894	6.6	LOS A	17.2	433.8	0.79	0.53	0.79	31.8

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	705	4	106	520	10	91
Future Vol, veh/h	705	4	106	520	10	91
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	105	-	85	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-6	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	750	4	113	553	11	97

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	754	0	1531	753
Stage 1	-	-	-	-	752	-
Stage 2	-	-	-	-	779	-
Critical Hdwy	-	-	4.1	-	5.2	5.6
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	865	-	217	468
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	591	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	865	-	188	468
Mov Cap-2 Maneuver	-	-	-	-	188	-
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	514	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.66	15.74
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	188	468	-	-	865	-
HCM Lane V/C Ratio	0.056	0.207	-	-	0.13	-
HCM Ctrl Dly (s/v)	25.2	14.7	-	-	9.8	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.8	-	-	0.4	-

Intersection	
Int Delay, s/veh	5.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	586	146	124	395	72	130
Future Vol, veh/h	586	146	124	395	72	130
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	3	1
Mvmt Flow	617	154	131	416	76	137

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	771	0	1371	694
Stage 1	-	-	-	-	694	-
Stage 2	-	-	-	-	677	-
Critical Hdwy	-	-	4.11	-	6.43	6.21
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.209	-	3.527	3.309
Pot Cap-1 Maneuver	-	-	849	-	160	445
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	503	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	849	-	136	445
Mov Cap-2 Maneuver	-	-	-	-	136	-
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	426	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.39	32.37
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	136	445	-	-	849	-
HCM Lane V/C Ratio	0.558	0.308	-	-	0.154	-
HCM Ctrl Dly (s/v)	60.8	16.7	-	-	10	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	2.8	1.3	-	-	0.5	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	587	7	94	368	6	3	5	131	10	7	13
Future Vol, veh/h	7	587	7	94	368	6	3	5	131	10	7	13
Conflicting Peds, #/hr	0	0	3	3	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	130	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	1	0	0	0	0	0	0	8
Mvmt Flow	8	638	8	102	400	7	3	5	142	11	8	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	407	0	0	649	0	0	1269	1271	645	1264	1271	404
Stage 1	-	-	-	-	-	-	660	660	-	608	608	-
Stage 2	-	-	-	-	-	-	609	611	-	656	664	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.372
Pot Cap-1 Maneuver	1163	-	-	947	-	-	147	169	476	148	169	634
Stage 1	-	-	-	-	-	-	455	463	-	486	489	-
Stage 2	-	-	-	-	-	-	486	488	-	458	461	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1163	-	-	944	-	-	121	150	475	89	149	633
Mov Cap-2 Maneuver	-	-	-	-	-	-	121	150	-	89	149	-
Stage 1	-	-	-	-	-	-	451	459	-	434	436	-
Stage 2	-	-	-	-	-	-	416	435	-	315	457	-

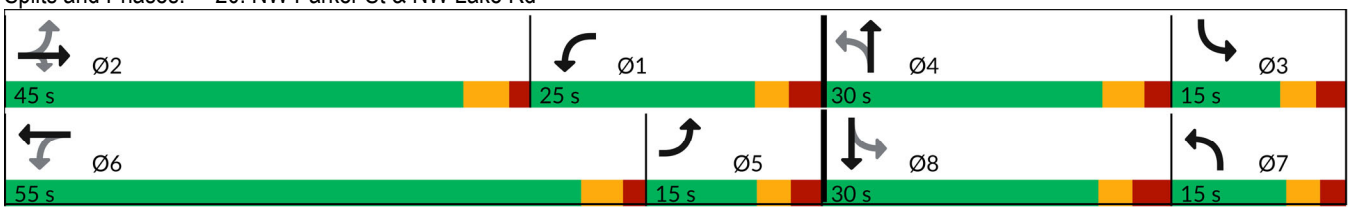
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.09	1.86	18.52	31.8
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	416	1163	-	-	944	-	-	167
HCM Lane V/C Ratio	0.363	0.007	-	-	0.108	-	-	0.196
HCM Ctrl Dly (s/v)	18.5	8.1	-	-	9.3	-	-	31.8
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.6	0	-	-	0.4	-	-	0.7

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	19	458	162	45	324	192	157	43	117
Future Volume (vph)	19	458	162	45	324	192	157	43	117
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		1	6	7	4	3	8
Permitted Phases	2		2	6		4		8	
Detector Phase	5	2	2	1	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	26.7	26.7	10.7	20.5	10.2	29.2	10.6	33.3
Total Split (s)	15.0	45.0	45.0	25.0	55.0	15.0	30.0	15.0	30.0
Total Split (%)	13.0%	39.1%	39.1%	21.7%	47.8%	13.0%	26.1%	13.0%	26.1%
Yellow Time (s)	3.0	4.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0
All-Red Time (s)	2.5	1.7	1.7	2.7	1.9	2.2	2.3	2.6	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.7	5.7	5.7	5.5	5.2	5.9	5.6	6.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)	29.7	26.0	26.0	30.8	27.0	28.4	22.0	18.2	11.1
Actuated g/C Ratio	0.41	0.36	0.36	0.43	0.38	0.39	0.31	0.25	0.15
v/c Ratio	0.04	0.73	0.25	0.17	0.29	0.37	0.55	0.17	0.51
Control Delay (s/veh)	15.3	28.9	3.7	16.3	19.7	21.8	28.6	21.6	38.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.3	28.9	3.7	16.3	19.7	21.8	28.6	21.6	38.6
LOS	B	C	A	B	B	C	C	C	D
Approach Delay (s/veh)		22.1			19.3		25.8		34.5
Approach LOS		C			B		C		C

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 72	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay (s/veh): 23.8	Intersection LOS: C
Intersection Capacity Utilization 67.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 20: NW Parker St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	458	162	45	324	25	192	157	117	43	117	17
Future Volume (veh/h)	19	458	162	45	324	25	192	157	117	43	117	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1885	1900	1885	1885	1900	1900	1885	1900
Adj Flow Rate, veh/h	21	503	108	49	356	9	211	173	97	47	129	17
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	1	0	1	0	1	1	0	0	1	0
Cap, veh/h	585	596	499	260	538	14	369	222	124	196	201	26
Arrive On Green	0.25	0.31	0.31	0.08	0.15	0.15	0.11	0.20	0.20	0.04	0.12	0.12
Sat Flow, veh/h	1810	1900	1593	1810	3569	90	1795	1133	635	1810	1630	215
Grp Volume(v), veh/h	21	503	108	49	178	187	211	0	270	47	0	146
Grp Sat Flow(s),veh/h/ln	1810	1900	1593	1810	1791	1868	1795	0	1769	1810	0	1844
Q Serve(g_s), s	0.0	15.5	3.1	0.0	5.9	5.9	0.7	0.0	9.1	0.0	0.0	4.7
Cycle Q Clear(g_c), s	0.0	15.5	3.1	0.0	5.9	5.9	0.7	0.0	9.1	0.0	0.0	4.7
Prop In Lane	1.00		1.00	1.00		0.05	1.00		0.36	1.00		0.12
Lane Grp Cap(c), veh/h	585	596	499	260	270	281	369	0	346	196	0	227
V/C Ratio(X)	0.04	0.84	0.22	0.19	0.66	0.66	0.57	0.00	0.78	0.24	0.00	0.64
Avail Cap(c_a), veh/h	585	1193	1000	673	1417	1478	451	0	681	387	0	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.0	20.0	15.8	26.5	25.1	25.1	24.4	0.0	23.9	28.6	0.0	26.1
Incr Delay (d2), s/veh	0.0	1.3	0.1	0.1	1.0	1.0	1.4	0.0	1.5	0.6	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	6.2	1.1	0.6	2.4	2.5	2.8	0.0	3.6	0.7	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.0	21.3	15.9	26.6	26.1	26.1	25.8	0.0	25.3	29.2	0.0	27.2
LnGrp LOS	B	C	B	C	C	C	C		C	C		C
Approach Vol, veh/h		632			414			481			193	
Approach Delay, s/veh		20.3			26.1			25.5			27.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	25.3	8.4	18.2	21.1	14.9	12.5	14.0
Change Period (Y+Rc), s	5.7	5.7	* 5.6	5.9	5.7	* 5.5	5.6	* 6.3
Max Green Setting (Gmax), s	19.3	39.3	* 9.4	24.1	9.5	* 50	9.8	* 24
Max Q Clear Time (g_c+I1), s	2.0	17.5	2.0	11.1	2.0	7.9	2.7	6.7
Green Ext Time (p_c), s	0.0	2.1	0.0	0.8	0.0	1.3	0.3	0.4

Intersection Summary	
HCM 7th Control Delay, s/veh	24.0
HCM 7th LOS	C

Notes

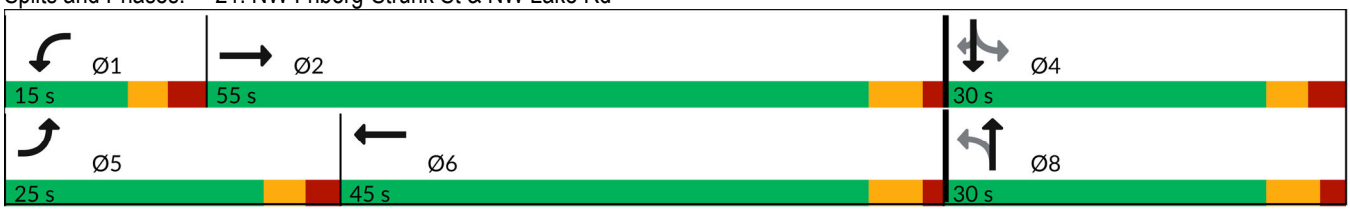
User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	375	566	1	455	4	1	97	0	254
Future Volume (vph)	375	566	1	455	4	1	97	0	254
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2	1	6		8		4	
Permitted Phases					8		4		4
Detector Phase	5	2	1	6	8	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.6	23.5	10.8	26.6	34.0	34.0	33.9	33.9	33.9
Total Split (s)	25.0	55.0	15.0	45.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	25.0%	55.0%	15.0%	45.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.6	1.5	2.8	1.6	2.0	2.0	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.6	5.5	5.8	5.6		6.0		5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	None	None	None	None	None
Act Effct Green (s)	19.7	39.5	5.1	15.8		9.2		9.3	9.3
Actuated g/C Ratio	0.32	0.64	0.08	0.25		0.15		0.15	0.15
v/c Ratio	0.72	0.27	0.01	0.70		0.02		0.51	0.59
Control Delay (s/veh)	30.6	6.5	31.0	24.1		24.0		34.4	9.5
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay (s/veh)	30.6	6.5	31.0	24.1		24.0		34.4	9.5
LOS	C	A	C	C		C		C	A
Approach Delay (s/veh)		16.1		24.1		24.0		16.4	
Approach LOS		B		C		C		B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 62.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay (s/veh): 18.6	Intersection LOS: B
Intersection Capacity Utilization 59.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 21: NW Friberg-Strunk St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	375	566	2	1	455	129	4	1	0	97	0	254
Future Volume (veh/h)	375	566	2	1	455	129	4	1	0	97	0	254
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1900	1900	1900	1885	1900	1900	1900	1900	1856	1900	1885
Adj Flow Rate, veh/h	408	615	2	1	495	140	4	1	0	105	0	276
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	0	0	0	1	0	0	0	0	3	0	1
Cap, veh/h	459	1846	6	3	686	193	267	56	0	443	0	341
Arrive On Green	0.26	0.50	0.50	0.00	0.25	0.25	0.21	0.21	0.00	0.21	0.00	0.21
Sat Flow, veh/h	1795	3691	12	1810	2755	774	754	261	0	1519	0	1593
Grp Volume(v), veh/h	408	301	316	1	321	314	5	0	0	105	0	276
Grp Sat Flow(s),veh/h/ln	1795	1805	1898	1810	1791	1738	1015	0	0	1519	0	1593
Q Serve(g_s), s	13.4	6.1	6.1	0.0	10.0	10.1	0.0	0.0	0.0	0.0	0.0	10.1
Cycle Q Clear(g_c), s	13.4	6.1	6.1	0.0	10.0	10.1	3.0	0.0	0.0	3.0	0.0	10.1
Prop In Lane	1.00		0.01	1.00		0.45	0.80		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	459	903	949	3	446	433	323	0	0	443	0	341
V/C Ratio(X)	0.89	0.33	0.33	0.34	0.72	0.73	0.02	0.00	0.00	0.24	0.00	0.81
Avail Cap(c_a), veh/h	569	1459	1534	272	1153	1119	540	0	0	701	0	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	9.2	9.2	30.5	21.0	21.1	19.0	0.0	0.0	20.1	0.0	22.9
Incr Delay (d2), s/veh	12.0	0.1	0.1	23.2	0.8	0.9	0.0	0.0	0.0	0.1	0.0	1.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	1.9	2.0	0.0	4.0	3.9	0.1	0.0	0.0	1.1	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.0	9.3	9.2	53.7	21.9	21.9	19.0	0.0	0.0	20.2	0.0	24.6
LnGrp LOS	C	A	A	D	C	C	B			C		C
Approach Vol, veh/h		1025			636			5			381	
Approach Delay, s/veh		19.1			21.9			19.0			23.4	
Approach LOS		B			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	36.2		19.1	21.3	20.8		19.1				
Change Period (Y+Rc), s	5.8	* 5.6		* 6	5.6	5.6		6.0				
Max Green Setting (Gmax), s	9.2	* 50		* 24	19.4	39.4		24.0				
Max Q Clear Time (g_c+I1), s	2.0	8.1		12.1	15.4	12.1		5.0				
Green Ext Time (p_c), s	0.0	2.2		0.7	0.3	2.7		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh	20.8	
HCM 7th LOS	C	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	91	27	352	136	28	337
Future Vol, veh/h	91	27	352	136	28	337
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	175	0	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	2	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	7	2	0	0	1
Mvmt Flow	100	30	387	149	31	370

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	895	464	0	0	538	0
Stage 1	464	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Critical Hdwy	6.01	6.07	-	-	4.1	-
Critical Hdwy Stg 1	5.01	-	-	-	-	-
Critical Hdwy Stg 2	5.01	-	-	-	-	-
Follow-up Hdwy	3.509	3.363	-	-	2.2	-
Pot Cap-1 Maneuver	345	604	-	-	1040	-
Stage 1	669	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	334	602	-	-	1038	-
Mov Cap-2 Maneuver	334	-	-	-	-	-
Stage 1	668	-	-	-	-	-
Stage 2	669	-	-	-	-	-

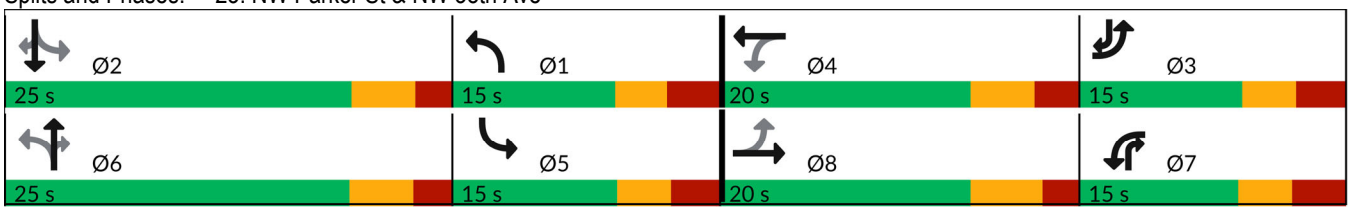
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	18.25	0	0.66
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	334	602	1038	-
HCM Lane V/C Ratio	-	-	0.299	0.049	0.03	-
HCM Ctrl Dly (s/v)	-	-	20.3	11.3	8.6	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0.2	0.1	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	94	137	166	244	51	296	66	102	307	143
Future Volume (vph)	94	137	166	244	51	296	66	102	307	143
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	7	4	1	6	7	5	2	3
Permitted Phases	8		4		6		6	2		2
Detector Phase	3	8	7	4	1	6	7	5	2	3
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.8	24.0	11.0	23.0	10.9	20.0	11.0	10.7	20.0	10.8
Total Split (s)	15.0	20.0	15.0	20.0	15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	20.0%	26.7%	20.0%	26.7%	20.0%	33.3%	20.0%	20.0%	33.3%	20.0%
Yellow Time (s)	3.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0	3.6	3.0
All-Red Time (s)	2.8	2.0	3.0	2.4	2.9	2.1	3.0	2.7	2.0	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.0	6.0	6.0	5.9	5.7	6.0	5.7	5.6	5.8
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	None	Max	None
Act Effct Green (s)	19.6	15.0	20.7	14.1	24.2	19.4	30.8	25.7	21.6	32.8
Actuated g/C Ratio	0.30	0.23	0.32	0.22	0.37	0.30	0.47	0.39	0.33	0.50
v/c Ratio	0.36	0.49	0.40	0.93	0.14	0.56	0.08	0.26	0.49	0.17
Control Delay (s/veh)	22.0	26.3	19.2	58.8	12.9	25.0	0.6	14.6	22.0	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.0	26.3	19.2	58.8	12.9	25.0	0.6	14.6	22.0	2.7
LOS	C	C	B	E	B	C	A	B	C	A
Approach Delay (s/veh)		24.9		46.3		19.6			15.6	
Approach LOS		C		D		B			B	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 65.1	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 27.1	Intersection LOS: C
Intersection Capacity Utilization 65.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 23: NW Parker St & NW 38th Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	137	62	166	244	114	51	296	66	102	307	143
Future Volume (veh/h)	94	137	62	166	244	114	51	296	66	102	307	143
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1900	1811	1885	1900	1900	1900	1900	1900	1885	1976	1900
Adj Flow Rate, veh/h	97	141	64	171	252	118	53	305	68	105	316	147
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	6	1	0	0	0	0	0	1	0	0
Cap, veh/h	248	181	82	394	256	120	388	548	686	397	573	587
Arrive On Green	0.07	0.15	0.15	0.14	0.21	0.21	0.07	0.29	0.29	0.07	0.29	0.29
Sat Flow, veh/h	1882	1234	560	1795	1222	572	1810	1900	1610	1795	1976	1610
Grp Volume(v), veh/h	97	0	205	171	0	370	53	305	68	105	316	147
Grp Sat Flow(s),veh/h/ln	1882	0	1795	1795	0	1794	1810	1900	1610	1795	1976	1610
Q Serve(g_s), s	0.0	0.0	7.4	0.0	0.0	13.7	0.0	9.1	0.0	0.0	9.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	7.4	0.0	0.0	13.7	0.0	9.1	0.0	0.0	9.0	0.0
Prop In Lane	1.00		0.31	1.00		0.32	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	0	263	394	0	375	388	548	686	397	573	587
V/C Ratio(X)	0.39	0.00	0.78	0.43	0.00	0.99	0.14	0.56	0.10	0.26	0.55	0.25
Avail Cap(c_a), veh/h	366	0	376	394	0	375	499	548	686	512	573	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	0.0	27.5	24.6	0.0	26.3	21.1	20.2	11.5	22.3	20.1	14.9
Incr Delay (d2), s/veh	0.4	0.0	3.9	0.3	0.0	42.4	0.1	4.0	0.3	0.1	3.8	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	3.2	2.3	0.0	9.9	0.6	4.3	0.6	1.3	4.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.0	0.0	31.4	24.9	0.0	68.7	21.2	24.2	11.8	22.4	23.9	15.9
LnGrp LOS	C		C	C		E	C	C	B	C	C	B
Approach Vol, veh/h		302			541			426			568	
Approach Delay, s/veh		30.6			54.9			21.8			21.5	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	25.0	11.0	20.0	10.9	25.0	15.2	15.8
Change Period (Y+Rc), s	5.9	5.6	6.0	* 6	5.9	* 5.7	6.0	6.0
Max Green Setting (Gmax), s	9.1	19.4	9.2	* 14	9.3	* 19	9.0	14.0
Max Q Clear Time (g_c+I1), s	2.0	11.0	2.0	15.7	2.0	11.1	2.0	9.4
Green Ext Time (p_c), s	0.0	1.0	0.1	0.0	0.1	0.8	0.1	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	32.9
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	157	103	129	84	10
Future Vol, veh/h	15	157	103	129	84	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	1	5	6	1	0
Mvmt Flow	19	196	129	161	105	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	530	111	118	0	-	0
Stage 1	111	-	-	-	-	-
Stage 2	419	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.245	-	-	-
Pot Cap-1 Maneuver	513	945	1452	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	668	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	463	945	1452	-	-	-
Mov Cap-2 Maneuver	463	-	-	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	668	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.52	3.43	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	799	-	866	-	-
HCM Lane V/C Ratio	0.089	-	0.248	-	-
HCM Ctrl Dly (s/v)	7.7	0	10.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.3	-	1	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	46	55	174	36	43	171
Future Vol, veh/h	46	55	174	36	43	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	4	6	4	14	5	4
Mvmt Flow	52	63	198	41	49	194

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	510	218	0	0	239	0
Stage 1	218	-	-	-	-	-
Stage 2	292	-	-	-	-	-
Critical Hdwy	6.44	6.26	-	-	4.15	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.354	-	-	2.245	-
Pot Cap-1 Maneuver	520	812	-	-	1311	-
Stage 1	813	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	498	812	-	-	1311	-
Mov Cap-2 Maneuver	498	-	-	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	722	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.97	0	1.58
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	631	362	-
HCM Lane V/C Ratio	-	-	0.182	0.037	-
HCM Ctrl Dly (s/v)	-	-	12	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	98	126	184	166	32
Future Vol, veh/h	15	98	126	184	166	32
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	1	0	1	1	3
Mvmt Flow	17	109	140	204	184	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	688	203	221	0	-	0
Stage 1	203	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Critical Hdwy	6.8	6.41	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.2	-	-	-
Pot Cap-1 Maneuver	385	831	1360	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	591	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	345	830	1359	-	-	-
Mov Cap-2 Maneuver	345	-	-	-	-	-
Stage 1	732	-	-	-	-	-
Stage 2	590	-	-	-	-	-

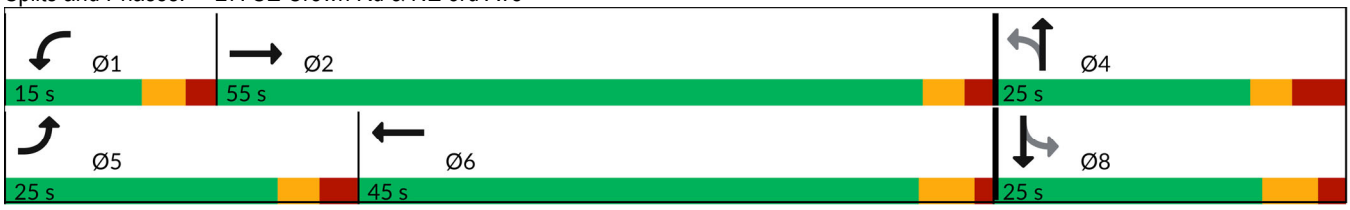
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.79	3.23	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1359	-	345	830	-	-
HCM Lane V/C Ratio	0.103	-	0.048	0.131	-	-
HCM Ctrl Dly (s/v)	8	-	16	10	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.2	0.5	-	-

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR	Ø1
Lane Configurations									
Traffic Volume (vph)	269	507	432	11	4	112	1	216	
Future Volume (vph)	269	507	432	11	4	112	1	216	
Turn Type	Prot	NA	NA	Perm	NA	Perm	NA	Free	
Protected Phases	5	2	6		4		8		1
Permitted Phases				4		8		Free	
Detector Phase	5	2	6	4	4	8	8		
Switch Phase									
Minimum Initial (s)	2.0	8.0	8.0	2.0	2.0	2.0	2.0		5.0
Minimum Split (s)	7.6	23.0	20.3	32.8	32.8	35.0	35.0		10.2
Total Split (s)	25.0	55.0	45.0	25.0	25.0	25.0	25.0		15.0
Total Split (%)	26.3%	57.9%	47.4%	26.3%	26.3%	26.3%	26.3%		16%
Yellow Time (s)	3.0	3.0	4.0	3.0	3.0	4.0	4.0		3.0
All-Red Time (s)	2.6	2.0	1.3	3.8	3.8	2.0	2.0		2.2
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0		
Total Lost Time (s)	5.6	5.0	5.3		6.8		6.0		
Lead/Lag	Lead	Lag	Lag						Lead
Lead-Lag Optimize?	Yes	Yes	Yes						Yes
Recall Mode	None	None	None	None	None	None	None		None
Act Effct Green (s)	14.0	37.0	14.4		8.7		9.5	52.5	
Actuated g/C Ratio	0.27	0.70	0.27		0.17		0.18	1.00	
v/c Ratio	0.60	0.22	0.61		0.06		0.46	0.13	
Control Delay (s/veh)	25.6	4.7	19.7		23.3		29.4	0.2	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)	25.6	4.7	19.7		23.3		29.4	0.2	
LOS	C	A	B		C		C	A	
Approach Delay (s/veh)		11.8	19.7		23.3		10.2		
Approach LOS		B	B		C		B		

Intersection Summary	
Cycle Length: 95	
Actuated Cycle Length: 52.5	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay (s/veh): 14.3	Intersection LOS: B
Intersection Capacity Utilization 57.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 27: SE Crown Rd & NE 3rd Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	269	507	12	0	432	142	11	4	0	112	1	216
Future Volume (veh/h)	269	507	12	0	432	142	11	4	0	112	1	216
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1876	1862	1952	1979	1964	1934	1952	1952	1952	2011	2058	2027
Adj Flow Rate, veh/h	274	517	12	0	441	145	11	4	0	114	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	0	0	1	3	0	0	0	3	0	2
Cap, veh/h	348	2085	48	5	695	226	265	71		337	1	
Arrive On Green	0.19	0.59	0.59	0.00	0.25	0.25	0.10	0.10	0.00	0.10	0.10	0.00
Sat Flow, veh/h	1787	3531	82	1884	2766	901	1074	738	1654	1573	14	1717
Grp Volume(v), veh/h	274	259	270	0	296	290	15	0	0	115	0	0
Grp Sat Flow(s),veh/h/ln	1787	1769	1845	1884	1865	1801	1811	0	1654	1586	0	1717
Q Serve(g_s), s	5.6	2.7	2.7	0.0	5.5	5.6	0.0	0.0	0.0	2.4	0.0	0.0
Cycle Q Clear(g_c), s	5.6	2.7	2.7	0.0	5.5	5.6	0.3	0.0	0.0	2.7	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.50	0.73		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	348	1044	1089	5	469	453	337	0		339	0	
V/C Ratio(X)	0.79	0.25	0.25	0.00	0.63	0.64	0.04	0.00		0.34	0.00	
Avail Cap(c_a), veh/h	896	2286	2385	477	1915	1849	927	0		953	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.8	3.8	3.8	0.0	12.9	12.9	15.9	0.0	0.0	17.0	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.0	0.5	0.6	0.0	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.3	0.3	0.0	1.7	1.7	0.1	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.3	3.8	3.8	0.0	13.4	13.5	15.9	0.0	0.0	17.2	0.0	0.0
LnGrp LOS	B	A	A		B	B	B			B		
Approach Vol, veh/h		803			586			15			115	
Approach Delay, s/veh		8.1			13.5			15.9			17.2	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	28.1		10.5	13.1	15.0		10.5				
Change Period (Y+Rc), s	5.2	* 5.3		6.8	5.6	5.3		* 6.8				
Max Green Setting (Gmax), s	9.8	* 50		18.2	19.4	39.7		* 19				
Max Q Clear Time (g_c+I1), s	0.0	4.7		2.3	7.6	7.6		4.7				
Green Ext Time (p_c), s	0.0	1.9		0.0	0.3	2.2		0.3				

Intersection Summary		
HCM 7th Control Delay, s/veh	10.9	
HCM 7th LOS	B	

Notes

User approved pedestrian interval to be less than phase max green.

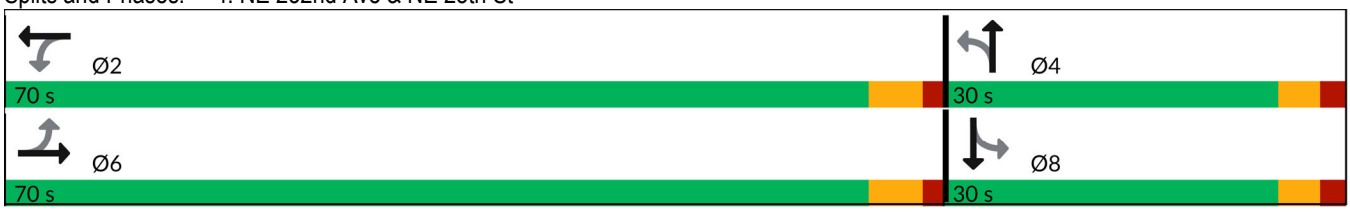
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix I: Year 2030 Mitigated Total Traffic Conditions Analysis Worksheets

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	2	153	49	248	312	2	1	3
Future Volume (vph)	2	153	49	248	312	2	1	3
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		6		2		4		8
Permitted Phases	6		2		4		8	
Detector Phase	6	6	2	2	4	4	8	8
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.0	23.0	23.0	23.0
Total Split (s)	70.0	70.0	70.0	70.0	30.0	30.0	30.0	30.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	None	None	None	None
Act Effct Green (s)		15.0		15.0		25.1		25.1
Actuated g/C Ratio		0.30		0.30		0.50		0.50
v/c Ratio		0.79		0.77		0.57		0.01
Control Delay (s/veh)		19.8		29.4		14.6		6.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay (s/veh)		19.8		29.4		14.6		6.8
LOS		B		C		B		A
Approach Delay (s/veh)		19.8		29.4		14.6		6.8
Approach LOS		B		C		B		A

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 50.7	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay (s/veh): 20.7	Intersection LOS: C
Intersection Capacity Utilization 81.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: NE 232nd Ave & NE 28th St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	153	292	49	248	2	312	2	34	1	3	6
Future Volume (veh/h)	2	153	292	49	248	2	312	2	34	1	3	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1832	1847	2018	1973	2018	1856	1900	1900	418	1900	1900
Adj Flow Rate, veh/h	2	163	311	52	264	2	332	2	36	1	3	6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	1	0	0	3	0	3	0	0	100	0	0
Cap, veh/h	107	213	402	188	635	4	612	2	45	131	201	323
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	2	566	1070	171	1693	12	1302	8	141	46	635	1022
Grp Volume(v), veh/h	476	0	0	318	0	0	370	0	0	10	0	0
Grp Sat Flow(s),veh/h/ln	1638	0	0	1876	0	0	1451	0	0	1703	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	7.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.7	0.0	0.0	4.1	0.0	0.0	8.0	0.0	0.0	0.1	0.0	0.0
Prop In Lane	0.00		0.65	0.16		0.01	0.90		0.10	0.10		0.60
Lane Grp Cap(c), veh/h	721	0	0	827	0	0	659	0	0	654	0	0
V/C Ratio(X)	0.66	0.00	0.00	0.38	0.00	0.00	0.56	0.00	0.00	0.02	0.00	0.00
Avail Cap(c_a), veh/h	3209	0	0	3393	0	0	1266	0	0	1351	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.3	0.0	0.0	7.9	0.0	0.0	10.7	0.0	0.0	8.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.0	1.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.7	0.0	0.0	8.0	0.0	0.0	10.9	0.0	0.0	8.0	0.0	0.0
LnGrp LOS	A			A			B			A		
Approach Vol, veh/h		476			318			370			10	
Approach Delay, s/veh		9.7			8.0			10.9			8.0	
Approach LOS		A			A			B			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	18.3	15.7	18.3	15.7
Change Period (Y+Rc), s	5.5	5.0	5.5	5.0
Max Green Setting (Gmax), s	64.5	25.0	64.5	25.0
Max Q Clear Time (g_c+I1), s	6.1	10.0	10.7	2.1
Green Ext Time (p_c), s	1.3	1.1	2.1	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	9.6
HCM 7th LOS	A

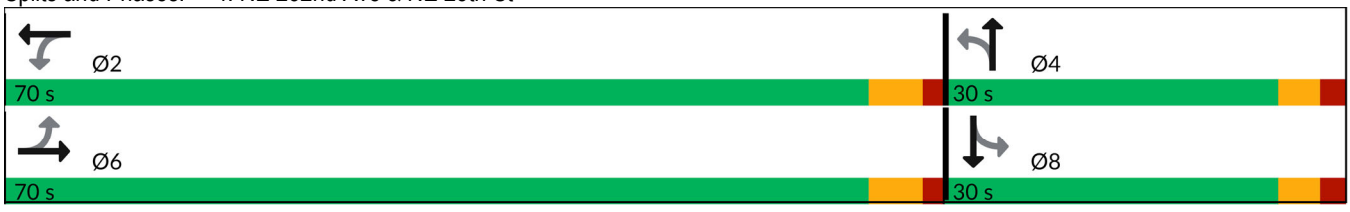
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	476	318	370	10
v/c Ratio	0.79	0.77	0.57	0.01
Control Delay (s/veh)	19.8	29.4	14.6	6.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.8	29.4	14.6	6.8
Queue Length 50th (ft)	72	84	67	1
Queue Length 95th (ft)	163	156	182	8
Internal Link Dist (ft)	1011	2542	687	496
Turn Bay Length (ft)				
Base Capacity (vph)	1584	1393	652	747
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	0.23	0.57	0.01

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	6	364	33	217	342	0	1	1
Future Volume (vph)	6	364	33	217	342	0	1	1
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		6		2		4		8
Permitted Phases	6		2		4		8	
Detector Phase	6	6	2	2	4	4	8	8
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.0	23.0	23.0	23.0
Total Split (s)	70.0	70.0	70.0	70.0	30.0	30.0	30.0	30.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	None	None	None	None
Act Effct Green (s)		39.8		39.8		25.9		25.9
Actuated g/C Ratio		0.52		0.52		0.34		0.34
v/c Ratio		0.90		0.34		0.87		0.01
Control Delay (s/veh)		27.7		10.9		47.4		19.6
Queue Delay		0.0		0.0		0.0		0.0
Total Delay (s/veh)		27.7		10.9		47.4		19.6
LOS		C		B		D		B
Approach Delay (s/veh)		27.7		10.9		47.4		19.6
Approach LOS		C		B		D		B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 76.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay (s/veh): 30.0	Intersection LOS: C
Intersection Capacity Utilization 80.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: NE 232nd Ave & NE 28th St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	364	384	33	217	0	342	0	33	1	1	3
Future Volume (veh/h)	6	364	384	33	217	0	342	0	33	1	1	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1832	1847	2018	1973	2018	1856	1900	1900	418	1900	1900
Adj Flow Rate, veh/h	6	387	409	35	231	0	364	0	35	1	1	3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	1	0	0	3	0	3	0	0	100	0	0
Cap, veh/h	59	432	452	129	798	0	514	0	39	138	147	326
Arrive On Green	0.53	0.53	0.53	0.53	0.53	0.00	0.31	0.00	0.31	0.31	0.31	0.31
Sat Flow, veh/h	3	818	855	122	1511	0	1324	0	127	230	480	1064
Grp Volume(v), veh/h	802	0	0	266	0	0	399	0	0	5	0	0
Grp Sat Flow(s),veh/h/ln	1676	0	0	1633	0	0	1451	0	0	1774	0	0
Q Serve(g_s), s	2.2	0.0	0.0	0.0	0.0	0.0	16.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	27.4	0.0	0.0	4.7	0.0	0.0	16.7	0.0	0.0	0.1	0.0	0.0
Prop In Lane	0.01		0.51	0.13		0.00	0.91		0.09	0.20		0.60
Lane Grp Cap(c), veh/h	943	0	0	927	0	0	553	0	0	611	0	0
V/C Ratio(X)	0.85	0.00	0.00	0.29	0.00	0.00	0.72	0.00	0.00	0.01	0.00	0.00
Avail Cap(c_a), veh/h	1757	0	0	1709	0	0	679	0	0	752	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.5	0.0	0.0	8.2	0.0	0.0	21.1	0.0	0.0	15.3	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.1	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	0.0	1.5	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.4	0.0	0.0	8.2	0.0	0.0	23.1	0.0	0.0	15.3	0.0	0.0
LnGrp LOS	B			A			C			B		
Approach Vol, veh/h		802			266			399			5	
Approach Delay, s/veh		14.4			8.2			23.1			15.3	
Approach LOS		B			A			C			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	39.1	24.5	39.1	24.5
Change Period (Y+Rc), s	5.5	5.0	5.5	5.0
Max Green Setting (Gmax), s	64.5	25.0	64.5	25.0
Max Q Clear Time (g_c+I1), s	6.7	18.7	29.4	2.1
Green Ext Time (p_c), s	1.1	0.8	4.1	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	15.6
HCM 7th LOS	B

Queues
4: NE 232nd Ave & NE 28th St

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	802	266	399	5
v/c Ratio	0.90	0.34	0.87	0.01
Control Delay (s/veh)	27.7	10.9	47.4	19.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.7	10.9	47.4	19.6
Queue Length 50th (ft)	275	66	160	1
Queue Length 95th (ft)	438	106	#474	10
Internal Link Dist (ft)	1011	2542	687	496
Turn Bay Length (ft)				
Base Capacity (vph)	1387	1282	460	455
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.58	0.21	0.87	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	112	281	0	0	172	127	0	0	0	167	0	80
Future Vol, veh/h	112	281	0	0	172	127	0	0	0	167	0	80
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	1	0	0	2	6	0	0	0	3	0	0
Mvmt Flow	124	312	0	0	191	141	0	0	0	186	0	89
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	17.7	12.9	0	13.5
HCM LOS	C	B	-	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	28%	0%	68%
Vol Thru, %	100%	72%	58%	0%
Vol Right, %	0%	0%	42%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	393	299	247
LT Vol	0	112	0	167
Through Vol	0	281	172	0
RT Vol	0	0	127	80
Lane Flow Rate	0	437	332	274
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0.647	0.477	0.444
Departure Headway (Hd)	6.531	5.333	5.169	5.83
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	677	694	618
Service Time	4.609	3.373	3.213	3.876
HCM Lane V/C Ratio	0	0.645	0.478	0.443
HCM Control Delay, s/veh	9.6	17.7	12.9	13.5
HCM Lane LOS	N	C	B	B
HCM 95th-tile Q	0	4.7	2.6	2.3

Appendix J NE 232nd Avenue/NE 28th Street Intersection Traffic Signal Warrant Analysis & 2030 Mitigated Operations Analysis Worksheets

KITTELSON & ASSOCIATES

Project #:	31612
Project Name:	Lacamas North Shore
Analyst:	Kittelson & Associates, Inc.
Analysis Date:	9/4/2025
File:	H:\31\31612 - Johnston Dairy\analysis\TIA\Signal Warrants\[28th & 232nd Signal-Warrant-Analysis_Total Traffic 2030.xlsm]Warrant
Intersection:	28th & 232nd
Scenario:	2030 Total Traffic Conditions
Data Date:	4/8/2025

Warrant Summary

Warrant	Name	Analyzed?	Met?
#1	Eight-Hour Vehicular Volume	Yes	Yes
#2	Four-Hour Vehicular volume	Yes	Yes
#3	Peak Hour	No	-
#4	Pedestrian Volume	No	-
#5	School Crossing	No	-
#6	Coordinated Signal System	No	-
#7	Crash Experience	No	-
#8	Roadway Network	No	-
#9	Intersection Near a Grade Crossing	No	-

Analysis Traffic Volumes

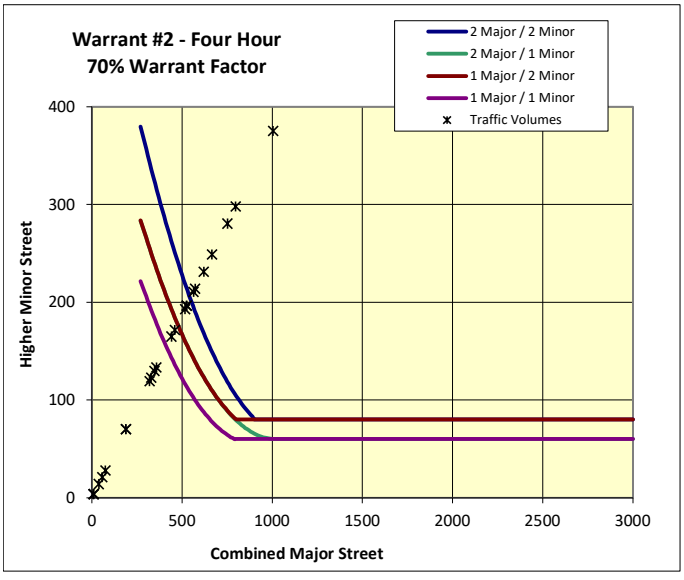
Hour		Major Street		Minor Street	
Begin	End	EB	WB	NB	SB
5:00 PM	6:00 PM	754	250	375	5
2nd Highest Hour		599	199	298	4
3rd Highest Hour		564	187	280	4
4th Highest Hour		500	166	249	3
5th Highest Hour		465	154	231	3
6th Highest Hour		430	143	214	3
7th Highest Hour		423	140	210	3
8th Highest Hour		395	131	196	3
9th Highest Hour		395	131	196	3
10th Highest Hour		388	129	193	3
11th Highest Hour		345	114	172	2
12th Highest Hour		331	110	165	2
13th Highest Hour		268	89	133	2
14th Highest Hour		261	86	130	2
15th Highest Hour		247	82	123	2
16th Highest Hour		240	79	119	2
17th Highest Hour		141	47	70	1
18th Highest Hour		141	47	70	1
19th Highest Hour		56	19	28	0
20th Highest Hour		42	14	21	0
21st Highest Hour		28	9	14	0
22nd Highest Hour		7	2	4	0
23rd Highest Hour		7	2	4	0
24th Highest Hour		7	2	4	0

Input Parameters

Volume Adjustment Factor =	1.0
North-South Approach =	Minor
East-West Approach =	Major
Major Street Thru Lanes =	1
Minor Street Thru Lanes =	1
Speed > 40 mph?	Yes
Population < 10,000?	No
Warrant Factor	70%
Peak Hour or Daily Count?	Peak Hour
Major Street: 4th-Highest Hour / Peak Hour	66%
Major Street: 8th-Highest Hour / Peak Hour	52%
Minor Street: 4th-Highest Hour / Peak Hour	66%
Minor Street: 8th-Highest Hour / Peak Hour	52%

Warrant #1 - Eight Hour

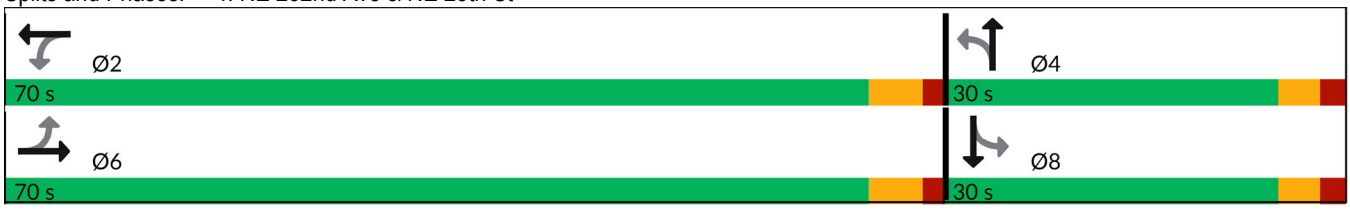
Warrant Factor	Condition	Major Street Requirement	Minor Street Requirement	Hours That Condition Is Met	Condition for Warrant Factor Met?	Signal Warrant Met?
100%	A	500	150	10	Yes	**Yes**
	B	750	75	3	No	
80%	A	400	120	12	Yes	**Yes**
	B	600	60	5	No	
70%	A	350	105	13	Yes	**Yes**
	B	525	53	9	Yes	
56%	A	280	84	16	Yes	**Yes**
	B	420	42	12	Yes	



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	2	153	49	248	312	2	1	3
Future Volume (vph)	2	153	49	248	312	2	1	3
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		6		2		4		8
Permitted Phases	6		2		4		8	
Detector Phase	6	6	2	2	4	4	8	8
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.0	23.0	23.0	23.0
Total Split (s)	70.0	70.0	70.0	70.0	30.0	30.0	30.0	30.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	None	None	None	None
Act Effct Green (s)		15.0		15.0		25.1		25.1
Actuated g/C Ratio		0.30		0.30		0.50		0.50
v/c Ratio		0.79		0.77		0.57		0.01
Control Delay (s/veh)		19.8		29.4		14.6		6.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay (s/veh)		19.8		29.4		14.6		6.8
LOS		B		C		B		A
Approach Delay (s/veh)		19.8		29.4		14.6		6.8
Approach LOS		B		C		B		A

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 50.7	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay (s/veh): 20.7	Intersection LOS: C
Intersection Capacity Utilization 81.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: NE 232nd Ave & NE 28th St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	153	292	49	248	2	312	2	34	1	3	6
Future Volume (veh/h)	2	153	292	49	248	2	312	2	34	1	3	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1832	1847	2018	1973	2018	1856	1900	1900	418	1900	1900
Adj Flow Rate, veh/h	2	163	311	52	264	2	332	2	36	1	3	6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	1	0	0	3	0	3	0	0	100	0	0
Cap, veh/h	107	213	402	188	635	4	612	2	45	131	201	323
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	2	566	1070	171	1693	12	1302	8	141	46	635	1022
Grp Volume(v), veh/h	476	0	0	318	0	0	370	0	0	10	0	0
Grp Sat Flow(s),veh/h/ln	1638	0	0	1876	0	0	1451	0	0	1703	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	7.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.7	0.0	0.0	4.1	0.0	0.0	8.0	0.0	0.0	0.1	0.0	0.0
Prop In Lane	0.00		0.65	0.16		0.01	0.90		0.10	0.10		0.60
Lane Grp Cap(c), veh/h	721	0	0	827	0	0	659	0	0	654	0	0
V/C Ratio(X)	0.66	0.00	0.00	0.38	0.00	0.00	0.56	0.00	0.00	0.02	0.00	0.00
Avail Cap(c_a), veh/h	3209	0	0	3393	0	0	1266	0	0	1351	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.3	0.0	0.0	7.9	0.0	0.0	10.7	0.0	0.0	8.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.0	1.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.7	0.0	0.0	8.0	0.0	0.0	10.9	0.0	0.0	8.0	0.0	0.0
LnGrp LOS	A			A			B			A		
Approach Vol, veh/h		476			318			370			10	
Approach Delay, s/veh		9.7			8.0			10.9			8.0	
Approach LOS		A			A			B			A	

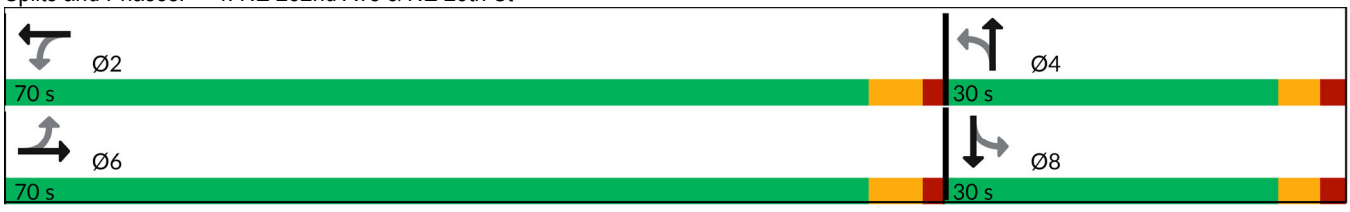
Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	18.3	15.7	18.3	15.7
Change Period (Y+Rc), s	5.5	5.0	5.5	5.0
Max Green Setting (Gmax), s	64.5	25.0	64.5	25.0
Max Q Clear Time (g_c+I1), s	6.1	10.0	10.7	2.1
Green Ext Time (p_c), s	1.3	1.1	2.1	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	9.6
HCM 7th LOS	A

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	6	364	33	217	342	0	1	1
Future Volume (vph)	6	364	33	217	342	0	1	1
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		6		2		4		8
Permitted Phases	6		2		4		8	
Detector Phase	6	6	2	2	4	4	8	8
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.0	23.0	23.0	23.0
Total Split (s)	70.0	70.0	70.0	70.0	30.0	30.0	30.0	30.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	None	None	None	None
Act Effct Green (s)		39.8		39.8		25.9		25.9
Actuated g/C Ratio		0.52		0.52		0.34		0.34
v/c Ratio		0.90		0.34		0.87		0.01
Control Delay (s/veh)		27.7		10.9		47.4		19.6
Queue Delay		0.0		0.0		0.0		0.0
Total Delay (s/veh)		27.7		10.9		47.4		19.6
LOS		C		B		D		B
Approach Delay (s/veh)		27.7		10.9		47.4		19.6
Approach LOS		C		B		D		B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 76.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay (s/veh): 30.0	Intersection LOS: C
Intersection Capacity Utilization 80.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: NE 232nd Ave & NE 28th St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	364	384	33	217	0	342	0	33	1	1	3
Future Volume (veh/h)	6	364	384	33	217	0	342	0	33	1	1	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1832	1847	2018	1973	2018	1856	1900	1900	418	1900	1900
Adj Flow Rate, veh/h	6	387	409	35	231	0	364	0	35	1	1	3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	1	0	0	3	0	3	0	0	100	0	0
Cap, veh/h	59	432	452	129	798	0	514	0	39	138	147	326
Arrive On Green	0.53	0.53	0.53	0.53	0.53	0.00	0.31	0.00	0.31	0.31	0.31	0.31
Sat Flow, veh/h	3	818	855	122	1511	0	1324	0	127	230	480	1064
Grp Volume(v), veh/h	802	0	0	266	0	0	399	0	0	5	0	0
Grp Sat Flow(s),veh/h/ln	1676	0	0	1633	0	0	1451	0	0	1774	0	0
Q Serve(g_s), s	2.2	0.0	0.0	0.0	0.0	0.0	16.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	27.4	0.0	0.0	4.7	0.0	0.0	16.7	0.0	0.0	0.1	0.0	0.0
Prop In Lane	0.01		0.51	0.13		0.00	0.91		0.09	0.20		0.60
Lane Grp Cap(c), veh/h	943	0	0	927	0	0	553	0	0	611	0	0
V/C Ratio(X)	0.85	0.00	0.00	0.29	0.00	0.00	0.72	0.00	0.00	0.01	0.00	0.00
Avail Cap(c_a), veh/h	1757	0	0	1709	0	0	679	0	0	752	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.5	0.0	0.0	8.2	0.0	0.0	21.1	0.0	0.0	15.3	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.1	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	0.0	1.5	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.4	0.0	0.0	8.2	0.0	0.0	23.1	0.0	0.0	15.3	0.0	0.0
LnGrp LOS	B			A			C			B		
Approach Vol, veh/h		802			266			399			5	
Approach Delay, s/veh		14.4			8.2			23.1			15.3	
Approach LOS		B			A			C			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	39.1	24.5	39.1	24.5
Change Period (Y+Rc), s	5.5	5.0	5.5	5.0
Max Green Setting (Gmax), s	64.5	25.0	64.5	25.0
Max Q Clear Time (g_c+I1), s	6.7	18.7	29.4	2.1
Green Ext Time (p_c), s	1.1	0.8	4.1	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	15.6
HCM 7th LOS	B

MacKay Sposito

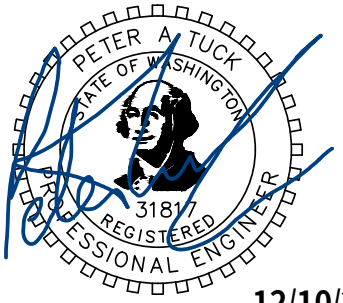
Vancouver Office

18405 SE Mill Plain Boulevard, Suite 100, Vancouver, WA 98683
360-695-3411 | www.mackaysposito.com

MEMORANDUM

TO: **City of Camas**

FROM: **Peter Tuck P.E.**
MacKay Sposito



12/10/2025

RE: Existing and Proposed Stormwater on City of Camas Parcel – Parcel Id # 175721-000.

DATE: December 10, 2025

This memo is to address the following concerns raised by the city in relation to the proposed storm line to be constructed across the City of Camas Parcel with the Lacamas North Shore Development. City staff are concerned that the proposed design will dry up the natural drainage across the parcel and request that a design be completed that preserves the natural drainage.

Currently runoff from the basin area that discharges to the head of the city's drainage, first flows to the central wetland on the Lacamas North Shore Project (LNSP), before being collected and piped to the drainage on the city's parcel. Since the hydrology for the wetland is primarily from groundwater, the current subsurface collection system in the wetland ensures constant flow to the drainage throughout the year.

The existing contributing basin area to the city's drainage is made up of approximately 34 Ac of land not being disturbed by the LNSP and another 55 Ac of development area within the LNSP. The undisturbed area consists of forested area with large basaltic extrusions, some swampy area and the remainder made up of the pastured wetland central to LNSP.

Runoff from the 55 Ac of development area is being collected and routed to the stormwater facility adjacent to the central wetland where it is treated using media cartridges followed by underground detention. Discharge from the detention is currently planned to be piped to the west slope on the City of Camas Parcel where it will be discharged to the existing drainage.

Runoff from the remaining 34 Ac will continue to flow to the central wetland where it will be collected and routed to the head of the drainage on the city's parcel. The current subsurface collection system will be impacted by the development, but a new shallow French drain system will be installed in or adjacent to the wetland in accordance with the wetland mitigation plan, to ensure the base historic flows from groundwater are maintained throughout the year. This

system will also collect surface runoff and route it to the drainage. To increase the amount of water routed to the wetland and therefore the city's drainage, all roof area directly adjacent to the wetland will be routed to it. This flow will be mitigated by oversizing the detention system to ensure the full discharge from the site is in accordance with Washington State Department of Ecology (WSDOE) requirements.

Based on WSDOE requirements, all stormwater facilities are to be sized using the Western Washinton Hydrological Model (WWHM). This model calculates the historic runoff rates from a site and aids in sizing facilities that meet the developed runoff rate that is equal to or lower than the runoff from the site in a fully forested state.

For this project, a model was created that includes both the 55 Ac onsite development area and the undisturbed 34 Ac area. For the model:

- The undisturbed area is unchanged in both the predeveloped and developed conditions
- In the developed state, the undisturbed area was not routed to the detention facility
- Approximately 1.5 Ac of roof area was added to the undisturbed catchment that bypasses detention. (this equates to the roofs runoff being routed directly to the central wetland)
- Resultant discharge flows for the model are for the location of the pipe discharge at the west side of the city parcel not at the head of the drainage.
- Table 1 below shows Peak Historic Flows from the site for the full 89 Ac.
- Table 2 shows Peak Developed Flows from the site for the full 89 Ac.

Since the peak flows shown in the above model are at the pipe discharge rather than at the top of the drainage, a second model was created identical to the first but revised to remove the basin that bypasses the detention. The resultant flows are still at the pipe discharge but do not include the flow across the drainage and are shown below in Table 3.

The flow across the drainage can be calculated as the difference between the two sets of flows or the values shown in Table 3 subtracted from the values in Table 2. These totals are shown in Table 4 below.

Storm Event	Peak Flow (CFS)
2 Year	22.3
10 Year	41.9
25 Year	48.9
100 Year	56.5

Table 1: Historic Runoff from the Entire 89 Ac

Storm Event	Peak Flow (CFS)
2 Year	15.8
10 Year	31.6
25 Year	40.8
100 Year	55.7

Table 2: Developed Discharge from Detention Facility and 34 Ac Undeveloped Area.

Storm Event	Peak Flow (CFS)
2 Year	9.7
10 Year	19.6
25 Year	26.0
100 Year	37.4

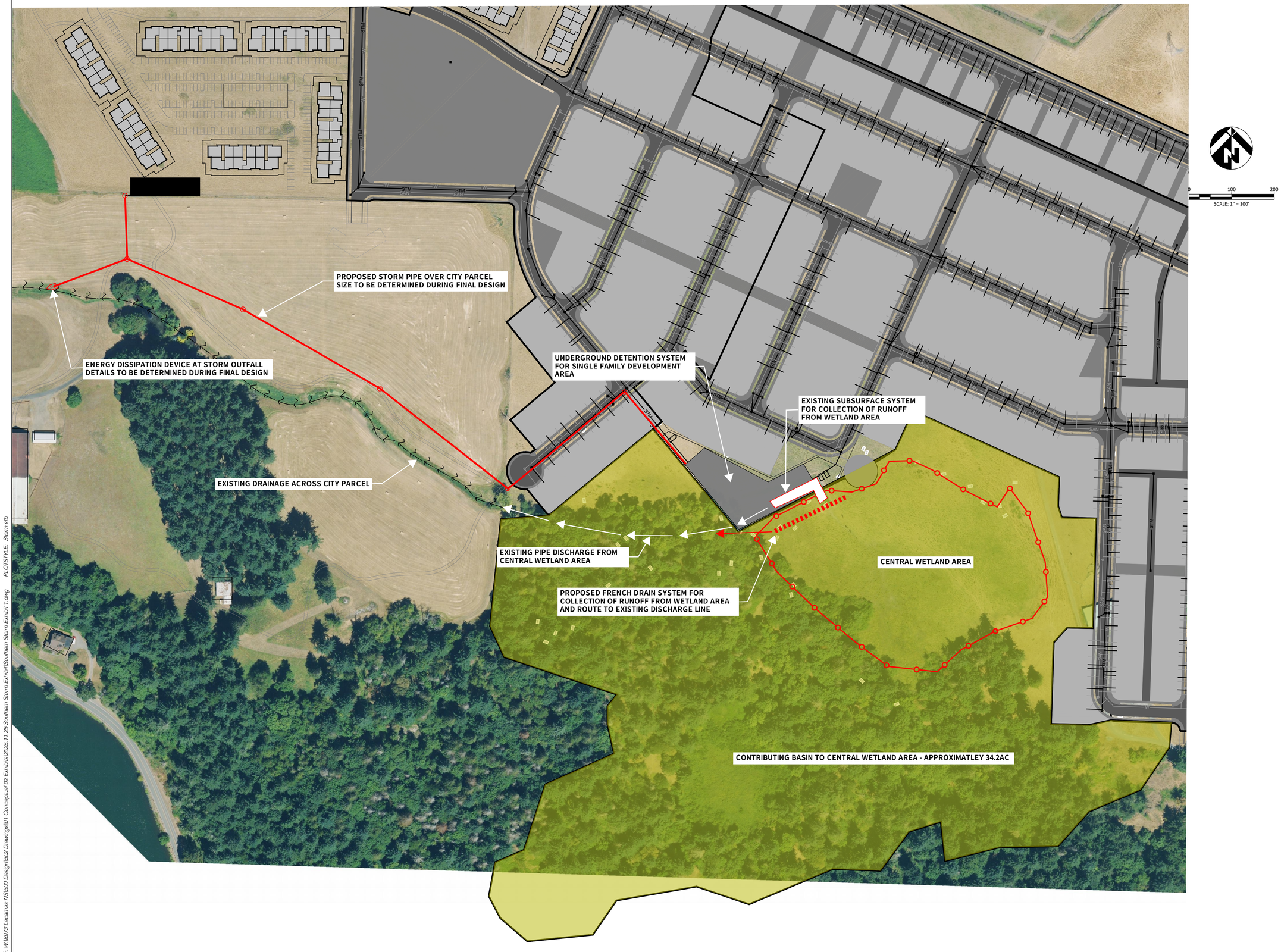
Table 3: Developed Discharge from Detention Facility (34 Ac + additional roof areas removed from model)

Storm Event	Peak Flow (CFS)
2 Year	6.1
10 Year	12.0
25 Year	14.8
100 Year	18.3

Table 4: Flow to Head of Drainage after Development (Flows from Table 3 subtracted from Table 2)

As can be seen from the values in Table 4, when the development is completed, post developed flows are still more than adequate to preserve the natural drainage and will ensure that it will not dry up. In addition, since a shallow french drain will be installed in or adjacent to the wetland, the existing low flows from the groundwater will continue to provide moisture in the drainage throughout the year.

Attached:
Southern Storm Basin Exhibit
WWHM Model for 89 Ac Development and Adjacent Area – Results
Original WWHM Model with 34 Ac + additional roof areas removed - Results



FILE: W:\8973 Lacamas NS\400 Design\500 Drawings\01 Conceptual\02 Exhibits\2025 11 25 Southern Storm Exhibit\Southern Storm Exhibit 1.dwg PLOTSTYLE: Storm.stb

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TAYLOR ANDREW WINTERS
STATE OF WASHINGTON
22012357
REGISTERED
PROFESSIONAL ENGINEER

12/8/2025

LACAMAS NORTH SHORE
CITY OF CAMAS

SOUTHERN STORM EXHIBIT

REVISIONS:

JOB NO.:	8973
DATE:	12/8/2025
DESIGNED BY:	KEH
DRAWN BY:	KEH
CHECKED BY:	TAW

CONCEPTUAL

EX3.1

WWHM2012

PROJECT REPORT

General Model Information

WWHM2012 Project Name: South Basin Revised w roof to wetland

Site Name:	Lacamas NS
Site Address:	
City:	
Report Date:	12/9/2025
Gage:	Lacamas
Data Start:	1948/10/01
Data End:	2008/09/30
Timestep:	15 Minute
Precip Scale:	1.300
Version Date:	2025/05/13
Version:	4.3.2

POC Thresholds

Low Flow Threshold for POC1:	50 Percent of the 2 Year
High Flow Threshold for POC1:	50 Year

Landuse Basin Data

Predeveloped Land Use

Basin 1

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
SG4, Forest, Flat	54.83
Pervious Total	54.83
Impervious Land Use	acre
Impervious Total	0
Basin Total	54.83

Element Flow Componants:

Surface	Interflow	Groundwater
Componant Flows To:		
POC 1	POC 1	

Basin 2

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
SG4, Forest, Flat	34.23
Pervious Total	34.23
Impervious Land Use	acre
Impervious Total	0
Basin Total	34.23

Element Flow Componants:

Surface	Interflow	Groundwater

Componant Flows To:

POC 1	POC 1

Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
SG4, Lawn, Flat	21.03
Pervious Total	21.03

Impervious Land Use	acre
ROADS FLAT	6.05
ROOF TOPS FLAT	4.13
SIDEWALKS FLAT	2.23
Impervious Total	12.41
Basin Total	33.44

Element Flow Componants:

Surface	Interflow	Groundwater
Componant Flows To:		
Trapezoidal Pond 1	Trapezoidal Pond 1	

Basin 2

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
SG4, Lawn, Flat	11.26
Pervious Total	11.26

Impervious Land Use	acre
ROADS FLAT	3.73
ROOF TOPS FLAT	3.42
SIDEWALKS FLAT	1.43
Impervious Total	8.58
Basin Total	19.84

Element Flow Componants:

Surface	Interflow	Groundwater
Componant Flows To:		
Trapezoidal Pond 1	Trapezoidal Pond 1	

Basin 3

Bypass:	Yes
GroundWater:	No
Pervious Land Use	acre
SG4, Forest, Flat	34.23
Pervious Total	34.23
Impervious Land Use	acre
ROOF TOPS FLAT	1.54
Impervious Total	1.54
Basin Total	35.77

Element Flow Componants:

Surface	Interflow	Groundwater
Componant Flows To:		
POC 1	POC 1	

Routing Elements
Predeveloped Routing

Mitigated Routing

Trapezoidal Pond 1

Bottom Length: 170.00 ft.
Bottom Width: 170.00 ft.
Depth: 5 ft.
Volume at riser head: 2.6907 acre-feet.
Side slope 1: 0 To 1
Side slope 2: 0 To 1
Side slope 3: 0 To 1
Side slope 4: 0 To 1
Discharge Structure
Riser Height: 4 ft.
Riser Diameter: 54 in.
Notch Type: Rectangular
Notch Width: 1.750 ft.
Notch Height: 1.250 ft.
Orifice 1 Diameter: 11.000 inElevation:0 ft.
Element Outlets:
Outlet 1 Outlet 2
Outlet Flows To:

Pond Hydraulic Table

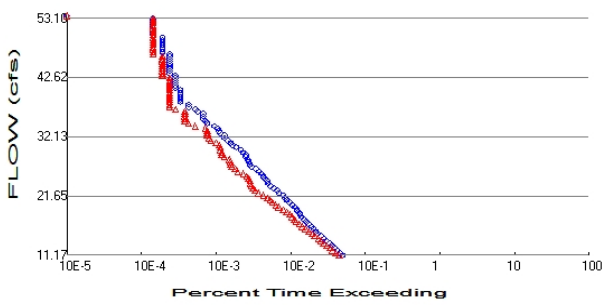
Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.663	0.000	0.000	0.000
0.0556	0.663	0.036	0.773	0.000
0.1111	0.663	0.073	1.094	0.000
0.1667	0.663	0.110	1.340	0.000
0.2222	0.663	0.147	1.547	0.000
0.2778	0.663	0.184	1.730	0.000
0.3333	0.663	0.221	1.895	0.000
0.3889	0.663	0.258	2.047	0.000
0.4444	0.663	0.294	2.189	0.000
0.5000	0.663	0.331	2.321	0.000
0.5556	0.663	0.368	2.447	0.000
0.6111	0.663	0.405	2.566	0.000
0.6667	0.663	0.442	2.681	0.000
0.7222	0.663	0.479	2.790	0.000
0.7778	0.663	0.516	2.895	0.000
0.8333	0.663	0.552	2.997	0.000
0.8889	0.663	0.589	3.095	0.000
0.9444	0.663	0.626	3.191	0.000
1.0000	0.663	0.663	3.283	0.000
1.0556	0.663	0.700	3.373	0.000
1.1111	0.663	0.737	3.461	0.000
1.1667	0.663	0.774	3.546	0.000
1.2222	0.663	0.810	3.630	0.000
1.2778	0.663	0.847	3.711	0.000
1.3333	0.663	0.884	3.791	0.000
1.3889	0.663	0.921	3.869	0.000
1.4444	0.663	0.958	3.946	0.000
1.5000	0.663	0.995	4.021	0.000
1.5556	0.663	1.032	4.095	0.000
1.6111	0.663	1.068	4.167	0.000
1.6667	0.663	1.105	4.239	0.000

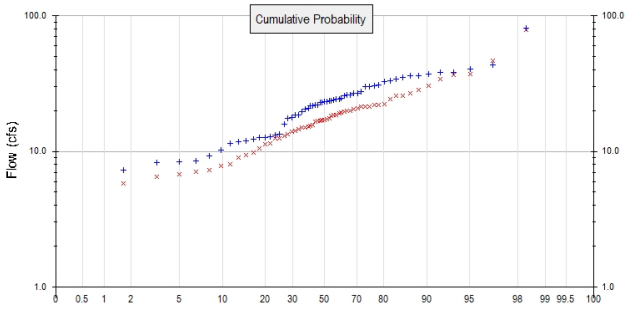
1.7222	0.663	1.142	4.309	0.000
1.7778	0.663	1.179	4.378	0.000
1.8333	0.663	1.216	4.446	0.000
1.8889	0.663	1.253	4.512	0.000
1.9444	0.663	1.290	4.578	0.000
2.0000	0.663	1.326	4.643	0.000
2.0556	0.663	1.363	4.707	0.000
2.1111	0.663	1.400	4.770	0.000
2.1667	0.663	1.437	4.833	0.000
2.2222	0.663	1.474	4.894	0.000
2.2778	0.663	1.511	4.955	0.000
2.3333	0.663	1.548	5.015	0.000
2.3889	0.663	1.584	5.075	0.000
2.4444	0.663	1.621	5.133	0.000
2.5000	0.663	1.658	5.191	0.000
2.5556	0.663	1.695	5.249	0.000
2.6111	0.663	1.732	5.305	0.000
2.6667	0.663	1.769	5.362	0.000
2.7222	0.663	1.806	5.417	0.000
2.7778	0.663	1.842	5.499	0.000
2.8333	0.663	1.879	5.667	0.000
2.8889	0.663	1.916	5.882	0.000
2.9444	0.663	1.953	6.134	0.000
3.0000	0.663	1.990	6.415	0.000
3.0556	0.663	2.027	6.724	0.000
3.1111	0.663	2.064	7.056	0.000
3.1667	0.663	2.100	7.410	0.000
3.2222	0.663	2.137	7.785	0.000
3.2778	0.663	2.174	8.179	0.000
3.3333	0.663	2.211	8.591	0.000
3.3889	0.663	2.248	9.020	0.000
3.4444	0.663	2.285	9.466	0.000
3.5000	0.663	2.322	9.928	0.000
3.5556	0.663	2.358	10.40	0.000
3.6111	0.663	2.395	10.89	0.000
3.6667	0.663	2.432	11.40	0.000
3.7222	0.663	2.469	11.92	0.000
3.7778	0.663	2.506	12.45	0.000
3.8333	0.663	2.543	13.00	0.000
3.8889	0.663	2.580	13.55	0.000
3.9444	0.663	2.617	14.12	0.000
4.0000	0.663	2.653	14.71	0.000
4.0556	0.663	2.690	15.38	0.000
4.1111	0.663	2.727	16.57	0.000
4.1667	0.663	2.764	18.09	0.000
4.2222	0.663	2.801	19.88	0.000
4.2778	0.663	2.838	21.91	0.000
4.3333	0.663	2.875	24.14	0.000
4.3889	0.663	2.911	26.55	0.000
4.4444	0.663	2.948	29.13	0.000
4.5000	0.663	2.985	31.85	0.000
4.5556	0.663	3.022	34.71	0.000
4.6111	0.663	3.059	37.68	0.000
4.6667	0.663	3.096	40.75	0.000
4.7222	0.663	3.133	43.91	0.000
4.7778	0.663	3.169	47.13	0.000
4.8333	0.663	3.206	50.41	0.000
4.8889	0.663	3.243	53.73	0.000

4.9444	0.663	3.280	57.07	0.000
5.0000	0.663	3.317	60.42	0.000
5.0556	0.663	3.354	63.75	0.000

Analysis Results

POC 1





\+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1
Total Pervious Area: 89.06
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 66.52
Total Impervious Area: 22.53

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**
2 year	22.344109
5 year	34.979818
10 year	41.874478
25 year	48.90844
50 year	53.096113
100 year	56.543096

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	16.283888
5 year	25.41149
10 year	32.066895
25 year	41.095244
50 year	48.237759
100 year	55.717006

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	**Predeveloped**	**Mitigated**
1949	17.448	16.894
1950	22.877	16.886
1951	30.220	16.467
1952	17.715	18.511
1953	23.899	15.456
1954	33.306	19.313
1955	18.543	12.421
1956	36.364	36.931
1957	27.656	18.249
1958	20.516	25.831

1959	11.927	8.040
1960	11.780	9.004
1961	32.747	20.826
1962	21.974	14.986
1963	24.417	15.587
1964	23.303	15.006
1965	20.892	19.054
1966	26.700	16.995
1967	23.265	14.263
1968	30.419	19.631
1969	24.787	19.928
1970	81.020	79.014
1971	12.814	10.450
1972	21.788	14.574
1973	21.699	21.334
1974	34.171	36.730
1975	18.621	13.086
1976	26.765	21.411
1977	0.729	4.123
1978	38.152	30.393
1979	25.823	21.342
1980	15.792	11.385
1981	36.269	26.764
1982	24.410	22.271
1983	40.608	25.666
1984	13.249	9.840
1985	10.213	11.322
1986	12.615	9.338
1987	22.014	17.432
1988	8.500	6.473
1989	9.236	7.058
1990	8.378	7.229
1991	23.763	13.875
1992	26.142	15.210
1993	30.729	28.242
1994	23.493	21.973
1995	19.493	22.131
1996	37.280	46.361
1997	43.174	34.015
1998	34.903	18.558
1999	26.084	20.591
2000	12.631	7.771
2001	7.279	5.752
2002	38.095	20.010
2003	29.949	24.358
2004	8.219	6.810
2005	12.286	12.527
2006	22.984	17.288
2007	11.378	16.991
2008	13.352	13.475

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	81.0204	79.0136
2	43.1735	46.3608
3	40.6079	36.9313
4	38.1521	36.7296

5	38.0949	34.0149
6	37.2802	30.3928
7	36.3635	28.2415
8	36.2693	26.7642
9	34.9032	25.8306
10	34.1706	25.6655
11	33.3057	24.3581
12	32.7471	22.2709
13	30.7287	22.1307
14	30.4193	21.9734
15	30.2198	21.4107
16	29.9486	21.3424
17	27.6561	21.3335
18	26.7653	20.8259
19	26.7001	20.5905
20	26.1422	20.0098
21	26.0842	19.9277
22	25.8228	19.6306
23	24.7866	19.3128
24	24.4166	19.0537
25	24.4099	18.5578
26	23.8989	18.5107
27	23.7633	18.2493
28	23.4933	17.4320
29	23.3027	17.2878
30	23.2653	16.9948
31	22.9836	16.9909
32	22.8768	16.8938
33	22.0144	16.8862
34	21.9736	16.4672
35	21.7883	15.5873
36	21.6993	15.4562
37	20.8921	15.2095
38	20.5158	15.0057
39	19.4933	14.9857
40	18.6209	14.5740
41	18.5433	14.2627
42	17.7147	13.8754
43	17.4476	13.4753
44	15.7916	13.0862
45	13.3524	12.5274
46	13.2489	12.4205
47	12.8138	11.3851
48	12.6306	11.3216
49	12.6152	10.4495
50	12.2862	9.8402
51	11.9265	9.3383
52	11.7803	9.0037
53	11.3782	8.0405
54	10.2127	7.7707
55	9.2359	7.2294
56	8.5003	7.0581
57	8.3785	6.8098
58	8.2195	6.4732
59	7.2790	5.7524
60	0.7288	4.1234

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
11.1721	1041	937	90	Pass
11.5955	960	839	87	Pass
12.0190	894	761	85	Pass
12.4425	811	702	86	Pass
12.8660	746	634	84	Pass
13.2894	694	582	83	Pass
13.7129	631	535	84	Pass
14.1364	583	495	84	Pass
14.5599	536	440	82	Pass
14.9833	484	406	83	Pass
15.4068	456	367	80	Pass
15.8303	425	332	78	Pass
16.2538	402	301	74	Pass
16.6772	367	274	74	Pass
17.1007	336	246	73	Pass
17.5242	314	236	75	Pass
17.9477	298	220	73	Pass
18.3711	280	204	72	Pass
18.7946	265	186	70	Pass
19.2181	253	168	66	Pass
19.6416	238	145	60	Pass
20.0650	221	132	59	Pass
20.4885	201	120	59	Pass
20.9120	186	112	60	Pass
21.3355	175	102	58	Pass
21.7589	168	91	54	Pass
22.1824	145	77	53	Pass
22.6059	139	70	50	Pass
23.0294	126	66	52	Pass
23.4528	113	62	54	Pass
23.8763	104	60	57	Pass
24.2998	101	60	59	Pass
24.7233	95	57	60	Pass
25.1467	90	54	60	Pass
25.5702	85	49	57	Pass
25.9937	80	41	51	Pass
26.4172	71	38	53	Pass
26.8406	62	34	54	Pass
27.2641	59	33	55	Pass
27.6876	57	33	57	Pass
28.1111	56	32	57	Pass
28.5345	53	27	50	Pass
28.9580	52	25	48	Pass
29.3815	48	25	52	Pass
29.8050	45	24	53	Pass
30.2284	39	24	61	Pass
30.6519	35	23	65	Pass
31.0754	33	21	63	Pass
31.4989	30	18	60	Pass
31.9223	27	17	62	Pass
32.3458	27	16	59	Pass
32.7693	24	16	66	Pass
33.1928	23	16	69	Pass

33.6162	22	15	68	Pass
34.0397	20	11	55	Pass
34.4632	16	9	56	Pass
34.8867	15	8	53	Pass
35.3101	14	8	57	Pass
35.7336	14	8	57	Pass
36.1571	14	8	57	Pass
36.5806	12	8	66	Pass
37.0041	11	6	54	Pass
37.4275	9	5	55	Pass
37.8510	9	5	55	Pass
38.2745	7	5	71	Pass
38.6980	7	5	71	Pass
39.1214	7	5	71	Pass
39.5449	7	5	71	Pass
39.9684	7	5	71	Pass
40.3919	7	5	71	Pass
40.8153	6	5	83	Pass
41.2388	6	5	83	Pass
41.6623	6	5	83	Pass
42.0858	6	5	83	Pass
42.5092	6	5	83	Pass
42.9327	6	4	66	Pass
43.3562	5	4	80	Pass
43.7797	5	4	80	Pass
44.2031	5	4	80	Pass
44.6266	5	4	80	Pass
45.0501	5	4	80	Pass
45.4736	5	4	80	Pass
45.8970	5	4	80	Pass
46.3205	5	4	80	Pass
46.7440	5	3	60	Pass
47.1675	4	3	75	Pass
47.5909	4	3	75	Pass
48.0144	4	3	75	Pass
48.4379	4	3	75	Pass
48.8614	4	3	75	Pass
49.2848	4	3	75	Pass
49.7083	4	3	75	Pass
50.1318	3	3	100	Pass
50.5553	3	3	100	Pass
50.9787	3	3	100	Pass
51.4022	3	3	100	Pass
51.8257	3	3	100	Pass
52.2492	3	3	100	Pass
52.6726	3	3	100	Pass
53.0961	3	3	100	Pass

Water Quality

Water Quality BMP Flow and Volume for POC #1

On-line facility volume:	2.3746 acre-feet
On-line facility target flow:	3.2304 cfs.
Adjusted for 15 min:	3.2304 cfs.
Off-line facility target flow:	1.7176 cfs.
Adjusted for 15 min:	1.7176 cfs.

POC 2

POC #2 was not reported because POC must exist in both scenarios and both scenarios must have been run.

Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

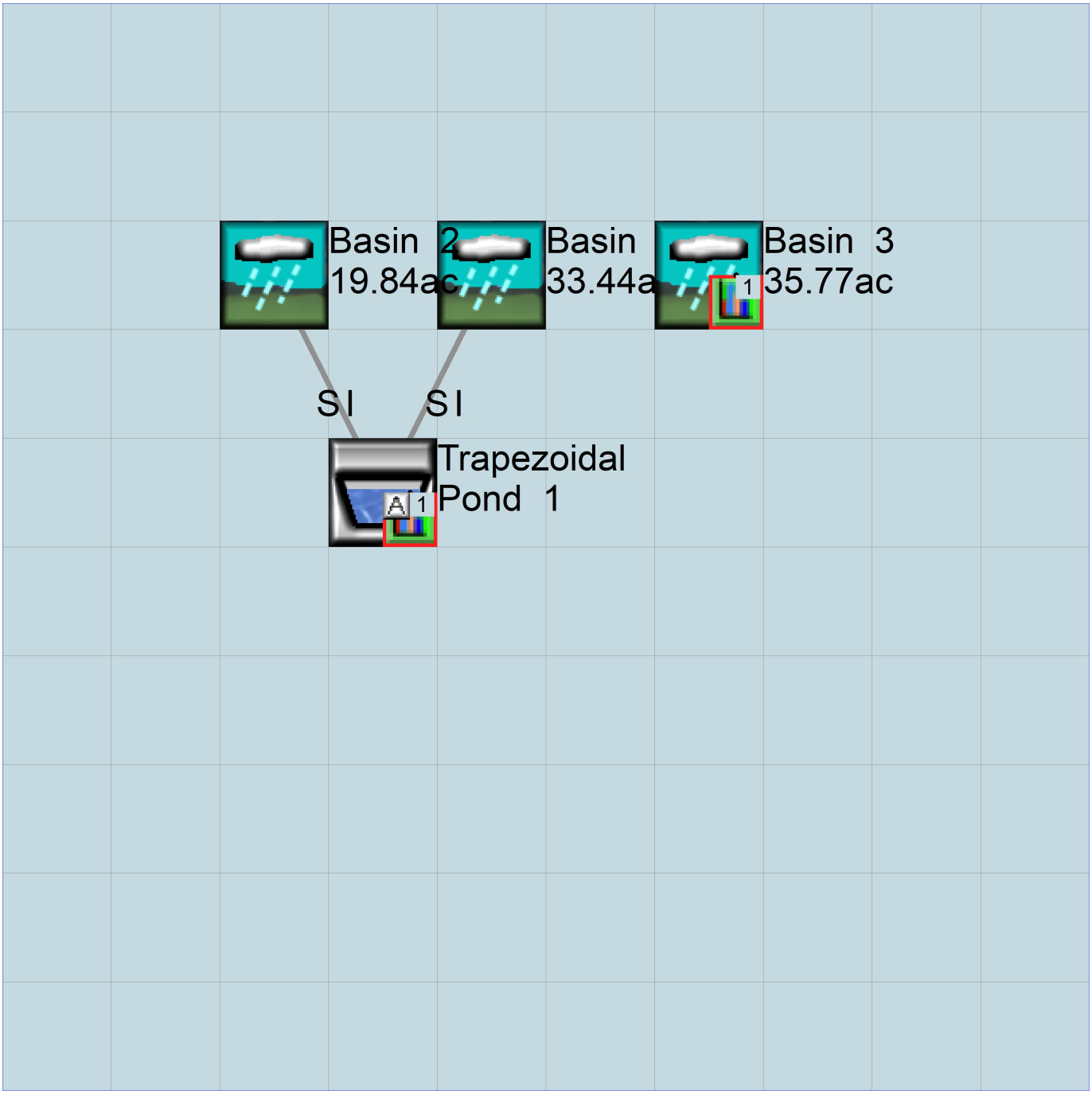
No PERLND changes have been made.

IMPLND Changes

No IMPLND changes have been made.

Appendix
Predeveloped Schematic

Mitigated Schematic



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Local (360)943-0304

www.clearcreeksolutions.com

WWHM2012

PROJECT REPORT

General Model Information

WWHM2012 Project Name: Sth Basin Rev w roof to wetland w 34 Ac removed

Site Name: Lacamas NS
Site Address:
City:
Report Date: 12/9/2025
Gage: Lacamas
Data Start: 1948/10/01
Data End: 2008/09/30
Timestep: 15 Minute
Precip Scale: 1.300
Version Date: 2025/05/13
Version: 4.3.2

POC Thresholds

Low Flow Threshold for POC1:	50 Percent of the 2 Year
High Flow Threshold for POC1:	50 Year

Landuse Basin Data

Predeveloped Land Use

Basin 1

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
SG4, Forest, Flat	54.83
Pervious Total	54.83
Impervious Land Use	acre
Impervious Total	0
Basin Total	54.83

Element Flow Componants:

Surface	Interflow	Groundwater
Componant Flows To:		
POC 1	POC 1	

Basin 2

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
SG4, Forest, Flat	34.23
Pervious Total	34.23
Impervious Land Use	acre
Impervious Total	0
Basin Total	34.23

Element Flow Componants:

Surface	Interflow	Groundwater

Componant Flows To:

POC 1	POC 1

Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
SG4, Lawn, Flat	21.03
Pervious Total	21.03

Impervious Land Use	acre
ROADS FLAT	6.05
ROOF TOPS FLAT	4.13
SIDEWALKS FLAT	2.23
Impervious Total	12.41
Basin Total	33.44

Element Flow Componants:

Surface	Interflow	Groundwater

Componant Flows To:

Trapezoidal Pond 1	Trapezoidal Pond 1

Basin 2

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
SG4, Lawn, Flat	11.26
Pervious Total	11.26

Impervious Land Use	acre
ROADS FLAT	3.73
ROOF TOPS FLAT	3.42
SIDEWALKS FLAT	1.43
Impervious Total	8.58
Basin Total	19.84

Element Flow Componants:

Surface	Interflow	Groundwater
Componant Flows To:		
Trapezoidal Pond 1	Trapezoidal Pond 1	

Routing Elements
Predeveloped Routing

Mitigated Routing

Trapezoidal Pond 1

Bottom Length: 170.00 ft.
Bottom Width: 170.00 ft.
Depth: 5 ft.
Volume at riser head: 2.6907 acre-feet.
Side slope 1: 0 To 1
Side slope 2: 0 To 1
Side slope 3: 0 To 1
Side slope 4: 0 To 1
Discharge Structure
Riser Height: 4 ft.
Riser Diameter: 54 in.
Notch Type: Rectangular
Notch Width: 1.750 ft.
Notch Height: 1.250 ft.
Orifice 1 Diameter: 11.000 inElevation:0 ft.
Element Outlets:
Outlet 1 Outlet 2
Outlet Flows To:

Pond Hydraulic Table

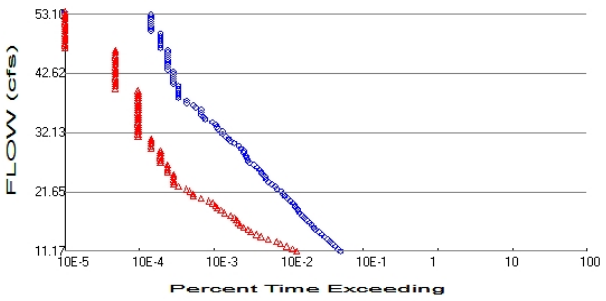
Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.663	0.000	0.000	0.000
0.0556	0.663	0.036	0.773	0.000
0.1111	0.663	0.073	1.094	0.000
0.1667	0.663	0.110	1.340	0.000
0.2222	0.663	0.147	1.547	0.000
0.2778	0.663	0.184	1.730	0.000
0.3333	0.663	0.221	1.895	0.000
0.3889	0.663	0.258	2.047	0.000
0.4444	0.663	0.294	2.189	0.000
0.5000	0.663	0.331	2.321	0.000
0.5556	0.663	0.368	2.447	0.000
0.6111	0.663	0.405	2.566	0.000
0.6667	0.663	0.442	2.681	0.000
0.7222	0.663	0.479	2.790	0.000
0.7778	0.663	0.516	2.895	0.000
0.8333	0.663	0.552	2.997	0.000
0.8889	0.663	0.589	3.095	0.000
0.9444	0.663	0.626	3.191	0.000
1.0000	0.663	0.663	3.283	0.000
1.0556	0.663	0.700	3.373	0.000
1.1111	0.663	0.737	3.461	0.000
1.1667	0.663	0.774	3.546	0.000
1.2222	0.663	0.810	3.630	0.000
1.2778	0.663	0.847	3.711	0.000
1.3333	0.663	0.884	3.791	0.000
1.3889	0.663	0.921	3.869	0.000
1.4444	0.663	0.958	3.946	0.000
1.5000	0.663	0.995	4.021	0.000
1.5556	0.663	1.032	4.095	0.000
1.6111	0.663	1.068	4.167	0.000
1.6667	0.663	1.105	4.239	0.000

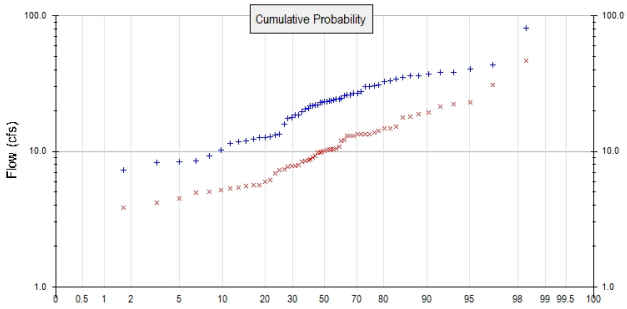
1.7222	0.663	1.142	4.309	0.000
1.7778	0.663	1.179	4.378	0.000
1.8333	0.663	1.216	4.446	0.000
1.8889	0.663	1.253	4.512	0.000
1.9444	0.663	1.290	4.578	0.000
2.0000	0.663	1.326	4.643	0.000
2.0556	0.663	1.363	4.707	0.000
2.1111	0.663	1.400	4.770	0.000
2.1667	0.663	1.437	4.833	0.000
2.2222	0.663	1.474	4.894	0.000
2.2778	0.663	1.511	4.955	0.000
2.3333	0.663	1.548	5.015	0.000
2.3889	0.663	1.584	5.075	0.000
2.4444	0.663	1.621	5.133	0.000
2.5000	0.663	1.658	5.191	0.000
2.5556	0.663	1.695	5.249	0.000
2.6111	0.663	1.732	5.305	0.000
2.6667	0.663	1.769	5.362	0.000
2.7222	0.663	1.806	5.417	0.000
2.7778	0.663	1.842	5.499	0.000
2.8333	0.663	1.879	5.667	0.000
2.8889	0.663	1.916	5.882	0.000
2.9444	0.663	1.953	6.134	0.000
3.0000	0.663	1.990	6.415	0.000
3.0556	0.663	2.027	6.724	0.000
3.1111	0.663	2.064	7.056	0.000
3.1667	0.663	2.100	7.410	0.000
3.2222	0.663	2.137	7.785	0.000
3.2778	0.663	2.174	8.179	0.000
3.3333	0.663	2.211	8.591	0.000
3.3889	0.663	2.248	9.020	0.000
3.4444	0.663	2.285	9.466	0.000
3.5000	0.663	2.322	9.928	0.000
3.5556	0.663	2.358	10.40	0.000
3.6111	0.663	2.395	10.89	0.000
3.6667	0.663	2.432	11.40	0.000
3.7222	0.663	2.469	11.92	0.000
3.7778	0.663	2.506	12.45	0.000
3.8333	0.663	2.543	13.00	0.000
3.8889	0.663	2.580	13.55	0.000
3.9444	0.663	2.617	14.12	0.000
4.0000	0.663	2.653	14.71	0.000
4.0556	0.663	2.690	15.38	0.000
4.1111	0.663	2.727	16.57	0.000
4.1667	0.663	2.764	18.09	0.000
4.2222	0.663	2.801	19.88	0.000
4.2778	0.663	2.838	21.91	0.000
4.3333	0.663	2.875	24.14	0.000
4.3889	0.663	2.911	26.55	0.000
4.4444	0.663	2.948	29.13	0.000
4.5000	0.663	2.985	31.85	0.000
4.5556	0.663	3.022	34.71	0.000
4.6111	0.663	3.059	37.68	0.000
4.6667	0.663	3.096	40.75	0.000
4.7222	0.663	3.133	43.91	0.000
4.7778	0.663	3.169	47.13	0.000
4.8333	0.663	3.206	50.41	0.000
4.8889	0.663	3.243	53.73	0.000

4.9444	0.663	3.280	57.07	0.000
5.0000	0.663	3.317	60.42	0.000
5.0556	0.663	3.354	63.75	0.000

Analysis Results

POC 1





\+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1
Total Pervious Area: 89.06
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 32.29
Total Impervious Area: 20.99

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**
2 year	22.344109
5 year	34.979818
10 year	41.874478
25 year	48.90844
50 year	53.096113
100 year	56.543096

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	9.667273
5 year	15.246935
10 year	19.640866
25 year	26.031016
50 year	31.428534
100 year	37.396735

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	**Predeveloped**	**Mitigated**
1949	17.448	10.326
1950	22.877	9.750
1951	30.220	8.745
1952	17.715	12.999
1953	23.899	7.417
1954	33.306	9.307
1955	18.543	6.883
1956	36.364	22.233
1957	27.656	10.561
1958	20.516	19.256

1959	11.927	4.511
1960	11.780	6.099
1961	32.747	13.017
1962	21.974	8.569
1963	24.417	7.938
1964	23.303	8.461
1965	20.892	12.113
1966	26.700	10.336
1967	23.265	8.330
1968	30.419	9.865
1969	24.787	18.822
1970	81.020	46.940
1971	12.814	5.299
1972	21.788	7.851
1973	21.699	13.374
1974	34.171	22.882
1975	18.621	7.252
1976	26.765	11.961
1977	0.729	3.861
1978	38.152	18.115
1979	25.823	14.859
1980	15.792	5.433
1981	36.269	15.196
1982	24.410	13.464
1983	40.608	14.240
1984	13.249	5.947
1985	10.213	10.085
1986	12.615	5.607
1987	22.014	10.319
1988	8.500	4.925
1989	9.236	5.657
1990	8.378	5.154
1991	23.763	7.661
1992	26.142	5.575
1993	30.729	17.788
1994	23.493	13.349
1995	19.493	14.729
1996	37.280	31.090
1997	43.174	21.454
1998	34.903	10.279
1999	26.084	12.988
2000	12.631	4.200
2001	7.279	3.833
2002	38.095	9.894
2003	29.949	13.405
2004	8.219	5.020
2005	12.286	7.817
2006	22.984	9.046
2007	11.378	13.717
2008	13.352	10.859

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	81.0204	46.9396
2	43.1735	31.0901
3	40.6079	22.8820
4	38.1521	22.2332

5	38.0949	21.4544
6	37.2802	19.2562
7	36.3635	18.8224
8	36.2693	18.1154
9	34.9032	17.7882
10	34.1706	15.1961
11	33.3057	14.8587
12	32.7471	14.7289
13	30.7287	14.2396
14	30.4193	13.7169
15	30.2198	13.4639
16	29.9486	13.4054
17	27.6561	13.3740
18	26.7653	13.3490
19	26.7001	13.0167
20	26.1422	12.9988
21	26.0842	12.9875
22	25.8228	12.1128
23	24.7866	11.9606
24	24.4166	10.8590
25	24.4099	10.5607
26	23.8989	10.3357
27	23.7633	10.3259
28	23.4933	10.3193
29	23.3027	10.2792
30	23.2653	10.0847
31	22.9836	9.8944
32	22.8768	9.8648
33	22.0144	9.7502
34	21.9736	9.3071
35	21.7883	9.0464
36	21.6993	8.7448
37	20.8921	8.5690
38	20.5158	8.4613
39	19.4933	8.3304
40	18.6209	7.9376
41	18.5433	7.8514
42	17.7147	7.8170
43	17.4476	7.6608
44	15.7916	7.4175
45	13.3524	7.2520
46	13.2489	6.8834
47	12.8138	6.0993
48	12.6306	5.9473
49	12.6152	5.6571
50	12.2862	5.6075
51	11.9265	5.5752
52	11.7803	5.4329
53	11.3782	5.2993
54	10.2127	5.1538
55	9.2359	5.0198
56	8.5003	4.9248
57	8.3785	4.5114
58	8.2195	4.1999
59	7.2790	3.8607
60	0.7288	3.8325

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
11.1721	1041	267	25	Pass
11.5955	960	237	24	Pass
12.0190	894	198	22	Pass
12.4425	811	164	20	Pass
12.8660	746	144	19	Pass
13.2894	694	112	16	Pass
13.7129	631	90	14	Pass
14.1364	583	78	13	Pass
14.5599	536	65	12	Pass
14.9833	484	60	12	Pass
15.4068	456	52	11	Pass
15.8303	425	47	11	Pass
16.2538	402	44	10	Pass
16.6772	367	42	11	Pass
17.1007	336	39	11	Pass
17.5242	314	35	11	Pass
17.9477	298	29	9	Pass
18.3711	280	26	9	Pass
18.7946	265	23	8	Pass
19.2181	253	22	8	Pass
19.6416	238	20	8	Pass
20.0650	221	18	8	Pass
20.4885	201	14	6	Pass
20.9120	186	11	5	Pass
21.3355	175	11	6	Pass
21.7589	168	10	5	Pass
22.1824	145	9	6	Pass
22.6059	139	7	5	Pass
23.0294	126	6	4	Pass
23.4528	113	6	5	Pass
23.8763	104	6	5	Pass
24.2998	101	6	5	Pass
24.7233	95	6	6	Pass
25.1467	90	5	5	Pass
25.5702	85	5	5	Pass
25.9937	80	5	6	Pass
26.4172	71	5	7	Pass
26.8406	62	4	6	Pass
27.2641	59	4	6	Pass
27.6876	57	4	7	Pass
28.1111	56	4	7	Pass
28.5345	53	4	7	Pass
28.9580	52	4	7	Pass
29.3815	48	3	6	Pass
29.8050	45	3	6	Pass
30.2284	39	3	7	Pass
30.6519	35	3	8	Pass
31.0754	33	3	9	Pass
31.4989	30	2	6	Pass
31.9223	27	2	7	Pass
32.3458	27	2	7	Pass
32.7693	24	2	8	Pass
33.1928	23	2	8	Pass

33.6162	22	2	9	Pass
34.0397	20	2	10	Pass
34.4632	16	2	12	Pass
34.8867	15	2	13	Pass
35.3101	14	2	14	Pass
35.7336	14	2	14	Pass
36.1571	14	2	14	Pass
36.5806	12	2	16	Pass
37.0041	11	2	18	Pass
37.4275	9	2	22	Pass
37.8510	9	2	22	Pass
38.2745	7	2	28	Pass
38.6980	7	2	28	Pass
39.1214	7	2	28	Pass
39.5449	7	2	28	Pass
39.9684	7	1	14	Pass
40.3919	7	1	14	Pass
40.8153	6	1	16	Pass
41.2388	6	1	16	Pass
41.6623	6	1	16	Pass
42.0858	6	1	16	Pass
42.5092	6	1	16	Pass
42.9327	6	1	16	Pass
43.3562	5	1	20	Pass
43.7797	5	1	20	Pass
44.2031	5	1	20	Pass
44.6266	5	1	20	Pass
45.0501	5	1	20	Pass
45.4736	5	1	20	Pass
45.8970	5	1	20	Pass
46.3205	5	1	20	Pass
46.7440	5	1	20	Pass
47.1675	4	0	0	Pass
47.5909	4	0	0	Pass
48.0144	4	0	0	Pass
48.4379	4	0	0	Pass
48.8614	4	0	0	Pass
49.2848	4	0	0	Pass
49.7083	4	0	0	Pass
50.1318	3	0	0	Pass
50.5553	3	0	0	Pass
50.9787	3	0	0	Pass
51.4022	3	0	0	Pass
51.8257	3	0	0	Pass
52.2492	3	0	0	Pass
52.6726	3	0	0	Pass
53.0961	3	0	0	Pass

Water Quality

Water Quality BMP Flow and Volume for POC #1

On-line facility volume:	2.3746 acre-feet
On-line facility target flow:	3.2304 cfs.
Adjusted for 15 min:	3.2304 cfs.
Off-line facility target flow:	1.7176 cfs.
Adjusted for 15 min:	1.7176 cfs.

POC 2

POC #2 was not reported because POC must exist in both scenarios and both scenarios must have been run.

Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

No PERLND changes have been made.

IMPLND Changes

No IMPLND changes have been made.

Appendix
Predeveloped Schematic

Mitigated Schematic

Mitigated UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1948 10 01        END    2008 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   Sth Basin Rev w roof to wetland w 34 Ac removed.wdm
MESSU       25   MitSth Basin Rev w roof to wetland w 34 Ac removed.MES
            27   MitSth Basin Rev w roof to wetland w 34 Ac removed.L61
            28   MitSth Basin Rev w roof to wetland w 34 Ac removed.L62
            30   POCSth Basin Rev w roof to wetland w 34 Ac removed1.dat
END FILES

OPN SEQUENCE
    INGRP              INDELT 00:15
      PERLND      34
      IMPLND       1
      IMPLND       4
      IMPLND       8
      RCHRES       1
      COPY         1
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title----------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Trapezoidal Pond  1         MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                          in  out           ***
   34     SG4, Lawn, Flat         1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   34         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
```

```
    <PLS > ***************** Print-flags **************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   34         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   34         0    0    0    0    0    0    0    0    0    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   34              0         6      0.02       400      0.05         0      0.96
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   34              0         0         3         2         0         0         0
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                              ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   34           0.1       0.2      0.25         2       0.4      0.25
  END PWAT-PARM4

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
             ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
   34              0         0         0         0       2.5         1         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                     in  out           ***
    1      ROADS/FLAT             1    1    1   27    0
    4      ROOF TOPS/FLAT         1    1    1   27    0
    8      SIDEWALKS/FLAT         1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
    1         0    0    1    0    0    0
    4         0    0    1    0    0    0
    8         0    0    1    0    0    0
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
    1         0    0    4    0    0    4    1    9
    4         0    0    4    0    0    0    1    9
    8         0    0    4    0    0    0    1    9
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
    1         0    0    0    0    0
    4         0    0    0    0    0
    8         0    0    0    0    0
```

```
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >       IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
    1            400      0.01       0.1       0.1
    4            400      0.01       0.1       0.1
    8            400      0.01       0.1       0.1
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >       IWATER input info: Part 3         ***
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    4              0         0
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  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
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    4              0         0
    8              0         0
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END IMPLND

SCHEMATIC
<-Source->                 <--Area-->     <-Target->   MBLK   ***
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Basin  1***
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PERLND  34                      21.03     RCHRES   1      3
IMPLND   1                       6.05     RCHRES   1      5
IMPLND   4                       4.13     RCHRES   1      5
IMPLND   8                       2.23     RCHRES   1      5
Basin  2***
PERLND  34                      11.26     RCHRES   1      2
PERLND  34                      11.26     RCHRES   1      3
IMPLND   1                       3.73     RCHRES   1      5
IMPLND   4                       3.42     RCHRES   1      5
IMPLND   8                       1.43     RCHRES   1      5

******Routing******
PERLND  34                      21.03     COPY     1     12
IMPLND   1                       6.05     COPY     1     15
IMPLND   4                       4.13     COPY     1     15
IMPLND   8                       2.23     COPY     1     15
PERLND  34                      21.03     COPY     1     13
PERLND  34                      11.26     COPY     1     12
IMPLND   1                       3.73     COPY     1     15
IMPLND   4                       3.42     COPY     1     15
IMPLND   8                       1.43     COPY     1     15
PERLND  34                      11.26     COPY     1     13
RCHRES   1                          1     COPY   501     16
END SCHEMATIC

NETWORK
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<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   48.4        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
```

```
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<----------------><---> User T-series  Engl Metr LKFG             ***
                                      in  out                                ***
    1     Trapezoidal Pond-007    1    1    1    1   28    0    1
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
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  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ****************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
    1         4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                    ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
           FG FG FG FG  possible  exit  *** possible  exit      possible  exit
            *  *  *  *    *  *  *  *  *       *  *  *  *  *        ***
    1       0  1  0  0    4  0  0  0  0       0  0  0  0  0        2  2  2  2  2
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><--------><--------> ***
    1              1      0.03       0.0       0.0       0.5       0.0
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                       ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><--->
```

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1.222222	0.663453	0.810887	3.630105
1.277778	0.663453	0.847745	3.711691
1.333333	0.663453	0.884604	3.791521
1.388889	0.663453	0.921462	3.869705
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1.500000	0.663453	0.995179	4.021515
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1.611111	0.663453	1.068896	4.167800
1.666667	0.663453	1.105755	4.239049
1.722222	0.663453	1.142613	4.309121
1.777778	0.663453	1.179471	4.378071
1.833333	0.663453	1.216330	4.445952
1.888889	0.663453	1.253188	4.512813
1.944444	0.663453	1.290047	4.578697
2.000000	0.663453	1.326905	4.643646
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2.166667	0.663453	1.437481	4.833260
2.222222	0.663453	1.474339	4.894833
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2.833333	0.663453	1.879783	5.667232
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2.944444	0.663453	1.953500	6.134037
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3.055556	0.663453	2.027217	6.723977
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4.833333	0.663453	3.206688	50.41891
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4.944444	0.663453	3.280405	57.07606
5.000000	0.663453	3.317264	60.42046

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END FTABLES

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<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.3            PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.3            IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    0.8            PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    0.8            IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
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<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
RCHRES   1 HYDR   RO     1 1        1      WDM   1000 FLOW     ENGL      REPL
RCHRES   1 HYDR   STAGE  1 1        1      WDM   1001 STAG     ENGL      REPL
COPY     1 OUTPUT MEAN   1 1     48.4      WDM    701 FLOW     ENGL      REPL
COPY   501 OUTPUT MEAN   1 1     48.4      WDM    801 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK        2
PERLND     PWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    2

  MASS-LINK        3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    3

  MASS-LINK        5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    5

  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13

  MASS-LINK       15
IMPLND     IWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   15

  MASS-LINK       16
RCHRES     ROFLOW                          COPY           INPUT  MEAN
  END MASS-LINK   16


END MASS-LINK

END RUN
```

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CRITICAL AREAS REPORT

November 14, 2025

Lacamas Northshore

Camas, Washington

Prepared for

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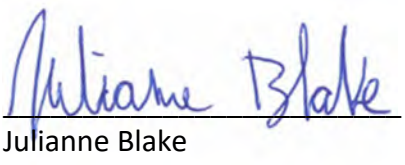
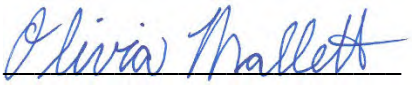
SIGNATURE PAGE

The information and data in this report were compiled and prepared under the supervision and direction of the undersigned.



Julianne Blake
Biologist IV



Olivia Mallett
Biologist III

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INTRODUCTION

Ecological Land Services, Inc. (ELS) was contracted by SunCal Acquisitions, LLC to complete a critical areas report for Clark County Tax Parcel Numbers 175747000, 175733000, and 175726000, 175727000 located at 104 NE 252nd Avenue in Camas, Washington. The site is approximately 228 acres and is located within Section 27, Township 2 North, Range 3 East of the Willamette Meridian (Figure 1). ELS biologists conducted site visits on June 10, 11, 12, and 18, 2025 to determine the presence and extent of wetlands and fish and wildlife habitat conservation areas onsite. This critical areas report summarizes ELS findings in accordance with *City of Camas Municipal Code (CMC) Chapter 16.53 Wetlands* and *Chapter 16.61 Fish and Wildlife Habitat Conservation Areas* (March 2025).

SITE DESCRIPTION

The site is accessed by a driveway that enters the site from SE 252nd Avenue near the southeast portion of parcel 175727000. The site is zoned as North Shore Lower Density Residential (LD-NS), North Shore Higher Density Residential (HD-NS), North Shore Mixed Use (MX-NS), North Shore Commercial (C-NS), North Shore Mixed Employment (ME-NS), North Shore Park/Open Space (POS-NS). The properties surrounding the site consist primarily of single-family homes, farmland, and undeveloped forested land, with Lacamas Lake Elementary to the northwest of the site. The majority of the site is comprised of regularly grazed open pasture land, with forested areas in the southern portion of the site and the northeastern corners of parcels 175747000 and 175726000, and manure treatment ponds with associated structures for storage of farm equipment in the southeast near the site access. The open pasture area has rolling hills with the topographical low points associated with Wetland A, Wetland E, Wetland V, Wetland W, Wetland X, and the manure treatment ponds. A linear depression associated with Stream A flows through the site from the northeast to the northwest and a linear depression associated with Stream B is located along the southeastern corner of the site. A topographical low point associated with Wetland U is located in the northwest corner of the site along Stream A. The forested area in the northeast corner of parcel 175726000 generally slopes upward to the northeast and downward toward Stream A, with depressions associated with Wetland Y and Wetland Z. The forested area in the northeast corner of parcel 175747000 generally slopes upward to the northeast. The southernmost forested area consists of undulating topography associated with rock outcroppings and the herbaceous bald (HB) and depressions associated with Wetland B, Wetland C, and Wetland D. General vegetation in unforested areas consists of regularly mowed and grazed pasture grasses and weedy herbs and forbs. Forested areas consist of a mixed canopy formed by deciduous and coniferous trees, with woody shrubs forming a multi-layered sub-canopy with grasses, herbs, and forbs providing ground cover.

METHODOLOGY

The property was evaluated for the presence of wetlands using the Routine Determination Method according to the U.S. Army Corps of Engineers' 1987 *Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers' Wetland Delineation Manual* (Environmental Laboratory 1987); *Western Mountains, Valleys, and Coast Region* (Version 2.0) (Corps 2010). The

Routine Determination Method and defining wetland criteria are discussed further in Appendix A. Wetlands are regulated as "Waters of the United States" by the U.S. Army Corps of Engineers (Corps) and as "Waters of the State" by the Washington Department of Ecology (Ecology), and locally by the City of Camas. The ordinary high water mark (OHWM) delineation was conducted following *RCW 90.58.030* and *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Ecology 2016).

ELS biologists evaluated the property on June 10, 11, 12, and 18, 2025 for the presence of critical areas including streams, wetlands, and other fish and wildlife habitat conservation areas within or near the site. Eleven wetlands (Wetlands A – E and Wetlands U – Z) were delineated onsite. Onsite boundaries were determined through changes in topography, vegetation, and evidence of wetland hydrology. Vegetation, soil, and hydrology data were collected from test plots to determine the location and extent of wetlands onsite. Herbaceous bald boundaries were delineated based on vegetation and the presence of bedrock under shallow soils.

Two streams (Stream A and Stream B) were delineated onsite. The OHWM of Stream A in the forested area was demarcated with orange flagging based on obvious changes in topography, vegetation type and growth patterns, wrack deposits, and indicators of regular flow. Both sides of the stream onsite were delineated, and the stream centerline was mapped. The OHWM of Stream A throughout the remainder of the site was not mapped in the field, as the stream channel is clearly visible on aerial imagery and was blocked by barbed wire fencing. Stream B is excavated and resembles a manmade ditch but was delineated as a stream due to its size and apparent connection to an offsite stream to the south. Stream B was mapped based on obvious changes in topography, vegetation growth patterns, and indicators of regular flow. The locations of test plots, wetland flags, herbaceous bald boundaries, Oregon white oak (*Quercus garryana*, FACU) trees, and OHWM flagging were recorded using a hand-held GPS unit capable of sub-meter accuracy under ideal conditions (Figure 2).

VEGETATION

Vegetation in unforested areas consists of regularly mowed and grazed pasture grasses and weedy herbs and forbs. Forested areas consist of a mixed canopy formed by deciduous and coniferous trees, with woody shrubs forming a multi-layered sub-canopy, and grasses, herbs, and forbs providing ground cover. The forested area in the southernmost portion of the property also contains Oregon white oak (oak) trees and shrubs and herbs commonly associated with herbaceous balds. Himalayan blackberry (*Rubus armeniacus*, FAC) was very dense in some portions of the site. The plant indicator status following the plant scientific name is defined by the *National Wetland Plant List Indicator Rating Definitions* (Corps 2012) and can be found in Appendix A.

FORESTED AREAS

Dominant vegetation in forested areas consists primarily of **trees:** bigleaf maple (*Acer macrophyllum*, FACU), Douglas fir (*Pseudotsuga menziesii*, FACU), Oregon ash (*Fraxinus latifolia*, FACW), Oregon white oak, red alder (*Alnus rubra*, FAC), western redcedar (*Thuja plicata*, FAC); **shrubs:** oceanspray (*Holodiscus discolor*, FACU), vine maple (*Acer circinatum*, FAC), Himalayan

blackberry, holly (*Ilex aquifolium*, FACU), beaked hazelnut (*Corylus cornuta*, FACU), snowberry (*Symphoricarpos albus*, FACU), tall Oregon grape (*Mahonia aquifolium*, FACU), salmonberry (*Rubus spectabilis*, FAC); and **herbs:** bentgrass (*Agrostis* sp., Assumed FAC), shiny geranium (*Geranium lucidum*, FACU), western ladyfern (*Athyrium cyclosorum*, FAC), nightshade (*Circaea canadensis*, FACU), red fescue (*Festuca rubra*, FAC), velvetgrass (*Holcus lanatus*, FAC), creeping buttercup (*Ranunculus repens*, FAC), cleavers (*Galium aparine*, FACU), annual ryegrass (*Lolium perenne*, FAC), trailing blackberry (*Rubus ursinus*, FACU), bluegrass (*Poa* sp., Assumed FAC), herb Robert (*Geranium robertianum*, FACU), false lily of the valley (*Maianthemum dilatatum*, FAC), spring beauty (*Claytonia virginica*, FACU), sweet vernal (*Anthoxanthum odoratum*, FACU), orchard grass (*Dactylis glomerata*, FACU), soft rush (*Juncus effusus*, FACW), reed canarygrass (*Phalaris arundinacea*, FACW), and tall fescue (*Schedonorus arundinaceus*, FAC).

Open Pasture

Dominant vegetation in open pasture areas consists primarily of **herbs:** bentgrass, red fescue, velvetgrass, annual ryegrass, common plantain (*Plantago major*, FAC), cleavers, bluegrass, sweet vernal, orchard grass, creeping buttercup, tall fescue, and Canada thistle (*Cirsium arvense*, FAC).

Wetlands

Dominant wetland vegetation consists primarily of **trees:** Oregon ash, red alder; **shrubs:** Himalayan blackberry, salmonberry; and **herbs:** western ladyfern, water parsley (*Oenanthe sarmentosa*, OBL), creeping buttercup, western skunk cabbage (*Lysichiton americanus*, OBL), bentgrass, velvetgrass, reed canarygrass, soft rush, sawbeak sedge (*Carex stipata*, OBL), marsh seedbox (*Ludwigia palustris*, OBL), pond water-starwort (*Callitriche stagnalis*, OBL), water smartweed (*Polygonum punctatum*, OBL), water foxtail (*Alopecurus aequalis*, OBL), orchard grass, annual ryegrass, tall fescue, Kentucky bluegrass (*Poa pratensis*, FAC), curly dock (*Rumex crispus*, FAC), tall mannagrass (*Glyceria elata*, FACW), and piggyback (*Tolmiea menziesii*, FAC).

Uplands

Dominant upland vegetation consists primarily of **trees:** bigleaf maple, Oregon white oak, Douglas fir, Oregon ash, red alder, western redcedar; **shrubs:** vine maple, Himalayan blackberry, holly, beaked hazelnut, snowberry, tall Oregon grape; and **herbs:** bentgrass, shiny geranium, western ladyfern, nightshade, red fescue, velvetgrass, creeping buttercup, annual ryegrass, common plantain, bluegrass, herb Robert, false lily of the valley, spring beauty, sweet vernal, orchard grass, red fescue, soft rush, reed canarygrass, tall fescue, cutleaf geranium (*Geranium dissectum*, UPL), trailing blackberry, Canada thistle, tansy ragwort (*Jacobaea vulgaris*, FAC), piggyback, and cleavers.

Herbaceous Bald

Dominant vegetation found on the herbaceous bald consisted primarily of **trees:** Oregon white oak, Douglas fir, Oregon ash, western redcedar; **shrubs:** Nootka rose (*Rosa nutkana*, FAC), snowberry, seaberry (*Hippophae rhamnoides,* UPL), tall Oregon grape, holly, serviceberry (*Amelanchier alnifolia*, UPL), oceanspray, poison oak (*Toxicodendron diversilobum*, FAC), beaked hazelnut; and **herbs:** nipplewort (*Lapsana communis*, FACU), herb Robert, wild strawberry (*Fragaria vesca*, FACU), spring beauty, self-heal (*Prunella vulgaris*, FACU), Camas lily (*Camassia*

quamash, FACW), sweet vernal, trillium (*Trillium grandiflorum*, UPL), largeleaf avens (*Geum macrophyllum*, FAC), western swordfern (*Polystichum munitum*, FACU), vetch (*Vicia americana*, FAC), and western columbine (*Aquilegia formosa*, UPL).

SOILS

Soils onsite are mapped as Cove silty clay loam, 0 to 3 percent slopes (CvA), Hesson clay loam, 0 to 8 percent slopes (HcB), Hesson clay loam, 8 to 20 percent slopes (HcD), Hesson clay loam, 20 to 30 percent slopes (HcE), Hesson clay loam, 30 to 55 percent slopes (HcF), Lauren loam, 0 to 8 percent slopes (LeB), Lauren gravelly loam, 8 to 20 percent slopes (LgD), Lauren gravelly loam, 20 to 45 percent slopes (LgF), Lauren very gravelly loam, 0 to 8 percent slopes (LIB), Olympic stony clay loam, 3 to 30 percent slopes (OmE), Tisch silt loam, 0 to 3 percent slopes (ThA), Semiahmoo muck (Sr), Rock land (Rk), and Washougal gravelly loam, 0 to 8 percent slopes (WgB) as referenced on the Natural Resources Conservation Service (NRCS) Web Soil Survey website (NRCS 2025a; Figure 7)[1]. Table 1 summarizes soils onsite and Appendix B contains the Wetland Determination Data Forms with soil data.

Table 1. Mapped Soils

Soil Series	Percent Slope	Landform[1]	Drainage Class[1]	Hydric Soil[2]	Test Plots per Soil Series
Cove silty clay loam (CvA)	0 – 3	Floodplains	Poorly drained	Yes	10 – 13
Hesson clay loam (HcB)	0 – 8	Terraces	Well drained	No	--
Hesson clay loam (HcD)	8 – 20	Terraces	Well drained	No	--
Hesson clay loam (HcE)	20 – 30	Terraces	Well drained	No	--
Hesson clay loam (HcF)	30 – 55	Terraces, escarpments	Well drained	No	--
Lauren loam (LeB)	0 – 8	Terraces	Well drained	No	33, 34, 43, 81 – 86, 93 – 96
Lauren gravelly loam (LgD)	8 – 20	Terraces	Well drained	No	1, 8, 9, 14, 97 – 100
Lauren gravelly loam (LgF)	20 – 45	Terraces, escarpments	Well drained	No	--
Lauren very gravelly loam (LIB)	0 – 8	Terraces	Well drained	No	2 – 5, 15 – 21
Olympic stony clay loam (OmE)	3 – 30	Mountain slopes	Well drained	No	--
Tisch silt loam (ThA)	0 – 3	Depressions	Very poorly drained	Yes	35, 42, 44 – 49, 88 – 92

[1] Areas mapped as hydric soils do not necessarily mean that an area is or is not a wetland—hydrology, hydrophytic vegetation, and hydric soils must all be present to classify an area as a wetland.

Soil Series	Percent Slope	Landform[1]	Drainage Class[1]	Hydric Soil[2]	Test Plots per Soil Series
Semiahmoo muck (Sr)	0 – 1	Depressions	Very poorly drained	Yes	6, 7, 22-32, 36 – 41, 87
Rock land (Rk)	65 – 90	--	--	No	--
Washougal gravelly loam (WgB)	0 – 8	Terraces	Somewhat excessively drained	No	--

[1]NRCS 2025a; [2]NRCS 2025b.

WETLAND SOILS

Evaluated wetland soils consisted of silt, silt loam, clay loam, silty clay loam, and gravelly sandy loam textures with black, very dark brown, very dark gray, very dark grayish brown, dark grayish brown, dark gray, and gray (10YR 2/1, 2/2, 3/1, 3/2, 3/3, 4/1, 4/2, 4/3) matrix colors. Redoximorphic features were observed as concentrations or depletions occurring as soft masses or pore linings with reddish brown, yellowish red, dark brown, strong brown, reddish yellow, dark yellowish brown, and brownish yellow (5YR 4/4, 4/6; 7.5YR 3/4, 4/6, 7/6; 10YR 3/6, 4/6, 5/4, 5/8, 6/8). Primary hydric soil indicators Redox Dark Surface (F6), Hydrogen Sulfide (A4), Depleted Below Dark Surface (A11), Redox Depressions (F8) were observed in wetland plots (Appendix B).

UPLAND SOILS

Evaluated upland soils consist of silt, silt loam, loam, clay loam, clay, silty clay, silty clay loam, gravelly sandy loam, gravelly silty loam, with black, dark brown, very dark brown, very dark gray, very dark grayish brown, dark gray, brown, and dark yellowish brown (7.5YR 2.5/1, 3/1, 3/2; 10YR 2/1, 2/2, 3/1, 3/2, 3/3, 4/1, 4/3, 4/4) matrix colors. Redoximorphic features were observed in upland test plots TP-4, TP-11, TP-28, TP-34, TP-36, TP-42, TP-96, and TP-97 as concentrations or depletions occurring as soft masses or pore linings with dark reddish brown, yellowish red, strong brown, dark brown, dark yellowish brown, and yellowish brown (5YR 3/4, 4/6; 7.5YR 3/4, 4/6; 10YR 3/6, 5/8). Primary hydric soil indicator Redox Dark Surface (F6) was observed in TP-4, TP-11, TP-28, TP-34, TP-36, TP-96, and TP-97, and Depleted Matrix (F3) was also observed in TP-34 (Appendix B). These plots did not meet the criteria for all three wetland indicators and are therefore considered to be located within uplands.

HYDROLOGY

A total of eleven wetlands are located onsite. Hydrology within all the wetlands is maintained by a high groundwater table and supported by precipitation and runoff. Additionally, the hydrology within the riverine wetlands is supported by overbank flooding from the associated Stream A. Table 2 summarizes the hydrology of each wetland and Appendix B contains the Wetland Determination Data Forms with hydrological data.

Table 2. Hydrology

Wetland	HGM Class	Hydrology Indicators[1]	Hydroperiods[2]
Wetland A	Depressional	A2, A3, C1, C3, D2	SF, SO
Wetland B	Depressional	D2, D5	SO
Wetland C	Depressional	A2, A3, C1	PF, SF
Wetland D	Depressional	B4, B9, D2, D5	SF, SO
Wetland E	Slope	D2, D5	SO
Wetland U	Riverine	--	SO, PFS
Wetland V	Slope	C3	SO
Wetland W	Slope	C3	SO
Wetland X	Slope	C3	SO, IFS
Wetland Y	Riverine	A2, A3, C1	SO, PFS
Wetland Z	Riverine	D2, D5	SO, PFS

[1]High Water Table (A2), Saturation (A3), Algal Mat or Crust (B4), Water-Stained Leaves (B9), Hydrogen Sulfide Odor (C1), Oxidized Rhizospheres along Living Roots (C3), Geomorphic Position (D2), FAC Neutral Test (D5) [2]Seasonally flooded (SF), saturated only (SO), permanently flooded (PF), permanently flowing stream in or adjacent to the wetland (PFS), intermittently flowing stream in or adjacent to the wetland (IFS).

STREAMS

STREAM A

Stream A is mapped by Washington Department of Natural Resources (WDNR) as a Type-F stream (fish-bearing; WDNR 2025). Stream A originates approximately one mile offsite to the northeast and enters the site in the northeast corner near Wetland Y and Wetland Z, flows southwest for approximately 0.25 miles and then northwest for approximately 0.60 miles before leaving the site in the northwest corner. Stream A continues northwesterly offsite, then arcs to the southwest for approximately 0.60 miles before discharging to Lacamas Lake (WDNR 2025; Figure 2). Onsite hydrology is supported by precipitation, a shallow groundwater table, and runoff from upslope areas. According to the Washington State Department of Ecology's Water Quality Atlas, the site is in the Lacamas Creek 12-digit hydrologic unit code (HUC) 170800010605 and Watershed Resource Inventory Area (WRIA) 28 Salmon – Washougal.

STREAM B

Stream B is not mapped by WDNR; however, Stream B meets the WAC 222-16-031 definition of a Type 3 water based on having a defined channel of 2 feet or greater within the bankfull width, a gradient of 16 percent or less, and the absence of any fish passage barriers. As such, Stream B is considered a Type-F (fish-bearing) stream. Stream B is maintained as a roadside ditch and the onsite portion begins at a culvert at the corner of NE 3rd Street and NE 252nd Avenue (Figure 2). The stream leaves the site by crossing under NE 252nd Avenue via a culvert and flows offsite to the southeast. The stream converges with a WDNR mapped stream approximately 0.20 miles southeast of the site and continues generally south before discharging to Lacamas Lake (WDNR 2025; Figure 2). Onsite hydrology is supported by precipitation, a shallow groundwater table, and runoff from upslope areas.

PRECIPITATION

Site visits were conducted on June 10, 11, 12, and 18, 2025. Precipitation data from June 11 and 12 is omitted, as data gathered for June 10 and June 18 provides an accurate representation of the timeframe in which the delineations were conducted. Data were gathered from the NOAA Regional Climate Centers *Clark County, WETS Station: Battle Ground*, which is the closest station to the project site with the most complete set of precipitation data. The two weeks prior to June 10 were wetter than the two weeks prior to June 18th and no precipitation occurred on the day of either site visit. Review of the APT data indicates rainfall in the three months prior to each site visit was drier than normal; however, year to date mean rainfall and year to date actual rainfall were within normal ranges. The Corps Antecedent Precipitation Tool (APT 2025) data is in Appendix D and summarized in Table 2.

Table 3. Precipitation Data

Precipitation (inches)								
Date	**Two Weeks Prior**	**Three Months Prior**				**DAREM[1]**		
6/10/2025	5/26 – 6/9	30 Days Ending	Observed	30%	70%	Value	Weight	Total
0.00	0.20	6/10/2025	1.87	1.98	4.25	1	3	3
		5/11/2025	0.55	2.23	5.09	1	2	2
		4/11/2025	5.91	3.99	5.88	3	1	3
Rainfall 3 months prior was: **drier than normal**[2]								**8**
Year to Date Mean Rainfall[3,4]: 47.68								
Year to Date Actual Rainfall[4]: 48.28								
Date	**Two Weeks Prior**	**Three Months Prior**				**DAREM[1]**		
6/18/2025	6/3 – 6/17	30 Days Ending	Observed	30%	70%	Value	Weight	Total
0.00	0.03	6/18/2025	0.41	1.67	3.70	1	3	3
		5/19/2025	1.98	1.93	4.42	2	2	4
		4/19/2025	3.98	3.92	5.52	2	1	2
Rainfall 3 months prior was: **drier than normal**[2]								**9**
Year to Date Mean Rainfall[3,4]: 48.30								
Year to Date Actual Rainfall[4]: 48.28								

[1]Direct Antecedent Rainfall Evaluation Methods (Sumner et al 2009). [2]Drier than normal (6-9), normal (10-14), wetter than normal (15-18). [3]Based on 2004-2024 precipitation data; [4]Based on a water year, which starts on October 1.

CRITICAL AREAS INVENTORIES

NATIONAL WETLANDS INVENTORY

The National Wetlands Inventory (NWI; USFWS 2025) mapping indicates the presence of one PEM1C (palustrine, emergent, persistent, seasonally flooded) wetland near the southern boundary, two PFOA (palustrine, forested, temporarily flooded) wetlands onsite in the central eastern portion with a third just offsite to the east, one PSS/EM1C (palustrine, scrub-shrub, emergent, persistent, seasonally flooded) wetland in the northwest corner, one PUBHx (palustrine, unconsolidated bottom, permanently flooded, excavated) wetland near the southeast boundary, and an R4SBC (riverine, intermittent, streambed, seasonally flooded) waterbody that runs the length of the site in the north (Figure 8). ELS partially agrees with the

NWI, as the PEM1C is mapped in the general vicinity of Wetland C, the PUBx matches the location of the manure treatment ponds, one PFOA is mapped in the general vicinity of Wetland E and another is mapped in the general vicinity of Wetland W, the PSS/EM1C is mapped in the vicinity of Wetland W, and the R4SBC is in the general vicinity of Stream A. However, the wetland classes are inconsistent with what was observed, wetlands were delineated in areas mapped as uplands by NWI, the offsite PFOA was not observed, and Stream B was observed onsite which is not identified by NWI mapping. Critical area inventory maps are typically used to gather information about a region and due to the large scale necessary for regional mapping, are limited in accuracy for localized analyses.

Clark County Critical Areas

The Clark County Critical Areas (CCCA) map indicates potential and permitted wetland presence and hydric soils onsite (Figure 9). ELS partially agrees with the mapping of permitted and potential wetlands as they generally correspond with the locations of the onsite wetlands and Stream A; however, CCCA does not identify any critical areas where Stream B was identified, and ELS disagrees with the extent of the CCCA mapped wetlands.

Priority Habitats and Species

The Washington Department of Fish and Wildlife (WDFW) Priority Habitat and Species (PHS) maps indicate forested/shrub wetlands and emergent wetlands in the northwestern, central eastern, southern, and northeast portions of the site, oak woodlands near the southern boundary and offsite to the south, and cave or cave-rich areas in the township. Additionally, cutthroat occurrence and rainbow trout occurrence and migration are mapped in the northeast corner (WDFW 2025a; Figure 10). ELS partially agrees with PHS as wetlands are mapped in the general vicinity of ELS delineated wetlands, oak woodlands are mapped in the vicinity of the observed oaks, and the cutthroat and rainbow trout are mapped in the vicinity of Stream A, a Type-F stream. ELS also identified an herbaceous bald onsite which is not identified by PHS.

WDNR Forest Practices

The Washington Department of Natural Resources (WDNR) Forest Practices Application Mapping Tool (FPAMT) indicates a Type-F stream that runs from east to west along the northern portion of the property. ELS investigations are generally consistent with the FPAMT, as the location of the mapped Type-F stream generally corresponds to Stream A; however, although the FPAMT identifies a stream offsite to the southeast, it does not identify a stream where ELS biologists observed Stream B (WDNR 2025; Figure 11).

Critical Areas Summary

Wetlands

Wetlands were rated according to the *Washington State Wetland Rating System for Western Washington: 2014 Update* (Rating System; Hruby & Yahnke 2023). Wetland determination data forms are in Appendix B, wetland rating forms are in Appendix C, and wetlands are summarized in Table 4.

WETLAND A

Wetland A is a Category III, depressional, emergent (EM) wetland totaling approximately 3.95 acres in the southern portion of the site, with two hydroperiods (seasonally flooded (SF), saturated only (SO)). Wetland A's vegetation is dominated by creeping buttercup, skunk cabbage, water parsley, bentgrass, velvetgrass, reedcanarygrass, and soft rush. Hydrology is maintained by a high groundwater table and supported by precipitation and runoff and does not have an outlet. According to the Rating System), Wetland A is a Category III wetland, scoring 5 points for water quality functions, 5 points for hydrologic functions, and 6 points for habitat functions, for a total score of 16 points.

WETLAND B

Wetland B is a Category III, depressional, forested (FO), wetland totaling approximately 0.14 acres in the southern portion of the site, just west of Wetland A, with one hydroperiod (SO). Wetland B vegetation is dominated by Oregon ash, red alder, Himalayan blackberry, bentgrass, and skunk cabbage. Hydrology is maintained by a high groundwater table and supported by precipitation and runoff and does not have an outlet. According to the Rating System, Wetland B is a Category III wetland, scoring 5 points for water quality functions, 5 points for hydrologic functions, and 6 points for habitat functions, for a total score of 16 points.

WETLAND C

Wetland C is a Category II, depressional, EM, scrub-shrub (SS), wetland totaling approximately 0.12 acres onsite that continues offsite to the south, with two hydroperiods (SF, permanently flooded (PF)). Wetland C vegetation is dominated by marsh seedbox, water smartweed, and pond water-starwort. Hydrology is maintained by a high groundwater table and supported by precipitation and runoff. Hydrology in Wetland C flows generally south with its outlet offsite to the south. According to the Rating System, Wetland C is a Category II wetland, scoring 7 points for water quality functions, 6 points for hydrologic functions, and 7 points for habitat functions, for a total score of 20 points.

WETLAND D

Wetland D is a Category III, depressional, FO wetland totaling approximately 0.09 acres located near Wetlands A, B, and C with hydroperiods (SF, SO). Hydrology is supported by a high groundwater table, precipitation, and runoff and does not have an outlet. Vegetation is dominated by Oregon ash, reed canarygrass, bentgrass, and skunk cabbage. According to the Rating System, Wetland D is a Category III wetland, scoring 5 points for water quality functions, 5 points for hydrologic functions, and 6 points for habitat functions, for a total score of 16 points.

WETLAND E

Wetland E is a Category IV, slope, EM wetland totaling approximately 0.84 acres in the central, eastern portion of the site with one hydroperiod (SO). Hydrology is supported by a high groundwater table, precipitation, and runoff, and hydrology in Wetland E flows generally southeast without impounding. Wetland vegetation is dominated by water foxtail, annual ryegrass, bentgrass, orchard grass, and tall fescue. According to the Rating System, Wetland E is

a Category IV wetland, scoring 5 points for water quality functions, 4 points for hydrologic functions, and 3 points for habitat functions, for a total score of 12 points.

WETLAND U

Wetland U is a Category III, sloped, riverine, SS, FO wetland totaling approximately 0.16 acres onsite that continues offsite to the northwest with two hydroperiods (SO, permanently flowing stream within the wetland (PFS)). Hydrology is supported by overbank flooding from Stream A, a high groundwater table, precipitation, and runoff. Vegetation was dominated by red alder, willow (*Salix* sp., Assumed FACW), skunk cabbage, water parsley, common horsetail (*Equisetum arvense*, FAC), and reed canarygrass. According to the Rating System, Wetland U is a Category III wetland, scoring 7 points for water quality functions, 6 points for hydrologic functions, and 6 points for habitat functions, for a total score of 19 points.

WETLAND V

Wetland V is a Category IV slope, EM, wetland totaling approximately 0.19 acres, located north of Stream A near the center of the site with one hydroperiod (SO). Hydrology is supported by a high groundwater table, precipitation, and runoff. Vegetation is dominated by perennial ryegrass, hydrology flows generally northwest without impounding, and the wetland outlets to Stream A. According to the Rating System, Wetland V is a Category IV wetland, scoring 5 points for water quality functions, 4 points for hydrologic functions, and 6 points for habitat functions, for a total score of 14 points.

WETLAND W

Wetland W is a Category III slope, EM wetland totaling approximately 18.98 acres in the northwestern portion of the site with two hydroperiods (SO, PFS). Hydrology is supported by a high groundwater table, precipitation, and runoff, and flows generally northwest without impounding before discharging to Stream A. Vegetation is dominated by velvetgrass, red fescue, perennial ryegrass, soft rush, reed canarygrass, and Kentucky bluegrass. According to the Rating System, Wetland W is a Category III wetland, scoring 6 points for water quality functions, 4 points for hydrologic functions, and 6 points for habitat functions, for a total score of 16 points.

WETLAND X

Wetland X is a Category IV, slope, EM wetland totaling approximately 1.48 acres in the southeast corner of the site, near Stream B, with two hydroperiods (SO, intermittently flowing stream (IFS)). Hydrology is supported by a high groundwater table, precipitation, and runoff. Dominant vegetation consists of tall fescue, perennial ryegrass, Kentucky bluegrass, velvetgrass, creeping buttercup, and reed canarygrass. Hydrology flows generally southeast without impounding before discharging to Stream B. According to the Rating System, Wetland X is a Category IV wetland, scoring 6 points for water quality functions, 4 points for hydrologic functions, and 5 points for habitat functions, for a total score of 15 points.

WETLAND Y

Wetland Y is a Category III riverine, SS, wetland totaling approximately 0.01 acres in the northeast corner of the site, near Stream A's entry into the site, with two hydroperiods (SF, PFS). Hydrology

is supported by overbank flooding from Stream A, a high groundwater table, precipitation, and runoff, and flows generally west before discharging to Stream A. Vegetation is dominated by red alder, Himalayan blackberry, salmonberry, tall mannagrass, skunk cabbage, ladyfern, and water parsley. According to the Rating System, Wetland Y is a Category III wetland, scoring 6 points for water quality functions, 5 points for hydrologic functions, and 6 points for habitat functions, for a total score of 17 points.

Wetland Z

Wetland Z is a Category III, riverine, SS, wetland totaling approximately 0.03 acres in the northeast corner of the site, near Stream A's entry into the site, with two hydroperiods (SO, PFS). Hydrology is supported by overbank flooding from Stream A, a high groundwater table, precipitation, and runoff, and flows generally northwest before discharging to Stream A. According to the Rating System, Wetland Z is a Category III wetland, scoring 6 points for water quality functions, 5 points for hydrologic functions, and 6 points for habitat functions, for a total score of 17 points.

Streams

Stream A

Stream A is a Type-F stream that originates approximately one mile offsite to the northeast and enters the site in the northeast corner near Wetland Y and Wetland Z. Stream A flows westerly through the northern portion of the site, eventually discharging to Lacamas Lake approximately 0.60 miles southwest of the site (WDNR 2025; Figure 2). Onsite hydrology is supported by precipitation, a shallow groundwater table, and runoff from upslope areas. Riparian vegetation in the forested area in the northeast corner consists primarily of bigleaf maple, red alder, Himalayan blackberry, beaked hazelnut, salmonberry, lady fern, water parsley, cleavers, piggyback, skunk cabbage, and tall mannagrass. Riparian vegetation through the rest of the site consists primarily of tall fescue, reed canarygrass, velvetgrass, bentgrass, Kentucky bluegrass, Canada thistle, orchard grass, perennial ryegrass, and creeping buttercup. Streambed substrate in the northeastern and northwestern corners is composed of small to medium sized cobbles, pea gravel, sediment, and silty sands. The streambanks in the northeast corner are prominent with overhanging vegetation. Stream A's substrate throughout the rest of the site is composed of small cobbles, pea gravel, sediment, and silty sands, with downcut mad-made banks. Approximately two to six inches of flowing water was present in the northeast corner, with a maximum depth of approximately 12 inches in other areas throughout the site.

Stream B

Stream B is a Type-F stream that begins at a culvert at the corner of NE 3rd Street and NE 252nd Avenue, crosses under NE 252nd Avenue via a culvert and flows offsite to the southeast, eventually discharging to Lacamas Lake after flowing generally southerly for approximately 0.80 miles (WDNR 2025). Onsite hydrology is supported by precipitation, a shallow groundwater table, and runoff from upslope areas. Onsite riparian vegetation consists primarily of tall fescue, velvetgrass, reed canarygrass, and curly dock. The streambed is composed of small to medium sized cobbles, pea gravel, sediment, and silty sands, with excavated banks. Stream B had a maximum depth of approximately twelve inches of flowing water during the site visit.

BUFFERS

WETLAND BUFFERS

Standard wetland buffers are based on wetland category and habitat score from the Rating System, in conjunction with the proposed land use intensity (*CMC 16.53.040(B)(2)*). Wetlands and their designated buffer widths according to *CMC* are summarized in Table 3.

STREAM BUFFERS

According to *CMC 16.61.040(D)*, Type F, non-anadromous streams, with reaches that do not provide access for anadromous fish, require a 75-foot riparian buffer. According to Washington State Fish Passage online mapping (WDFW 2025b), Lacamas Lake may contain the presence of resident fish. Because both Stream A and Stream B outlet to Lacamas Lake, both are allocated a 75-foot buffer width. Stream buffers are summarized in Table 3.

Table 4. Wetland and Stream Summary

Identifier	Classification[1,2,3]	Cowardin Class, Hydroperiod[4]	Habitat Score/ Category[5]	Proposed Land Use Intensity	Buffer Width (feet)[6,7]
Wetlands					
Wetland A	Depressional	EM/ SF, SO	6, Cat. III	Low, Moderate, High	65, 100, 135
Wetland B	Depressional	FO, SO	6, Cat. III		65, 100, 135
Wetland C	Depressional	EM/SS, IFS	7, Cat. II		110, 165, 220
Wetland D	Depressional	FO, SF/SO	6, Cat. III		65, 100, 135
Wetland E	Slope	EM/ SO	4, Cat. IV		25, 40, 50
Wetland U	Riverine	FO/SS, SO/PFS	6, Cat. III		65, 100, 135
Wetland V	Slope	EM, SO	5, Cat. IV		25, 40, 50
Wetland W	Slope	EM, SO	6, Cat. III		65, 100, 135
Wetland X	Slope	EM, SO/IFS	5, Cat. IV		25, 40, 50
Wetland Y	Riverine	SS, SO/PFS	6, Cat. III		65, 100, 135
Wetland Z	Riverine	SS, SO/PFS	6, Cat. III		65, 100, 135
Streams					
Stream A	Type F[3]	--			75
Stream B	Type F[2]				75

[1]NRCS 2008. [2]WAC 222-16-031. [3]WDNR 2025. [4]FGDC 2013. [5]Hruby and Yahnke 2023. [6]CMC Tables 16.53.040-1,2,3. [7]CMC 16.61.040(D).

FISH AND WILDLIFE HABITAT CONSERVATION AREAS

Fish and Wildlife Habitat Conservation Areas are regulated by *CMC Chapter 16.61* and include areas with which state or federally designated endangered, threatened, and sensitive species have a primary association, state priority habitats and areas associated with state priority species, habitats of local importance, naturally occurring ponds under 20 acres, waters of the state, bodies of water planted with game fish by a governmental or tribal entity, and state natural area preserves and natural resource conservation areas. Habitats of local importance include Camas lily of a significant concentration (0.25 acres or greater) and Oregon white oak trees with a diameter at breast height (DBH) of 20 inches or greater (*CMC 16.61.010(A)*).

Oregon White Oak

The Washington Department of Fish and Wildlife (WDFW) identifies which oak communities are considered priority habitats through its Priority Habitats and Species (PHS) program. The Washington Natural Heritage Program (WNHP) defines a North Pacific Oak Woodland as a community dominated or co-dominated by oak and associated with dry, low-elevation sites or those with frequent fires pre-settlement (Nolan and Azerrad 2024). Oregon white oak woodlands are associated with eight different plant communities, including a wide variety of native herbaceous and shrub species. Oak woodlands provide a mix of feeding, resting, and breeding habitat for many wildlife species (Nolan and Azerrad 2024). In addition to oak woodlands, individual oak trees can be considered a priority habitat if they provide considerable value to wildlife. In addition to woodland communities, oaks are also associated with prairies and savannas in Washington. These communities are considered wooded grasslands and are an association of upland grassland and meadows (Rocchio and Crawford 2015).

One oak was identified in the northeast corner and 45 oaks were identified in the southeastern portion of the site located on or near the herbaceous bald (Figures 3, 4, and 5). Although PHS mapping identifies oak woodlands in the vicinity of the 45 mapped oaks, an assessment will need to be completed to determine whether the oaks meet the requirements to be considered a woodland or individuals. Several of the oak trees meet WDFW priority habitat criteria for individual oaks. The oak inventory is provided in Table 4.

Table 5. Oak Inventory

Identifier	DBH (inches)	Identifier	DBH (inches)	Identifier	DBH (inches)
1	3	17	14	33	12
2*	13, 16	18	13	34*	20, 9
3	6	19	7	35	10
4	9	20	5	36	4
5	12	21	6	37	4
6	2	22	4	38	8
7	8	23*	18, 14	39	8
8	6	24*	9, 6	40	6
9	5	25	6	41	18
10	8	26	5	42	17
11	11	27	16	43	12
12	11	28	10	44*	10, 8
13	16	29*	11, 9	45	16
14	11	30	8	46	20
15	1	31	11		
16	9	32	10		

*Split trunk

Priority Snags

Trees are considered snags by WDFW if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavations and use by wildlife (WDFW 2025a). Priority snags

have a DBH of greater than 12 inches and are at least 6.5 feet tall. ELS biologists identified 30 snags onsite, all of which are considered priority snags (Table 6; Figures 3 and 6).

Table 6. Snag Inventory

Identifier	DBH (inches)	Identifier	DBH (inches)
1	13	16	18
2	13	17	17
3	27	18	17
4	24	19	22
5	22	20	19
6	21	21	18
7	34	22	27
8	40	23	25
9	19	24	16
10	16	25	23
11	31	26	19
12	25	27	15
13	17	28	25
14	23	29	19
15	18	30	17

Herbaceous Bald Habitat

According to *CMC 16.61.010(A)(2)*, priority habitats and species are identified by WDFW; however, *CMC 16.61.010(A)(1)* states that lists, categories, and definitions of species promulgated by WDFW are provided to the City to be used for guidance only. According to the WDFW Priority Habitat and Species List (WDFW 2008) herbaceous balds are defined as:

"*…variable-sized patches of grass and forb vegetation located on shallow soils over bedrock that commonly is fringed by forest or woodland. Typically consists of low-growing vegetation adapted for survival on shallow soils amid seasonally dry conditions, and is often on steep slopes. Dominant flora includes herbaceous vegetation, dwarf shrubs, mosses, and lichens. Rock outcrops, boulders, and scattered trees are often present, especially Douglas-fir, Pacific madrone, and Oregon white oak. Balds occur within mid-montane to lowland forest zones. On slopes near saltwater shorelines in the northern Puget Trough, herbaceous balds and herbaceous bluffs can sometimes be difficult to differentiate. Balds typically are smaller than 5 ha (12 ac), although some can be up to about 100 ha (≅ 250 ac)*" (WDFW 2008).

ELS biologists identified one area onsite that meets herbaceous bald criteria, located near the southern boundary and totaling approximately 1.44 acres in size. This area is defined by shallow soils with vegetation dominated by Oregon white oak, Douglas fir, red alder, Nootka rose snowberry, tall Oregon grape, poison oak, beaked hazelnut, wild strawberry, Camas lily, trillium, western swordfern, and western columbine. Many oaks were rooted on the herbaceous bald and displayed stunted crowns and curled leaves, likely from stress related to shallow soils and shading

by Douglas fir trees. Herbaceous bald boundaries were delineated based on vegetation and the presence of bedrock under shallow soils.

LIMITATIONS

ELS bases the above listed determinations and conclusions on standard scientific methodology and best professional judgment. In our opinion, local, state, and federal regulatory agencies should agree with the conclusions of this report. However, this should be considered a preliminary report and should be used at your own risk until it has been reviewed and approved in writing by the appropriate regulatory agencies. ELS is not responsible for the impacts of any changes in environmental standards, practices, or regulations after the date of this report.

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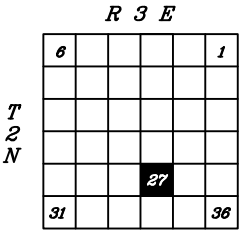
FIGURES AND PHOTOPLATES

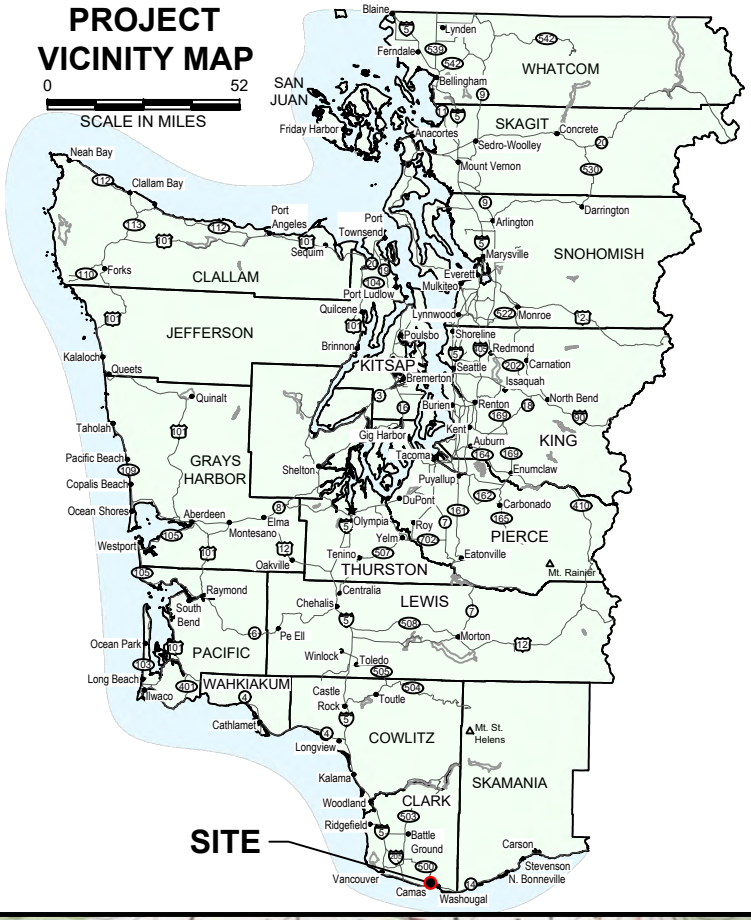
WASHINGTON

45.6247° Latitude
-122.4166° Longitude

LOCATION MAP



PROJECT VICINITY MAP



NOTE:
Quadrangle topographic map from USGS.

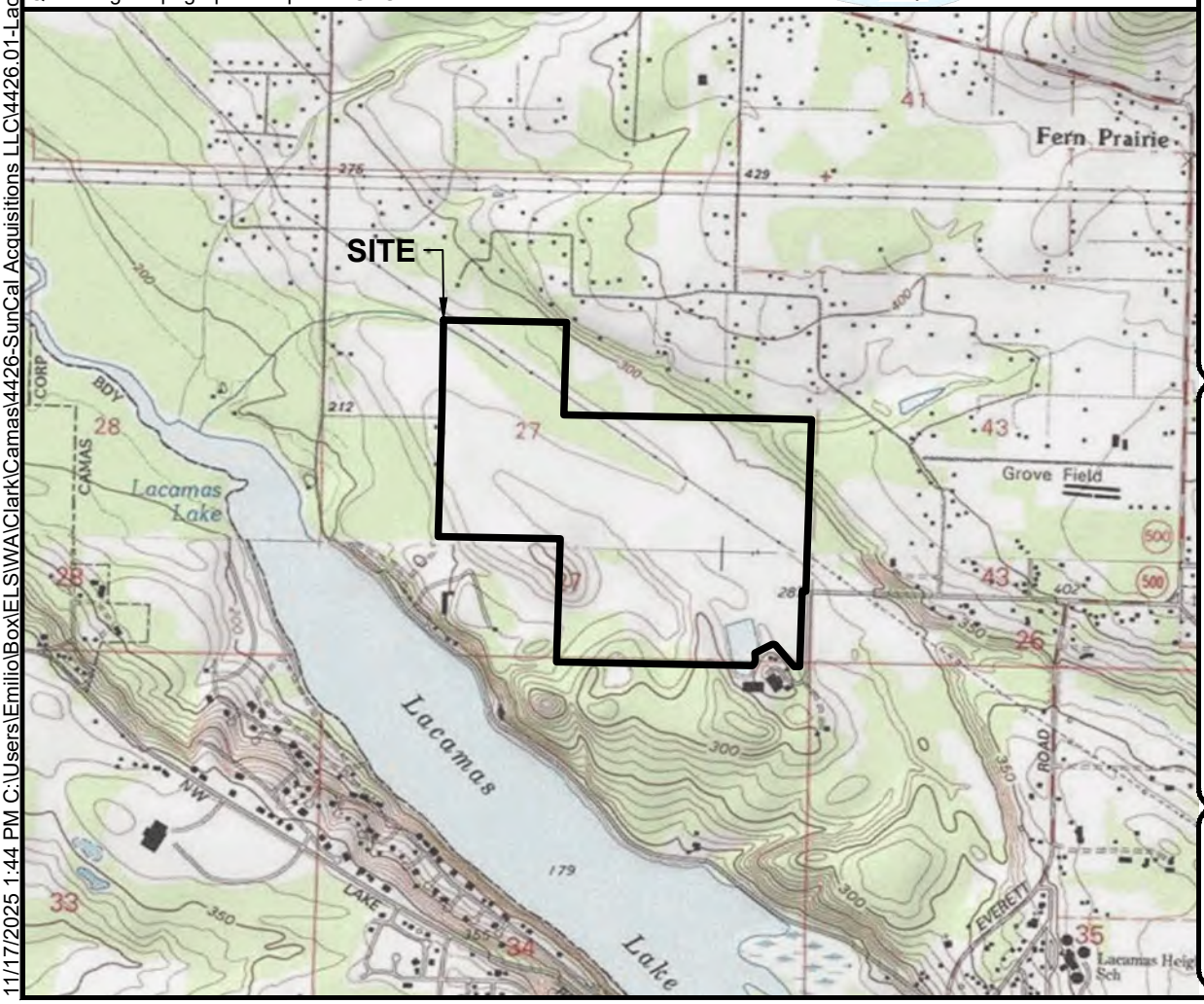


Figure 1
VICINITY MAP
Lacamas Northshore
Suncal Acquisitions, LLC
City of Camas, Clark County, WA
Section 27, Township 2N, Range 3E, W.M.

DATE: 11/17/25
DWN: EF
REQ. BY: OM
PRJ. MGR: JB
CHK:
PROJECT NO: 4426.01

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LEGEND:

- Site Boundary
- Parcel Boundary
- Wetland Boundary
- Wetland Buffer
- Approx. Wetland Boundary
- TP-1 Test Plot Location
- 5' Contours
- OHWM
- Stream with Flow Direction
- Stream Buffer
- Culvert
- Manure Treatment Pond
- Herbaceous Bald
- 30 Photo Point Location

Wetland U
Category III
Riverine
SS/FO
(0.16 ac. onsite)

Wetland W
Category III
Slope
EM
(18.98 ac. onsite)

Wetland V
Category IV
Slope
EM
(0.19 ac.)

Wetland Z
Category III
Riverine
SS
(0.03 ac.)

Wetland Y
Category III
Riverine
SS
(0.01 ac.)

Wetland E
Category IV
Slope
EM
(0.84 ac.)

Wetland A
Category III
Depressional
EM
(3.95 ac.)

Wetland B
Category III
Depressional
FO
(0.14 ac.)

Wetland D
Category III
Depressional
FO
(0.09 ac.)

Wetland C
Category II
Depressional
EM/SS
(0.12 ac.)

Wetland X
Category IV
Slope
EM
(1.48 ac.)

Stream A
Type F

Stream B
Type F

Lacamas Lake
Type S

Herbaceous Bald
(1.44 ac.)

Manure Treatment Pond

Manure Treatment Pond

Parcel #: 175747000

Parcel #: 175733000

Parcel #: 175726000

Parcel #: 175727000

N Shore Blvd

NE 9th St

NE Leadbetter Rd

NE 3rd St

NE 252nd Ave

TP-1 TP-2 TP-3 TP-4 TP-5 TP-6 TP-7 TP-8 TP-9 TP-10 TP-11 TP-12 TP-13 TP-14 TP-15 TP-16 TP-17 TP-18 TP-19 TP-20 TP-21 TP-22 TP-23 TP-24 TP-25 TP-26 TP-27 TP-28 TP-29 TP-30 TP-31 TP-32 TP-33 TP-34 TP-35 TP-36 TP-37 TP-38 TP-39 TP-40 TP-41 TP-42 TP-43 TP-44 TP-45 TP-46 TP-47 TP-48 TP-49 TP-81 TP-82 TP-83 TP-84 TP-85 TP-86 TP-87 TP-88 TP-89 TP-90 TP-91 TP-92 TP-93 TP-94 TP-95 TP-96 TP-97 TP-98 TP-99 TP-100

NOTE(S):

1. Aerial from Google Earth™ (2024).
2. Wetland, OHWM, Stream, culverts, photo points and test plots located using handheld GPS capable of submeter accuracy.
3. Parcel data from Clark County GIS.
4. Stream B meets the WAC 222-16-031 definition for a Type 3 water and shall be considered fish-bearing.
5. Contours generated from LiDAR provided by WDNR.

Figure 2
EXISTING CONDITIONS
Lacamas Northshore
Suncal Acquisitions, LLC
City of Camas, Clark County, WA
Section 27, Township 2N, Range 3E, W.M.

DATE: 11/17/25
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LEGEND:

- Site Boundary
- Parcel Boundary
- Wetland Boundary
- Wetland Buffer
- Approx. Wetland Boundary
- OHWM
- 5' Contours
- Stream with Flow Direction
- Stream Buffer
- Culvert
- Manure Treatment Pond
- Herbaceous Bald
- #1 Oak (46 Total)
- #1 Snag (30 Total)

Wetland U
Category III
Riverine
SS/FO
(0.16 ac. onsite)

Parcel #:
175747000

135'

Snag Detail
See Figure 6

N Shore Blvd

NE 9th St

Wetland W
Category III
Slope
EM
(18.98 ac. onsite)

Parcel #:
175733000

Oak and Snag Detail
See Figure 5

Wetland V
Category IV
Slope
EM
(0.19 ac.)

50'

75'

Wetland Y
Category III
Riverine
SS
(0.01 ac.)

Wetland Z
Category III
Riverine
SS
(0.03 ac.)

135'

Wetland E
Category IV
Slope
EM
(0.84 ac.)

50'

Parcel #:
175726000

Stream A
Type F

NE Leadbetter Rd

Lacamas Lake
Type S

Wetland B
Category III
Depressional
FO
(0.14 ac.)

Wetland C
Category II
Depressional
EM/SS
(0.12 ac.)

Wetland A
Category III
Depressional
EM
(3.95 ac.)

Wetland D
Category III
Depressional
FO
(0.09 ac.)

Herbaceous Bald
(1.44 ac.)

150'

Oak and Herbaceous
Bald Detail
See Figure 4

150'

150'

220'

Parcel #:
175727000

Stream B
Type F

Wetland X
Category IV
Slope
EM
(1.48 ac.)

NE 3rd St

75'

50'

NE 252nd Ave

Manure
Treatment
Pond

Manure
Treatment
Pond

NOTE(S):

1. Aerial from Google Earth™ (2024).
2. Wetland, OHWM, Stream, culverts, photo points and test plots located using handheld GPS capable of submeter accuracy.
3. Parcel data from Clark County GIS.
4. Stream B meets the WAC 222-16-031 definition for a Type 3 water and shall be considered fish-bearing.
5. Contours generated from LiDAR provided by WDNR.

Figure 3
PRIORITY HABITAT OVERVIEW
Lacamas Northshore
Suncal Acquisitions, LLC
City of Camas, Clark County, WA
Section 27, Township 2N, Range 3E, W.M.

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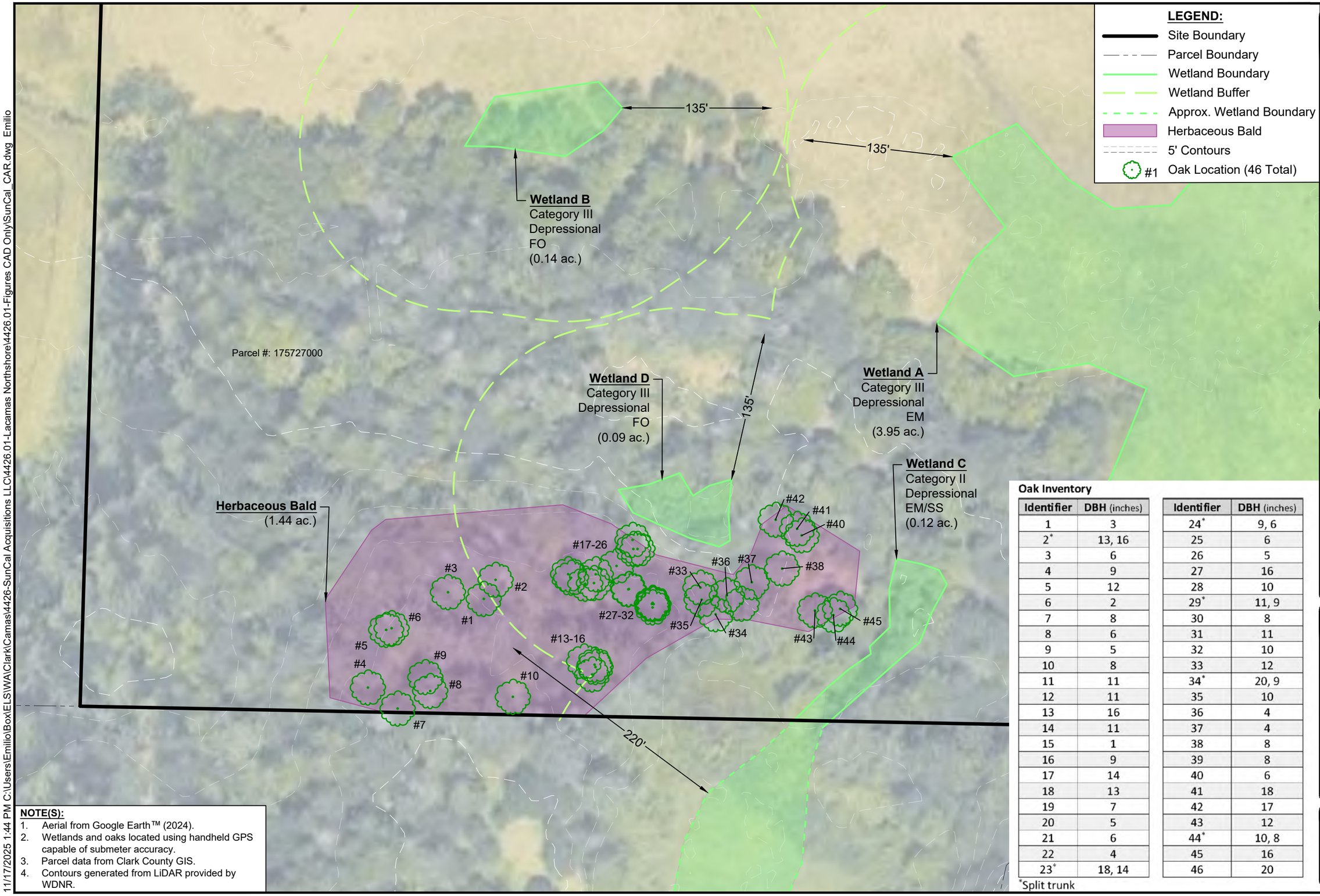

Oak Inventory

Identifier	DBH (inches)	Identifier	DBH (inches)
1	3	24*	9, 6
2*	13, 16	25	6
3	6	26	5
4	9	27	16
5	12	28	10
6	2	29*	11, 9
7	8	30	8
8	6	31	11
9	5	32	10
10	8	33	12
11	11	34*	20, 9
12	11	35	10
13	16	36	4
14	11	37	4
15	1	38	8
16	9	39	8
17	14	40	6
18	13	41	18
19	7	42	17
20	5	43	12
21	6	44*	10, 8
22	4	45	16
23*	18, 14	46	20

*Split trunk

NOTE(S):
1. Aerial from Google Earth™ (2024).
2. Wetlands and oaks located using handheld GPS capable of submeter accuracy.
3. Parcel data from Clark County GIS.
4. Contours generated from LiDAR provided by WDNR.

Figure 4
OAK AND HERBACEOUS BALD DETAIL
Lacamas Northshore
Suncal Acquisitions, LLC
City of Camas, Clark County, WA
Section 27, Township 2N, Range 3E, W.M.

DATE: 11/17/25
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LEGEND:

- Site Boundary
- Parcel Boundary
- Wetland Boundary
- Wetland Buffer
- OHWM
- Stream with Flow Direction
- Stream Buffer
- 5' Contours
- #1 Oak Location (46 Total)
- #1 Snag (30 Total)

Snag Inventory

Identifier	DBH (inches)	Identifier	DBH (inches)
1	13	16	18
2	13	17	17
3	27	18	17
4	24	19	22
5	22	20	19
6	21	21	18
7	34	22	27
8	40	23	25
9	19	24	16
10	16	25	23
11	31	26	19
12	25	27	15
13	17	28	25
14	23	29	19
15	18	30	17

Oak Inventory

Identifier	DBH (inches)	Identifier	DBH (inches)
1	3	24*	9, 6
2*	13, 16	25	6
3	6	26	5
4	9	27	16
5	12	28	10
6	2	29*	11, 9
7	8	30	8
8	6	31	11
9	5	32	10
10	8	33	12
11	11	34*	20, 9
12	11	35	10
13	16	36	4
14	11	37	4
15	1	38	8
16	9	39	8
17	14	40	6
18	13	41	18
19	7	42	17
20	5	43	12
21	6	44*	10, 8
22	4	45	16
23*	18, 14	46	20

*Split trunk

#1 #2 #3 #4 #5 #6 #7 #8 #9 #10 #11 #12 #13 #14 #15 #16 #17 #18 #19 #20 #21 #22 #23 #24 #25 #26 #27 #28 #29 #30 #46

75'

135'

135'

Stream A
Type F

Wetland Y
Category III
Riverine
SS
(0.01 ac.)

Wetland Z
Category III
Riverine
SS
(0.03 ac.)

Parcel #: 175726000

NOTE(S):

1. Aerial from Google Earth™ (2024).
2. Wetland, OHWM, stream, snags and oaks located using handheld GPS capable of submeter accuracy.
3. Parcel data from Clark County GIS.
4. Contours generated from LiDAR provided by WDNR.

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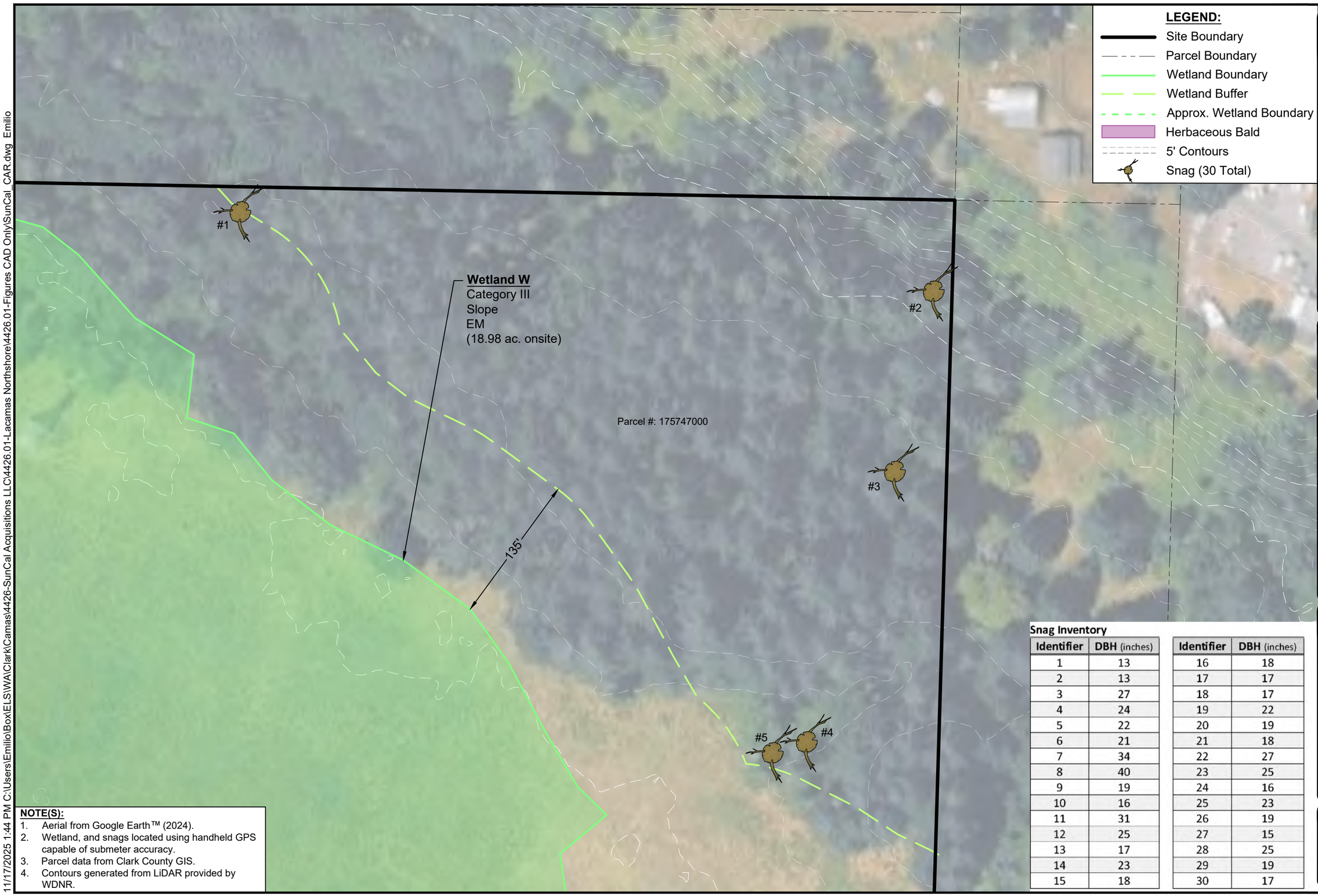
Figure 5
OAK AND SNAG DETAIL
Lacamas Northshore
Suncal Acquisitions, LLC
City of Camas, Clark County, WA
Section 27, Township 2N, Range 3E, W.M.



LEGEND:

- Site Boundary
- Parcel Boundary
- Wetland Boundary
- Wetland Buffer
- Approx. Wetland Boundary
- Herbaceous Bald
- 5' Contours
- Snag (30 Total)

Figure 6
SNAG DETAIL
Lacamas Northshore
Suncal Acquisitions, LLC
City of Camas, Clark County, WA
Section 27, Township 2N, Range 3E, W.M.

DATE: 11/17/25
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Snag Inventory

Identifier	DBH (inches)	Identifier	DBH (inches)
1	13	16	18
2	13	17	17
3	27	18	17
4	24	19	22
5	22	20	19
6	21	21	18
7	34	22	27
8	40	23	25
9	19	24	16
10	16	25	23
11	31	26	19
12	25	27	15
13	17	28	25
14	23	29	19
15	18	30	17

NOTE(S):
1. Aerial from Google Earth™ (2024).
2. Wetland, and snags located using handheld GPS capable of submeter accuracy.
3. Parcel data from Clark County GIS.
4. Contours generated from LiDAR provided by WDNR.

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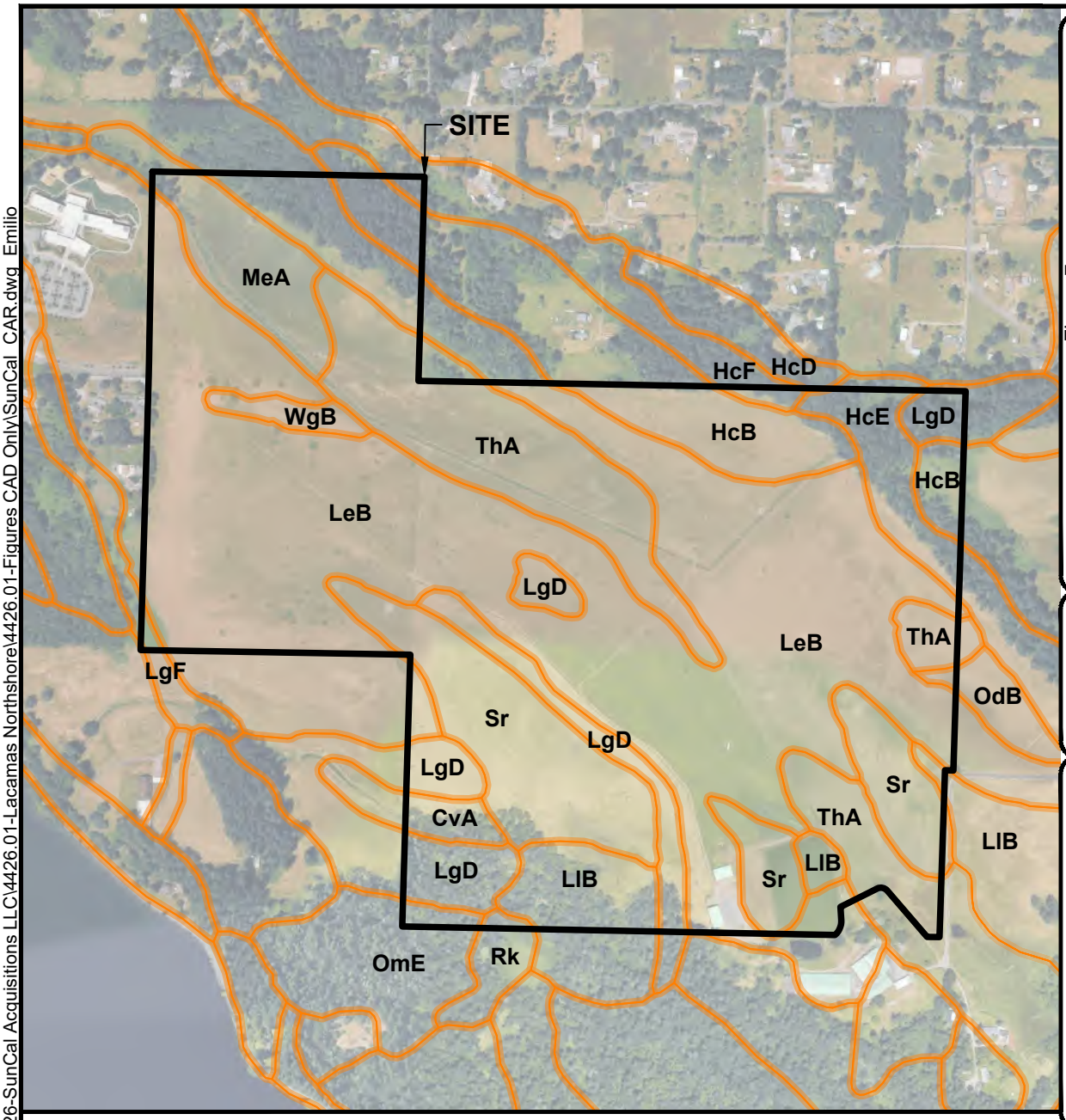

Figure 7
NRCS SOIL SURVEY
Lacamas Northshore
Suncal Acquisitions, LLC
City of Camas, Clark County, WA
Section 27, Township 2N, Range 3E, W.M.

DATE: 11/17/25
DWN: EF
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LEGEND:

- Site Boundary
- NRCS Soil Boundary

CvA	Cove silty clay loam, 0 to 3 percent slopes. **Hydric.**
HcB	Hesson clay loam, 0 to 8 percent slopes. Not hydric.
HcD	Hesson clay loam, 8 to 20 percent slopes. Not hydric.
HcE	Hesson clay loam, 20 to 30 percent slopes. Not hydric.
HcF	Hesson clay loam, 30 to 55 percent slopes. Not hydric.
LeB	Lauren loam, 0 to 8 percent slopes. Not hydric.
LgD	Lauren gravelly loam, 8 to 20 percent slopes. Not hydric.
LgF	Lauren gravelly loam, 20 to 45 percent slopes. Not hydric.
LIB	Lauren very gravelly loam, 0 to 8 percent slopes. Not hydric.
OmE	Olympic stony clay loam, 3 to 30 percent slopes. Not hydric.
ThA	Tisch silt loam, 0 to 3 percent slopes. **Hydric.**
Sr	Semiahmoo muck. **Hydric.**
Rk	Rock land. Not hydric.
WgB	Washougal gravelly loam, 0 to 8 percent slopes. Not hydric.

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NOTE(S):
1. Map provided on-line by NRCS at web address: *http://websoilsurvey.nrcs.usda.gov/app/*

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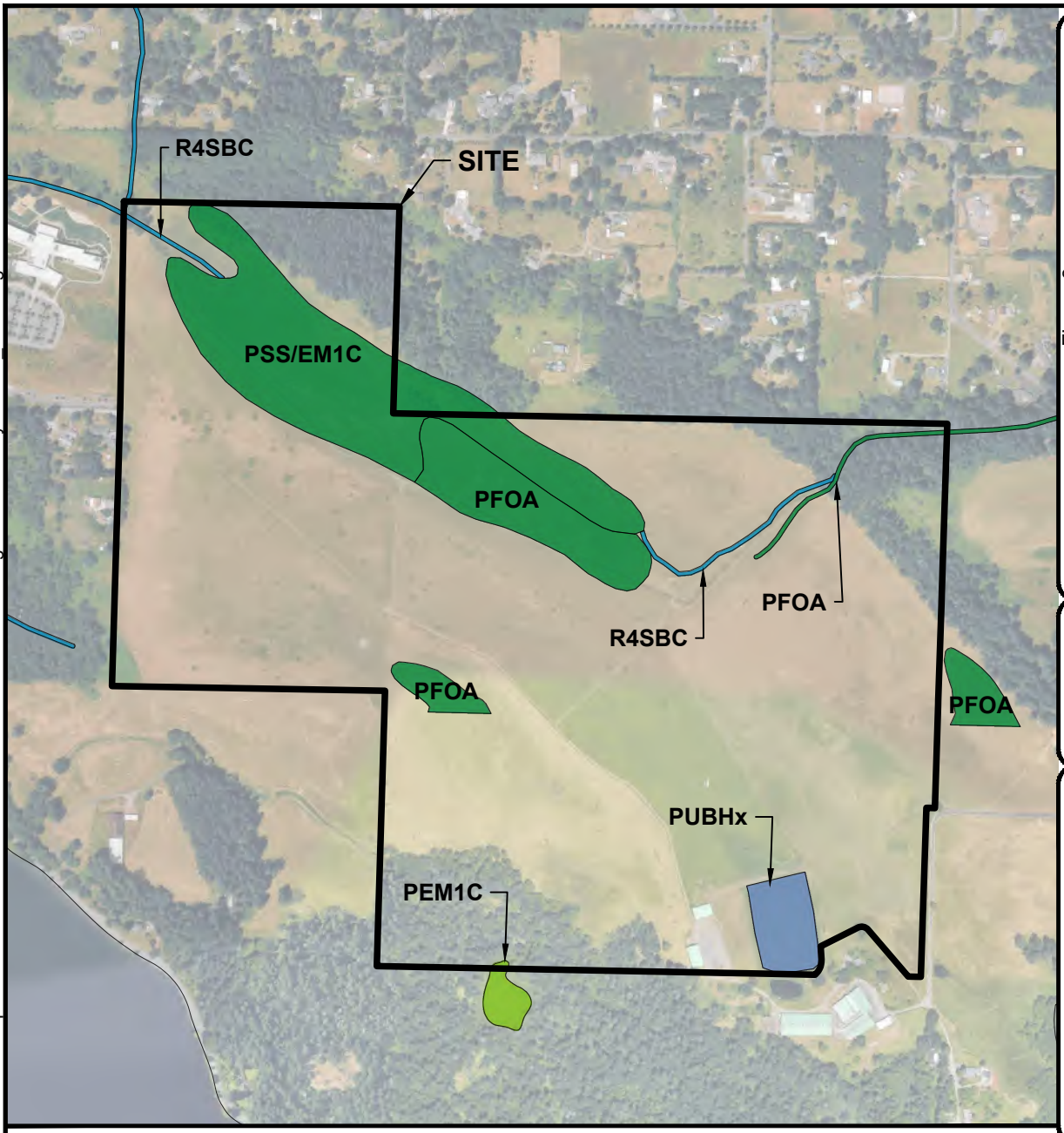

Figure 8
USFWS NATIONAL WETLANDS INVENTORY
Lacamas Northshore
Suncal Acquisitions, LLC
City of Camas, Clark County, WA
Section 27, Township 2N, Range 3E, W.M.

DATE: 11/17/25
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No mapped wetlands indicated onsite by US Fish & Wildlife Service.

LEGEND:

- Site Boundary

Wetlands

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

PEM1C	Palustrine, emergent, persistent, seasonally flooded.
PFOA	Palustrine, forested, temporarily flooded.
PSS/EM1C	Palustrine, scrub-shrub, emergent, persistent, seasonally flooded.
PUBHx	Palustrine, unconsolidated bottom, permanently flooded, excavated.
R4SBC	Riverine, intermittent, streambed, seasonally flooded.

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NOTE(S):

1. Map provided on-line by US Fish & Wildlife Service at web address: *https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper*

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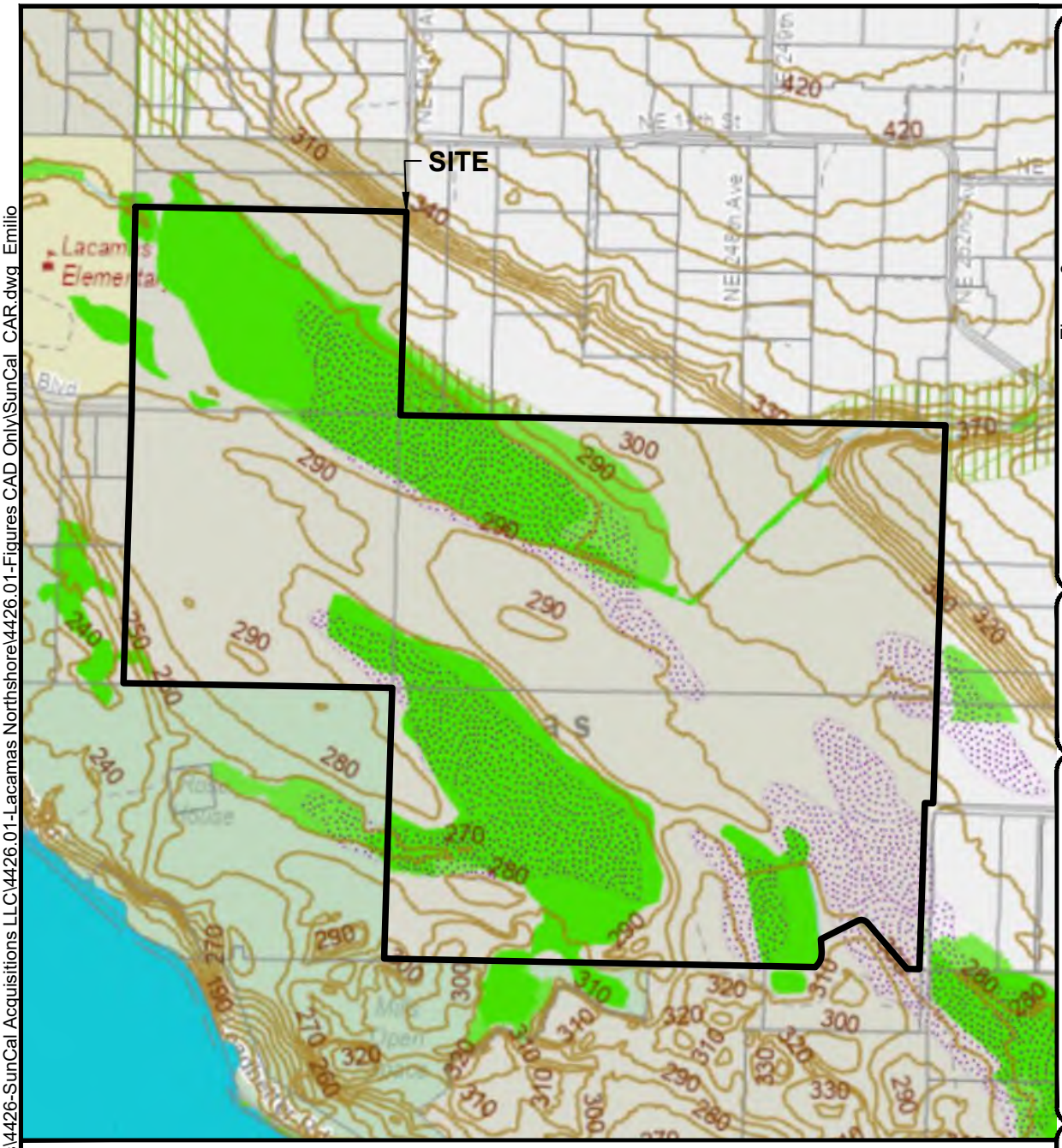

Figure 9
CLARK COUNTY CRITICAL AREAS
Lacamas Northshore
Suncal Acquisitions, LLC
City of Camas, Clark County, WA
Section 27, Township 2N, Range 3E, W.M.

DATE: 11/17/25
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LEGEND:

- Site Boundary

Environmental
Priority Habitats and Species Group
Riparian Habitat
- Riparian Habitat Area

Slopes and Geologic Hazards Group
Contour Lines
- Contour Lines - 10 ft

Soils and Wetlands Inventory
- Hydric Soils
- Potential Wetlands Presence
- Permitted Wetland

Environmental Constraints
- Floodway or Floodway Fringe

0 800 1600
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NOTE(S):
1. Map provided on-line by Clark County at web address: *https://gis.clark.wa.gov/mapsonline/index.cfm?site=Environmental*

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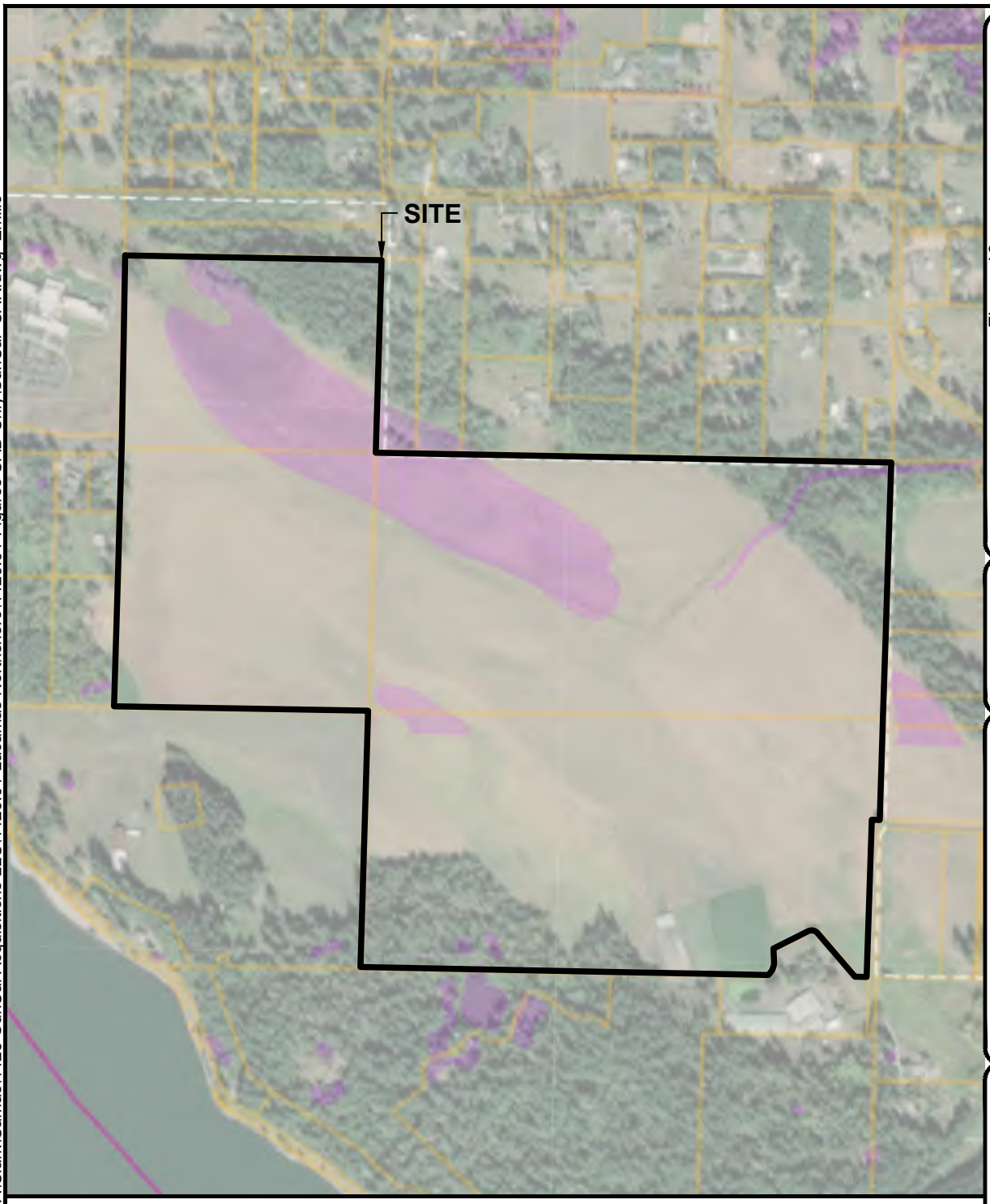

Figure 10
WDFW PRIORITY HABITATS AND SPECIES
Lacamas Northshore
Suncal Acquisitions, LLC
City of Camas, Clark County, WA
Section 27, Township 2N, Range 3E, W.M.

DATE: 11/17/25
DWN: EF
REQ. BY: OM
PRJ. MGR: JB
CHK:
PROJECT NO: 4426.01

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Ecological Land Services

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SCALE IN FEET

N W E S

LEGEND:
Site Boundary
Parcel Boundary
Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Oak Woodland

By Township:
Cave or Cave-rich areas

NOTE: Map provided on-line by Washington State Department of Fish & Wildlife at web address: *http://apps.wdfw.wa.gov/phsontheweb/*

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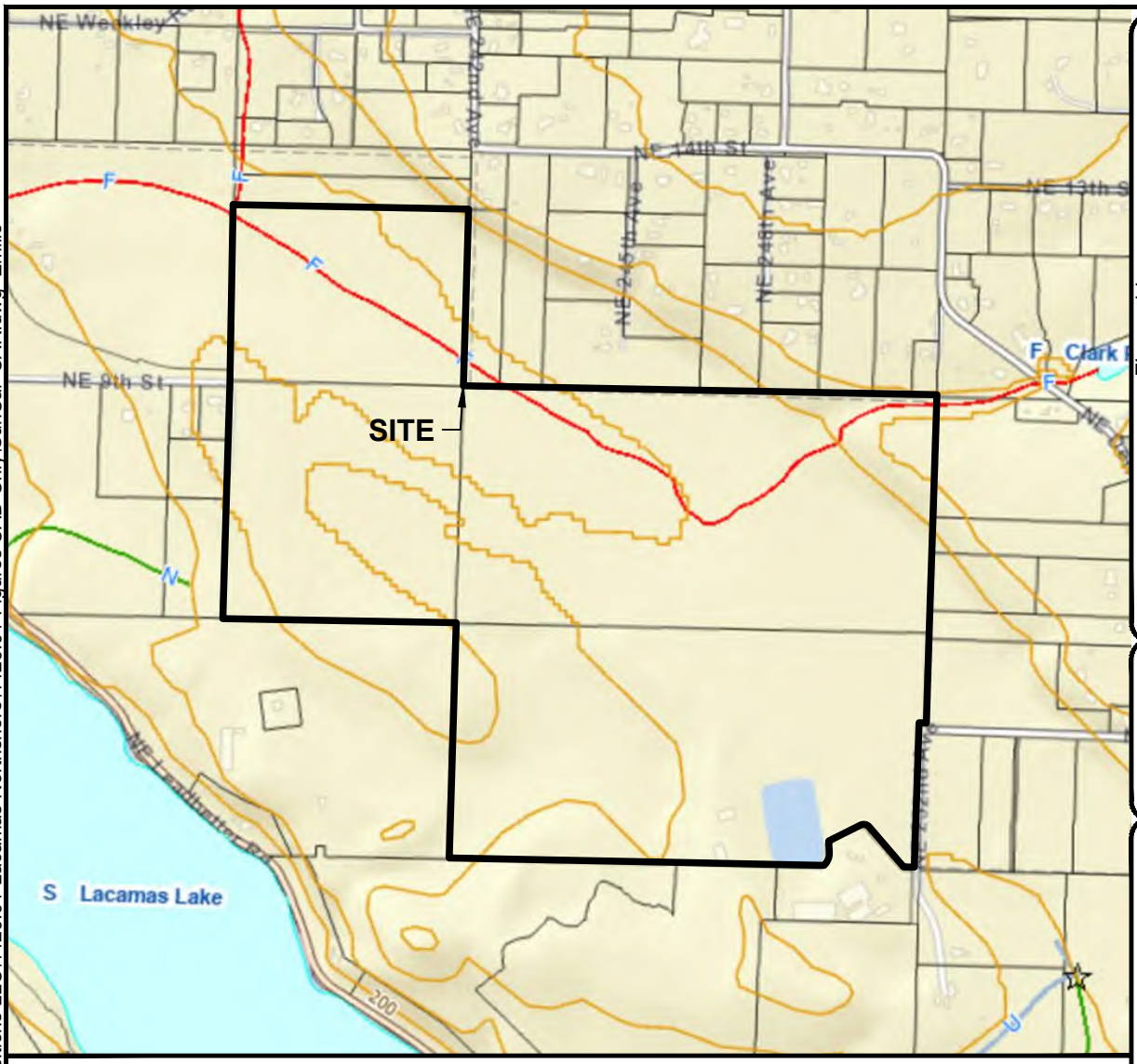

Figure 11
WDNR FPAMT
Lacamas Northshore
Suncal Acquisitions, LLC
City of Camas, Clark County, WA
Section 27, Township 2N, Range 3E, W.M.

DATE: 11/17/25
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LEGEND:

- Site Boundary

40-foot Contours
- 40 ft. Contours

Water Bodies (FP)
- Open Freshwater

Water Courses (FP)
- Type F
- Type N, Np, Ns
- U, unknown
- ★ Water Type Breaks (FP)

SCALE IN FEET
0
1000
2000

N
W
E
S

NOTE: Map provided on-line by Washington State Department of Natural Resources at web address: *http://fortress.wa.gov/dnr/app1/Fpars/viewer.htm*

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LEGEND:

- Site Boundary
- Parcel Boundary
- Wetland Boundary
- Approx. Wetland Boundary
- Stream with Flow Direction
- Manure Treatment Pond
- 150' Wetland Offset

Pollutants/Runoff:
Wetland A - 90.6%
Wetland B - 100.0%
Wetland C - 35.6%
Wetland D - 100.0%
Wetland E - 100.0%
Wetland U - 68.1%
Wetland V - 100.0%
Wetland W - 78.5%
Wetland X - 59.0%
Wetland Y - 0.0%
Wetland Z - 0.0%

NOTE(S):
1. Aerial from Google Earth™ (2024).
2. Wetland, OHWM, Stream, culverts, and test plots located using handheld GPS capable of submeter accuracy.
3. Parcel data from Clark County GIS.

Cowardin Classes:
EM Emergent
SS Scrub/shrub
FO Forested

Hydroperiods:
PF Permanently flooded
SF Seasonally flooded
SO Saturated only
PFS Permanently Flowing Stream

Wetland A:
EM - (100.0%)
SO - (86.5%)
SF - (23.5%)

Wetland B:
FO - (100.0%)
SO - (91.4%)
SF - (8.6%)

Wetland C:
EM - (55.4%)
SS - (44.6%)
SF - (15.2%)
PF - (84.8%)

Wetland D:
FO - (100.0%)
SO - (88.9%)
SF - (11.1%)

Wetland E:
EM - (100.0%)
SO - (100.0%)

Wetland U:
SS - (44.7%)
FO - (55.3%)
SO - (86.5%)

Wetland V:
EM - (100.0%)
SO - (100.0%)

Wetland W:
EM - (95.0%)
FO - (5.0%)
SO - (86.5%)

Wetland X:
EM - (100.0%)
SO - (100.0%)

Wetland Y:
SS - (100.0%)
SO - (100.0%)

Wetland Z:
SS - (100.0%)
SO - (100.0%)

Wetland U
Category III
Riverine
SS/FO
SO/PFS
(0.16 ac. onsite)
(1.07 ac. total)

Parcel #:
175747000

Wetland W
Category III
Slope
EM
SO
(18.98 ac. onsite)
(19.96 ac. total)

Parcel #:
175733000

Wetland V
Category IV
Slope
EM
SO
(0.19 ac.)

Wetland E
Category IV
Slope
EM
SO
(0.84 ac.)

Parcel #:
175726000

Stream A
Type F

Wetland Y
Category III
Riverine
SS
SO/PFS
(0.01 ac.)

Wetland Z
Category III
Riverine
SS
SO/PFS
(0.03 ac.)

Wetland A
Category III
Depressional
EM
SO/SF
(3.95 ac.)

Parcel #:
175727000

Wetland B
Category III
Depressional
FO
SO/SF
(0.14 ac.)

Wetland D
Category III
Depressional
FO
SO/SF
(0.09 ac.)

Wetland C
Category II
Depressional
EM/SS
SF/PF
(0.12 ac. onsite)
(0.54 ac. total)

Outlet

Lacamas Lake
Type S

Wetland X
Category IV
Slope
EM
SO
(1.48 ac.)

Stream B
Type F

Manure
Treatment
Pond

Manure
Treament
Pond

N Shore Blvd
NE 9th St
NE Leadbetter Rd
NE 3rd St
NE 252nd Ave

Wetland to Stream Ratios:
Wetland U = 11.22
Wetland Y = 3.74
Wetland Z = 4.33

Figure 12
WETLAND RATING FIGURE - 150' OFFSET
Lacamas Northshore
Suncal Acquisitions, LLC
City of Camas, Clark County, WA
Section 27, Township 2N, Range 3E, W.M.

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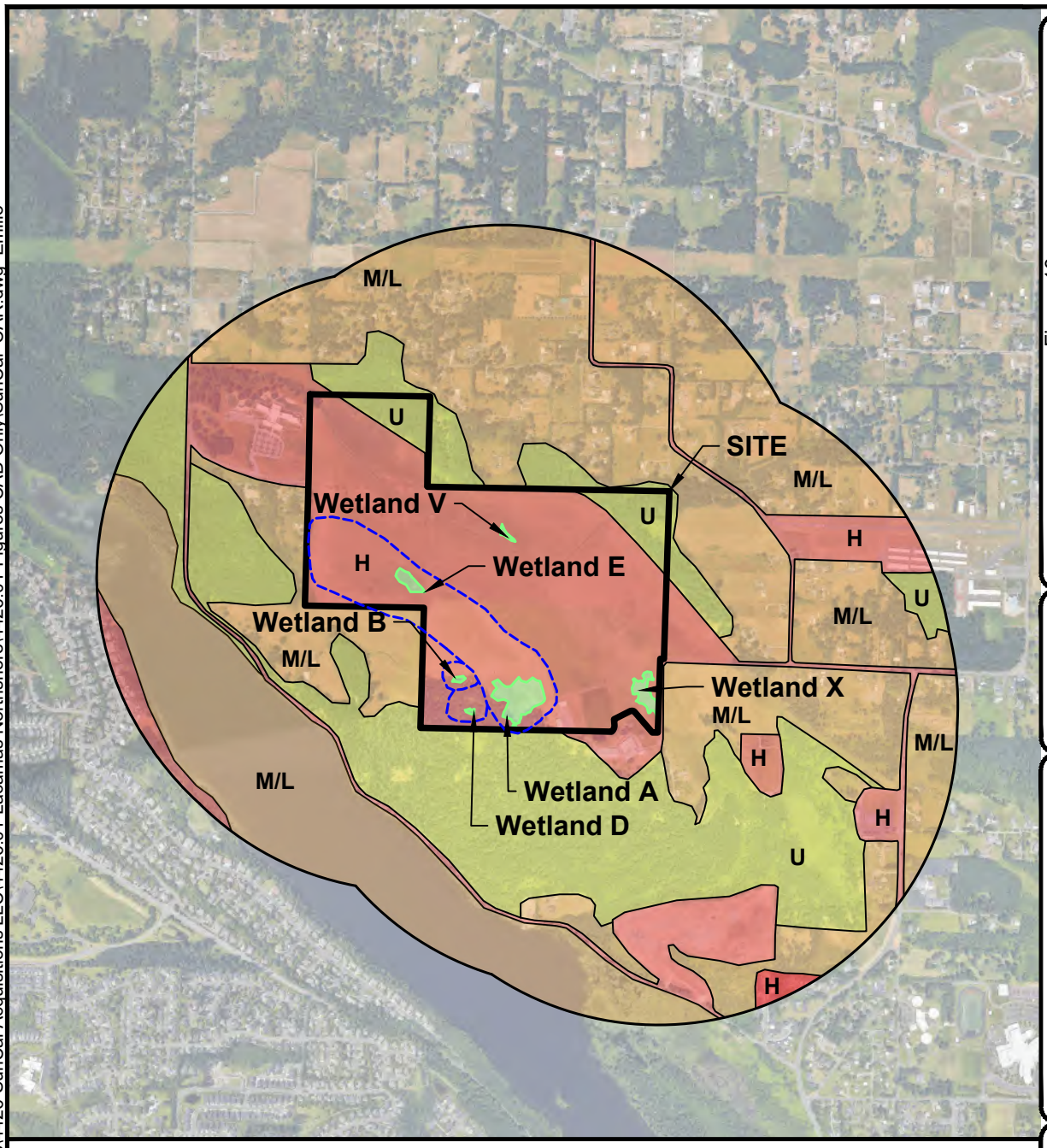

Figure 13
WETLANDS A,B,D,E,V,X RATING FORM - 1 km OFFSET
Lacamas Northshore
Suncal Acquisitions, LLC
City of Camas, Clark County, WA
Section 27, Township 2N, Range 3E, W.M.

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LEGEND:

- Site Boundary
- Wetland Unit Boundary
- Contributing Basin:
  12.6 x Larger than Wetland A
  14.3 x Larger than Wetland B
  35.6 x Larger than Wetland D

H2.1 Accessible Habitat

- A-U: A-U (0.0%)
- A-M/L: A-M/L (0.0%)

H2.2 Undisturbed Habitat

- U: U (23.4%)
- M/L: M/L (54.2%)

H2.3 Land Use Intensity

- H: H (22.4%)

SCALE IN FEET: 0, 1800, 3600

H 2.1. Accessible Habitat Equation

% A-U habitat **0.0%** + [(% A-M/L intensity land uses)/2] **0.0%** = **0.0%**

H 2.2. Total Undisturbed Habitat Equation

% A-U + % U habitat **23.4%** + [(% A-M/L + % M/L land uses)/2] **27.1%** = **50.5%**

N, W, E, S

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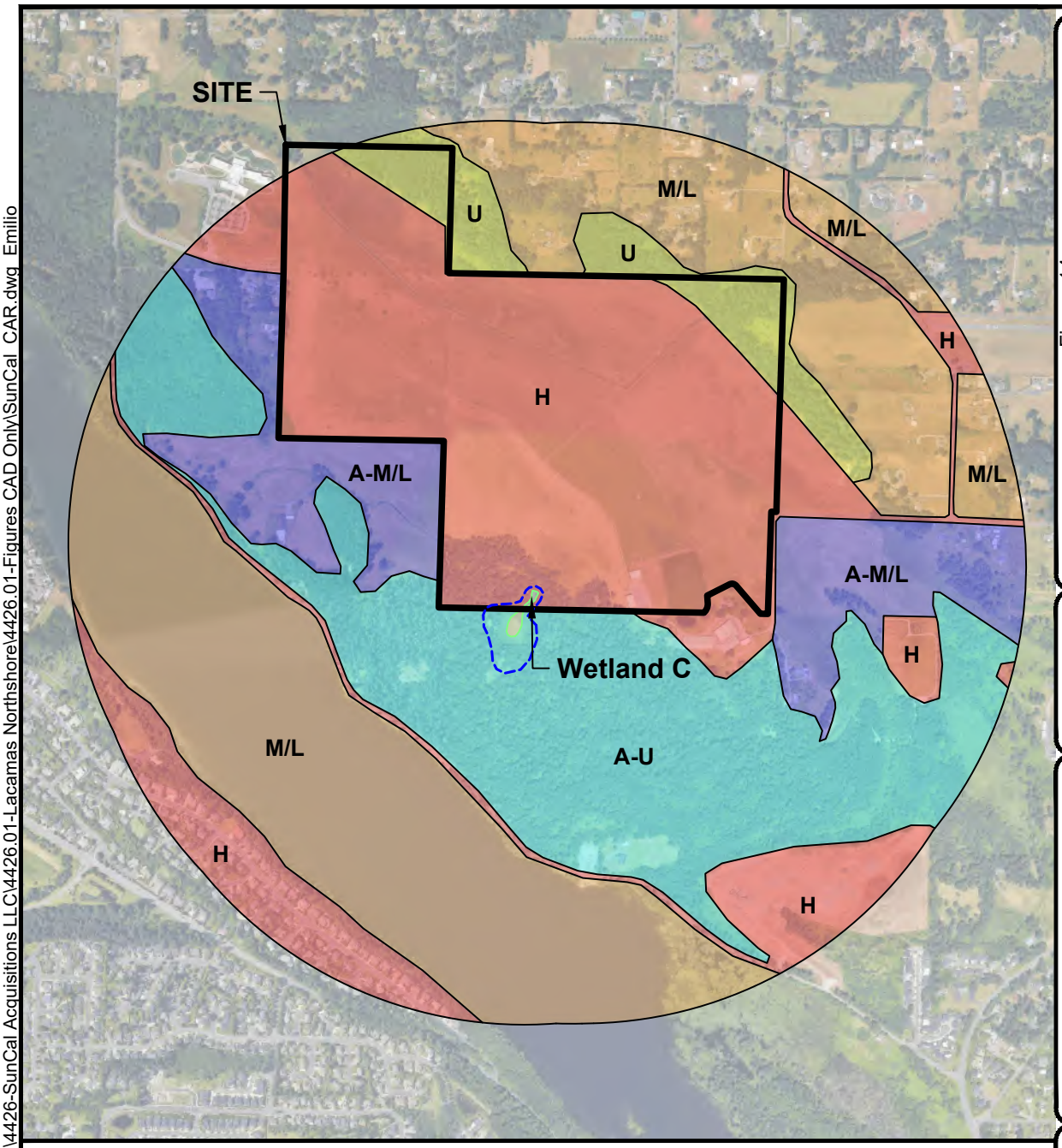

Figure 14
WETLAND C RATING FORM-1 km OFFSET
Lacamas Northshore
Suncal Acquisitions, LLC
City of Camas, Clark County, WA
Section 27, Township 2N, Range 3E, W.M.

DATE: 11/17/25
DWN: EF
REQ. BY: OM
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LEGEND:

- Site Boundary
- Wetland Unit Boundary
- Contributing Basin: 8.5 x Larger than Wetland C

H2.1 Accessible Habitat

- A-U: A-U (22.0%)
- A-M/L: A-M/L (9.7%)

H2.2 Undisturbed Habitat

- U: U (4.5%)
- M/L: M/L (31.1%)

H2.3 Land Use Intensity

- H: H (32.6%)

SCALE IN FEET: 0, 1300, 2600

N, W, E, S

H 2.1. Accessible Habitat Equation

% A-U habitat **22.0%** + [(% A-M/L intensity land uses)/2] **4.9%** = **26.9%**

H 2.2. Total Undisturbed Habitat Equation

% A-U + % U habitat **26.5%** + [(% A-M/L + % M/L land uses)/2] **20.4%** = **46.9%**

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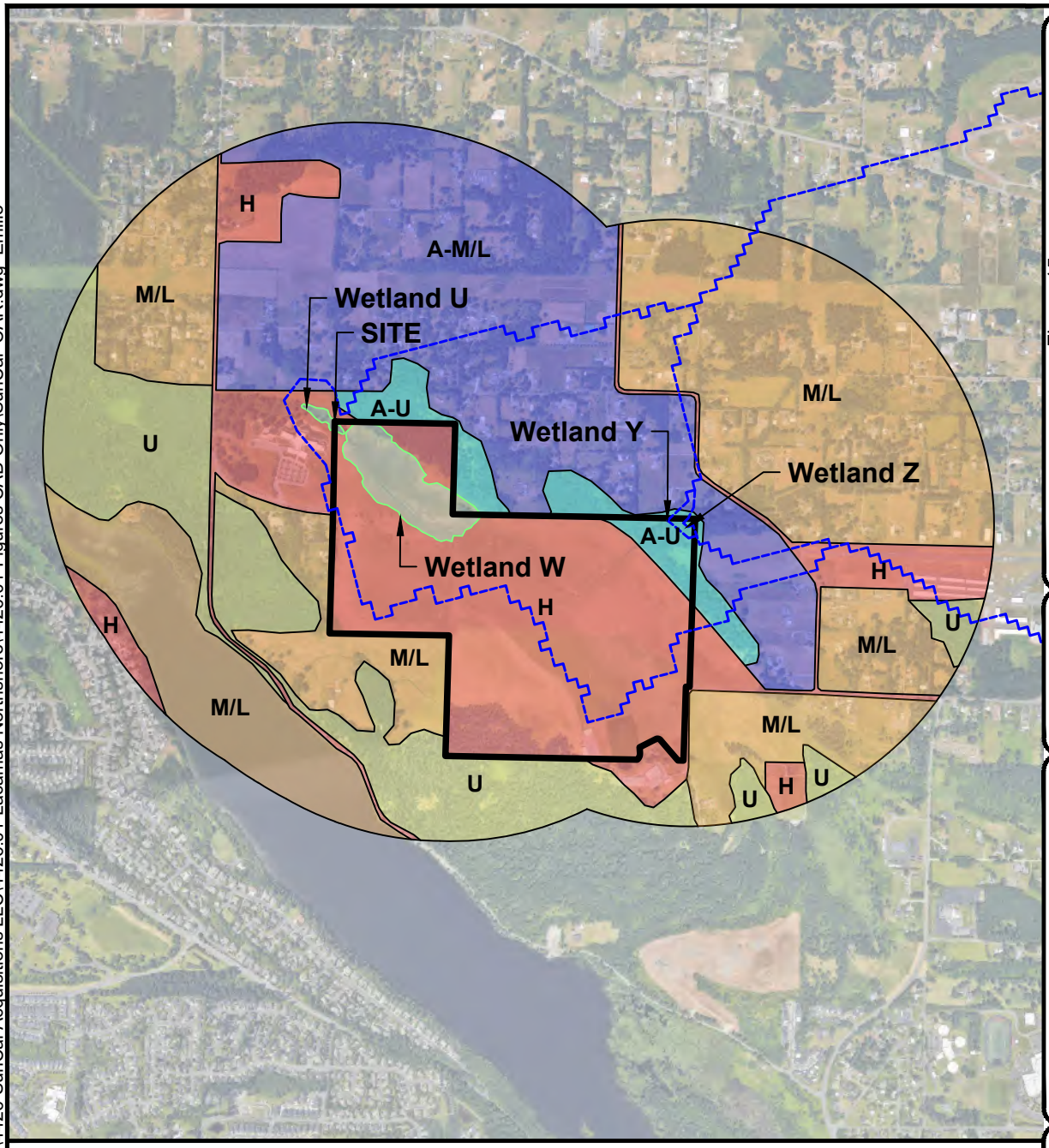

Figure 15
WETLANDS U,W,Y,Z RATING FORM-1 km OFFSET
Lacamas Northshore
Suncal Acquisitions, LLC
City of Camas, Clark County, WA
Section 27, Township 2N, Range 3E, W.M.

DATE: 11/17/25
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LEGEND:

- Site Boundary
- Wetland Unit Boundary
- Contributing Basin:
  289.2 x Larger than Wetland U
  120.7 x Larger than Wetland Y
  15,724.2 x Larger than Wetland Z

0% Ponded Depressions for wetlands U, Y, and Z.

H2.1 Accessible Habitat

- A-U: A-U (3.2%)
- A-M/L: A-M/L (24.4%)

H2.2 Undisturbed Habitat

- U: U (12.9%)
- M/L: M/L (36.4%)

H2.3 Land Use Intensity

- H: H (23.1%)

SCALE IN FEET: 0, 1800, 3600

N, W, E, S

H 2.1. Accessible Habitat Equation

% A-U habitat **3.2%** + [(% A-M/L intensity land uses)/2] **12.2%** = **15.4%**

H 2.2. Total Undisturbed Habitat Equation

% A-U + % U habitat **16.1%** + [(% A-M/L + % M/L land uses)/2] **30.4%** = **46.5%**

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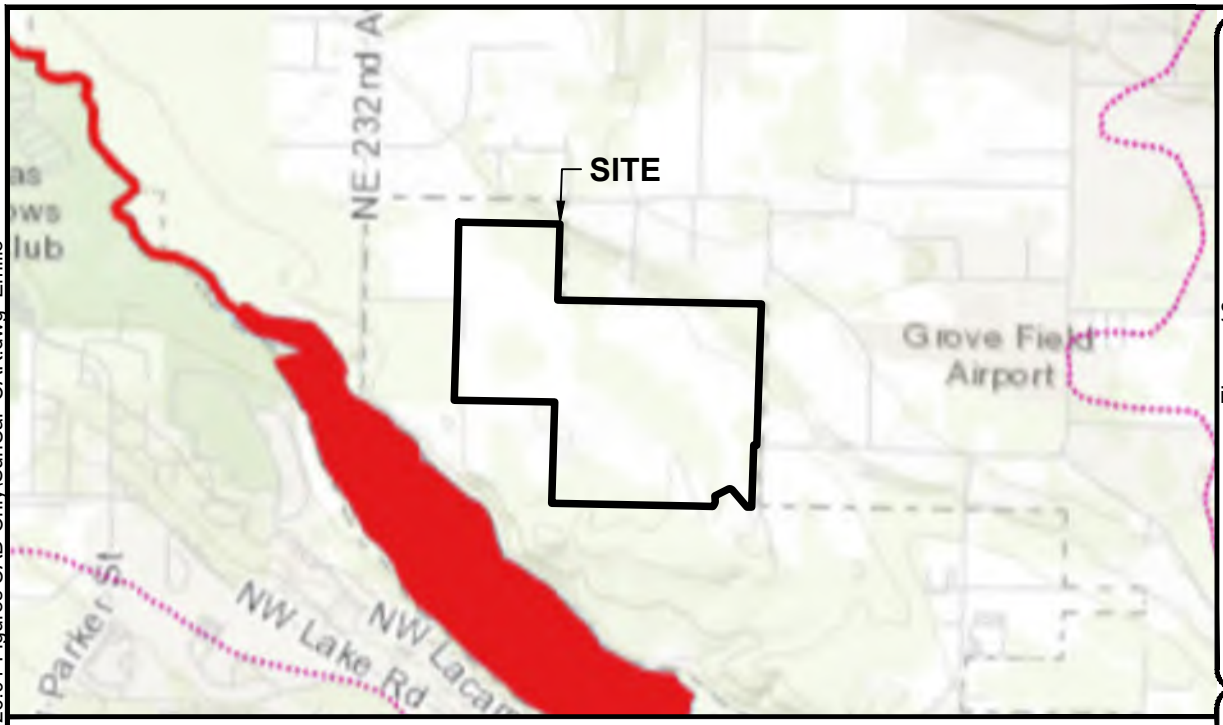

Figure 16
WETLAND RATING FORM-303(d) and TMDLs
Lacamas Northshore
Suncal Acquisitions, LLC
City of Camas, Clark County, WA
Section 27, Township 2N, Range 3E, W.M.

DATE: 11/17/25
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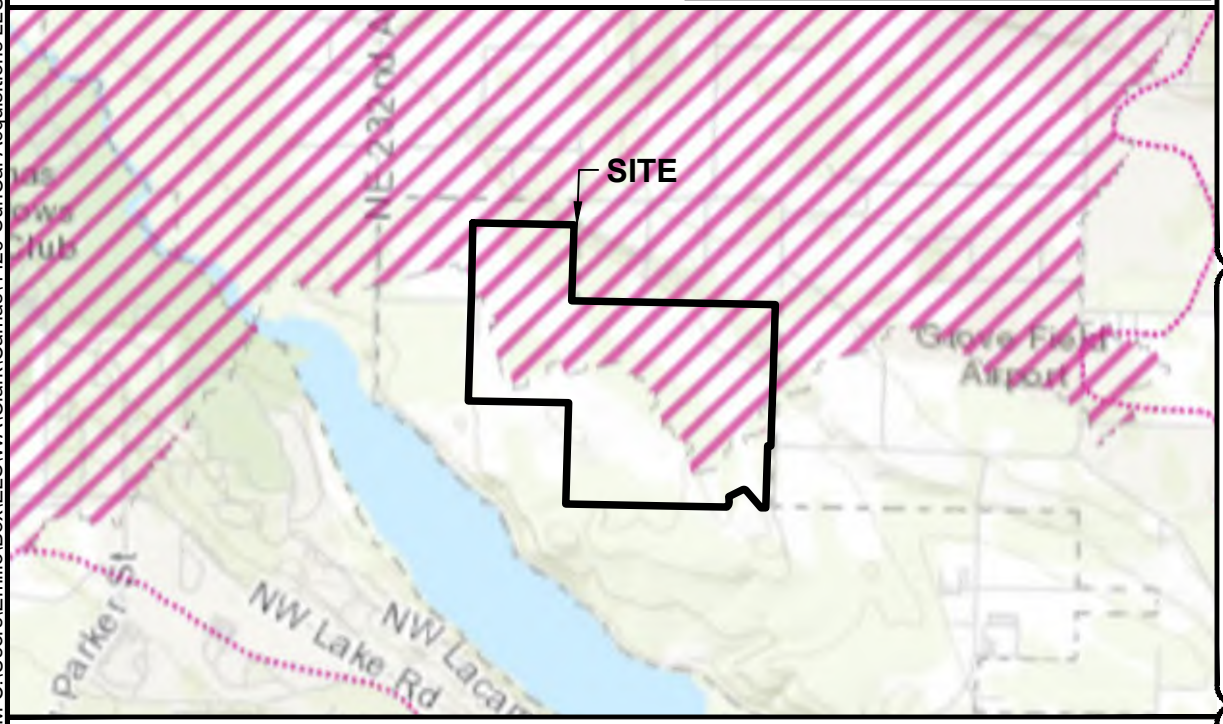
Assessed Waters/Sediment

Water	Sediment	Subbasins
Category 5 - 303d	Category 5 - 303d	12 Digit HUC Boundary
Category 4C	Category 4C	
Category 4B	Category 4B	
Category 4A	Category 4A	
Category 2	Category 2	
Category 1	Category 1	

NOTE(S):
Map provided on-line by Washington State Department of Ecology at web address: *https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx?*



WQ Improvement Projects

TMDL - Approved	ARP - Approved	Subbasins
4B - Approved	TMDL - In Development	12 Digit HUC Boundary
STI - Approved	STI - In Development	
	ARP - In Development	

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Photo 1 was taken from Photo Point 1, located near the south boundary, within Wetland A, looking west across the wetland.

Photo 2 was taken at the same location as Photo 1, looking north across Wetland A.

Photo 3 was taken from Photo Point 2, just south of Photo Point 1, at the south boundary. The photo looks north across Wetland A.

Photo 4 was taken from Photo Point 3, located along the west boundary of Wetland A, looking south across the wetland.

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Photoplate 1
Lacamas Northshore
SunCal Acquisitions, LLC
Camas, Washington

Photo 5 was taken from Photo Point 4, located at the northwest corner of Wetland A, looking west across the upland pasture.

Photo 6 was taken from Photo Point 5, located along the east boundary of Wetland A, looking north along the wetland boundary.

Photo 7 was taken from Photo Point 6, located between Wetlands A and B, looking north toward a fenced off culvert in the pasture.

Photo 8 was taken from Photo Point 7 , located in Wetland B, looking east across the wetland at the edge of the forested community.

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Photoplate 2
Lacamas Northshore
SunCal Acquisitions, LLC
Camas, Washington

Photo 9 was taken from Photo Point 8 on the herbaceous bald, located at the south study area boundary, looking east.

Photo 10 was taken from Photo Point 9, located on the southeast edge of the herbaceous bald, looking east at Wetland C.

Photo 11 was taken at Photo Point 10, located on the east boundary of Wetland C, looking west across the wetland.

Photo 12 was taken from Photo Point 11, located in Wetland C, looking east where the wetland continues offsite to the south.

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Photoplate 3
Lacamas Northshore
SunCal Acquisitions, LLC
Camas, Washington

Photo 13 was taken from Photo Point 12 , located in Wetland D, looking south across the wetland.

Photo 14 was taken from Photo Point 13, located between Wetlands A and E, looking west across the upland pasture.

Photo 15 was taken in the same location as Photo 14, looking east across the upland pasture.

Photo 16 was taken from Photo Point 14, located south of Wetland E, looking west along the wetland boundary.

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Photoplate 4
Lacamas Northshore
SunCal Acquisitions, LLC
Camas, Washington

Photo 17 was taken from Photo Point 15, located at the west study area boundary, looking north toward offsite Wetland T.

Photo 18 was taken from Photo Point 16, located just north of Photo 17, looking west toward the adjacent property.

Photo 19 was taken from Photo Point 17. located at the north study area boundary, looking west along the boundary.

Photo 20 was taken in the same location as Photo 19, looking south toward Wetland V.

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Photoplate 5
Lacamas Northshore
SunCal Acquisitions, LLC
Camas, Washington

Photo 21 was taken from Photo Point 18, located north of Wetland V. The photo looks south toward the wetland.

Photo 22 was taken from Photo Point 19, located within Wetland V, looking west across the wetland and Stream A.

Photo 23 was taken from Photo Point 20, located east of Wetland V, looking west toward the wetland.

Photo 24 was taken from Photo Point 21, located east of Wetland U, looking west toward the wetland.

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Photoplate 6
Lacamas Northshore
SunCal Acquisitions, LLC
Camas, Washington

Photo 25 was taken from Photo Point 22, located near the east study area boundary, looking west across the pasture.

Photo 26 was taken from the same location as Photo 25, looking east toward the adjacent property.

Photo 27 was taken from Photo Point 23, located at the north end of Stream B, looking west across the pasture.

Photo 28 was taken in the same location as Photo 27, looking south across Stream B.

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Photoplate 7
Lacamas Northshore
SunCal Acquisitions, LLC
Camas, Washington

Photo 29 was taken in the same location as Photos 27 and 28, looking east toward the culvert Stream B originates from.

Photo 30 was taken from Photo Point 24, located within Wetland W, looking east toward NE 252nd Avenue.

Photo 31 was taken in the same location as Photo 30, looking west toward the existing structures.

Photo 32 was taken in the same location as Photo 30 and 31, looking north across Wetland W.

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Photoplate 8
Lacamas Northshore
SunCal Acquisitions, LLC
Camas, Washington

Photo 33 was taken in the same location as Photos 30, 31, and 32, looking south along the boundary of Wetland W.

Photo 34 was taken from Photo Point 25, located at the east bank of the onsite manure treatment pond, looking north along the pond's edge.

Photo 35 was taken from Test Plot 96, looking south toward the manure lagoon. The farm road is in the background just before the burm.

Photo 36 was taken from Photo Point 27, located where Stream A flows from the forested area into the pasture, looking south.

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Photoplate 9
Lacamas Northshore
SunCal Acquisitions, LLC
Camas, Washington

Photo 37 was taken in the same location as Photo 36, looking north along Stream A.

Photo 38 was taken from Photo Point 28, located near the north study area boundary, looking north across the upland forest.

Photo 39 was taken from Photo Point 29, located near the northeast corner of the study area, looking east across the upland.

Photo 40 was taken from Photo Point 30, located at the east study area boundary, looking west across the upland.

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Photoplate 10
Lacamas Northshore
SunCal Acquisitions, LLC
Camas, Washington

Photo 41 was taken from Photo Point 31, located near the northeast corner of the study area, looking south across the forested upland.

Photo 42 was taken from Photo Point 32, located in Wetland Y, looking north across the wetland.

Photo 43 was taken from Photo Point 33, located at the northeast study corner, looking west across an area dominated by blackberry.

Photo 44 was taken in the same location as Photo 43, looking north toward the area where Stream A briefly crosses offsite to the north.

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Photoplate 11
Lacamas Northshore
SunCal Acquisitions, LLC
Camas, Washington

Photo 45 was taken from Photo Point 34, located at the northeast corner of the study area, looking west across Stream A.

Photo 46 was taken in the same location as Photo point 45, looking east toward the location that Stream A enters the study area.

Photo 47 was taken at Photo Point 35, located within Wetland Z, looking west across the wetland.

Photo 48 was taken in the same location as Photo 47, looking north across the Wetland.

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Photoplate 12
Lacamas Northshore
SunCal Acquisitions, LLC
Camas, Washington

APPENDIX A

ROUTINE DETERMINATION METHOD AND PLANT INDICATOR RATING DEFINITIONS

Routine Determination Method

The Routine Determination Method is defined according to the U.S. Army Corps of Engineers' 1987 *Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers' Wetland Delineation Manual* (Environmental Laboratory 1987)*; Western Mountains, Valleys, and Coast Region (Version 2.0)* (Corps 2010). The Routine Determination Method examines three parameters – vegetation, soils, and hydrology – to determine if wetlands exist in a given area. Hydrology is critical in determining what is a wetland, but if often difficult to assess because hydrologic conditions can change periodically (hourly, daily, or seasonally). Consequently, it is necessary to determine if hydrophytic vegetation and hydric soils are present, which would indicate that water is present for a long enough duration to support a wetland plant community. By definition, wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Vegetation Indicator Status

The indicator status, following the scientific names of plant species, indicates the likelihood of the species to be found in wetlands according to the *National Wetland Plant List Indicator Rating Definitions* (Corps 2012). Listed from most likely to least likely to be found in wetlands, the indicator status categories are:

- **OBL** (obligate wetland) - occur almost always under natural conditions in wetlands.
- **FACW** (facultative wetland) - usually occur in wetlands, but occasionally found in non-wetlands.
- **FAC** (facultative) - equally likely to occur in wetlands or non-wetlands.
- **FACU** (facultative upland) - usually occur in non-wetlands, but occasionally found in wetlands.
- **UPL** (obligate upland) - occur almost always under natural conditions in non-wetlands.
- **NI** (no indicator) - insufficient data to assign to an indicator category.

APPENDIX B

WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 1
Investigator(s): AJ and SH Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 8-20%
Subregion (LRR): MLRA 2 Lat: 45.62157 Long: -122.419 Datum: NAD83
Soil Map Unit Name: LgD- Lauren gravelly loam, 8 to 20 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: Test Plot 1 was conducted in a forested area near the southern boundary.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer macrophyllum*	20	yes	FACU
2. *Pseudotsuga menziesii*	15	yes	FACU
3. *Thuja plicata*	8	no	FAC
4.			
50% = 21.5, 20% = 8.6	43	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Agrostis sp*.*	50	yes	FAC
2. *Ranunculus repens*	15	no	FAC
3. *Lapsana communis*	10	no	FACU
4. *Lysichiton americanus*	8	no	OBL
5. *Cirsium arvense*	5	no	FAC
6. *Arctium minus*	5	no	UPL
7.			
8.			
9.			
10.			
11.			
50% = 46.5, 20% = 18.6	93	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
50% = ____, 20% = ____		= Total Cover	

% Bare Ground in Herb Stratum 7

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ 1 – Rapid Test for Hydrophytic Vegetation
☐ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0[1]
☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ 5 - Wetland Non-Vascular Plants[1]
☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☐ No ☒**

Remarks: The hydrophytic vegetation criterion was not met because there is less than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					loam	No redox features

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil profile did not meet any hydric soil indicators due to a lack of redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Secondary indicator Geomorphic Position (D2) was present. Wetland Hydrology was not met because two or more secondary indicators are required.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 2
Investigator(s): AJ and SH Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.62154 Long: -122.421 Datum: NAD83
Soil Map Unit Name: LIB- Lauren very gravelly loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: Test Plot 2 was conducted near the southern boundary at the toe of the slope outside of Wetland A.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer macrophyllum*	30	yes	FACU
2. *Pseudotsuga menziesii*	15	yes	FACU
3.			
4.			
50% = 22.5, 20% = 9	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1. *Acer circinatum*	15	yes	FAC
2. *Corylus cornuta*	5	no	FACU
3. *Ilex aquifolium*	5	no	FACU
4. *Oemleria cerasiformis*	2	no	FACU
5. *Rubus armeniacus*	2	no	FAC
50% = 14.5, 20% = 5.8	29	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Geranium lucidum*	5	yes	UPL
2. *Athyrium cyclosorum*	2	yes	FAC
3. *Circaea canadensis*	2	yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 4.5, 20% = 1.8	9	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 91

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☐ No ☒**

Remarks: The hydrophytic vegetation criterion was not met because there was less than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					silt loam	*See remarks below

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil profile did not meet any hydric soil indicators due to a lack of redoximorphic features.
*1"-1.5" cobble throughout soil profile.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 3
Investigator(s): AJ and, SH Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.62158 Long: -122.421 Datum: NAD83
Soil Map Unit Name: LIB- Lauren very gravelly loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒**	**No ☐**
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			

Remarks: Test Plot 3 was conducted near the southern boundary in Wetland A.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Ranunculus repens*	20	yes	FAC
2. *Lysichiton americanus*	20	yes	OBL
3. *Oenanthe sarmentosa*	10	yes	OBL
4. *Agrostis sp*.*	10	yes	FAC
5. *Athyrium cyclosorum*	5	no	FAC
6. *Geranium robertianum*	5	no	FACU
7. *Urtica dioica*	5	no	FAC
8. *Equisetum arvense*	5	no	FAC
9.			
10.			
11.			
50% = 40, 20% = 8	80	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 20			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒** **No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC and OBL species.
*Assumed FAC

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/2	95	10YR 5/8	5	C	M	silt loam	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: The soil profile matches the description for indicator F6, Redox Dark Surface, because at least 4 of the upper 12 inches has a value less than 4 and chroma less than 3 and at least 5 percent distinct redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☒	No	☐	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes	☒	No	☐	Depth (inches):	4

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: A high water table was observed at a depth of 6 inches and soil saturation at a depth of 4 inches, so there are primary indicators present for wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 4
Investigator(s): AJ and SH Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.62264 Long: -122.422 Datum: NAD83
Soil Map Unit Name: LIB- Lauren very gravelly loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: Test Plot 4 was conducted west of Wetland A in the open pasture.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Phalaris arundinacea*	25	yes	FACW
2. *Agrostis sp*.*	20	yes	FAC
3. *Lotus corniculatus*	20	yes	FAC
4. *Dactylis glomerata*	15	no	FACU
5. *Juncus effusus*	10	no	FACW
6. *Festuca rubra*	10	no	FAC
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC and FACW species.
*Assumed FAC

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	100					silty clay	No redox features
8-16	10YR 3/1	95	10YR 5/8	5	C	M	silty clay	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: The soil profile matches the description for indicator F6, Redox Dark Surface, because at least 4 of the upper 12 inches has a value less than 4 and chroma less than 3 and at least 5% distinct redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 5
Investigator(s): AJ and SH Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.62273 Long: -122.421 Datum: NAD83
Soil Map Unit Name: LIB- Lauren very gravelly loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒**	**No ☐**
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			

Remarks: Test Plot 5 was conducted in Wetland A in the open pasture.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Holcus lanatus*	25	yes	FAC
2. *Phalaris arundinacea*	15	yes	FACW
3. *Juncus effusus*	15	yes	FACW
4. *Dactylis glomerata*	10	no	FACU
5. *Carex stipata*	10	no	OBL
6. *Festuca rubra*	10	no	FAC
7. *Lotus corniculatus*	10	no	FAC
8. *Lysichiton americanus*	5	no	OBL
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒** **No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC and FACW species.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/3	100					clay loam	No redox features
6-16	10YR 2/1	95	10YR 6/8	5	C	M	clay loam	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: The soil profile matches the description for indicator F6, Redox Dark Surface, because at least 4 of the upper 12 inches has a value less than 4 and chroma less than 3 and at least 5 percent distinct redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The presence of oxidized rhizospheres within the upper 12 inches of the soil profile is a primary indicator of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 6
Investigator(s): AJR, SH Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-1%
Subregion (LRR): MLRA 2 Lat: 45.62313 Long: -122.42 Datum: NAD83
Soil Map Unit Name: Sr- Semiahmoo muck NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 6 was conducted in uplands just north of Wetland A.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Holcus lanatus*	33	yes	FAC
2. *Phalaris arundinacea*	33	yes	FACW
3. *Festuca rubra*	33	yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 49.5, 20% = 19.8	99	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 1			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC and FACW species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					silt loam	No redox features
10-16	10YR 2/1	99	10YR 5/8	1	C	M	silt loam	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil profile did not meet any hydric soil indicators due to a lack of redoximorphic features in the surface layer and the subsurafce layer not having a high enough percentage of redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal State: WA Sampling Point: TP 7
Investigator(s): AJ and SH Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-1%
Subregion (LRR): MLRA 2 Lat: 45.62338 Long: -122.42 Datum: NAD83
Soil Map Unit Name: Sr- Semiahmoo muck NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 7 was conducted in an old ditch/ fence line.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Festuca rubra*	60	yes	FAC
2. *Holcus lanatus*	15	no	FAC
3. *Dactylis glomerata*	15	no	FACU
4. *Juncus effusus*	10	no	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					silt loam	No redox features

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil profile did not meet any hydric soil indicators due to a lack of redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Northshore Lacamas City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal State: WA Sampling Point: TP 8
Investigator(s): AJ and SH Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 8-20%
Subregion (LRR): MLRA 2 Lat: 45.62282 Long: -122.419 Datum: NAD83
Soil Map Unit Name: LgD- Lauren gravelly loam, 8 to 20 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: **The study area is located on a dairy farm in Camas Washington on 252nd Ave. Most of the property is open pasture with forested areas along the north and south boundaries. Twelve wetlands and two streams were identified onsite. Test Plot 8 was conducted in the open pasture east of Wetland A.**

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Holcus lanatus*	85	yes	FAC
2. *Phalaris arundinacea*	5	no	FACW
3. *Festuca rubra*	5	no	FAC
4. *Cirsium arvense*	5	no	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species.

Project Site: Northshore Lacamas

SOIL

Sampling Point: TP 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					si cl lo	No redox features
								lo-loam
								si-silt
								cl-clay

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil profile did not meet any hydric soil indicators due to a lack of redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 9
Investigator(s): AJ and SH Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 8-20%
Subregion (LRR): MLRA 2 Lat: 45.62273 Long: -122.419 Datum: NAD83
Soil Map Unit Name: LgD- Lauren gravelly loam, 8 to 20 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒ No ☐**
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: Test Plot 9 was conducted near the eastern boundary of Wetland A.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Phalaris arundinacea*	35	yes	FACW
2. *Lysichiton americanus*	35	yes	OBL
3. *Carex stipata*	20	yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 45, 20% = 18	90	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 10			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FACW and OBL species.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	100					si cl lo	No redox features
								lo - loam
								si-silt
								cl-clay

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☒ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: Presence of Hydrogen Sulfide odor within the upper 12 inches meets indicator A4.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☒ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☒	No	☐	Depth (inches):	9
Saturation Present? (includes capillary fringe)	Yes	☒	No	☐	Depth (inches):	8

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: A high water table was observed at a depth of 9 inches and soil saturation at a depth of 8 inches, meeting primary wetland hydrology indicators.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 10
Investigator(s): AJ and SH Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.62294 Long: -122.424 Datum: NAD83
Soil Map Unit Name: CvA-Cove silty clay loam, 0 to 3 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: Test Plot 10 was conducted at the west boundary of the study area in a slight depression near a culvert outlet.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = ____, 20% = ____		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Agrostis sp*.*	32	yes	FAC
2. *Ranunculus repens*	20	yes	FAC
3. *Lolium perenne*	20	yes	FAC
4. *Cirsium arvense*	10	no	FAC
5. *Lotus corniculatus*	10	no	FAC
6. *Rubus ursinus*	5	no	FACU
7. *Phalaris arundinacea*	3	no	FACW
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
50% = ____, 20% = ____		= Total Cover	
% Bare Ground in Herb Stratum ____			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	____	x1 =	____
FACW species	____	x2 =	____
FAC species	____	x3 =	____
FACU species	____	x4 =	____
UPL species	____	x5 =	____
Column Totals:	____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

☐ 1 – Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0[1]
☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ 5 - Wetland Non-Vascular Plants[1]
☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species.
*Assumed FAC

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	98	7.5YR 3/4	2	C	M	si cl lo	
12-16	10YR 3/2	95	7.5YR 3/4	5	C	M	si cl lo	
								lo - loam
								si-silt
								cl-clay

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil profile did not meet any hydric soil indicators due to the surface layer not having high enough percentage of redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 11
Investigator(s): AJ and SH Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6229 Long: -122.424 Datum: NAD83
Soil Map Unit Name: CvA-Cove silty clay loam, 0 to 3 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes** ☐	**No** ☒
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☐	No ☒			

Remarks: Test Plot 11 was conducted at the west boundary of the study area.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus latifolia*	30	yes	FACW
2. *Alnus rubra*	30	yes	FAC
3.			
4.			
50% = 30, 20% = 12	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1. *Rubus armeniacus*	10	yes	FAC
2.			
3.			
4.			
5.			
50% = 5, 20% = 2	10	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Phalaris arundinacea*	60	yes	FACW
2. *Ranunculus repens*	35	yes	FAC
3. *Lysichiton americanus*	5	no	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC, FACW, and OBL species.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					si lo	No redox features
6-12	10YR 2/1	98	7.5YR 3/4	2	C	M	cl	
12-16	10YR 3/1	95	7.5 YR 3/4	5	C	M	cl	
								si - silt
								lo - loam
								cl -clay

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: This soil profile matches the description for indicator F6, Redox Dark Surface, because at least 4 of the upper 12 inches has a value less than 4 and chroma less than 2 and at least 2% distinct redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 12
Investigator(s): AJ and SH Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.62291 Long: -122.423 Datum: NAD83
Soil Map Unit Name: CvA-Cove silty clay loam, 0 to 3 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒**	**No ☐**
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			

Remarks: Test Plot 12 was conducted near the west boundary of the study area in Wetland B.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus latifolia*	60	yes	FACW
2. *Alnus rubra*	20	yes	FAC
3.			
4.			
50% = 40, 20% = 16	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1. *Rubus armeniacus*	25	yes	FAC
2.			
3.			
4.			
5.			
50% = 12.5, 20% = 5	25	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Agrostis sp.**	55	yes	FAC
2. *Lysichiton americanus*	25	yes	OBL
3. *Ranunculus repens*	15	no	FAC
4. *Phalaris arundinacea*	5	no	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒** **No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC, FACW, and OBL species.
*Assumed FAC

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					silt	No redox features
6-16	10YR 3/1	80	7.5YR 3/4	20	C	M	silt	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: This soil profile matches the description for indicator F6, Redox Dark Surface, because at least 4 of the upper 12 inches has a value less than 4 and chroma less than 3 and at least 5% distinct redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Two secondary hydric soil indicators, geomophic position and FAC-neutral test were present, so the wetland hydrology indicator was met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 13
Investigator(s): AJ and SH Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.62311 Long: -122.423 Datum: NAD83
Soil Map Unit Name: CvA-Cove silty clay loam, 0 to 3 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Hydric Soil Present?	Yes	☐	No	☒	
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 13 was conducted upslope of Test Plot 12 outside of Wetland B.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Juncus effusus*	45	yes	FACW
2. *Phalaris arundinacea*	30	yes	FACW
3. *Festuca rubra*	25	yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC and FACW species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/2	99	7.5YR 3/4	1	C	M	silt	
9-16	10YR 3/1	97	7.5YR 3/4	3	C	M	silt	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil profile did not meet any hydric soils indicators because the surface layer did not have at least five percent redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 14
Investigator(s): AJ and SH Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 8-20%
Subregion (LRR): MLRA 2 Lat: 45.62204 Long: -122.423 Datum: NAD83
Soil Map Unit Name: LgD- Lauren gravelly loam, 8 to 20 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒ No ☐**
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: Test Plot 14 was conducted in Wetland D

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus latifolia*	55	yes	FACW
2.			
3.			
4.			
50% = 27.5, 20% = 11	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Phalaris arundinacea*	55	yes	FACW
2. *Lysichiton americanus*	25	yes	OBL
3. *Agrostis sp **	20	yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
50% = ____, 20% = ____		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC, FACW, and OBL species.
*Assumed FAC

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					silt	No redox features
6-16	10YR 3/1	95	7.5YR 3/4	5	C	M	silt	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: This soil profile matches the description for indicator F6, Redox Dark Surface, because at least 4 of the upper 12 inches has a value less than 4 and chroma less than 3 and at least 5% distinct redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Two secondary hydric soil indicators, geomophic position and FAC-neutral test were present, so the wetland hydrology indicator was met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 15
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.62149 Long: -122.422 Datum: NAD83
Soil Map Unit Name: LIB- Lauren very gravelly loam, 0 to 8 percent slopes NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes** ☒	**No** ☐
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			

Remarks: Test Plot 15 was conducted near the south boundary in Wetland C.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = ____, 20% = ____		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Ludwigia palustris*	10	yes	OBL
2. *Callitriche stagnalis*	10	yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 10, 20% = 4	20	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
50% = ____, 20% = ____		= Total Cover	

% Bare Ground in Herb Stratum 80

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	____	x1 =	____
FACW species	____	x2 =	____
FAC species	____	x3 =	____
FACU species	____	x4 =	____
UPL species	____	x5 =	____
Column Totals:	____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by OBL species.
*Assumed FAC

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/2	100					si lo	No redox features
5-16								See remarks below
								si - silt
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☒ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: Presence of Hydrogen Sulfide odor within the upper 12 inches meets indicator A4. Soils unconsolidated due to high water table.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☒ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☒	No	☐	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes	☒	No	☐	Depth (inches):	5

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: A high water table was observed at a depth of 6 inches, soil saturation at a depth of 5 inches, and a hydrogen sulfide odor was present upon opening the test pit. As such, primary indicators for wetland hydrology are present.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 16
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.62149 Long: -122.422 Datum: NAD83
Soil Map Unit Name: LIB- Lauren very gravelly loam, 0 to 8 percent slopes NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: Test Plot 16 was conducted in uplands near the southern boundary of Wetland C.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pseudotsuga menziesii*	30	yes	FACU
2. *Acer macrophyllum*	20	yes	FACU
3.			
4.			
50% = 25, 20% = 10	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1. *Ilex aquifolium*	15	yes	FACU
2. *Corylus cornuta*	10	yes	FACU
3. *Symphoricarpos albus*	10	yes	FACU
4. *Rubus armeniacus*	5	no	FAC
5. *Oemleria cerasiformis*	5	no	FACU
50% = 22.5, 20% = 9	45	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Geranium lucidum*	40	yes	UPL
2. *Geranium robertianum*	5	no	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 22.5, 20% = 9	45	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 55			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☐ No ☒**

Remarks: The hydrophytic vegetation criterion was not met because there was less than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					loam	No redox features

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil profile did not meet any hydric soils indicators due to high matrix color.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 17
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.6217 Long: -122.422 Datum: NAD83
Soil Map Unit Name: LIB- Lauren very gravelly loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☒	No	☐	**Is the Sampled Area within a Wetland?** **Yes** ☒ **No** ☐
Wetland Hydrology Present?	Yes	☒	No	☐	

Remarks: Test Plot 17 was conducted in Wetland C.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Polygonum punctatum*	10	yes	OBL
2. *Ludwigia palustris*	5	yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 7.5, 20% = 3	15	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 85

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by OBL species.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 2/1	47	5YR 4/4	7	C	M	si lo	
	10YR 4/2	46						
15-16	10YR 4/2	95	5YR 4/4	5	C	M	si lo	
								si -silt
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☒ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: Presence of Hydrogen Sulfide odor within the upper 12 inches meets indicator A4.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☒ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☒	No	☐	Depth (inches):	12
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: A high water table was observed at a depth of 12 inches and is a primary indicator for wetland hydrology. Hydrogen Sulfide Odor (C1) was also present.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 18
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.62172 Long: -122.422 Datum: NAD83
Soil Map Unit Name: LIB- Lauren very gravelly loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: Test Plot 18 was conducted in the upland west of Wetland C.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus latifolia*	15	yes	FACW
2.			
3.			
4.			
50% = 15, 20% = 6	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1. *Fraxinus latifolia*	7	yes	FACW
2. *Rubus armeniacus*	5	yes	FAC
3.			
4.			
5.			
50% = 6, 20% = 2.4	12	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Plantago major*	2	yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 1, 20% = 0.4	2	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 98			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC and FACW species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					loam	See remarks below

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet any hydric soils indicators due to high matrix color. One-inch cobbles throughout soil profile.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 19
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.62207 Long: -122.422 Datum: NAD83
Soil Map Unit Name: LIB- Lauren very gravelly loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☒, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒			
Hydric Soil Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes** ☒	**No** ☐
Wetland Hydrology Present?	Yes ☒	No ☐			

Remarks: Test Plot 19 was conducted in Wetland D. Vegetation is problematic due to heavy cattle grazing. Because indicators for the presence of hydric soils and hydrophytic vegetation are present, this test plot is located within wetlands.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = ____, 20% = ____		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = ____, 20% = ____		= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
50% = ____, 20% = ____		= Total Cover	
% Bare Ground in Herb Stratum 100			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	____	x1 =	____
FACW species	____	x2 =	____
FAC species	____	x3 =	____
FACU species	____	x4 =	____
UPL species	____	x5 =	____
Column Totals:	____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☒ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks: Due to heavy use of area by cows, there was no vegetation at this test plot, only leaf litter on bareground.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/1	100					silt loam	See remarks below
12-18	10YR 4/2	90	10YR 4/6	10	C	M	silt loam	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☒ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: Soils disturbed due to heavy use by cattle. This soil profile met hydric soil indicator A12 due to the presence of a thick dark surface over a depleted matrix that begins at 12 inches below the soil surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☒ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Algal Mat or Crust (B4) was present and is a primary indicator of wetland hydrology. Water Stained Leaves (B9) were also present.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 20
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.62204 Long: -122.422 Datum: NAD83
Soil Map Unit Name: LIB- Lauren very gravelly loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☒, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: Test Plot 20 was conducted in the upland east of Wetland D.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer macrophyllum*	85	yes	FACU
2. *Pseudotsuga menziesii*	5	no	FACU
3.			
4.			
50% = 45, 20% = 18	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1. *Symphoricarpos albus*	10	yes	FACU
2.			
3.			
4.			
5.			
50% = 5, 20% = 2	10	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Poa sp.**	5	yes	FAC
2. *Geranium robertianum*	5	yes	FACU
3. *Maianthemum dilatatum*	5	yes	FAC
4. *Geranium lucidum*	5	yes	FACU
5. *Claytonia virginica*	5	yes	FACU
6.			
7.			
8.			
9.			
10.			
11.			
50% = 12.5, 20% = 5	25	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
50% = _____, 20% = _____		= Total Cover	
% Bare Ground in Herb Stratum 75			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	29	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☐ No ☒**

Remarks: The hydrophytic vegetation criterion was not met because there was less than 50 percent dominance by FAC, FACW, and OBL species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/2	100					silt loam	No redox features

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: rock refusal

Depth (inches): 9

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet any hydric soils indicators due to high matrix colors.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): ____

Water Table Present? Yes ☐ No ☒ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): ____

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 21
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.62213 Long: -122.423 Datum: NAD83
Soil Map Unit Name: LIB- Lauren very gravelly loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☒, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: Test Plot 21 was conducted in a concave depression west of Wetland D.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus latifolia*	30	yes	FACW
2. *Populus balsamifera*	20	yes	FAC
3. *Thuja plicata*	10	no	FAC
4.			
50% = 30, 20% = 12	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1. *Acer circinatum*	5	yes	FAC
2.			
3.			
4.			
5.			
50% = 2.5, 20% = 1	5	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = _____, 20% = _____		= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
50% = _____, 20% = _____		= Total Cover	
% Bare Ground in Herb Stratum 100			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

☐ 1 – Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0[1]
☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ 5 - Wetland Non-Vascular Plants[1]
☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC and FACW species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					silt loam	No redox features

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet any hydric soils indicators due to a lack of redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Secondary Indicator Water-Stained Leaves (B9) were present at this test plot. Wetland Hydrology was not met due to only one secondary indicator being met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 22
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-1%
Subregion (LRR): MLRA 2 Lat: 45.62283 Long: -122.422 Datum: NAD83
Soil Map Unit Name: SR- Semiahoo muck NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☒, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: **Test Plot 22 was conducted west of Wetland A.**

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Anthoxanthum odoratum*	30	yes	FACU
2. *Agrostis sp.**	25	yes	FAC
3. *Holcus lanatus*	25	yes	FAC
4. *Hypochaeris radicata*	5	no	FACU
5. *Lotus corniculatus*	5	no	FAC
6. *Juncus effusus*	2	no	FACW
7. *Cirsium arvense*	2	no	FAC
8.			
9.			
10.			
11.			
50% = 47, 20% = 18.8	94	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 6			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: *Assumed FAC. The hydrophytic criterion is met because more than 50% of dominant species are FAC or wetter.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	100					silt loam	No redox features
8-16	7.5YR 3/1	100					silt loam	No redox features

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet any hydric soils indicators due to a lack of redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 23
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-1%
Subregion (LRR): MLRA 2 Lat: 45.62333 Long: -122.422 Datum: NAD83
Soil Map Unit Name: SR- Semiahoo muck NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 23 was conducted northwest of Wetland A in an open pasture.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Phalaris arundinacea*	100	yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percnet dominance by FACW species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 23

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1	100					silt loam	No redox features
5-16	10YR 4/2	30					si cl loam	No redox features
	10YR2/1	70						
								si-silt
								cl-clay

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet any hydric soils indicators due to a lack of redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 24
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-1%
Subregion (LRR): MLRA 2 Lat: 45.62352 Long: -122.421 Datum: NAD83
Soil Map Unit Name: SR- Semiahoo muck NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 24 was conducted northwest of Wetland A in an open pasture.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Phalaris arundinacea*	100	yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FACW species.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 24

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	100					silt loam	No redox features
8-16	7.5YR 3/1	100					si cl loam	No redox features
								si-silt
								cl-clay

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet any hydric soils indicators due to a lack of redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 25
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-1%
Subregion (LRR): MLRA 2 Lat: 45.62394 Long: -122.421 Datum: NAD83
Soil Map Unit Name: SR- Semiahoo muck NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Hydric Soil Present?	Yes	☐	No	☒	
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 25 was conducted northwest of Wetland A in an open pasture.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Phalaris arundinacea*	75	yes	FACW
2. *Holcus lanatus*	20	yes	FAC
3. *Lotus corniculatus*	5	no	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC and FACW species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 25

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2/2	100					silt loam	No redox features
9-16	7.5YR 3/1	100					silt loam	No redox features

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet any hydric soils indicators due to a lack of redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 26
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-1%
Subregion (LRR): MLRA 2 Lat: 45.62473 Long: -122.423 Datum: NAD83
Soil Map Unit Name: SR- Semiahoo muck NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 26 was conducted in an open pasture between Wetlands A and E.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Phalaris arundinacea*	100	yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FACW species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 26

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 2/1	100					silt loam	No redox features
14-18	10YR 2/1	80					silt loam	No redox features
	10YR 4/2	20						

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet any hydric soils indicators due to a lack of redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 27
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-1%
Subregion (LRR): MLRA 2 Lat: 45.6256775 Long: -122.4249535 Datum: NAD83
Soil Map Unit Name: SR- Semiahoo muck NWI classification: PFOA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒ No ☐**
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: Test Plot 27 was conducted in Wetland E.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Alopecurus aequalis*	90	yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 45, 20% = 18	90	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 10			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by OBL species.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 27

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 3/2	95	10YR 6/8	5	C	M	si lo	
11-16	10YR 4/1	95	10YR 5/8	5	C	M	si lo	
								si - silt
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: This soil profile met the hydric soil criterion because hydric soil indicators Depleted Below Dark Surface (A11) and Redox Dark Surface (F6) were met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The wetland hydrology criterion was met because two secondary indicators, Geomorphic Position and FAC-Neutral Test, were observed.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 28
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-1%
Subregion (LRR): MLRA 2 Lat: 45.6260585 Long: -122.424981 Datum: NAD83
Soil Map Unit Name: SR- Semiahoo muck NWI classification: PFOA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 28 was conducted northeast of Wetland E.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Agrostis sp.*	33	yes	FAC
2. *Dactylis glomerata*	30	yes	FACU
3. *Holcus lanatus*	30	yes	FAC
4. *Cirsium arvense*	5	no	FAC
5. *Rumex crispus*	2	no	FAC
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	67	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 28

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/3	95	5YR 4/6	5	C	M	si lo	
12-16	10YR 4/1	95	5YR 4/6	5	C	M	si lo	
								si - silt
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile does not meet hydric soil indicators, as the soil matrix chroma is too high.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water or evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 29
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-1%
Subregion (LRR): MLRA 2 Lat: 45.6260116 Long: -122.4250601 Datum: NAD83
Soil Map Unit Name: SR- Semiahoo muck NWI classification: PFOA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒**	**No ☐**
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			

Remarks: Test Plot 29 was conducted in Wetland E.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Alopecurus aequalis*	30	yes	OBL
2. *Lolium perenne*	30	yes	FAC
3. *Agrostis sp.**	30	yes	FAC
4. *Trifolium repens*	5	no	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 47.5, 20% = 19	95	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 5

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒** **No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC and OBL species. *Assumed FAC.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 29

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 2/2	95	10YR 4/6	5	C	M	si lo	
11-16	10YR 4/1	85	10YR 4/6	15	C	M	si lo	
								si - silt
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: This soil profile met the hydric soil criterion because the redox dark surface and depleted below dark surface indicators were present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The wetland hydrology criterion was met because two secondary indicators, Geomorphic Position and FAC-Neutral Test, were observed.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 30
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-1%
Subregion (LRR): MLRA 2 Lat: 45.626187 Long: -122.4257161 Datum: NAD83
Soil Map Unit Name: SR- Semiahoo muck NWI classification: PFOA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 30 was conducted northwest of Wetland E.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Dactylis glomerata*	30	yes	FACU
2. *Holcus lanatus*	30	yes	FAC
3. *Agrostis sp.**	30	yes	FAC
4. *Geranium lucidum*	5	no	UPL
5. *Cirsium arvense*	5	no	FAC
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	67	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species. *Assumed FAC.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 30

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/2	100					si lo	No redox features
9-16	10YR 3/2	98	10YR 4/6	2	C	M	si lo	
								si - silt
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet the hydric soil criterion because the matrix chroma was too high and redox features do not start within the upper 8 inches of the soil profile..

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water or evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 31
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-1%
Subregion (LRR): MLRA 2 Lat: 45.6261662 Long: -122.4256561 Datum: NAD83
Soil Map Unit Name: SR- Semiahoo muck NWI classification: PFOA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☒	No	☐	**Is the Sampled Area within a Wetland?** **Yes** ☒ **No** ☐
Wetland Hydrology Present?	Yes	☒	No	☐	

Remarks: Test Plot 31 was conducted within Wetland E.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Agrostis sp.**	45	yes	FAC
2. *Dactylis glomerata*	25	yes	FACU
3. *Schedonorus arundinaceus*	20	yes	FAC
4. *Geranium lucidum*	5	no	NI
5. *Cirsium arvense*	5	no	FAC
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	67	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species. *Assumed FAC.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 31

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	98	10YR 4/6	2	C	M	si lo	
6-16	10YR 3/2	85	10YR 4/6	15	C	M	si lo	
								si - silt
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: This soil profile met the hydric soil criterion because the redox dark surface indicator was present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The wetland hydrology criterion was met because two secondary indicators, Geomorphic Position and FAC-Neutral Test, were observed.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 32
Investigator(s): SH and JC Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-1%
Subregion (LRR): MLRA 2 Lat: 45.6255651 Long: -122.4250924 Datum: NAD83
Soil Map Unit Name: SR- Semiahoo muck NWI classification: PFOA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 32 was conducted southwest of Wetland E.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Lolium perenne*	60	yes	FAC
2. *Agrostis sp.**	30	yes	FAC
3. *Cirsium arvense*	5	no	FAC
4. *Geranium lucidum*	5	no	NI
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species. *Assumed FAC.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 32

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 3/3	95	10YR 4/6	5	C	M	si lo	
11-16	10YR 4/2	90	10YR 4/6	10	C	M	si lo	
								si - silt
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet the hydric soil criterion because the matrix chroma was too high.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water or evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-18-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 33
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.6297198 Long: -122.4295541 Datum: NAD83
Soil Map Unit Name: LeB - Lauren loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 33 was conducted at the west study area boundary.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Lolium perenne*	65	yes	FAC
2. *Holcus lanatus*	15	no	FAC
3. *Tragopogon pratensis*	5	no	UPL
4. *Geranium dissectum*	5	no	UPL
5. *Dactylis glomerata*	5	no	FACU
6. *Hypochaeris radicata*	2	no	FACU
7. *Lotus corniculatus*	2	no	FAC
8. *Agrostis sp.**	1	no	FAC
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species. *Assumed FAC.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 33

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/3	95	10YR 4/6	5	C	M	si cl lo	
								cl - clay
								si - silt
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: compacted soils

Depth (inches): 8

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet the hydric soil criterion because the matrix chroma was too high.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water or evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 34
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.6294824 Long: -122.4293956 Datum: NAD83
Soil Map Unit Name: LeB - Lauren loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: Test Plot 34 was conducted near the western study area boundary, southeast of TP-33.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Schedonorus arundinaceus*	45	yes	FAC
2. *Lolium perenne*	45	yes	FAC
3. *Poa pratensis*	5	no	FAC
4. *Geranium dissectum*	5	no	NI
5. *Rumex crispus*	2	no	FAC
6. *Plantago major*	2	no	FAC
7. *Hypochaeris radicata*	2	no	FACU
8.			
9.			
10.			
11.			
50% = 53, 20% = 21.2	106	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 34

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/2	97	10YR 5/8	3	C	M	si lo	
3-12	10YR 3/2	95	10YR 5/8	5	C	M	si lo	
								si - silt
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: compacted soils

Depth (inches): 12

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: This soil profile met the hydric soil criterion because the depleted matrix and redox dark surface indicators were present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water or evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-18-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 35
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6282286 Long: -122.4255234 Datum: NAD83
Soil Map Unit Name: ThA - Tisch silt loam, 0 to 3 percent slopes NWI classification: PFOA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒**	**No ☐**
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			

Remarks: Test Plot 35 was conducted within Wetland V.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Holcus lanatus*	50	yes	FAC
2. *Lolium perenne*	35	yes	FAC
3. *Trifolium repens*	5	no	FAC
4. *Cirsium arvense*	5	no	FAC
5. *Agrostis sp.**	5	no	FAC
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒** **No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species. *Assumed FAC.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 35

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	99	10YR 5/8	1	C	M	si lo	
3-10	10YR 3/2	95	10YR 5/8	5	C	M/PL	si lo	
								cl - clay
								si - silt
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: compacted soils

Depth (inches): 10

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: This soil profile met the hydric soil criterion because the redox dark surface indicator was present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The wetland hydrology criterion was met because there were oxidized rhizospheres present.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-18-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 36
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6254693 Long: -122.4243275 Datum: NAD83
Soil Map Unit Name: Sr - Semiahmoo muck NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes** ☐	**No** ☒
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☐	No ☒			

Remarks: Test Plot 36 was conducted southeast of Wetland E.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Holcus lanatus*	30	yes	FAC
2. *Lolium perenne*	25	yes	FAC
3. *Agrostis sp.**	20	no	FAC
4. *Festuca rubra*	13	no	FAC
5. *Rumex crispus*	5	no	FAC
6. *Cirsium arvense*	5	no	FAC
7. *Trifolium repens*	5	no	FAC
8. *Bromus hordeaceus*	5	no	FACU
9. *Ranunculus repens*	2	no	FAC
10.			
11.			
50% = 55, 20% = 22	110	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species. *Assumed FAC.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 36

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					si lo	No redox features
3-16	10YR 3/2	92	7.5YR 4/6	8	C	M	si lo	
								si - silt
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: This soil profile met the hydric soil criterion because the redox dark surface indicator was present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water or evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-18-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 37
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6254058 Long: -122.4240411 Datum: NAD83
Soil Map Unit Name: Sr - Semiahmoo muck NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 37 was conducted southeast of Wetland E.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Phalaris arundinacea*	60	yes	FACW
2. *Lolium perenne*	15	no	FAC
3. *Holcus lanatus*	15	no	FAC
4. *Agrostis sp.**	10	no	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FACW species. *Assumed FAC.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 37

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/2	100					cl lo	No redox features
								cl - clay
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet the hydric soil criterion because the matrix chroma was too high and there are no redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water or evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-18-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 38
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6254058 Long: -122.4240411 Datum: NAD83
Soil Map Unit Name: Sr - Semiahmoo muck NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes** ☐	**No** ☒
Hydric Soil Present?	Yes ☐	No ☒			
Wetland Hydrology Present?	Yes ☐	No ☒			

Remarks: Test Plot 38 was conducted southeast of Wetland E.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = ____, 20% = ____		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Phalaris arundinacea*	90	yes	FACW
2. *Agrostis sp.*	10	no	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
50% = ____, 20% = ____		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FACW species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 38

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/2	100					cl lo	No redox features
								cl - clay
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet the hydric soil criterion because the matrix chroma was too high and there were no redoximorphic features present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water or evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-18-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 39
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6251709 Long: -122.4230765 Datum: NAD83
Soil Map Unit Name: Sr - Semiahmoo muck NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes** ☐	**No** ☒
Hydric Soil Present?	Yes ☐	No ☒			
Wetland Hydrology Present?	Yes ☐	No ☒			

Remarks: Test Plot 39 was conducted southeast of Wetland E.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Phalaris arundinacea*	40	yes	FACW
2. *Juncus effusus*	20	yes	FACW
3. *Lysichiton americanus*	10	no	OBL
4. *Agrostis sp.**	10	no	FAC
5. *Festuca rubra*	10	no	FAC
6. *Holcus lanatus*	10	no	FAC
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FACW species. *Assumed FAC.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 39

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1;'	100					cl lo	No redox features
								cl - clay
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet the hydric soil criterion because there were no redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water observed in the test plot during the site visit. The FAC-Neutral Test was met; however, there were no other secondary indicators present, so the wetland hydrology criterion was not met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-18-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 40
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6246562 Long: -122.4224062 Datum: NAD83
Soil Map Unit Name: Sr - Semiahmoo muck NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 40 was conducted between Wetlands A and E.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Festuca rubra*	25	yes	FAC
2. *Agrostis sp.**	20	yes	FAC
3. *Juncus effusus*	15	yes	FACW
4. *Holcus lanatus*	15	yes	FAC
5. *Trifolium repens*	10	no	FAC
6. *Lysichiton americanus*	10	no	OBL
7. *Lotus corniculatus*	5	no	FAC
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC and FACW species. *Assumed FAC.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 40

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 2/1	100					cl lo	No redox features
7-16	10YR 3/1	100					cl lo	No redox features
								cl - clay
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet the hydric soil criterion because there were no redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water observed in the test plot during the site visit. The FAC-Neutral Test was met; however, there were no other secondary indicators present, so the wetland hydrology criterion was not met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-18-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 41
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6243707 Long: -122.4224974 Datum: NAD83
Soil Map Unit Name: Sr - Semiahmoo muck NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 41 was conducted between Wetlands A and E.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Phalaris arundinacea*	50	yes	FACW
2. *Schedonorus arundinaceus*	20	yes	FAC
3. *Agrostis sp.**	20	yes	FAC
4. *Juncus effusus*	10	no	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC and FACW species. *Assumed FAC.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 41

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/2	100					cl lo	No redox features
10-16	10YR 4/2	100					cl lo	No redox features
								cl - clay
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet the hydric soil criterion because there were no redox features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water observed in the test plot during the site visit. The FAC-Neutral Test was met; however, there were no other secondary indicators present, so the wetland hydrology criterion was not met.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-18-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 42
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6271705 Long: -122.4206459 Datum: NAD83
Soil Map Unit Name: ThA - Tisch silt loam, 0 to 3 percent slopes NWI classification: PFOA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes** ☐	**No** ☒
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☐	No ☒			

Remarks: Test Plot 42 was conducted southeast of Wetland U.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Schedonorus arundinaceus*	68	yes	FAC
2. *Agrostis sp.**	10	no	FAC
3. *Dactylis glomerata*	10	no	FACU
4. *Lolium perenne*	10	no	FAC
5. *Phalaris arundinacea*	2	no	FACW
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species. *Assumed FAC.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 42

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	99	7.5YR 4/6	1	C	M	si cl lo	
3-16	10YR 3/2	95	5YR 4/6	5	C	M	si cl lo	
								si - silt
								cl - clay
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: This soil profile met the hydric soil criterion because the redox dark surface indicator was present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water or evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-18-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 43
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6272429 Long: -122.4208522 Datum: NAD83
Soil Map Unit Name: ThA - Tisch silt loam, 0 to 3 percent slopes NWI classification: PFOA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒**	**No ☐**
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			

Remarks: Test Plot 43 was conducted within Wetland U.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Lolium perenne*	63	yes	FAC
2. *Schedonorus arundinaceus*	15	no	FAC
3. *Agrostis sp.*	10	no	FAC
4. *Alopecurus geniculatus*	10	no	OBL
5. *Cirsium arvense*	2	no	FAC
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒** **No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 43

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/3	98	10YR 5/8	2	C	PL	si cl lo	
2-16	10YR 3/2	90	7.5YR 4/6	10	C	PL	si cl lo	
								si - silt
								cl - clay
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: This soil profile met the hydric soil criterion because the redox dark surface indicator was present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The wetland hydrology criterion was met because there were oxidized rhizospheres present.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-18-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 44
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6276523 Long: -122.420903 Datum: NAD83
Soil Map Unit Name: ThA - Tisch silt loam, 0 to 3 percent slopes NWI classification: PFOA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 44 was conducted north of Wetland U.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Lolium perenne*	70	yes	FAC
2. *Dactylis glomerata*	10	no	FACU
3. *Festuca rubra*	10	no	FAC
4. *Agrostis sp.**	5	no	FAC
5. *Trifolium repens*	5	no	FAC
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species. *Assumed FAC.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 44

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	7.5YR 2.5/1	100					si lo	No redox features
11-16	7.5YR 2.5/1	99	7.5YR 4/6	1	C	PL	si lo	
								si - silt
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet the hydric soil criterion because there are no redox features in the upper 8 inches of the soil profile.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water or evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-18-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 45
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6275894 Long: -122.4217009 Datum: NAD83
Soil Map Unit Name: ThA - Tisch silt loam, 0 to 3 percent slopes NWI classification: PFOA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes** ☐	**No** ☒
Hydric Soil Present?	Yes ☐	No ☒			
Wetland Hydrology Present?	Yes ☐	No ☒			

Remarks: Test Plot 45 was conducted west of Wetland U.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Dactylis glomerata*	40	yes	FACU
2. *Schedonorus arundinaceus*	40	yes	FAC
3. *Lolium perenne*	15	no	FAC
4. *Lactuca serriola*	5	no	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species	55	x3 =	165
FACU species	45	x4 =	180
UPL species		x5 =	
Column Totals:	100 (A)		345 (B)

Prevalence Index = B/A = 3.45

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks: The hydrophytic vegetation criterion was not met because the prevalence index was greater than 3.0.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 45

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	7.5YR 3/2	99	7.5YR 4/6	1	C	M	si lo	
								si - silt
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Compacted soils

Depth (inches): 11

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet the hydric soil criterion because there was less than 5 percent redox features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water or evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-18-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 46
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6279963 Long: -122.4225896 Datum: NAD83
Soil Map Unit Name: ThA - Tisch silt loam, 0 to 3 percent slopes NWI classification: PFOA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 46 was conducted between Wetlands U and V.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Schedonorus arundinaceus*	34	yes	FAC
2. *Agrostis sp.**	20	yes	FAC
3. *Juncus effusus*	20	yes	FACW
4. *Lolium perenne*	20	yes	FAC
5. *Trifolium repens*	2	no	FAC
6. *Lotus corniculatus*	2	no	FAC
7. *Ranunculus repens*	2	no	FAC
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC and FACW species. *Assumed FAC.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 46

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	99	7.5YR 4/6	1	C	M	cl lo	
8-16	10YR 3/2	100					cl lo	No redox features
								cl - clay
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet the hydric soil criterion because there was less than 5 percent redox features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☒ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water or evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-18-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 47
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6277994 Long: -122.4226019 Datum: NAD83
Soil Map Unit Name: ThA - Tisch silt loam, 0 to 3 percent slopes NWI classification: PFOA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 47 was conducted between Wetlands U and V.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Schedonorus arundinaceus*	48	yes	FAC
2. *Agrostis sp.**	15	yes	FAC
3. *Lolium perenne*	15	yes	FAC
4. *Juncus effusus*	12	no	FACW
5. *Dactylis glomerata*	10	no	FACU
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species. *Assumed FAC.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 47

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/2	99	7.5YR 4/6	1	C	M	cl lo	
9-16	10YR 3/1	97	7.5YR 4/6	3	C	M	cl	
								cl - clay
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet the hydric soil criterion because the redox features are not at least 5 percent in the upper 9 inches of the soil profile.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water or evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-18-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 48
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6284864 Long: -122.4236622 Datum: NAD83
Soil Map Unit Name: ThA - Tisch silt loam, 0 to 3 percent slopes NWI classification: PFOA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒ No ☐**
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: Test Plot 48 was conducted within Wetland V.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Schedonorus arundinaceus*	55	yes	FAC
2. *Juncus effusus*	35	yes	FACW
3. *Lolium perenne*	5	no	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 47.5, 20% = 19	95	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 5

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC and FACW species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 48

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/1	98	7.5YR 4/6	2	C	PL	cl lo	
								cl - clay
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: compacted soil

Depth (inches): 10

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: This soil profile met the hydric soil criterion because the redox dark surface indicator was present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The wetland hydrology criterion was met because there were oxidized rhizospheres present.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-18-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 49
Investigator(s): SH and AJ Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6284864 Long: -122.4236622 Datum: NAD83
Soil Map Unit Name: ThA - Tisch silt loam, 0 to 3 percent slopes NWI classification: PFOA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes** ☐	**No** ☒
Hydric Soil Present?	Yes ☐	No ☒			
Wetland Hydrology Present?	Yes ☐	No ☒			

Remarks: Test Plot 49 was conducted east of Wetland V.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Schedonorus arundinaceus*	80	yes	FAC
2. *Agrostis sp.**	10	no	FAC
3. *Lolium perenne*	10	no	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species. *Assumed FAC.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 49

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	98	7.5YR 4/6	2	C	PL/M	cl	
								cl - clay

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet the hydric soil criterion because there was less than 5 percent redox features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water or evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-12-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 81
Investigator(s): OM and BR Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.6313975 Long: -122.4273762 Datum: NAD83
Soil Map Unit Name: LeB - Lauren loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: Test Plot 81 was conducted north of Wetland V at the north study area boundary.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Thuja plicata*	20	yes	FAC
2. *Pseudotsuga menziesii*	10	yes	FACU
3. *Alnus rubra*	5	no	FAC
4.			
50% = 20, 20% = 8	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1. *Mahonia aquifolium*	20	yes	FACU
2. *Symphoricarpos albus*	10	yes	FACU
3. *Rubus armeniacus*	10	yes	FAC
4.			
5.			
50% = 20, 20% = 8	40	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Geranium dissectum*	25	yes	UPL
2. *Rubus ursinus*	15	yes	FACU
3. *Tiarella trifoliata*	5	no	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 22.5, 20% = 9	45	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 55

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	29	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☐ No ☒**

Remarks: The hydrophytic vegetation criterion was not met because there was less than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 81

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/2	100					si lo	No redox features
13-16	10YR 3/3	100					si lo	No redox features
								si - silt
								lo - loam

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet the hydric soil criterion because the matrix chroma was too high and there were no redox features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: There was no water or evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 82
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.63112 Long: -122.427 Datum: NAD83
Soil Map Unit Name: LeB- Lauren loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒**	**No ☐**
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			

Remarks: Test Plot 82 was conducted in the northwest corner of the property in Wetland V.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus latifolia*	50	yes	FACW
2.			
3.			
4.			
50% = 25, 20% = 10	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1. *Rubus armeniacus*	5	yes	FAC
2.			
3.			
4.			
5.			
50% = 2.5, 20% = 1	5	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Phalaris arundinacea*	70	yes	FACW
2. *Poa pratensis*	25	yes	FAC
3. *Ranunculus repens*	5	no	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒** **No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC and FACW species.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 82

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	90	5YR 4/6	10	C	PL/M	silt loam	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: This soil profile matches the description for indicator F6, Redox Dark Surface, because at least 4 of the upper 12 inches has a value less than 4 and chroma less than 3 and at least 5% distinct redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The presence of oxidized rhizospheres within the upper 12 inches of the soil profile is a primary indicator of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 83
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.63063 Long: -122.429 Datum: NAD83
Soil Map Unit Name: LeB- Lauren loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☒	No	☐	**Is the Sampled Area within a Wetland?** **Yes** ☒ **No** ☐
Wetland Hydrology Present?	Yes	☒	No	☐	

Remarks: Test Plot 83 was conducted in the northwest corner of the property in Wetland V.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Lolium perenne*	50	yes	FAC
2. *Phleum pratense*	2	no	FAC
3. *Taraxacum officinale*	2	no	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 27, 20% = 10.8	54	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 46

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 83

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	93	10YR 4/6	7	C	PL/M	silt loam	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: The soil profile most closely matches the description for hydric soil indicator F3, Depleted Matrix because the depleted matrix begins at or within 10 inches from the soil surface and has distinct redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The presence of oxidized rhizospheres within the upper 12 inches of the soil profile is a primary indicator of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 84
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.63064 Long: -122.429 Datum: NAD83
Soil Map Unit Name: LeB- Lauren loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 84 was conducted in the northwest corner of the property outside of Wetland V.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Holcus lanatus*	35	yes	FAC
2. *Dactylis glomerata*	25	yes	FACU
3. *Lolium perenne*	25	yes	FAC
4. *Cirsium arvense*	25	yes	FAC
5. *Schedonorus arundinaceus*	15	no	FAC
6. *Phleum pratense*	5	no	FAC
7.			
8.			
9.			
10.			
11.			
50% = 65, 20% = 26	130	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	75	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 84

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 4/4	98	5YR 4/6	2	C	M	silt loam	
10-16	10YR 4/4	88	5YR 4/6	12	C	M	silt loam	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil profile did not meet any hydric soil indicators due to high matrix color.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 85
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.62805 Long: -122.425 Datum: NAD83
Soil Map Unit Name: LeB- Lauren loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☐ No ☒**
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: Test Plot 85 was conducted outside of Wetland V in an open pasture.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Lolium perenne*	50	yes	FAC
2. *Schedonorus arundinaceus*	20	yes	FAC
3. *Poa pratensis*	10	no	FAC
4. *Dactylis glomerata*	10	no	FACU
5. *Rumex crispus*	5	no	FAC
6. *Trifolium repens*	2	no	FAC
7. *Geranium dissectum*	2	no	UPL
8. *Vicia americana*	2	no	FAC
9.			
10.			
11.			
50% = 50.5, 20% = 20.2	101	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 85

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	99	10YR 4/6	1	C	M	silt loam	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil profile did not meet any hydric soil indicators due to high matrix color.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 86
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.62817 Long: -122.425 Datum: NAD83
Soil Map Unit Name: LeB- Lauren loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes** ☒	**No** ☐
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			

Remarks: Test Plot 86 was conducted in Wetland V in an open pasture.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Schedonorus arundinaceus*	60	yes	FAC
2. *Holcus lanatus*	30	yes	FAC
3. *Lolium perenne*	10	no	FAC
4. *Trifolium repens*	5	no	FAC
5. *Plantago major*	2	no	FAC
6. *Taraxacum officinale*	2	no	FACU
7. *Geranium dissectum*	2	no	UPL
8.			
9.			
10.			
11.			
50% = 55.5, 20% = 22.2	111	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 86

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/2	95	10YR 4/6	5	C	PL/M	silt loam	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: This soil profile matches the description for indicator F6, Redox Dark Surface, because at least 4 of the upper 12 inches has a value less than 4 and chroma less than 3 and at least 5% distinct redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The presence of oxidized rhizospheres within the upper 12 inches of the soil profile is a primary indicator of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 87
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6236 Long: -122.415 Datum: NAD83
Soil Map Unit Name: Sr - Semiahmoo muck NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes** ☐	**No** ☒
Hydric Soil Present?	Yes ☐	No ☒			
Wetland Hydrology Present?	Yes ☐	No ☒			

Remarks: Test Plot 87 was conducted north of Wetland W and west of Stream B.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Dactylis glomerata*	60	yes	FACU
2. *Poa pratensis*	25	yes	FACU
3. *Lolium perenne*	10	no	FAC
4. *Cirsium arvense*	5	no	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks: The hydrophytic vegetation criterion was not met because there was less than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 87

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	99	10YR 4/6	1	C	M	clay loam	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet any hydric soils indicators due to the redoximorphic features being less than 2%.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 88
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6259 Long: -122.414 Datum: NAD83
Soil Map Unit Name: ThA- Tisch silt loam, 0 to 3 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes** ☐	**No** ☒
Hydric Soil Present?	Yes ☐	No ☒			
Wetland Hydrology Present?	Yes ☐	No ☒			

Remarks: Test Plot 88 was conducted along the east study area boundary in an open pasture.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Schedonorus arundinaceus*	60	yes	FAC
2. *Poa pratensis*	30	yes	FACU
3. *Lolium perenne*	5	no	FAC
4. *Phalaris arundinacea*	5	no	FACW
5. *Dactylis glomerata*	5	no	FACU
6. *Cirsium arvense*	5	no	FAC
7.			
8.			
9.			
10.			
11.			
50% = 55, 20% = 22	110	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species	5	x2 =	10
FAC species	70	x3 =	210
FACU species	35	x4 =	140
UPL species		x5 =	
Column Totals:	110 (A)		360 (B)

Prevalence Index = B/A = 3.27

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks: The hydrophytic vegetation criterion was not met because dominance by FAC species was not greater than 50 percent and the Prevalence Index was greater than 3.0.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 88

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	99	10YR 4/6	1	C	M	clay loam	
10-16	10YR 2/1	98	5YR 4/6	2	C	M	clay	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet any hydric soils indicators due to the redoximorphic features being less than 5%.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Secondary indicator Geomorphic Position (D2) was present. Wetland Hydrology was not met because two or more secondary indicators are required.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 89
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.62569 Long: -122.415 Datum: NAD83
Soil Map Unit Name: ThA- Tisch silt loam, 0 to 3 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes ☒ No ☐**
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: Test Plot 89 was conducted along the east study area boundary in an open pasture.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Poa pratensis*	40	yes	FACU
2. *Schedonorus arundinaceus*	30	yes	FAC
3. *Lolium perenne*	20	no	FACU
4. *Phalaris arundinacea*	10	no	FACW
5. *Dactylis glomerata*	5	no	FACU
6.			
7.			
8.			
9.			
10.			
11.			
50% = 52.5, 20% = 21	105	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species	10	x2 =	20
FAC species	30	x3 =	90
FACU species	65	x4 =	260
UPL species		x5 =	
Column Totals:	105 (A)		370 (B)

Prevalence Index = B/A = 3.52

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: The hydrophytic vegetation criterion was not met because dominance by FAC species was not greater than 50 percent and the Prevalence Index is greater than 3.0.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 89

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2/1	99	5YR 4/6	1	C	M	silt loam	
9-16	10YR 2/1	97	5YR 4/6	3	C	M	silt loam	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet any hydric soils indicators due to the redoximorphic features being less than 5%.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Secondary indicator Geomorphic Position (D2) was present. Wetland Hydrology was not met because two or more secondary indicators are required.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 90
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.6224 Long: -122.415 Datum: NAD83
Soil Map Unit Name: ThA- Tisch silt loam, 0 to 3 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒**	**No ☐**
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			

Remarks: Test Plot 90 was conducted in the southeast corner of the study area in Wetland W.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Lolium perenne*	15	yes	FAC
2. *Schedonorus arundinaceus*	10	yes	FAC
3. *Poa pratensis*	10	yes	FACU
4. *Ranunculus repens*	5	no	FAC
5. *Trifolium repens*	5	no	FAC
6. *Dactylis glomerata*	2	no	FACU
7.			
8.			
9.			
10.			
11.			
50% = 23.5, 20% = 9.4	47	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 53			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	67	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒** **No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 90

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/1	94	10YR 3/6	6	C	PL	silt loam	
8-16	10YR 3/1	96	10YR 3/6	4	C	PL	silt loam	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: The soil profile matches the description for indicator F6, Redox Dark Surface, because at least 4 of the upper 12 inches has a value less than 4 and chroma less than 3 and at least 2% distinct redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The presence of oxidized rhizospheres within the upper 12 inches of the soil profile is a primary indicator of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 91
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.62216 Long: -122.415 Datum: NAD83
Soil Map Unit Name: ThA- Tisch silt loam, 0 to 3 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes** ☐	**No** ☒
Hydric Soil Present?	Yes ☐	No ☒			
Wetland Hydrology Present?	Yes ☒	No ☐			

Remarks: Test Plot 91 was conducted in the southeast corner of the study area outside of Wetland W.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Dactylis glomerata*	100	yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks: The hydrophytic vegetation criterion was not met because there was less than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL Sampling Point: TP 91

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	99	10YR 3/6	1	C	M	silty loam	
								si-silty
								cl-clay

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil profile did not meet any hydric soils indicators due to the redoximorpic features being less than 2%.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☒ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The presence of surface soil cracks is a primary indicator of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 92
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-3%
Subregion (LRR): MLRA 2 Lat: 45.62224 Long: -122.415 Datum: NAD83
Soil Map Unit Name: ThA- Tisch silt loam, 0 to 3 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒**	**No ☐**
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			

Remarks: Test Plot 92 was conducted in the southeast corner of the study area in Wetland W.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Holcus lanatus*	35	yes	FAC
2. *Ranunculus repens*	25	yes	FAC
3. *Phalaris arundinacea*	20	yes	FACW
4. *Alopecurus pratensis*	10	no	FAC
5. *Agrostis sp.**	5	no	FAC
6. *Dactylis glomerata*	5	no	FACU
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒** **No ☐**

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC and FACW species. *Assumed FAC

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 92

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	90	10YR 3/6	8	C	M	si cl loam	
			10YR 5/8	2	C	M		
								si-silty
								cl-clay

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: The soil profile matches the description for indicator F6, Redox Dark Surface, because at least 4 of the upper 12 inches has a value less than 3 and chroma less than 2 and at least 2% distinct redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The presence of oxidized rhizospheres within the upper 12 inches of the soil profile is a primary indicator of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 93
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.62186 Long: -122.416 Datum: NAD83
Soil Map Unit Name: LeB- Lauren loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 93 was conducted in the southeast corner of the study area near the manure treatment pond.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Phalaris arundinacea*	40	yes	FACW
2. *Agrostis sp.**	10	yes	FAC
3. *Jacobaea vulgaris*	10	yes	FACU
4. *Geranium dissectum*	10	yes	UPL
5. *Trifolium repens*	5	no	FAC
6. *Rumex crispus*	5	no	FAC
7. *Holcus lanatus*	5	no	FAC
8.			
9.			
10.			
11.			
50% = 42.5, 20% = 17	85	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 15

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species	40	x2 =	80
FAC species	25	x3 =	75
FACU species	10	x4 =	40
UPL species	10	x5 =	50
Column Totals:	85 (A)		245 (B)

Prevalence Index = B/A = 2.88

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☒ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because the Prevalence Index is less than 3.0. *Assumed FAC

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 93

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 3/2	100					silt loam	No redox features
15-16	10YR 3/2	98	10YR 3/6	2	C	M	si cl loam	
								si-silty
								cl-clay

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile did not meet any hydric soils indicators due to the redoximorphic features being less than 5% and occurring outside of the first 8 inches of the profile.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 94
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): MLRA 2 Lat: 45.62245 Long: -122.414 Datum: NAD83
Soil Map Unit Name: LeB- Lauren loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes** ☐	**No** ☒
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☐	No ☒			

Remarks: Test Plot 94 was conducted in the southeast corner of the study area outside of Wetland W.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Holcus lanatus*	45	yes	FAC
2. *Dactylis glomerata*	15	yes	FACU
3. *Lolium perenne*	10	no	FAC
4. *Agrostis sp.**	10	no	FAC
5. *Trifolium repens*	5	no	FAC
6. *Rumex crispus*	5	no	FAC
7. *Equisetum arvense*	5	no	FAC
8. *Taraxacum officinale*	5	no	FACU
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species	80	x3 =	240
FACU species	20	x4 =	80
UPL species		x5 =	
Column Totals:	100 (A)		320 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks: The hydrophytic vegetation criterion was met because the Prevalence Index was greater than 3.0. *Assumed FAC

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 94

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					silt loam	No redox features
8-16	10YR 3/1	98	5YR 3/4	2	C	M	si cl loam	
								si-silty
								cl-clay

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: The soil profile matches the description for indicator F6, Redox Dark Surface, because at least 4 of the upper 12 inches have a value less than 3 and chroma less than 2 and at least 2% distinct redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 95
Investigator(s): FN and BR Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): LRRA Lat: 45.62299 Long: -122.4175 Datum: NAD83
Soil Map Unit Name: LeB- Lauren loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	
Hydric Soil Present?	Yes	☐	No	☒	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 95 was conducted in the southeast corner of the study area approximately 100 feet north of the manure lagoon.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Schedonorus arundinaceus*	40	yes	FAC
2. *Holcus lanatus*	40	yes	FAC
3. *Trifolium repens*	10	no	FAC
4. *Lotus cornicukatus*	5	no	FAC
5. *Lolium perenne*	5	no	FAC
6. *Rumex crispus*	2	no	FAC
7. *Ranunculus repens*	2	no	FAC
8.			
9.			
10.			
11.			
50% = 52, 20% = 20.8	104	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☐ 1 – Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0[1]
☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ 5 - Wetland Non-Vascular Plants[1]
☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 95

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					silt loam	
8-16	10YR 4/3	100					silt loam	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: This soil profile does not meet hydric soil indicators because the soil is not composed of organic material, there are no redoximorphic features, and the matrix color is high. Soil presents relatively well-drained conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This location is historically and presently drained by agricultural clay and plastic drain tiles, dating back to the 1070's, per the landowner and farm operator.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 96
Investigator(s): FN and BR Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-8%
Subregion (LRR): LRRA Lat: 45.62323 Long: -122.4178 Datum: NAD83
Soil Map Unit Name: LeB- Lauren loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	☒	No	☐	**Is the Sampled Area within a Wetland?** **Yes** ☐ **No** ☒
Hydric Soil Present?	Yes	☐	No	☒	
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: Test Plot 96 was conducted in the southeast corner of the study area approximately 200 feet north of the manure lagoon.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = 2.5, 20% = 1		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1.			
2.			
3.			
4.			
5.			
50% = ____, 20% = ____		= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Schedonorus arundinaceus*	30	yes	FAC
2. *Holcus lanatus*	10	yes	FAC
3. *Ranunculus repens*	5	no	FAC
4. *Lolium perenne*	2	no	FAC
5. *Rumex crispus*	2	no	FAC
6.			
7.			
8.			
9.			
10.			
11.			
50% = 24.5, 20% = 9.8	49	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
50% = ____, 20% = ____		= Total Cover	
% Bare Ground in Herb Stratum 51			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species The bare ground in this area is due to a cattle feeding station placed here..

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 96

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					silt loam	
10-16	10YR 4/3	100					silt loam	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil profile does not meet the hydric soil indicators because the soil is not composed of organic material, there are no redoximorphic features, and the matrix color is high. Soil presents well-drained conditions and is compacted due to cattle feeding station.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This location is historically and presently drained by agricultural clay and plastic drain tiles, dating back to the 1070's, per the landowner and farm operator.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 97
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 8-20%
Subregion (LRR): MLRA 2 Lat: 45.62877 Long: -122.414 Datum: NAD83
Soil Map Unit Name: LgD- Lauren gravelly loam, 8 to 20 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes** ☐	**No** ☒
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☐	No ☒			

Remarks: Test Plot 97 was conducted in the northeast corner of the study area outside of Wetland Y.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Alnus rubra*	5	yes	FAC
2.			
3.			
4.			
50% = 2.5, 20% = 1	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1. *Rubus armeniacus*	90	yes	FAC
2. *Rubus spectabilis*	10	no	FAC
3.			
4.			
5.			
50% = 50, 20% = 20	100	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Athyrium cyclosorum*	15	yes	FAC
2. *Tolmiea menziesii*	10	yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 12.5, 20% = 5	25	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
50% = _____, 20% = _____		= Total Cover	

% Bare Ground in Herb Stratum 75

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 97

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/2	85	10YR 3/6	15	C	M	gr sa loam	
							gr-gravelly	
							sa- sandy	

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: The soil profile matches the description for indicator F6, Redox Dark Surface, because at least 4 of the upper 12 inches has a value less than 4 and chroma less than 3 and at least 5% distinct redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Secondary indicator Geomorphic Position (D2) was present. Wetland Hydrology was not met because two or more secondary indicators are required.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 98
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 8-20%
Subregion (LRR): MLRA 2 Lat: 45.62858 Long: -122.414 Datum: NAD83
Soil Map Unit Name: LgD- Lauren gravelly loam, 8 to 20 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒**	**No ☐**
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			

Remarks: Test Plot 98 was conducted in the northeast corner of the study area in Wetland Y.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Alnus rubra*	5	yes	FAC
2.			
3.			
4.			
50% = 2.5, 20% = 1	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1. *Rubus armeniacus*	15	yes	FAC
2. *Rubus spectabilis*	5	yes	FAC
3.			
4.			
5.			
50% = 10, 20% = 4	20	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Glyceria elata*	10	yes	FACW
2. *Lysichiton americanus*	10	yes	OBL
3. *Athyrium cyclosorum*	10	yes	FAC
4. *Oenanthe sarmentosa*	10	yes	OBL
5. *Ranunculus repens*	5	no	FAC
6. *Juncus effusus*	5	no	FACW
7.			
8.			
9.			
10.			
11.			
50% = 25, 20% = 10	50	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
50% = _____, 20% = _____		= Total Cover	

% Bare Ground in Herb Stratum 50

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	7	(A)
Total Number of Dominant Species Across All Strata:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒** **No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC, FACW, and OBL species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 98

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/2	98	10YR 3/6	2	C	M	gr sa loam	
9-16	10YR 3/1	96	10YR 4/6	2	C	M	gr sa loam	
9-16			10YR 4/1	2			gr sa lo	
								gr-gravelly
								sa- sandy

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☒ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: Presence of Hydrogen Sulfide odor within the upper 12 inches meets indicator A4.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☒ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☒	No	☐	Depth (inches):	9
Saturation Present? (includes capillary fringe)	Yes	☒	No	☐	Depth (inches):	0

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: A high water table was observed at a depth of 9 inches, soil saturation at the surface, and there was a hydrogen sulfide odor. Therefore, primary wetland hydrology indicators are present.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 99
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 8-20%
Subregion (LRR): MLRA 2 Lat: 45.62858 Long: -122.414 Datum: NAD83
Soil Map Unit Name: LgD- Lauren gravelly loam, 8 to 20 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	**Is the Sampled Area within a Wetland?**	**Yes** ☐	**No** ☒
Hydric Soil Present?	Yes ☐	No ☒			
Wetland Hydrology Present?	Yes ☐	No ☒			

Remarks: Test Plot 99 was conducted near the eastern boundary outside of Wetland Z.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer macrophyllum*	25	yes	FACU
2.			
3.			
4.			
50% = 12.5, 20% = 5	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1. *Rubus armeniacus*	15	yes	FAC
2. *Corylus cornuta*	10	yes	FACU
3. *Oemleria cerasiformis*	5	no	FACU
4. *Symphoricarpos albus*	5	no	FACU
5. *Rubus spectabilis*	5	no	FAC
50% = 20, 20% = 8	40	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Galium aparine*	10	yes	FACU
2. *Tolmiea menziesii*	10	yes	FAC
3. *Polystichum munitum*	5	no	FACU
4. *Adiantum aleuticum*	2	no	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 13.5, 20% = 5.4	27	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	

% Bare Ground in Herb Stratum 73

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	5	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	40	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks: The hydrophytic vegetation criterion was not met because there was less than 50 percent dominance by FAC species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 99

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					gr si loam	No redox features
								gr-gravelly
								si- silt

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soils Present? **Yes** ☐ **No** ☒

Remarks: The soil profile did not meet any hydric soil indicators due to high matrix color.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (inches):	
Water Table Present?	Yes	☐	No	☒	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (inches):	

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology was not present during the field visit and there was no evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: Lacamas Northshore City/County: Camas/Clark Sampling Date: 6-10-25
Applicant/Owner: SunCal Acquisitions, LLC State: WA Sampling Point: TP 100
Investigator(s): BR and OM Section, Township, Range: S27, T2, R3E WM
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 8-20%
Subregion (LRR): MLRA 2 Lat: 45.62858 Long: -122.414 Datum: NAD83
Soil Map Unit Name: LgD- Lauren gravelly loam, 8 to 20 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	**Is the Sampled Area within a Wetland?**	**Yes ☒**	**No ☐**
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			

Remarks: Test Plot 100 was conducted near the eastern boundary in Wetland Z.

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' diameter)			
1. *Rubus armeniacus*	15	yes	FAC
2.			
3.			
4.			
5.			
50% = 7.5, 20% = 3	15	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. *Athyrium cyclosorum*	30	yes	FAC
2. *Oenanthe sarmentosa*	25	yes	OBL
3. *Glyceria elata*	15	no	FACW
4. *Lysichiton americanus*	5	no	OBL
5. *Polystichum munitum*	5	no	FACU
6. *Tiarella trifoliata*	5	no	FAC
7.			
8.			
9.			
10.			
11.			
50% = 42.5, 20% = 17	85	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum 15			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒** **No ☐**

Remarks: The hydrophytic vegetation criterion was met because there was greater than 50 percent dominance by FAC, FACW, and OBL species.

Project Site: Lacamas Northshore

SOIL

Sampling Point: TP 100

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	85	10YR 4/6	15	C	M	gr sa loam	
								gr-gravelly
								sa- sandy

[1]Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix, RC=Root Channel

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: rocks

Depth (inches): 8

Hydric Soils Present? **Yes** ☒ **No** ☐

Remarks: The soil profile matches the description for indicator F6, Redox Dark Surface, because at least 4 of the upper 12 inches has a value less than 4 and chroma less than 3 and at least 5% distinct redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stresses Plants (D1) **(LRR A)**
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): ____

Water Table Present? Yes ☐ No ☒ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): ____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Secondary indicators Geomorphic Position (D2) and FAC-Nuetral (D5) were present, therefore wetland hydrology was present.

APPENDIX C

WETLAND RATING FORMS FOR WESTERN WASHINGTON

RATING SUMMARY – Western Washington

Name of wetland (or ID #): **Wetland A** Date of site visit: **6/10/25**

Rated by **Sara Hastings** Trained by Ecology? **X** Yes __No Date of training **6/22**

HGM Class used for rating **Depressional** Wetland has multiple HGM classes? **X** Y __ N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map **Google Earth**

OVERALL WETLAND CATEGORY **III** (based on functions **X** or special characteristics)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

X **Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H M (L)	H (M) L	H M (L)	
Landscape Potential	H (M) L	H (M) L	H (M) L	
Value	H (M) L	H M (L)	(H) M L	**TOTAL**
Score Based on Ratings	**5**	**5**	**6**	**16**

Score for each function based on three ratings (order of ratings is not important)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	Not Applicable

Wetland A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	**2, 12**
Hydroperiods	D 1.4, H 1.2	**2, 12**
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	--
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	**12**
Map of the contributing basin	D 4.3, D 5.3	**13**
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	**13**
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	**16**
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	**16**

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,

___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

____The wetland is on a slope (slope can be very gradual),

____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,

____The water leaves the wetland **without being impounded**.

NO – go to 5 **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

Wetland A

5. Does the entire wetland unit **meet all** of the following criteria?
   ____The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ____The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**
   NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? This means that any outlet, if present, is higher than the interior of the wetland.

   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

   NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	**3**
D 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 No = 0	**0**
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed plants > 95% of area points = 5 Wetland has persistent, ungrazed plants > ½ of area points = 3 Wetland has persistent, ungrazed plants ≥ $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	**0**
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is ≥ ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	**0**
Total for D 1 Add the points in the boxes above	**3**

Rating of Site Potential If score is: __**12-16 = H** ___**6-11 = M** **X**__**0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	**0**
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	**1**
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	**1**
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	**0**
Total for D 2 Add the points in the boxes above	**2**

Rating of Landscape Potential If score is: __**3 or 4 = H** **X**__**1 or 2 = M** ____**0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	**0**
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	**1**
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which the unit is found.) Yes = 2 No = 0	**0**
Total for D 3 Add the points in the boxes above	**1**

Rating of Value If score is**:** __**2-4 = H** **X**__**1 = M** ___**0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	**4**
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	**0**
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself. The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5	**3**
Total for D 4 Add the points in the boxes above	**7**

Rating of Site Potential If score is: ___**12-16 = H** **X** ___**6-11 = M** ___**0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	**0**
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	**1**
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	**1**
Total for D 5 Add the points in the boxes above	**2**

Rating of Landscape Potential If score is: ___**3 = H** **X** ___**1 or 2 = M** ___**0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately downgradient of unit. points = 2 • Surface flooding problems are in a sub-basin farther downgradient. points = 1 • Flooding from groundwater is an issue in the sub-basin. points = 1 • The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* **No outlet** points = 0 • There are no problems with flooding downstream of the wetland. points = 0	**0**
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	**0**
Total for D 6 Add the points in the boxes above	**0**

Rating of Value If score is: ___**2-4 = H** ___**1 = M** **X** ___**0 = L** *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.

____	Aquatic bed	4 structures or more: points = 4
X	Emergent	3 structures: points = 2
____	Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
____	Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

____ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

____	Permanently flooded or inundated	4 or more types present: points = 3
X	Seasonally flooded or inundated	3 types present: points = 2
____	Occasionally flooded or inundated	2 types present: points = 1
X	Saturated only	1 type present: points = 0
____	Permanently flowing stream or river in, or adjacent to, the wetland	
____	Intermittently or seasonally flowing stream in, or adjacent to, the wetland	
____	**Lake Fringe wetland**	**2 points**
____	**Freshwater tidal wetland**	**2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

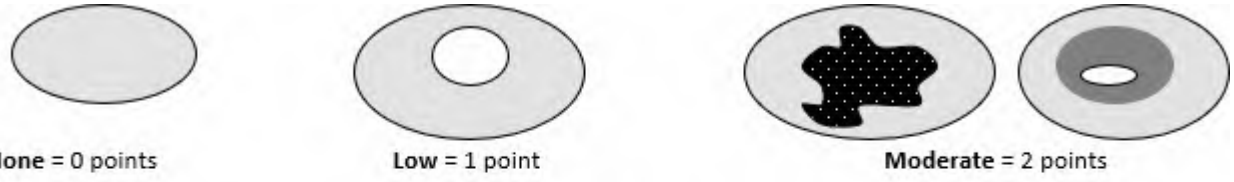
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.

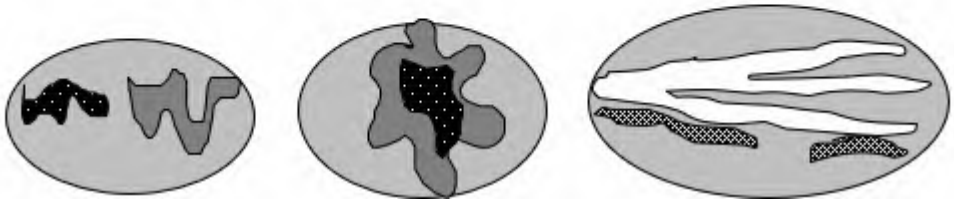


None = 0 points

Low = 1 point

Moderate = 2 points

All three diagrams in this row are **High** = 3 points



0

Wetland A

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. **X** Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). **X** Standing snags (dbh > 4 in.) within the wetland ___ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ___ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ___ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	**2**
Total for H 1 — Add the points in the boxes above	**4**

Rating of Site Potential If score is: ___**15-18 = H** ___**7-14 = M** **X**__**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat **0.0 +** [(% moderate and low intensity land uses)/2]**0.0 = 0.0%** Total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon — points = 3 20-33% of 1 km Polygon — points = 2 10-19% of 1 km Polygon — points = 1 < 10% of 1 km Polygon — points = 0	**0**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat **23.4 +** [(% moderate and low intensity land uses)/2]**27.1 = 50.5**% Total habitat > 50% of Polygon — points = 3 Total habitat 10-50% and in 1-3 patches — points = 2 Total habitat 10-50% and > 3 patches — points = 1 Total habitat < 10% of 1 km Polygon — points = 0	**3**
H 2.3. Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use — points = (- 2) ≤ 50% of 1 km Polygon is high intensity — points = 0	**0**
Total for H 2 — Add the points in the boxes above	**3**

Rating of Landscape Potential If score is**:** ___**4-6 = H** **X**__**1-3 = M** ___**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: — points = 2 — It has 3 or more Priority Habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW Priority Species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 Priority Habitats (listed on next page) within 100 m — points = 1 Site does not meet any of the criteria above — points = 0	**2**

Rating of Value If score is: **X** **2 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

_X_ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

— **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

Wetland A

_X_ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

__ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

_X_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

__ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

__ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes **= Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No = **Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes **= Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* — The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	**Not Applicable**

RATING SUMMARY – Western Washington

Name of wetland (or ID #): **Wetland B** Date of site visit: **6/10/25**

Rated by **Sara Hastings** Trained by Ecology? **X** Yes __No Date of training **6/22**

HGM Class used for rating **Depressional** Wetland has multiple HGM classes?___Y **X** N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map **Google Earth**

OVERALL WETLAND CATEGORY **III** (based on functions **X** or __ special characteristics)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

X **Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H M (L)	H (M) L	H M (L)	
Landscape Potential	H (M) L	H (M) L	H (M) L	
Value	H (M) L	H M (L)	(H) M L	**TOTAL**
Score Based on Ratings	**5**	**5**	**6**	**16**

Score for each function based on three ratings (order of ratings is not important)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	Not Applicable

Wetland B

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	**2, 12**
Hydroperiods	D 1.4, H 1.2	**2, 12**
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	--
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	**12**
Map of the contributing basin	D 4.3, D 5.3	**13**
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	**13**
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	**16**
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	**16**

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,

___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

____The wetland is on a slope (slope can be very gradual),

____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,

____The water leaves the wetland **without being impounded**.

NO – go to 5 **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

Wetland B

5. Does the entire wetland unit **meet all** of the following criteria?
   ____The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ____The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**

   NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? This means that any outlet, if present, is higher than the interior of the wetland.

   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

   NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	**3**
D 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 No = 0	**0**
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed plants > 95% of area points = 5 Wetland has persistent, ungrazed plants > ½ of area points = 3 Wetland has persistent, ungrazed plants ≥ 1/10 of area points = 1 Wetland has persistent, ungrazed plants < 1/10 of area points = 0	**0**
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is ≥ ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	**0**
Total for D 1 Add the points in the boxes above	**3**

Rating of Site Potential If score is: __**12-16 = H** ___**6-11 = M** **X**__**0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	**0**
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	**1**
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	**0**
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	**0**
Total for D 2 Add the points in the boxes above	**1**

Rating of Landscape Potential If score is: __**3 or 4 = H** **X**__**1 or 2 = M** ___**0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	**0**
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	**1**
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which the unit is found.) Yes = 2 No = 0	**0**
Total for D 3 Add the points in the boxes above	**1**

Rating of Value If score is**:** __**2-4 = H** **X**__**1 = M** ___**0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	**4**
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	**0**
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself. The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5	**3**
Total for D 4 Add the points in the boxes above	**7**

Rating of Site Potential If score is: ___**12-16 = H** **X** ___**6-11 = M** ___**0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	**0**
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	**1**
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	**1**
Total for D 5 Add the points in the boxes above	**2**

Rating of Landscape Potential If score is: ___**3 = H** **X** ___**1 or 2 = M** ___**0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately downgradient of unit. points = 2 • Surface flooding problems are in a sub-basin farther downgradient. points = 1 • Flooding from groundwater is an issue in the sub-basin. points = 1 • The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why:* ***No Outlet*** points = 0 • There are no problems with flooding downstream of the wetland. points = 0	**0**
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	**0**
Total for D 6 Add the points in the boxes above	**0**

Rating of Value If score is: ___**2-4 = H** ___**1 = M** **X** ___**0 = L** *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.

____	Aquatic bed	4 structures or more: points = 4
____	Emergent	3 structures: points = 2
____	Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
X	Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

____ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

____	Permanently flooded or inundated	4 or more types present: points = 3
____	Seasonally flooded or inundated	3 types present: points = 2
____	Occasionally flooded or inundated	2 types present: points = 1
X	Saturated only	1 type present: points = 0
____	Permanently flowing stream or river in, or adjacent to, the wetland	
____	Intermittently or seasonally flowing stream in, or adjacent to, the wetland	
____	**Lake Fringe wetland**	**2 points**
____	**Freshwater tidal wetland**	**2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

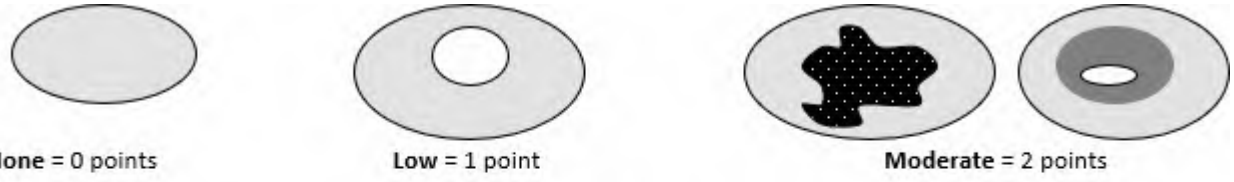
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.

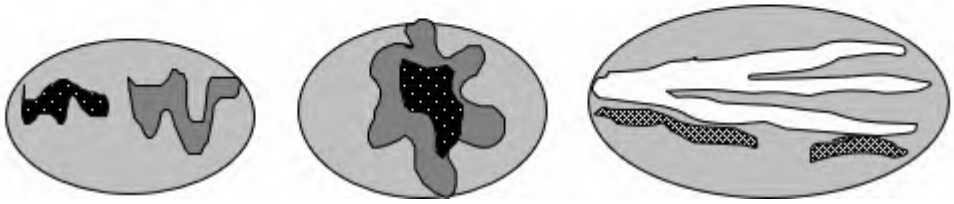


None = 0 points

Low = 1 point

Moderate = 2 points

All three diagrams in this row are **High** = 3 points



0

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ____Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ____Standing snags (dbh > 4 in.) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ____Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	**0**
Total for H 1 Add the points in the boxes above	**1**

Rating of Site Potential If score is: ___**15-18 = H** ____**7-14 = M** **X** ___**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 0.0 **+** [(% moderate and low intensity land uses)/2] 0.0 **=** 0.0 % Total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	**0**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 23.4 **+** [(% moderate and low intensity land uses)/2] 27.1 **=** 50.5 % Total habitat > 50% of Polygon points = 3 Total habitat 10-50% and in 1-3 patches points = 2 Total habitat 10-50% and > 3 patches points = 1 Total habitat < 10% of 1 km Polygon points = 0	**3**
H 2.3. Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	**0**
Total for H 2 Add the points in the boxes above	**3**

Rating of Landscape Potential If score is**: __4-6 = H __X_1-3 = M ___< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 _X_ It has 3 or more Priority Habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW Priority Species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	**2**

Rating of Value If score is: **X_2 = H ___1 = M ___0 = L** *Record the rating on the first page*

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

_X_ Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

— **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

Wetland B

_X_ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

__ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

_X_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

__ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

__ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes **= Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No = **Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes **= Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* — The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	**Not Applicable**

RATING SUMMARY – Western Washington

Name of wetland (or ID #): **Wetland C** Date of site visit: **6/12/25**

Rated by **Sara Hastings** Trained by Ecology? **X** Yes __No Date of training **6/22**

HGM Class used for rating **Depressional** Wetland has multiple HGM classes?___Y **X** N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map **Google Earth**

OVERALL WETLAND CATEGORY **II** (based on functions X or special characteristics)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

X **Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
										Circle the appropriate ratings
Site Potential	H	(M)	L	(H)	M	L	H	M	(L)	
Landscape Potential	H	(M)	L	H	(M)	L	(H)	M	L	
Value	(H)	M	L	H	M	(L)	(H)	M	L	**TOTAL**
Score Based on Ratings	**7**			**6**			**7**			**20**

Score for each function based on three ratings (order of ratings is not important)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	Not Applicable

Wetland C

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	**2, 12**
Hydroperiods	D 1.4, H 1.2	**2, 12**
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	**12**
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	**12**
Map of the contributing basin	D 4.3, D 5.3	**14**
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	**14**
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	**16**
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	**16**

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,

___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

____The wetland is on a slope (slope can be very gradual),

____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,

____The water leaves the wetland **without being impounded**.

NO – go to 5 **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

Wetland C

5. Does the entire wetland unit **meet all** of the following criteria?
   ____The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ____The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**
   NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? This means that any outlet, if present, is higher than the interior of the wetland.

   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

   NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	**2**
D 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 No = 0	**0**
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed plants > 95% of area points = 5 Wetland has persistent, ungrazed plants > ½ of area points = 3 Wetland has persistent, ungrazed plants ≥ 1/10 of area points = 1 Wetland has persistent, ungrazed plants < 1/10 of area points = 0	**5**
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is ≥ ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	**0**
Total for D 1 Add the points in the boxes above	**7**

Rating of Site Potential If score is: __**12-16 = H** **X** __**6-11 = M** ___**0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	**0**
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	**1**
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	**0**
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	**0**
Total for D 2 Add the points in the boxes above	**1**

Rating of Landscape Potential If score is: __**3 or 4 = H** **X** __**1 or 2 = M** ___**0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	**1**
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	**1**
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which the unit is found.) Yes = 2 No = 0	**0**
Total for D 3 Add the points in the boxes above	**2**

Rating of Value If score is: **X** **2-4 = H** **1 = M** ___**0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	**2**
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	**5**
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself. **The area of the basin is less than 10 times the area of the unit points = 5** The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5	**5**
Total for D 4 — Add the points in the boxes above	**12**

Rating of Site Potential If score is: **X 12-16 = H ___6-11 = M ___0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	**0**
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	**1**
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	**0**
Total for D 5 — Add the points in the boxes above	**1**

Rating of Landscape Potential If score is: **___3 = H X__1 or 2 = M ___0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately downgradient of unit. points = 2 • Surface flooding problems are in a sub-basin farther downgradient. points = 1 • Flooding from groundwater is an issue in the sub-basin. points = 1 • The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0 **• There are no problems with flooding downstream of the wetland. points = 0**	**0**
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	**0**
Total for D 6 — Add the points in the boxes above	**0**

Rating of Value If score is: **___2-4 = H ___1 = M X__0 = L** *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.

____Aquatic bed — 4 structures or more: points = 4
X___Emergent — 3 structures: points = 2
X___Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1
____Forested (areas where trees have > 30% cover) — 1 structure: points = 0

If the unit has a Forested class, check if:

____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

X___Permanently flooded or inundated — 4 or more types present: points = 3
X___Seasonally flooded or inundated — 3 types present: points = 2
____Occasionally flooded or inundated — 2 types present: points = 1
____Saturated only — 1 type present: points = 0
____Permanently flowing stream or river in, or adjacent to, the wetland
____Intermittently or seasonally flowing stream in, or adjacent to, the wetland
____**Lake Fringe wetland** — **2 points**
____**Freshwater tidal wetland** — **2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

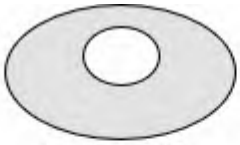
If you counted: > 19 species — points = 2
5 - 19 species — points = 1
< 5 species — points = 0

1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.

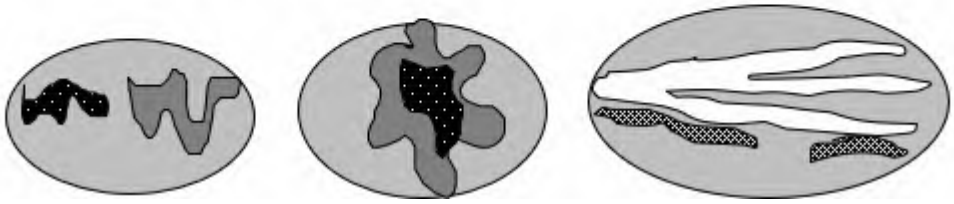
None = 0 points



Low = 1 point

Moderate = 2 points

All three diagrams in this row are **High** = 3 points



1

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. **X** Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ____Standing snags (dbh > 4 in.) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ____Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	**1**
Total for H 1 Add the points in the boxes above	**5**

Rating of Site Potential If score is: ___**15-18 = H** ____**7-14 = M** **X**__**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 22 **+** [(% moderate and low intensity land uses)/2] 4.9 **=** 26.9 % Total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	**2**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 26.5 **+** [(% moderate and low intensity land uses)/2] 20.4 **=** 46.9% Total habitat > 50% of Polygon points = 3 Total habitat 10-50% and in 1-3 patches points = 2 Total habitat 10-50% and > 3 patches points = 1 Total habitat < 10% of 1 km Polygon points = 0	**2**
H 2.3. Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	**0**
Total for H 2 Add the points in the boxes above	**4**

Rating of Landscape Potential If score is**: X 4-6 = H 1-3 = M < 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 X It has 3 or more Priority Habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW Priority Species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	**2**

Rating of Value If score is: **X 2 = H 1 = M 0 = L** *Record the rating on the first page*

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

X **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

— **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

X **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

— **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

X **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes **= Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No = **Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes **= Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* — The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	**Not Applicable**

RATING SUMMARY – Western Washington

Name of wetland (or ID #): **Wetland D** Date of site visit: **6/12/25**

Rated by **Sara Hastings** Trained by Ecology? **X** Yes __No Date of training **6/22**

HGM Class used for rating **Depressional** Wetland has multiple HGM classes?___Y **X** N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map **Google Earth**

OVERALL WETLAND CATEGORY **III** (based on functions **X** or special characteristics)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

X_____**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H M (L)	H (M) L	H M (L)	
Landscape Potential	H (M) L	H (M) L	H (M) L	
Value	H (M) L	H M (L)	(H) M L	**TOTAL**
Score Based on Ratings	**5**	**5**	**6**	**16**

Score for each function based on three ratings (order of ratings is not important)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	Not Applicable

Wetland D

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	**2, 12**
Hydroperiods	D 1.4, H 1.2	**2, 12**
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	--
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	**12**
Map of the contributing basin	D 4.3, D 5.3	**13**
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	**13**
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	**16**
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	**16**

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,

___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

____The wetland is on a slope (slope can be very gradual),

____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,

____The water leaves the wetland **without being impounded**.

NO – go to 5 **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?
   ____The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ____The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**

   NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? This means that any outlet, if present, is higher than the interior of the wetland.

   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

   NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	**3**
D 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 No = 0	**0**
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed plants > 95% of area points = 5 Wetland has persistent, ungrazed plants > ½ of area points = 3 Wetland has persistent, ungrazed plants ≥ $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	**0**
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is ≥ ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	**0**
Total for D 1 Add the points in the boxes above	**3**

Rating of Site Potential If score is: __**12-16 = H** ___**6-11 = M** **X**__**0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	**0**
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	**1**
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	**0**
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	**0**
Total for D 2 Add the points in the boxes above	**1**

Rating of Landscape Potential If score is: __**3 or 4 = H** **X**__**1 or 2 = M** ___**0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	**0**
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	**1**
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which the unit is found.) Yes = 2 No = 0	**0**
Total for D 3 Add the points in the boxes above	**1**

Rating of Value If score is**:** __**2-4 = H** **X**__**1 = M** ___**0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	**4**
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	**3**
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself. The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5	**3**
Total for D 4 Add the points in the boxes above	**10**

Rating of Site Potential If score is: ___**12-16 = H** **X** ___**6-11 = M** ___**0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	**0**
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	**1**
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	**1**
Total for D 5 Add the points in the boxes above	**2**

Rating of Landscape Potential If score is: ___**3 = H** **X** ___**1 or 2 = M** ___**0 = L** *Record the rating on the first page*

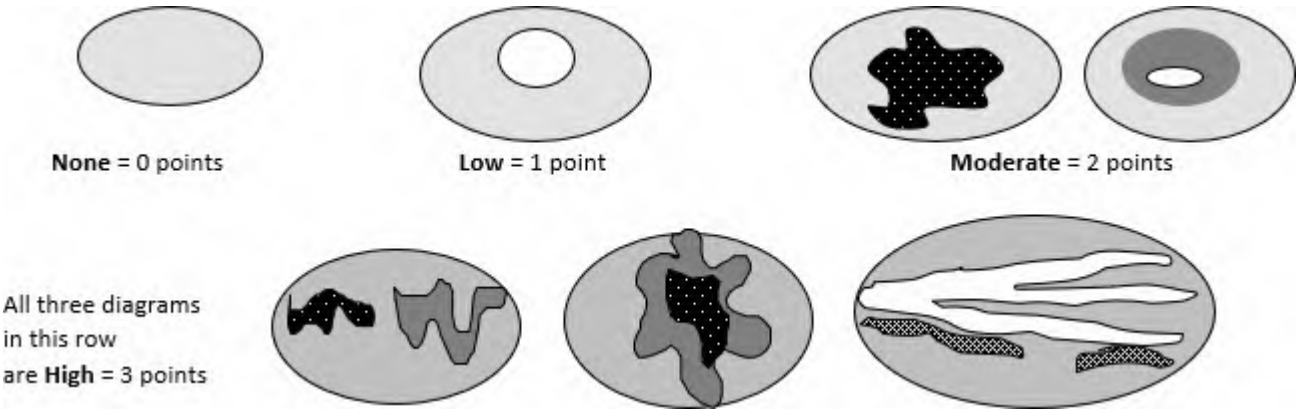
D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately downgradient of unit. points = 2 • Surface flooding problems are in a sub-basin farther downgradient. points = 1 • Flooding from groundwater is an issue in the sub-basin. points = 1 • The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why:* ***No outlet*** points = 0 • There are no problems with flooding downstream of the wetland. points = 0	**0**
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	**0**
Total for D 6 Add the points in the boxes above	**0**

Rating of Value If score is: ___**2-4 = H** ___**1 = M** **X** ___**0 = L** *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac. ____Aquatic bed — 4 structures or more: points = 4 ____Emergent — 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 **X**___Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon	**0**
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods). ____Permanently flooded or inundated — 4 or more types present: points = 3 **X**___Seasonally flooded or inundated — 3 types present: points = 2 ____Occasionally flooded or inundated — 2 types present: points = 1 **X**___Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Intermittently or seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	**1**
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	**1**
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.  **None** = 0 points **Low** = 1 point **Moderate** = 2 points All three diagrams in this row are **High** = 3 points	**0**

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). X Standing snags (dbh > 4 in.) within the wetland ___ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ___ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) X Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	**3**
Total for H 1 — Add the points in the boxes above	**5**

Rating of Site Potential If score is: ___**15-18 = H** ___**7-14 = M** X **0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 0.0 **+** [(% moderate and low intensity land uses)/2] 0.0 **=** 0.0 % Total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon — points = 3 20-33% of 1 km Polygon — points = 2 10-19% of 1 km Polygon — points = 1 < 10% of 1 km Polygon — points = 0	**0**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 23.4 **+** [(% moderate and low intensity land uses)/2] 27.1 **=** 50.5 % Total habitat > 50% of Polygon — points = 3 Total habitat 10-50% and in 1-3 patches — points = 2 Total habitat 10-50% and > 3 patches — points = 1 Total habitat < 10% of 1 km Polygon — points = 0	**3**
H 2.3. Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use — points = (- 2) ≤ 50% of 1 km Polygon is high intensity — points = 0	**0**
Total for H 2 — Add the points in the boxes above	**3**

Rating of Landscape Potential If score is**:** ___**4-6 = H** X **1-3 = M** ___**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: — points = 2 X It has 3 or more Priority Habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW Priority Species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 Priority Habitats (listed on next page) within 100 m — points = 1 Site does not meet any of the criteria above — points = 0	**2**

Rating of Value If score is: X **2 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

X **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

— **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

_X_ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

— **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

_X_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes **= Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No = **Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes **= Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* — The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	**Not Applicable**

RATING SUMMARY – Western Washington

Name of wetland (or ID #): **Wetland E** Date of site visit: **6/12/25**

Rated by **Sara Hastings** Trained by Ecology? **X** Yes __No Date of training **6/22**

HGM Class used for rating **Slope** Wetland has multiple HGM classes?___Y **X**___N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map **Google Earth**

OVERALL WETLAND CATEGORY IV (based on functions **X** or __ special characteristics)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

X **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	H M (L)	H M (L)	H M (L)	
Landscape Potential	H (M) L	H (M) L	H (M) L	
Value	H (M) L	H M (L)	H M (L)	**TOTAL**
Score Based on Ratings	**5**	**4**	**4**	**13**

Score for each function based on three ratings (order of ratings is not important)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	Not applicable

Wetland E

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	**2, 12**
Hydroperiods	H 1.2	**2, 12**
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	**2, 12**
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	**2, 12**
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	**12**
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	**13**
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	**16**
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	**16**

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,

___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

X___The wetland is on a slope (slope can be very gradual),

X___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,

X___The water leaves the wetland **without being impounded**.

NO – go to 5 **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?
   ____The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ____The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**
   NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? This means that any outlet, if present, is higher than the interior of the wetland.

   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

   NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: (A 1% slope has a 1 ft vertical change in elevation for every 100 ft of horizontal distance.) Slope is 1% or less points = 3 Slope is > 1%-2% points = 2 Slope is > 2%-5% points = 1 Slope is greater than 5% points = 0	**3**
S 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*: Yes = 3 No = 0	**0**
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed, and plants are higher than 6 in. Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 Dense, uncut, herbaceous plants > ½ of area points = 3 Dense, woody, plants > ½ of area points = 2 Dense, uncut, herbaceous plants > ¼ of area points = 1 Does not meet any of the criteria above for plants points = 0	**0**
Total for S 1 Add the points in the boxes above	**3**

Rating of Site Potential If score is: **__12 = H____6-11 = M X__0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? Yes = 1 No = 0	**1**
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources _____ Yes = 1 No = 0	**0**
Total for S 2 Add the points in the boxes above	**1**

Rating of Landscape Potential If score is: **__X__1-2 = M__0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	**0**
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? (At least one aquatic resource in the basin is on the 303(d) list.) Yes = 1 No = 0	**1**
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which unit is found.) Yes = 2 No = 0	**0**
Total for S 3 Add the points in the boxes above	**1**

Rating of Value If score is: **__2-4 = H X 1 = M ____0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions – Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. Stems of plants should be thick enough (usually > $^1/_8$ in), or dense enough, to remain erect during surface flows. Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 All other conditions points = 0	**0**

Rating of Site Potential If score is**: ___1 = M X__0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0	**1**

Rating of Landscape Potential If score is: **_X__1 = M___0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately downgradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther downgradient points = 1 No flooding problems anywhere downstream points = 0	**0**
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	**0**
Total for S 6 Add the points in the boxes above	**0**

Rating of Value If score is: **___2-4 = H ___1 = M X__0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.

____	Aquatic bed	4 structures or more: points = 4
X___	Emergent	3 structures: points = 2
____	Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
____	Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

____	Permanently flooded or inundated	4 or more types present: points = 3
____	Seasonally flooded or inundated	3 types present: points = 2
____	Occasionally flooded or inundated	2 types present: points = 1
X___	Saturated only	1 type present: points = 0
____	Permanently flowing stream or river in, or adjacent to, the wetland	
____	Intermittently or seasonally flowing stream in, or adjacent to, the wetland	
____	**Lake Fringe wetland**	**2 points**
____	**Freshwater tidal wetland**	**2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

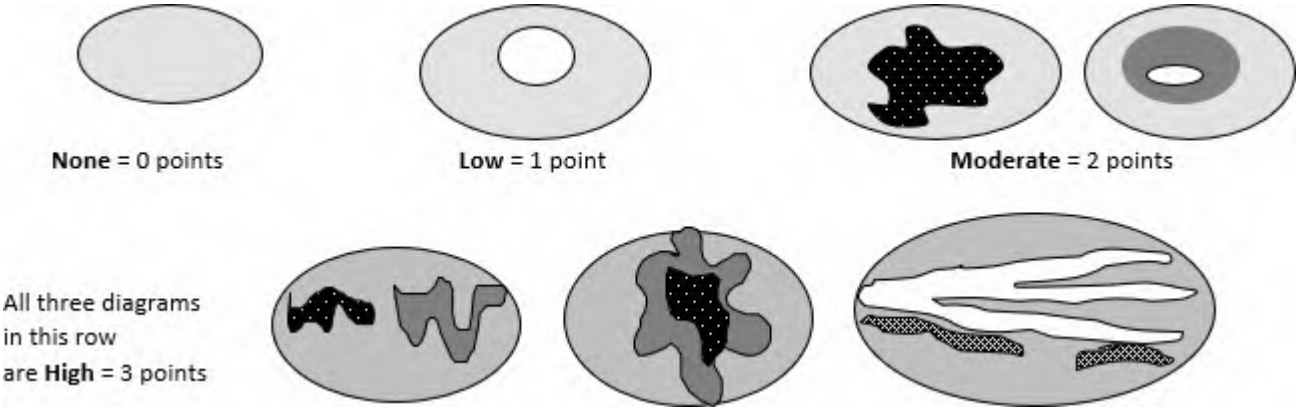
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.



0

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ____Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ____Standing snags (dbh > 4 in.) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) X___Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	**1**
Total for H 1 Add the points in the boxes above	**2**

Rating of Site Potential If score is: ___**15-18 = H** ____**7-14 = M** **X**___**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 0.0 **+** [(% moderate and low intensity land uses)/2] 0.0 **=** 0.0 % Total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	**0**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 23.4 **+** [(% moderate and low intensity land uses)/2] 27.1 **=** 50.5 % Total habitat > 50% of Polygon points = 3 Total habitat 10-50% and in 1-3 patches points = 2 Total habitat 10-50% and > 3 patches points = 1 Total habitat < 10% of 1 km Polygon points = 0	**3**
H 2.3. Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	**0**
Total for H 2 Add the points in the boxes above	**3**

Rating of Landscape Potential If score is**:** ___**4-6 = H** **X**___**1-3 = M** ____**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 — It has 3 or more Priority Habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW Priority Species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	**0**

Rating of Value If score is: ___**2 = H** ____**1 = M** **X**___**0 = L** *Record the rating on the first page*

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

— **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats
- **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** (No= **Not an estuarine wetland**)	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes = **Category I** (No – Go to **SC 2.2**) SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** (No = **Not a WHCV**) SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** (No – Go to **SC 3.2**) SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** (No = **Not a bog**) SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* — The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	Not Applicable

RATING SUMMARY – Western Washington

Name of wetland (or ID #): **Wetland U** Date of site visit: **6/12/2025**

Rated by **O. Mallett** Trained by Ecology? **X** Yes _No Date of training **10/2023**

HGM Class used for rating **Riverine** Wetland has multiple HGM classes? **X** Y ____N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map **Google Earth**

OVERALL WETLAND CATEGORY **III** (based on functions **X** or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

X **Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			TOTAL
	Circle the appropriate ratings									
Site Potential	H	(M)	L	(H)	M	L	H	M	(L)	
Landscape Potential	(H)	M	L	H	(M)	L	H	(M)	L	
Value	H	(M)	L	H	M	(L)	(H)	M	L	
Score Based on Ratings	**7**			**6**			**6**			**19**

Score for each function based on three ratings (order of ratings is not important)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	Not applicable

Wetland U

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	**2, 12**
Hydroperiods	H 1.2	**2, 12**
Ponded depressions	R 1.1	**15**
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	**12**
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	**12**
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	**12**
Map of the contributing basin	R 2.2, R 2.3, R 5.2	**15**
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	**15**
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	**16**
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	**16**

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,

___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

X___The wetland is on a slope (slope can be very gradual),

X___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,

X___The water leaves the wetland **without being impounded**.

NO – go to 5 **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

Wetland U

5. Does the entire wetland unit **meet all** of the following criteria?
   X The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   X The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**

   NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? This means that any outlet, if present, is higher than the interior of the wetland.

   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

   NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover >3/4 area of wetland points = 8 Depressions cover > ½ area of wetland points = 4 Depressions present but cover ≤ ½ area of wetland points = 2 No depressions present points = 0	0
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, **not** Cowardin classes) Trees or shrubs > 2/3 area of the wetland points = 8 Trees or shrubs > 1/3 area of the wetland points = 6 Herbaceous plants (> 6 in. high) > 2/3 area of the wetland points = 6 Herbaceous plants (> 6 in. high) > 1/3 area of the wetland points = 3 Trees, shrubs, and ungrazed herbaceous < 1/3 area of the wetland points = 0	8
Total for R 1 Add the points in the boxes above	8

Rating of Site Potential If score is: **___12-16 = H X___6-11 = M ___0-5 = L** *Record the rating on the first page*

R 2.0. Does the landscape have the potential to support the water quality function of the site?	
R 2.1. Is the wetland within an incorporated city or within its UGA? Yes = 2 No = 0	2
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area? Yes = 1 No = 0	1
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years? Yes = 1 No = 0	1
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? Other sources : _____ Yes = 1 No = 0	0
Total for R 2 Add the points in the boxes above	5

Rating of Landscape Potential If score is: **_X__3-6 = H ___1 or 2 = M ___0 = L** *Record the rating on the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? Yes = 1 No = 0	0
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the drainage in which the unit is found.) Yes = 2 No = 0	1
Total for R 3 Add the points in the boxes above	1

Rating of Value If score is: **___2-4 = H _X__ 1 = M __0 = L** *Record the rating on the first page*

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion

R 4.0. Does the site have the potential to reduce flooding and erosion?	
R 4.1. Characteristics of the overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks). If the ratio is more than 20 points = 9 If the ratio is 10-20 points = 6 If the ratio is 5-<10 points = 4 If the ratio is 1-<5 points = 2 If the ratio is < 1 points = 1	6
R 4.2. Characteristics of plants that slow down water velocities during floods: Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are NOT Cowardin classes). Forest or shrub for > $^1/_3$ area OR emergent plants > $^2/_3$ area points = 7 Forest or shrub for > $^1/_{10}$ area OR emergent plants > $^1/_3$ area points = 4 Plants do not meet above criteria points = 0	7
Total for R 4 Add the points in the boxes above	13

Rating of Site Potential If score is: **__X__12-16 = H___6-11 = M ____0-5 = L** *Record the rating on the first page*

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1	0
R 5.2. Does the upgradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	1
R 5.3. Is the upgradient stream or river controlled by dams?	Yes = 0 No = 1	0
Total for R 5 Add the points in the boxes above		1

Rating of Landscape Potential If score is: **___3 = H __X__1 or 2 = M ____0 = L** *Record the rating on the first page*

R 6.0. Are the hydrologic functions provided by the site valuable to society?	
R 6.1. Distance to the nearest areas downstream that have flooding problems? Choose the description that best fits the site. The sub-basin immediately downgradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther downgradient points = 1 No flooding problems anywhere downstream points = 0	0
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for R 6 Add the points in the boxes above	0

Rating of Value If score is: **___2-4 = H ___1 = M __X___0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.

____	Aquatic bed	4 structures or more: points = 4
____	Emergent	3 structures: points = 2
X	Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
X	Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

____ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

____	Permanently flooded or inundated	4 or more types present: points = 3
____	Seasonally flooded or inundated	3 types present: points = 2
____	Occasionally flooded or inundated	2 types present: points = 1
X	Saturated only	1 type present: points = 0
X	Permanently flowing stream or river in, or adjacent to, the wetland	
____	Intermittently or seasonally flowing stream in, or adjacent to, the wetland	
____	**Lake Fringe wetland**	**2 points**
____	**Freshwater tidal wetland**	**2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

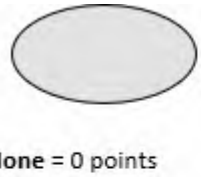
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

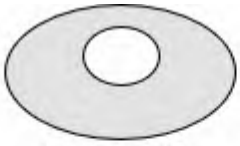
1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.



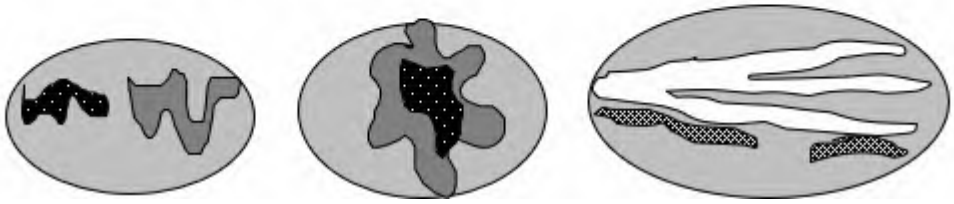
None = 0 points



Low = 1 point

Moderate = 2 points

All three diagrams in this row are **High** = 3 points



2

Wetland U

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ____Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ____Standing snags (dbh > 4 in.) within the wetland X___Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ____Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	1
Total for H 1 Add the points in the boxes above	6

Rating of Site Potential If score is: ___**15-18 = H** ____**7-14 = M** **X**__**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 3.2 **+** [(% moderate and low intensity land uses)/2] 12.2 **=** 15.4 % Total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	1
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 16.1 **+** [(% moderate and low intensity land uses)/2] 30.7 **=** 46.8 % Total habitat > 50% of Polygon points = 3 Total habitat 10-50% and in 1-3 patches points = 2 Total habitat 10-50% and > 3 patches points = 1 Total habitat < 10% of 1 km Polygon points = 0	2
H 2.3. Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	3

Rating of Landscape Potential If score is**:** ___**4-6 = H** **X**__**1-3 = M** ____**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 X It has 3 or more Priority Habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW Priority Species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: **X**__**2 = H** _**1 = M** ____**0 = L** *Record the rating on the first page*

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

_X_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

— **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

X **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

X **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** (No= **Not an estuarine wetland**)	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes = **Category I** (No – Go to **SC 2.2**) SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** (No = **Not a WHCV**) SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** (No – Go to **SC 3.2**) SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** (No = **Not a bog**) SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* — The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	Not Applicable

RATING SUMMARY – Western Washington

Name of wetland (or ID #): **Wetland V** Date of site visit: **6/12/25**

Rated by **Sara Hastings** Trained by Ecology? **X** Yes __No Date of training **6/22**

HGM Class used for rating **Slope** Wetland has multiple HGM classes?___Y **X**___N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map **Google Earth**

OVERALL WETLAND CATEGORY IV (based on functions X__ or __ special characteristics)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

__**X**__**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H M (L)	H M (L)	H M (L)	
Landscape Potential	H (M) L	H (M) L	H (M) L	
Value	H (M) L	H M (L)	H (M) L	**TOTAL**
Score Based on Ratings	**5**	**4**	**5**	**14**

Score for each function based on three ratings (order of ratings is not important)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	Not Applicable

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	**2, 12**
Hydroperiods	H 1.2	**2, 12**
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	**2, 12**
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	**2, 12**
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	**12**
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	**13**
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	**16**
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	**16**

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,

___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

X___The wetland is on a slope (slope can be very gradual),

X___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,

X___The water leaves the wetland **without being impounded**.

NO – go to 5 **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?
   ____The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ____The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**
   NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? This means that any outlet, if present, is higher than the interior of the wetland.

   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

   NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: (A 1% slope has a 1 ft vertical change in elevation for every 100 ft of horizontal distance.) Slope is 1% or less points = 3 Slope is > 1%-2% points = 2 Slope is > 2%-5% points = 1 Slope is greater than 5% points = 0	**3**
S 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*: Yes = 3 No = 0	**0**
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed, and plants are higher than 6 in. Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 Dense, uncut, herbaceous plants > ½ of area points = 3 Dense, woody, plants > ½ of area points = 2 Dense, uncut, herbaceous plants > ¼ of area points = 1 Does not meet any of the criteria above for plants points = 0	**0**
Total for S 1 Add the points in the boxes above	**3**

Rating of Site Potential If score is: **__12 = H____6-11 = M X__0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? Yes = 1 No = 0	**1**
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources _____ Yes = 1 No = 0	**0**
Total for S 2 Add the points in the boxes above	**1**

Rating of Landscape Potential If score is: **__X__1-2 = M__0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	**0**
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? (At least one aquatic resource in the basin is on the 303(d) list.) Yes = 1 No = 0	**1**
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which unit is found.) Yes = 2 No = 0	**0**
Total for S 3 Add the points in the boxes above	**1**

Rating of Value If score is: **____2-4 = H X 1 = M ___0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions – Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. Stems of plants should be thick enough (usually > $^1/_8$ in), or dense enough, to remain erect during surface flows. Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 All other conditions points = 0	**0**

Rating of Site Potential If score is**: __1 = M X__0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0	**1**

Rating of Landscape Potential If score is: **X_1 = M ___0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately downgradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther downgradient points = 1 No flooding problems anywhere downstream points = 0	**0**
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	**0**
Total for S 6 Add the points in the boxes above	**0**

Rating of Value If score is: **___2-4 = H ___1 = M X__0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.

____	Aquatic bed	4 structures or more: points = 4
X	Emergent	3 structures: points = 2
____	Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
____	Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

____	Permanently flooded or inundated	4 or more types present: points = 3
____	Seasonally flooded or inundated	3 types present: points = 2
____	Occasionally flooded or inundated	2 types present: points = 1
X	Saturated only	1 type present: points = 0
____	Permanently flowing stream or river in, or adjacent to, the wetland	
____	Intermittently or seasonally flowing stream in, or adjacent to, the wetland	
____	**Lake Fringe wetland**	**2 points**
____	**Freshwater tidal wetland**	**2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

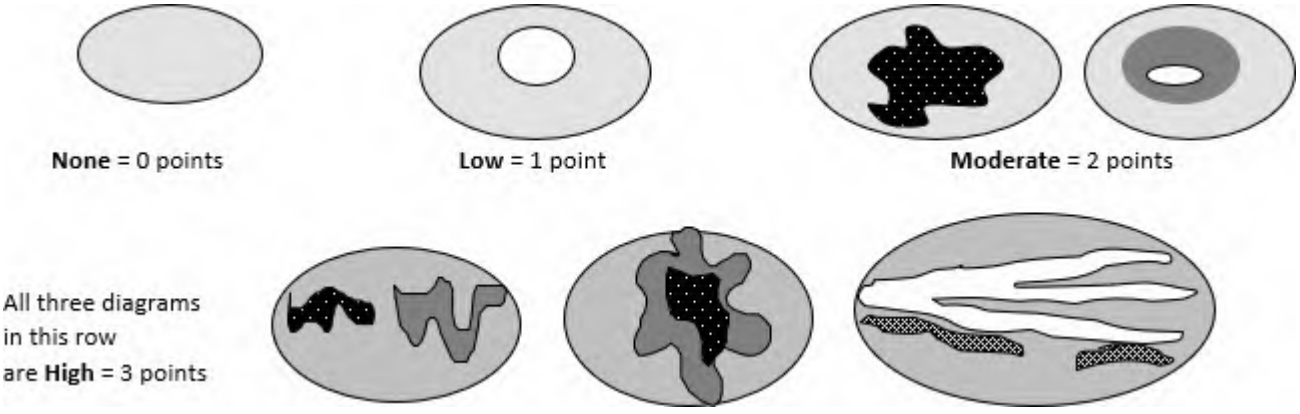
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.



0

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ____Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ____Standing snags (dbh > 4 in.) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) X___Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	**1**
Total for H 1 Add the points in the boxes above	**2**

Rating of Site Potential If score is: ___**15-18 = H** ____**7-14 = M** **X**__**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 0.0 **+** [(% moderate and low intensity land uses)/2] 0.0 **=** 0.0 % Total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	**0**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 23.4 **+** [(% moderate and low intensity land uses)/2] 27.1 **=** 50.5 % Total habitat > 50% of Polygon points = 3 Total habitat 10-50% and in 1-3 patches points = 2 Total habitat 10-50% and > 3 patches points = 1 Total habitat < 10% of 1 km Polygon points = 0	**3**
H 2.3. Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	**0**
Total for H 2 Add the points in the boxes above	**3**

Rating of Landscape Potential If score is**:** ___**4-6 = H** **X**___**1-3 = M** ____**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 — It has 3 or more Priority Habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW Priority Species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	**1**

Rating of Value If score is: ___**2 = H** **X**__**1 = M** ____**0 = L** *Record the rating on the first page*

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

_X_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

— **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

X **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** (No= **Not an estuarine wetland**)	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes = **Category I** (No – Go to **SC 2.2**) SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** (No = **Not a WHCV**) SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** (No – Go to **SC 3.2**) SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** (No = **Not a bog**) SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* — The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	Not Applicable

RATING SUMMARY – Western Washington

Name of wetland (or ID #): **Wetland W** Date of site visit: **6/12/2025**

Rated by **O. Mallett** Trained by Ecology? **X** Yes _No Date of training **10/2023**

HGM Class used for rating **Slope** Wetland has multiple HGM classes? ___Y **X** ___N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map **Google Earth**

OVERALL WETLAND CATEGORY **III** (based on functions **X** or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

X **Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H M (L)	H M (L)	H M (L)	
Landscape Potential	H (M) L	H (M) L	H (M) L	
Value	(H) M L	H M (L)	(H) M L	**TOTAL**
Score Based on Ratings	6	4	6	16

Score for each function based on three ratings (order of ratings is not important)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	Not Applicable

Wetland W

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	**2, 12**
Hydroperiods	H 1.2	**2, 12**
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	**2, 12**
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	**2, 12**
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	**12**
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	**15**
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	**16**
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	**16**

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,

___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

X___The wetland is on a slope (slope can be very gradual),

X___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,

X___The water leaves the wetland **without being impounded**.

NO – go to 5 **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

Wetland W

5. Does the entire wetland unit **meet all** of the following criteria?
   ___The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ___The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**

   NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? This means that any outlet, if present, is higher than the interior of the wetland.

   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

   NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: (A 1% slope has a 1 ft vertical change in elevation for every 100 ft of horizontal distance.) Slope is 1% or less points = 3 Slope is > 1%-2% points = 2 Slope is > 2%-5% points = 1 Slope is greater than 5% points = 0	3
S 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*: Yes = 3 No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed, and plants are higher than 6 in. Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 Dense, uncut, herbaceous plants > ½ of area points = 3 Dense, woody, plants > ½ of area points = 2 Dense, uncut, herbaceous plants > ¼ of area points = 1 Does not meet any of the criteria above for plants points = 0	0
Total for S 1 Add the points in the boxes above	3

Rating of Site Potential If score is: **___12 = H ___6-11 = M X__0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources _____ Yes = 1 No = 0	0
Total for S 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: **X___1-2 = M __0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? (At least one aquatic resource in the basin is on the 303(d) list.) Yes = 1 No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which unit is found.) Yes = 2 No = 0	0
Total for S 3 Add the points in the boxes above	2

Rating of Value If score is: **_X__2-4 = H _1 = M ___0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions – Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. Stems of plants should be thick enough (usually > $^1/_8$ in), or dense enough, to remain erect during surface flows. Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 All other conditions points = 0	0

Rating of Site Potential If score is**: __1 = M X__0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0	1

Rating of Landscape Potential If score is: **X__1 = M __0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately downgradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther downgradient points = 1 No flooding problems anywhere downstream points = 0	0
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for S 6 Add the points in the boxes above	0

Rating of Value If score is: **__2-4 = H __1 = M X__0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.

____Aquatic bed	4 structures or more: points = 4
X___Emergent	3 structures: points = 2
____Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
____Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

____Permanently flooded or inundated	4 or more types present: points = 3
____Seasonally flooded or inundated	3 types present: points = 2
____Occasionally flooded or inundated	2 types present: points = 1
X___Saturated only	1 type present: points = 0
X___Permanently flowing stream or river in, or adjacent to, the wetland	
____Intermittently or seasonally flowing stream in, or adjacent to, the wetland	
____**Lake Fringe wetland**	**2 points**
____**Freshwater tidal wetland**	**2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

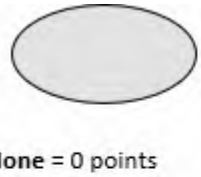
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

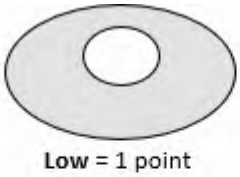
1

H 1.4. Interspersion of habitats

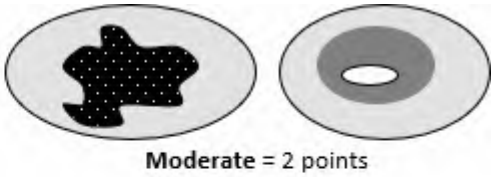
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.



None = 0 points

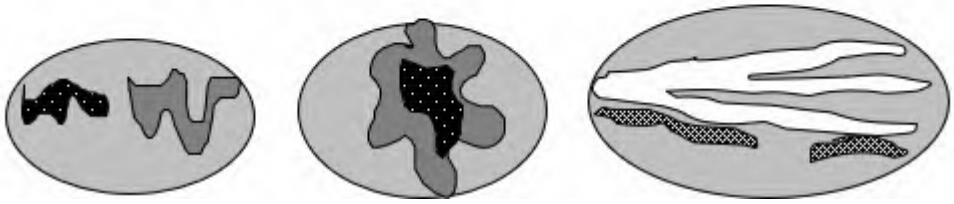


Low = 1 point



Moderate = 2 points

All three diagrams in this row are **High** = 3 points



0

Wetland W

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ____Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ____Standing snags (dbh > 4 in.) within the wetland X___Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) X___Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	2
Total for H 1 Add the points in the boxes above	3

Rating of Site Potential If score is: ___**15-18 = H** ____**7-14 = M** **X**__**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 3.2 **+** [(% moderate and low intensity land uses)/2] 12.2 **=** 15.4 % Total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	1
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 16.1 **+** [(% moderate and low intensity land uses)/2] 30.7 **=** 46.8 % Total habitat > 50% of Polygon points = 3 Total habitat 10-50% and in 1-3 patches points = 2 Total habitat 10-50% and > 3 patches points = 1 Total habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is**:** ___**4-6 = H** **X**__**1-3 = M** ____**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 _X_ It has 3 or more Priority Habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW Priority Species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: **X** **2 = H** _**1 = M** ____**0 = L** *Record the rating on the first page*

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

_X_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

— **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

_X_ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

_X_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** (No= **Not an estuarine wetland**)	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes = **Category I** (No – Go to **SC 2.2**) SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** (No = **Not a WHCV**) SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** (No – Go to **SC 3.2**) SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** (No = **Not a bog**) SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* — The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	Not Applicable

RATING SUMMARY – Western Washington

Name of wetland (or ID #): **Wetland X** Date of site visit: **6/12/2025**

Rated by **O. Mallett** Trained by Ecology? **X** Yes _No Date of training **10/2023**

HGM Class used for rating **Slope** Wetland has multiple HGM classes? ___Y **X** ___N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map **Google Earth**

OVERALL WETLAND CATEGORY IV___ (based on functions X__ or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

__X____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H M (L)	H M (L)	H M (L)	
Landscape Potential	H (M) L	H (M) L	H (M) L	
Value	(H) M L	H M (L)	H (M) L	**TOTAL**
Score Based on Ratings	6	4	5	15

Score for each function based on three ratings (order of ratings is not important)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	Not Applicable

Wetland X

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	**2, 12**
Hydroperiods	H 1.2	**2, 12**
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	**2, 12**
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	**2, 12**
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	**12**
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	**13**
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	**16**
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	**16**

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,

___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

X___The wetland is on a slope (slope can be very gradual),

X___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,

X___The water leaves the wetland **without being impounded**.

NO – go to 5 **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?
   ____The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ____The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**
   NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? This means that any outlet, if present, is higher than the interior of the wetland.

   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

   NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: (A 1% slope has a 1 ft vertical change in elevation for every 100 ft of horizontal distance.) Slope is 1% or less points = 3 Slope is > 1%-2% points = 2 Slope is > 2%-5% points = 1 Slope is greater than 5% points = 0	3
S 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*: Yes = 3 No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed, and plants are higher than 6 in. Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 Dense, uncut, herbaceous plants > ½ of area points = 3 Dense, woody, plants > ½ of area points = 2 Dense, uncut, herbaceous plants > ¼ of area points = 1 Does not meet any of the criteria above for plants points = 0	0
Total for S 1 Add the points in the boxes above	3

Rating of Site Potential If score is: **__12 = H ___6-11 = M X__0-5 = L** *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources _____ Yes = 1 No = 0	0
Total for S 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: **X___1-2 = M __0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? (At least one aquatic resource in the basin is on the 303(d) list.) Yes = 1 No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which unit is found.) Yes = 2 No = 0	0
Total for S 3 Add the points in the boxes above	2

Rating of Value If score is: **_X__2-4 = H _1 = M ___0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions – Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. Stems of plants should be thick enough (usually > $^1/_8$ in), or dense enough, to remain erect during surface flows. Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 All other conditions points = 0	0

Rating of Site Potential If score is: **__1 = M X__0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? Yes = 1 No = 0	1

Rating of Landscape Potential If score is: **_X__1 = M _0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately downgradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther downgradient points = 1 No flooding problems anywhere downstream points = 0	0
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for S 6 Add the points in the boxes above	0

Rating of Value If score is: **__2-4 = H ___1 = M X__0 = L** *Record the rating on the first page*

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac.

____	Aquatic bed	4 structures or more: points = 4
X___	Emergent	3 structures: points = 2
____	Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
____	Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

0

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

____	Permanently flooded or inundated	4 or more types present: points = 3
____	Seasonally flooded or inundated	3 types present: points = 2
____	Occasionally flooded or inundated	2 types present: points = 1
X___	Saturated only	1 type present: points = 0
____	Permanently flowing stream or river in, or adjacent to, the wetland	
X___	Intermittently or seasonally flowing stream in, or adjacent to, the wetland	
____	**Lake Fringe wetland**	**2 points**
____	**Freshwater tidal wetland**	**2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

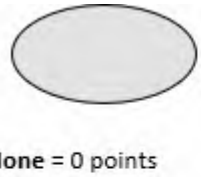
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

If you counted: > 19 species	points = 2
5 - 19 species	points = 1
< 5 species	points = 0

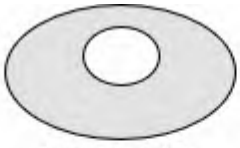
1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.



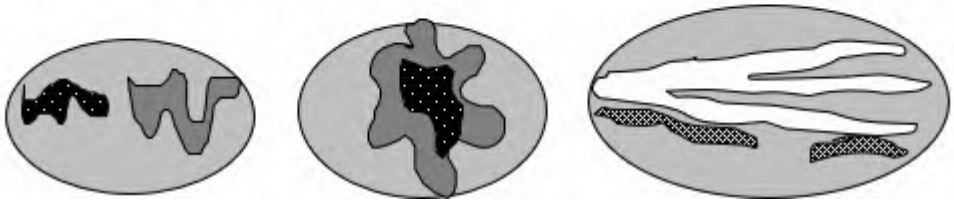
None = 0 points



Low = 1 point

Moderate = 2 points

All three diagrams in this row are **High** = 3 points



0

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ____Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ____Standing snags (dbh > 4 in.) within the wetland X___Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) X___Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	2
Total for H 1 Add the points in the boxes above	3

Rating of Site Potential If score is: ___**15-18 = H** ____**7-14 = M** **X**__**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 0.0 **+** [(% moderate and low intensity land uses)/2] 0.0 **=** 0.0 % Total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	0
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 23.4 **+** [(% moderate and low intensity land uses)/2] 27.1 **=** 50.5 % Total habitat > 50% of Polygon points = 3 Total habitat 10-50% and in 1-3 patches points = 2 Total habitat 10-50% and > 3 patches points = 1 Total habitat < 10% of 1 km Polygon points = 0	3
H 2.3. Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	3

Rating of Landscape Potential If score is**:** ___**4-6 = H** **X**__**1-3 = M** ____**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 — It has 3 or more Priority Habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW Priority Species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	1

Rating of Value If score is: ___**2 = H** **X**__**1 = M** ____**0 = L** *Record the rating on the first page*

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

_X_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

— **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

_X_ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** (No= **Not an estuarine wetland**)	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes = **Category I** (No – Go to **SC 2.2**) SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** (No = **Not a WHCV**) SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** (No – Go to **SC 3.2**) SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** (No = **Not a bog**) SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* — The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	Not Applicable

RATING SUMMARY – Western Washington

Name of wetland (or ID #): **Wetland Y** Date of site visit: **6/10/2025**

Rated by **O. Mallett** Trained by Ecology? **X** Yes _No Date of training **10/2023**

HGM Class used for rating **Riverine** Wetland has multiple HGM classes? ___Y **X** ___N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map **Google Earth**

OVERALL WETLAND CATEGORY **III** (based on functions **X** or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

X **Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H (M) L	H (M) L	H M (L)	
Landscape Potential	(H) M L	H (M) L	H (M) L	
Value	H M (L)	H M (L)	(H) M L	**TOTAL**
Score Based on Ratings	6	5	6	17

Score for each function based on three ratings (order of ratings is not important)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	Not Applicable

Wetland Y

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	**2, 12**
Hydroperiods	H 1.2	**2, 12**
Ponded depressions	R 1.1	**15**
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	**12**
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	**12**
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	**12**
Map of the contributing basin	R 2.2, R 2.3, R 5.2	**15**
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	**15**
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	**16**
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	**16**

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,

___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

____The wetland is on a slope (slope can be very gradual),

____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,

____The water leaves the wetland **without being impounded**.

NO – go to 5 **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?
   X The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   X The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**
   NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? This means that any outlet, if present, is higher than the interior of the wetland.

   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

   NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover >$^3/_4$ area of wetland points = 8 Depressions cover > ½ area of wetland points = 4 Depressions present but cover ≤ ½ area of wetland points = 2 No depressions present points = 0	0
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, **not** Cowardin classes) Trees or shrubs > $^2/_3$ area of the wetland points = 8 Trees or shrubs > $^1/_3$ area of the wetland points = 6 Herbaceous plants (> 6 in. high) > $^2/_3$ area of the wetland points = 6 Herbaceous plants (> 6 in. high) > $^1/_3$ area of the wetland points = 3 Trees, shrubs, and ungrazed herbaceous < $^1/_3$ area of the wetland points = 0	8
Total for R 1 Add the points in the boxes above	8

Rating of Site Potential If score is: **___12-16 = H X___6-11 = M ____0-5 = L** *Record the rating on the first page*

R 2.0. Does the landscape have the potential to support the water quality function of the site?	
R 2.1. Is the wetland within an incorporated city or within its UGA? Yes = 2 No = 0	2
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area? Yes = 1 No = 0	1
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years? Yes = 1 No = 0	0
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	0
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? Other sources _____ Yes = 1 No = 0	0
Total for R 2 Add the points in the boxes above	3

Rating of Landscape Potential If score is: **_X__3-6 = H ___1 or 2 = M ___0 = L** *Record the rating on the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? Yes = 1 No = 0	0
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the drainage in which the unit is found.) Yes = 2 No = 0	0
Total for R 3 Add the points in the boxes above	0

Rating of Value If score is: **___2-4 = H ___1 = M X_0 = L** *Record the rating on the first page*

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion

R 4.0. Does the site have the potential to reduce flooding and erosion?	
R 4.1. Characteristics of the overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks). If the ratio is more than 20 points = 9 If the ratio is 10-20 points = 6 If the ratio is 5-<10 points = 4 If the ratio is 1-<5 points = 2 If the ratio is < 1 points = 1	2
R 4.2. Characteristics of plants that slow down water velocities during floods: Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are NOT Cowardin classes). Forest or shrub for > $^1/_3$ area OR emergent plants > $^2/_3$ area points = 7 Forest or shrub for > $^1/_{10}$ area OR emergent plants > $^1/_3$ area points = 4 Plants do not meet above criteria points = 0	7
Total for R 4 Add the points in the boxes above	9

Rating of Site Potential If score is: ___**12-16 = H** **X**__**6-11 = M** ___**0-5 = L** *Record the rating on the first page*

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1	0
R 5.2. Does the upgradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	1
R 5.3. Is the upgradient stream or river controlled by dams?	Yes = 0 No = 1	0
Total for R 5 Add the points in the boxes above		1

Rating of Landscape Potential If score is: ___**3 = H** **X**__**1 or 2 = M** ___**0 = L** *Record the rating on the first page*

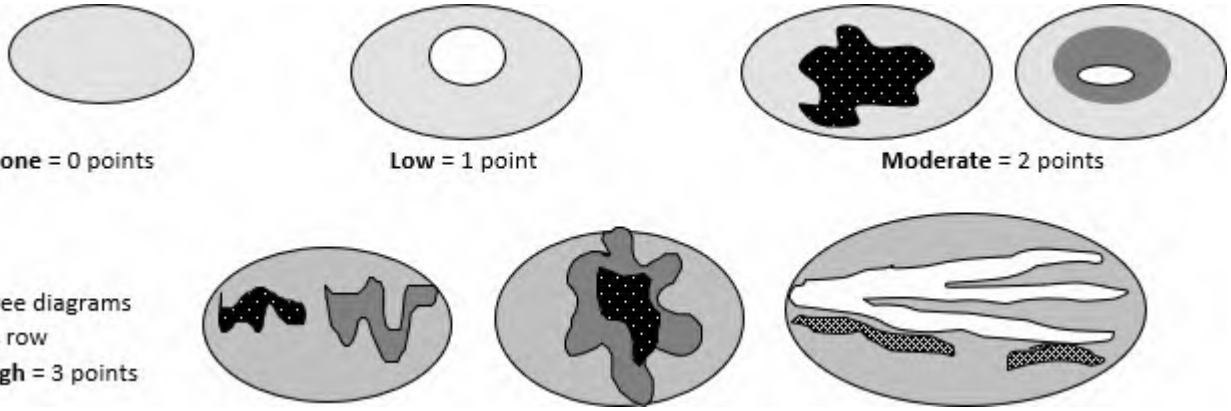
R 6.0. Are the hydrologic functions provided by the site valuable to society?	
R 6.1. Distance to the nearest areas downstream that have flooding problems? Choose the description that best fits the site. The sub-basin immediately downgradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther downgradient points = 1 No flooding problems anywhere downstream points = 0	0
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for R 6 Add the points in the boxes above	0

Rating of Value If score is: ___**2-4 = H** ___**1 = M** **X**__**0 = L** *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac. ____Aquatic bed — 4 structures or more: points = 4 ____Emergent — 3 structures: points = 2 X___Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 ____Occasionally flooded or inundated — 2 types present: points = 1 X___Saturated only — 1 type present: points = 0 X___Permanently flowing stream or river in, or adjacent to, the wetland ____Intermittently or seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.  **None** = 0 points **Low** = 1 point **Moderate** = 2 points All three diagrams in this row are **High** = 3 points	1

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ____Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ____Standing snags (dbh > 4 in.) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ____Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	0
Total for H 1 Add the points in the boxes above	3

Rating of Site Potential If score is: ___**15-18 = H** ____**7-14 = M** **X** ___**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 3.2 **+** [(% moderate and low intensity land uses)/2] 12.2 **=** 15.4 % Total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	1
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 16.1 **+** [(% moderate and low intensity land uses)/2] 30.7 **=** 46.8 % Total habitat > 50% of Polygon points = 3 Total habitat 10-50% and in 1-3 patches points = 2 Total habitat 10-50% and > 3 patches points = 1 Total habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is**: ___4-6 = H** **X** ___**1-3 = M** ____**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 X It has 3 or more Priority Habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW Priority Species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: X ___**2 = H** ___**1 = M** ____**0 = L** *Record the rating on the first page*

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

_X_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

— **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

_X_ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

_X_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes = **Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No = **Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* — The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	Not Applicable

RATING SUMMARY – Western Washington

Name of wetland (or ID #): **Wetland Z** Date of site visit: **6/10/2025**

Rated by **O. Mallett** Trained by Ecology? **X** Yes _No Date of training **10/2023**

HGM Class used for rating **Riverine** Wetland has multiple HGM classes? ___Y **X** ___N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map **Google Earth**

OVERALL WETLAND CATEGORY **III** (based on functions **X** or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

X **Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H (M) L	H (M) L	H M (L)	
Landscape Potential	(H) M L	H (M) L	H (M) L	
Value	H M (L)	H M (L)	(H) M L	**TOTAL**
Score Based on Ratings	6	5	6	17

Score for each function based on three ratings (order of ratings is not important)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	Not Applicable

Wetland Z

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	**2, 12**
Hydroperiods	H 1.2	**2, 12**
Ponded depressions	R 1.1	**15**
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	**12**
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	**12**
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	**12**
Map of the contributing basin	R 2.2, R 2.3, R 5.2	**15**
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	**15**
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	**16**
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	**16**

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?

___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,

___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

____The wetland is on a slope (slope can be very gradual),

____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,

____The water leaves the wetland **without being impounded**.

NO – go to 5 **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?
   X The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   X The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**
   NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? This means that any outlet, if present, is higher than the interior of the wetland.

   NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

   NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover >$^3/_4$ area of wetland points = 8 Depressions cover > ½ area of wetland points = 4 Depressions present but cover ≤ ½ area of wetland points = 2 No depressions present points = 0	0
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, **not** Cowardin classes) Trees or shrubs > $^2/_3$ area of the wetland points = 8 Trees or shrubs > $^1/_3$ area of the wetland points = 6 Herbaceous plants (> 6 in. high) > $^2/_3$ area of the wetland points = 6 Herbaceous plants (> 6 in. high) > $^1/_3$ area of the wetland points = 3 Trees, shrubs, and ungrazed herbaceous < $^1/_3$ area of the wetland points = 0	8
Total for R 1 Add the points in the boxes above	8

Rating of Site Potential If score is: **___12-16 = H X__6-11 = M ___0-5 = L** *Record the rating on the first page*

R 2.0. Does the landscape have the potential to support the water quality function of the site?	
R 2.1. Is the wetland within an incorporated city or within its UGA? Yes = 2 No = 0	2
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area? Yes = 1 No = 0	1
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years? Yes = 1 No = 0	0
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	0
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? Other sources _____ Yes = 1 No = 0	0
Total for R 2 Add the points in the boxes above	3

Rating of Landscape Potential If score is: **X___3-6 = H ___1 or 2 = M __0 = L** *Record the rating on the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? Yes = 1 No = 0	0
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the drainage in which the unit is found.) Yes = 2 No = 0	0
Total for R 3 Add the points in the boxes above	0

Rating of Value If score is: **___2-4 = H ___1 = M X__0 = L** *Record the rating on the first page*

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion

R 4.0. Does the site have the potential to reduce flooding and erosion?	
R 4.1. Characteristics of the overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks). If the ratio is more than 20 points = 9 If the ratio is 10-20 points = 6 If the ratio is 5-<10 points = 4 If the ratio is 1-<5 **See Figure 7** points = 2 If the ratio is < 1 points = 1	2
R 4.2. Characteristics of plants that slow down water velocities during floods: Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person height. These are NOT Cowardin classes). Forest or shrub for > $^1/_3$ area OR emergent plants > $^2/_3$ area points = 7 Forest or shrub for > $^1/_{10}$ area OR emergent plants > $^1/_3$ area points = 4 Plants do not meet above criteria points = 0	7
Total for R 4 Add the points in the boxes above	9

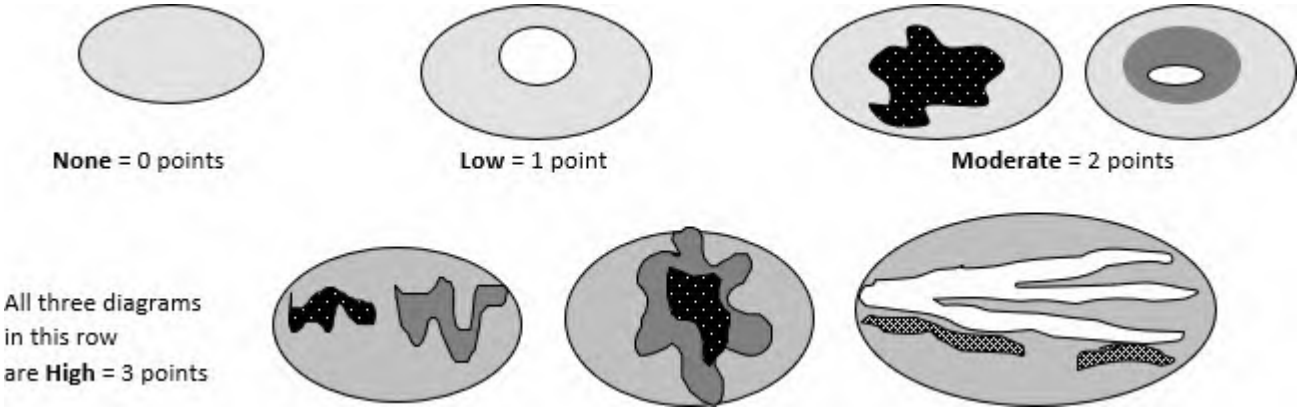
Rating of Site Potential If score is: **___12-16 = H X__6-11 = M ___0-5 = L** *Record the rating on the first page*

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1	0
R 5.2. Does the upgradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	1
R 5.3. Is the upgradient stream or river controlled by dams?	Yes = 0 No = 1	0
Total for R 5	Add the points in the boxes above	1

Rating of Landscape Potential If score is: **___3 = H X__1 or 2 = M ___0 = L** *Record the rating on the first page*

R 6.0. Are the hydrologic functions provided by the site valuable to society?	
R 6.1. Distance to the nearest areas downstream that have flooding problems? Choose the description that best fits the site. The sub-basin immediately downgradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther downgradient points = 1 No flooding problems anywhere downstream points = 0	0
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for R 6 Add the points in the boxes above	0

Rating of Value If score is: **___2-4 = H ___1 = M X__0 = L** *Record the rating on the first page*

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac. ____Aquatic bed — 4 structures or more: points = 4 ____Emergent — 3 structures: points = 2 X___Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 ____Occasionally flooded or inundated — 2 types present: points = 1 X___Saturated only — 1 type present: points = 0 X___Permanently flowing stream or river in, or adjacent to, the wetland ____Intermittently or seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.  **None** = 0 points **Low** = 1 point **Moderate** = 2 points All three diagrams in this row are **High** = 3 points	0

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ____Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ____Standing snags (dbh > 4 in.) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ____Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	0
Total for H 1 Add the points in the boxes above	2

Rating of Site Potential If score is: ___**15-18 = H** ____**7-14 = M** **X** ___**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 3.2 **+** [(% moderate and low intensity land uses)/2] 12.2 **=** 15.4 % Total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	1
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 16.1 **+** [(% moderate and low intensity land uses)/2] 30.7 **=** 46.8% Total habitat > 50% of Polygon points = 3 Total habitat 10-50% and in 1-3 patches points = 2 Total habitat 10-50% and > 3 patches points = 1 Total habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is**:** ___**4-6 = H** **X** ___**1-3 = M** ____**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 X It has 3 or more Priority Habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW Priority Species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: X ___**2 = H** ___**1 = M** ____**0 = L** *Record the rating on the first page*

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

_X_ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

— **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

_X_ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

_X_ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes = **Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No = **Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

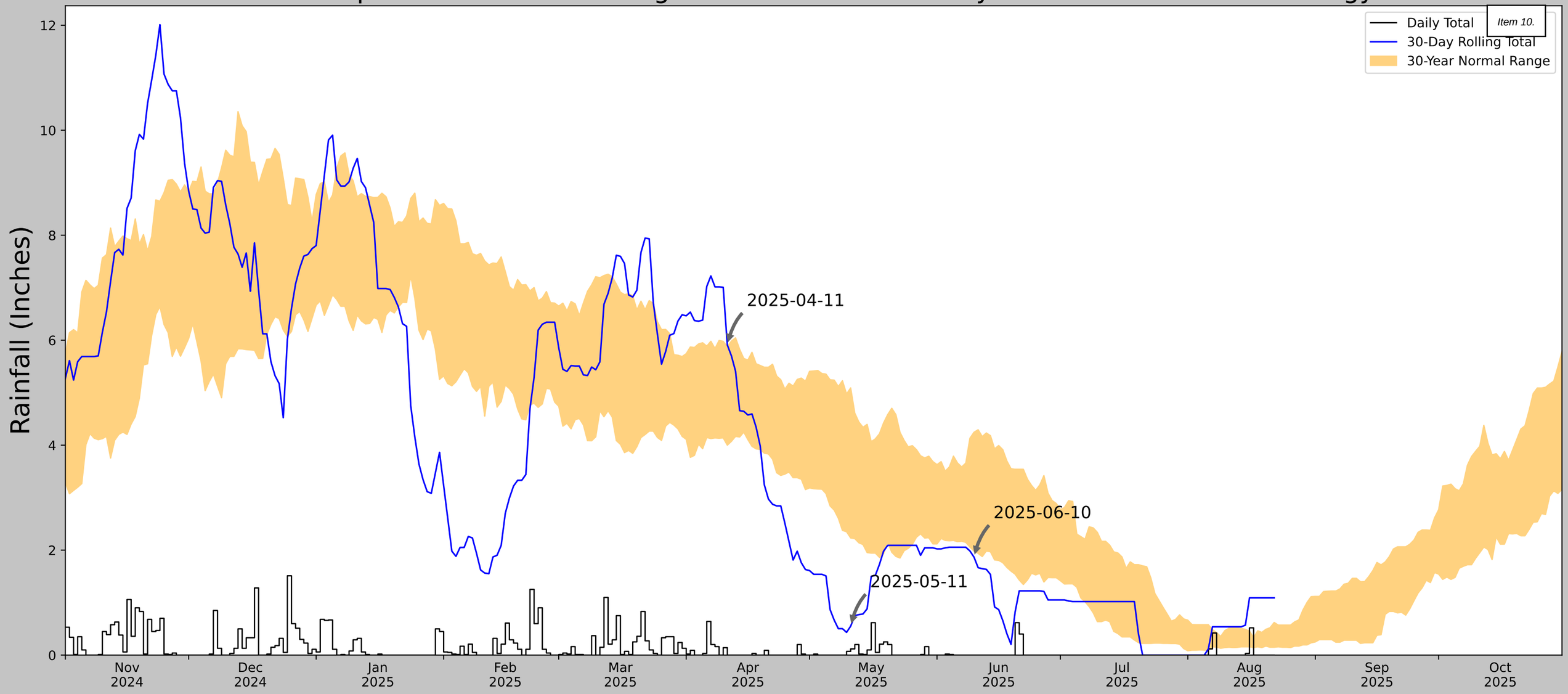
[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* — The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	Not Applicable

APPENDIX D

ANTECEDENT PRECIPITATION TOOL DATA

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	45.62724, -122.42365
Observation Date	2025-06-10
Elevation (ft)	288.401
Drought Index (PDSI)	Moderate drought
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-06-10	1.98189	4.246063	1.866142	Dry	1	3	3
2025-05-11	2.23189	5.090945	0.551181	Dry	1	2	2
2025-04-11	3.999606	5.876772	5.909449	Wet	3	1	3
Result							Drier than Normal - 8

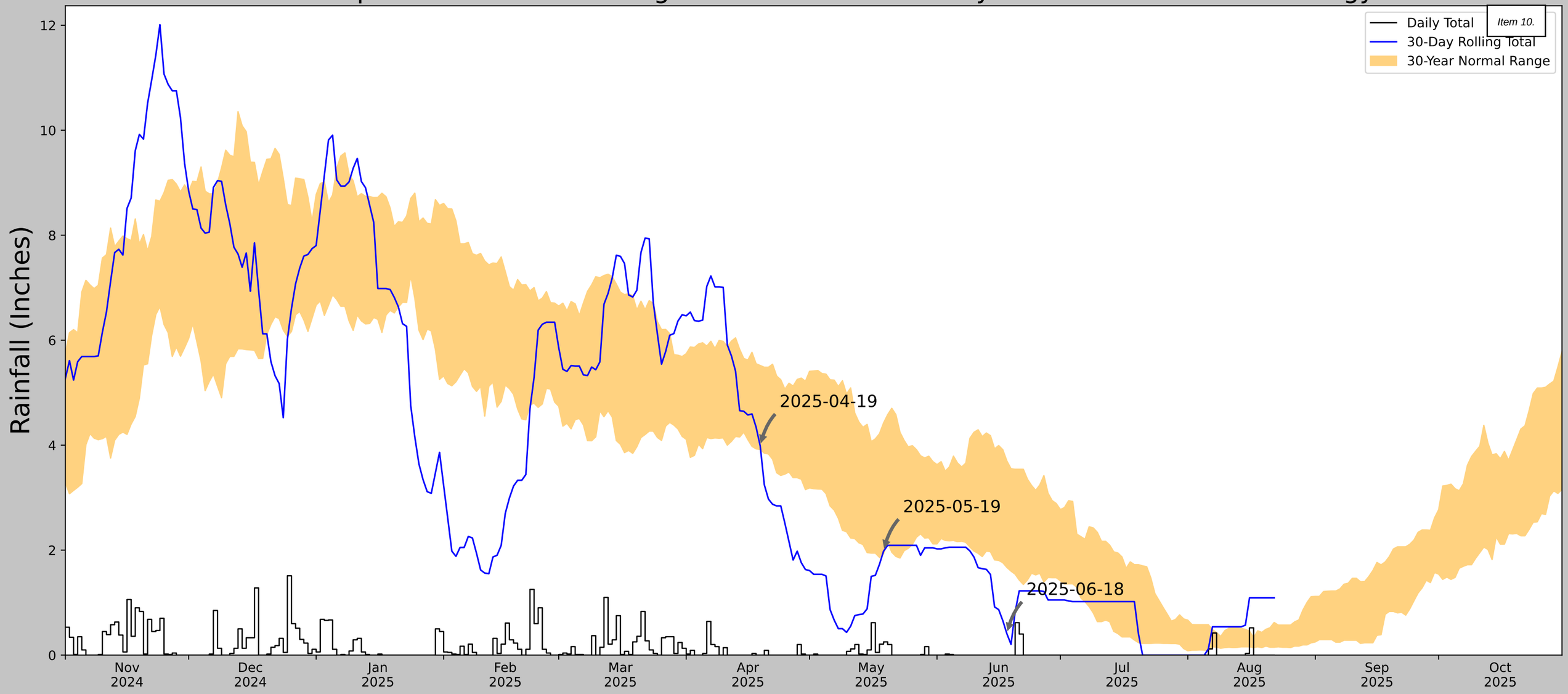
Figures and tables made by the
Antecedent Precipitation Tool
Version 3.0

US Army Corps of Engineers.
ERDC

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
BATTLE GROUND	45.7717, -122.5286	284.121	11.193	4.28	5.085	11320	89
BATTLE GROUND 1.2 NE	45.7958, -122.5275	361.877	1.666	77.756	0.879	0	1
VANCOUVER 4 NNE	45.6775, -122.6514	220.144	8.8	63.977	4.523	2	0
MERWIN DAM	45.955, -122.5625	224.081	12.769	60.04	6.513	31	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	45.62724, -122.42365
Observation Date	2025-06-18
Elevation (ft)	288.401
Drought Index (PDSI)	Moderate drought
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-06-18	1.669685	3.698032	0.405512	Dry	1	3	3
2025-05-19	1.933071	4.423228	1.980315	Normal	2	2	4
2025-04-19	3.916929	5.518504	3.984252	Normal	2	1	2
Result							Drier than Normal - 9

Figures and tables made by the
Antecedent Precipitation Tool
Version 3.0

US Army Corps of Engineers.
ERDC

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
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MERWIN DAM	45.955, -122.5625	224.081	12.769	60.04	6.513	31	0

State Environmental Policy Act
Determination of Non-Significance

CASE NO: DA25-1002 SunCal Development Agreement

APPLICANT: SunCal Acquisitions, LLC
606 Vanice Blvd. STE 100
Venice, CA 90291
Attn: Matthew Keenen

REQUEST: The 228-acre project site proposes to subdivide four existing parcels for residential, commercial, and mixed commercial-residential use.

LOCATION: The project area includes four parcels, Clark County Tax Parcel Numbers 175747000, 175733000, and 175726000, 175727000 located at 104 NE 252nd Avenue in Camas, Washington. The project area is located within the Northwest ¼ of Section 27, Township 2 North, Range 3 East of the Willamette Meridian

SEPA DETERMINATION: DETERMINATION OF NON-SIGNIFICANCE (DNS)

COMMENT DEADLINE: FEBRUARY 5TH, 2026, AT 5:00 P.M.

As lead agency under the State Environmental Policy Act (SEPA) Rules [Chapter 197-11, Washington Administrative Code (WAC)], the City of Camas must determine if there are possible significant adverse environmental impacts associated with this proposal. The options include the following:

- DS = Determination of Significance (The impacts cannot be mitigated through conditions of approval and, therefore, requiring the preparation of an Environmental Impact Statement (EIS).
- MDNS = Mitigated Determination of Non-Significance (The impacts can be addressed through conditions of approval), or;
- DNS = Determination of Non-Significance (The impacts can be addressed by applying the Camas Municipal Code).

Published in the Post Record on 1/22/26 Legal Publication #1066260
Mailed to property owners within 300-feet on 1/21/26
Posted on bulletin boards at Camas City Hall, Camas Library and the City of Camas website at: http://www.cityofcamas.us

Determination:

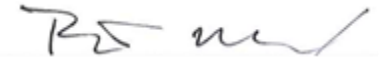
Determination of Non-Significance (DNS). The City of Camas, as lead agency for review of this proposal, has determined that this proposal does not have a probable significant adverse impact on the environment. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(e). This decision was made after review of a completed environmental checklist, and other information on file with the City of Camas.

Date of Publication & Comment Period:

Publication date of this DNS is **January 22nd, 2026**, and is issued under WAC 197-11-340. The lead agency will not act on this proposal until the close of the 14-day comment period which ends on **February 5th, 2026**. Comments may be sent by email to communitydevelopment@cityofcamas.us or regular mail to:

City of Camas SEPA Official
Community Development Department
616 NE Fourth Avenue
Camas, Washington 98607

Responsible Official: Robert Maul (360) 817-1568



Robert Maul, Planning Manager and Responsible Official

1/22/2026
Date of publication

Community Dev
616 NE Fourth Avenue • Camas, WA 98607
(360) 817-1568
http://www.cityofcamas.us

SEPA ENVIRONMENTAL CHECKLIST

UPDATED 2016

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

***Instructions for applicants*:**

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals: [help]

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [help]

1. Name of proposed project, if applicable: [help] *Lacamas Northshore*

2. Name of applicant: [help] *SunCal Acquisitions LLC*

3. Address and phone number of applicant and contact person: [help]

606 Venice Blvd STE 1200

Venice, CA 90291

Attn: Matthew Keenen

Matthew Vissotzky

4. Date checklist prepared: [help] *September 17, 2025*

5. Agency requestlng checklist: [help] *Cily of Camas*

6. Proposed timing or schedule (including phasing, if applicable): [help]

This checklist is submitted in conjunction with a Developer's Agreement ("DA") between the City of Camas and SunCal (the "Applicant"). The DA addresses certain development aspects of the Applicant's Lacamas Northshore Development Project. The answers in this checklist addresses various potential adverse impacts that are identifiable at this stage in the Project. Any probable significant adverse environmental impacts of the Property's future proposed development that are not addressed in this checklist will be addressed at the future stage of land use permit submittals.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain. [help]

The Applicant will be submitting land use applications for the development of the Property upon the completion of the DA process.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal. [help]

A critical areas report addressing the onsite wetlands, stream, herbaceous bald, and Oregon white oaks (Quercus garryana). A stormwater management plan and traffic study report are being prepared in support of the project. Additionally, a geo-technical report to address steep slopes and a cultural resources report addressing potential archaeological findings will be prepared.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. [help]

No other applications have been currently filed for the project area.

10. List any government approvals or permits that will be needed for your proposal, if known. [help]

The following permits will likely be required in the future: Clearing and grading permit-City of Camas, Land Use Approval-City of Camas, construction stormwater permit-City of Camas/Washington Dept of Ecology

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.) [help]

The 228-acre project site proposes to subdivide four existing parcels for residential, commercial, and mixed commercial-residential use.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. [help]

The project area includes four parcels, Clark County Tax Parcel Numbers 175747000, 175733000, and 175726000, 175727000 located at 104 NE 252nd Avenue in Camas, Washington. The project area is located within the Northwest ¼ of Section 27, Township 2 North, Range 3 East of the Willamette Meridian. The site plan, vicinity map, and topographic map are submitted with this checklist and the critical areas report.

B. ENVIRONMENTAL ELEMENTS [help]

1. Earth [help]

a. General description of the site: [help]

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other _____

b. What is the steepest slope on the site (approximate percent slope)? [help]

The steepest slope is 100 percent over a short distance of 10-15 vertical feet in the location of rock outcrops associated with the herbaceous bald in the southwest portion of the study area. These areas will be avoided in the development and therefore not impacted.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils. [help]

Natural Resource Conservation Service maps soil types, ranging from very gravelly loam to clay loam to silt loams as well as muck. There are two hydric soils mapped within the project area, Cove silty clay loam, 0 to 3 percent slopes (CvA) and Semiahmoo muck (Sr). Soil data collected during the site visits revealed mucky clay and silty clay loam within the delineated wetlands and silty loams and clays within the upland areas.

The project area is a historic dairy farm, and the current use is seasonally grazing livestock.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe. [help]

No.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill. [help]

No wetland fills are proposed for the project, but substantial grading will occur in upland areas to be detailed in a future engineering, stormwater and grading plan. An existing human-built manure lagoon will also be decommissioned but any grading needed will be incorporated within the overall site grading plan.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe. [help]

No, all future development activity will follow best management practices and be in compliance with a construction stormwater management plan.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? [help]

Approximately 30 percent of 228 acres at eventual site build out.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any: [help]

Best management practices will be employed to avoid any erosion during construction. A construction stormwater and erosion control plan will be prepared and implemented.

2. Air [help]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known. [help]

Emissions would increase in the area during construction due to the use of construction equipment. Once construction is complete, emissions will increase over time due to the increase in residential and commercial traffic and use. Emissions from the current farming activity, i.e. methane, cows, sileage, etc. will decrease.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe. [help]

The Camas Washougal airport is within 0.25 miles of the project area. The emissions from airplanes should not affect the proposal.

c. Proposed measures to reduce or control emissions or other impacts to air, if any: [help]

None

3. **Water** [help]

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe

type and provide names. If appropriate, state what stream or river it flows into. [help]

There are eleven delineated wetlands including several in existing agricultural areas that are within the study area. A wetlands delineation map is included in the critical areas report for the project. Two streams within the project site were delineated. The wetlands range from Category II to Category IV. The streams have been categorized as Type F non-anadromous waters. Both onsite streams drain to Lacamas Lake that is located within 800 feet of the project site. The site also includes a human-made manure lagoon that served for treatment of bio-solids from dairy and livestock operations in the recent past. The lagoon is still used for intermittent irrigation and bio-solid fertilizer application to the current pastures that will remain in use for grazing until such time that the development breaks ground on proposed land conversion. The site also includes extensive underground irrigation and drainage systems including clay and plastic pipe utilized for agricultural production and soil management. These piping systems will be utilized and maintained as necessary to support on-going livestock grazing, and hay production, until site development activities commence.

The site has three Threshold Discharge Areas (TDA's). The first is a shallow stream that discharges to the northwest that accepts runoff from all areas to the east and north of the proposed Skyline Boulevard. No flow from the commercial, multifamily or single-family development areas drain to the TDA.

The second TDA is a shallow flat stream that discharges from the site in the southeast corner and drains to the southeast. The onsite development area draining to this TDA is limited to approximately 18 acres of single-family lots and existing wetland and buffer. Runoff will be collected using drain basins and conveyance pipes. Water quality for this flow will be provided by a large wetpond oversized by 1.5 times to address phosphorous control since runoff flows to Lacamas Lake. Quantity control will be provided by a detention volume above the wetpond surface. Discharge will be to the existing shallow stream.

The third TDA is a shallow flat drainage that discharges across the adjacent city parcel to the west of the subject property. Runoff from the remainder of the site including all the multi-family and commercial areas in addition to the remaining single family lots drain to this discharge. Runoff will be collected using drain basins and conveyance pipes. Water quality treatment from the multi-family and commercial areas will be by bio-pod units or equivalent that provide both enhanced treatment and phosphorous treatment. Treatment for runoff from the single-family lots and onsite roads will be by underground filter vaults with treatment cartridges. The media will meet basic treatment and phosphorus control. To meet quantity control requirements, underground detention will be used. Discharge will be either to the shallow drainage across the city parcel to the west or through an offsite pipe routed across this parcel prior to a steeper drainage down to Lacamas Lake.

Overall release rates for each TDA will be as at or less than historic flows based on conditions set forth by the Western Washington Stormwater Manual.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans. [help]

Yes. The project proposes to create commercial and mixed commercial-residential use areas. No wetlands are proposed to be filled however wetland buffers may be reduced to install infrastructure, commercial development and single-family residential lots, and stormwater facilities. All impacts to wetland buffers will be

mitigated in accordance to Camas Municipal Code. The existing manure lagoon will be decommissioned and dewatered according to Best Management Practices (BMPs) per the Natural Resources Conservation Service (NRCS), and the lagoon berms will be graded out during the overall grading of the site during site development. Bio-solids accumulated in the lagoon will either be hauled off-site to an approved organic soil processing facility or re-applied to the on-site soils mixed into landscape soils for the development. Care will be taken to insure no human or pet exposure to livestock waste bio-solids or nutrients will occur as part of the lagoon decommissioning process.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material. [help]

No wetland fill is proposed. Streams bridged or culverted for future road access or utilities will require permitting and mitigation as appropriate for federal, state or local regulations. Manure lagoon decommissioning is described in the previous answer.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. [help]

No except for a temporary diversion during de-watering of the manure lagoon prior to development. All de-watering will follow NRCS BMPs' and no on-site or downstream surface water or wetland resources will be impacted by the temporary diversion.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan. [help] *No*

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge. [help]

None are proposed except for future road crossings at streams or ditches. By following NRCS BMP's for dewatering of the manure lagoon, there should be no discharge of waste material to surface waters or wetlands.

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known. [help] *No*

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve. [help]

A portion of future stormwater facilities may utilize infiltration into the soil substrate, however, all will be treated appropriately using cartridge treatment vaults or similar acceptable water quality treatment systems. The development will use the City of Camas sewer system for municipal waste collection and treatment.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe. [help]

The site has three Threshold Discharge Areas (TDA's). The first is a shallow stream that discharges to the northwest that accepts runoff from all areas to the east and north of the proposed Skyline Boulevard. No flow from the commercial, multifamily or single-family development areas drain to the TDA.

The second TDA is a shallow flat stream that discharges from the site in the southeast corner and drains to the southeast. The onsite development area draining to this TDA is limited to approximately 18 acres of single-family lots and existing wetland and buffer. Runoff will be collected using drain basins and conveyance pipes. Water quality for this flow will be provided by a large wetpond oversized by 1.5 times to address phosphorous control since runoff flows to Lacamas Lake. Quantity control will be provided by a detention volume above the wetpond surface. Discharge will be to the existing shallow stream.

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Overall release rates for each TDA will be at or less than historic flows based on conditions set forth by the Western Washington Stormwater Manual.

2) Could waste materials enter ground or surface waters? If so, generally describe. [help]

No. The stormwater management plan will provide sufficient areas and treatment methods to prevent waste materials from entering ground and surface waters. By following NRCS BMP's for dewatering of the manure lagoon, there should be no discharge of waste material to ground water, surface waters or wetlands.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe. [help]

No, the proposed stormwater system for the project will maintain the historic drainage patterns for the area. The site also includes extensive underground irrigation and drainage systems including clay and plastic pipe utilized for agricultural production and soil management. These piping systems will be utilized and maintained as necessary to support on-going livestock grazing, and hay production, until site development activities commence. At their decommissioning, the removal of any of these subsurface water conveyance systems will not alter natural drainage patterns across the site.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any: [help]

Low Impact Best Management Practices (LID BMP's) will be used where feasible; however, due to the existing onsite soils, infiltration is not feasible in most areas, which limits LID BMP use.

4. **Plants** [help]

a. Check the types of vegetation found on the site: [help]

X deciduous tree: alder, maple, aspen, other
X evergreen tree: fir, cedar, pine, other
X shrubs
____ grass
X pasture
____ crop or grain
____ Orchards, vineyards or other permanent crops.
X wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
____ water plants: water lily, eelgrass, milfoil, other
____ other types of vegetation

b. What kind and amount of vegetation will be removed or altered? [help]
Trees-deciduous and evergreen; shrubs; pasture grasses and low-growing forbs.

c. List threatened and endangered species known to be on or near the site. [help] *None*

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: [help]
The proposed project will utilize native vegetation plantings and removal of invasive species within open space and resource buffer areas (streams/wetlands) as appropriate for any buffer mitigation required.

e. List all noxious weeds and invasive species known to be on or near the site. [help]
Himalayan blackberry (Rubus armeniacus); reed canary grass (Phalaris arundinacea); Canada thistle and tansy ragwort are present but have been much limited by on-going suppression efforts by the current agricultural site operator.

5. **Animals** [help]

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. [help]

Examples include:

birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other _____

Birds: Songbirds
Mammals: deer, raccoons, opossum, mice, black bear
Fish; freshwater invertebrates (i.e. crayfish and other small species localized to small streams), freshwater snails, resident cutthroat trout

b. List any threatened and endangered species known to be on or near the site. [help]
None

c. Is the site part of a migration route? If so, explain.
[help] *No*

d. Proposed measures to preserve or enhance wildlife, if any: [help]

Leaving prescribed buffers surrounding all critical areas to the extent practicable and mitigating appropriately for any proposed buffer reductions. Wildlife corridors will be preserved along the perimeters of the project area where wetlands, oak trees, and herbaceous balds are present. Mitigation opportunity exists along the Type F stream through the center of the project area to create an improved wildlife corridor. The property to the south of the project site is designated open space and likely park land. The buffers along the south study area boundary will augment the offsite resources, leaving potential for greater wildlife corridors.

e. List any invasive animal species known to be on or near the site. [help] *None*

6. **Energy and Natural Resources** [help]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc. [help]

Electric and piped natural gas

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe. [help] *No*

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any: [help]
None

7. **Environmental Health** [help]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe. [help] *No*

1) Describe any known or possible contamination at the site from present or past uses. [help] *No contamination is anticipated. The existing manure lagoon will be decommissioned according to NRCS BMPs and organics removed from the lagoon will either be re-applied to fields still utilized for agriculture, incorporated into on-site landscape soils, or hauled off for suitable disposal at an organic waste recycling facility.*

2) Describe existing hazardous chemicals/conditions that might affect project development

and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity. [help] *None*

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project. [help] *None*

4) Describe special emergency services that might be required. [help]
First responder services such as fire, police and ambulance are expected to be required to serve the area during and after development.

5) Proposed measures to reduce or control environmental health hazards, if any: [help] *None*

b. Noise [help]

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)? [help]

Grove Field (Airfield) is located to the east within 0.25 miles of the project area. The majority of aircraft types are single engines but there are some multi-engine aircraft.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site. [help]

There will be increased noise due to construction activity during the building process. When the building phase is complete, noise levels will decrease to residential noise levels. The study area is surrounded by single family development and Lacamas Lake Elementary School. Existing onsite noise levels are due to agricultural activity, grazing cattle, and equipment such as tractors. The noise resulting from the residential development within the study area will be slightly greater than the existing noise level when construction is complete. The noise from the proposed commercial area will be typical of neighborhood commercial activities involving traffic of both automobiles and trucks.

3) Proposed measures to reduce or control noise impacts, if any: [help]

Vegetation screening where appropriate around property borders and landscape trees incorporated into both commercial and residential areas.

8. **Land and Shoreline Use** [help]

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe. [help]

The current land use is agricultural with seasonal cattle grazing. The surrounding properties are residential and the Lacamas Lake Elementary School. The property to the southeast is designated open space.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or

nonforest use? [help]

Yes. The study area is utilized for agricultural use. It is a previous dairy farm. It is currently used for seasonal cattle grazing.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how: [help] *No*

c. Describe any structures on the site. [help]
There is an existing pole barn onsite used for equipment storage.

d. Will any structures be demolished? If so, what? [help]
Yes. The pole barn will be demolished to develop single-family residential lots.

e. What is the current zoning classification of the site? [help]
The site is zoned as North Shore Lower Density Residential (LD-NS), North Shore Higher Density Residential (HD-NS), North Shore Mixed Use (MX-NS), North Shore Commercial (C-NS), North Shore Mixed Employment (ME-NS), and North Shore Park/Open Space (POS-NS).

f. What is the current comprehensive plan designation of the site? [help]
The project site is mapped as Industrial on the City of Camas Comprehensive Plan Map

g. If applicable, what is the current shoreline master program designation of the site? [help]
N/A

h. Has any part of the site been classified as a critical area by the city or county? If so, specify. [help]
Yes. Current City of Camas maps show that there are three wetlands within the project area. In addition, Stream A the flows through the center of the study area is classified as a Type F stream by Washington Dept of Natural Resources on the agency's water-type maps, which are utilized by the City of Camas for resource mapping.

i. Approximately how many people would reside or work in the completed project? [help]
TBD

j. Approximately how many people would the completed project displace? [help] *None*

k. Proposed measures to avoid or reduce displacement impacts, if any: [help] *N/A*

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any: [help]
The project proposes the development of commercial, commercial-residential, and residential uses. The proposed single-family lots, multi-family, commercial lots, and mixed commercial-residential lots are within the allowed land use (zoning) of the site.

l. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any: [help]
The impacts to agricultural uses are unavoidable because the site is a previous dairy farm that

currently serves as pasture for seasonal livestock grazing. The family that operates the farm no longer wishes to conduct their agricultural business in the area long term but will continue operations until land conversion is completed.

9. **Housing** [help]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing. [help]

The project currently proposes a total of up to 596 units made up of duplexes, townhomes, alley loaded lots, and front loaded small, medium, and large lots. A total 444 apartment units are proposed. The housing will be middle and high income housing. Alterations to these unit counts may occur via subdivision application at the development stage.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing. [help] *None*

c. Proposed measures to reduce or control housing impacts, if any: [help]
There will be no adverse impacts to housing because there is no existing housing within the project site.

10. **Aesthetics** [help]

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed? [help]

The maximum height in residential areas will be 50 feet and the maximum height in mixed use areas will be 100 feet. The principal exterior building materials will be hardie backer cement boards and cedar siding.

b. What views in the immediate vicinity would be altered or obstructed? [help]
Mount Hood is visible from certain locations within the project area. However, there are no residences within line of sight that will be affected by the development of the project site. No views would be obstructed.

c. Proposed measures to reduce or control aesthetic impacts, if any: [help]
There will be greenway areas along the western project site to provide a vegetated buffer between Lacamas Lake Elementary School and the proposed development.

11. **Light and Glare** [help]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur? [help]

The proposed project will produce light during evening and night hours. The residential and commercial development will require lights in residences and parking lots to increase safety for residents and workers in the commercial areas.

b. Could light or glare from the finished project be a safety hazard or interfere with views? [help] *No*

c. What existing off-site sources of light or glare may affect your proposal? [help] *None*

d. Proposed measures to reduce or control light and glare impacts, if any: [help]
Lights will be faced away from wetlands and critical areas at the finish of project to reduce impacts from light and glare.

12. **Recreation** [help]

a. What designated and informal recreational opportunities are in the immediate vicinity? [help]

Lacamas Lake is the vicinity of the project area. The lake provides recreation for lake activities, i.e. boats, stand up paddle boards, swimming, and fishing. Lacamas Lake Park, at the south end of Lacamas Lake, provides recreational trails. The property directly southwest of the project area is a designated open space, providing opportunities for future trails that could be connected to the project area. Any opportunities to incorporate trails would be considered within the development and could potentially connect to offsite trail systems.

b. Would the proposed project displace any existing recreational uses? If so, describe. [help] *No*

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any: [help]

The project has the potential to create trails that could connect to future trails within the offsite open space to the west and south.

13. **Historic and cultural preservation** [help]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers ? If so, specifically describe. [help]

Yes. There are nine precontact-era sites and one precontact isolate within 0.5 miles (mi) of the Project's Area of Potential Effects (APE). These include sites 45CL00658, 45CL00850, 45CL00851, 45CL01211, 45CL01213, 45CL01214, 45CL01228, 45CL01229, and 45CL01230, as well as isolate 45CL01212. Each of these resources consist of lithic assemblages including core reduction and biface shaping debitage, biface technologies and projectile points, handstones, fire-affected rock (FAR), and related materials. All 10 cultural resources remain unevaluated at this time. However, the Department of Archaeology and Historic Preservation (DAHP) typically considers all Native American cultural resources to be potentially eligible for listing in the National Register of Historic Places (NRHP) under Criterion D at minimum, and all sites determined potentially eligible to the NRHP are subsequently considered eligible for the state's Washington Heritage Register (DAHP 2025).

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources. [help]

Yes. There are nine previously recorded precontact-era sites and one precontact isolate within 0.5 mi of the APE. All 10 cultural resources represent lithic resources recorded between 2005 and 2016, and four of these sites were updated in 2009, 2017, and 2024.

Artifacts include lithic debitage, projectile points, handstones and ground stone, modified cobbles, utilized or modified flakes, lithic cores, FAR, and faunal remains. The presence of FAR in the sites indicates that features are in the vicinity. The sites are often expansive, according to shovel test probe (STP) data provided by previous surveys in the area. No known burials or cemetery sites are documented within a 0.5-mi vicinity of the APE within the DAHP WISAARD database, and no features were recorded in association with any of the previously recorded resources.

Professional studies found in DAHP's Washington Information System for Architectural and Archaeological Records Data (WISSARD) database include report 1691828, which identified three of the cultural resources within the 0.5-mi buffer of the APE (sites 45CL01228, 45CL01229, and 45CL01230; Fuld and Reese 2016). Another report, number 1690269, identified four sites in the search radius buffer (45CL01211, 45CL01212, 45CL01213, and 45CL01214; Dubois et al 2016). One report, not located in DAHP's WISAARD database but mentioned in the site record, was related to an archaeological predetermination survey for Lacamas Properties, LLC, and prepared by Alex Gall, Dave Delyria, and Andy Hudson of Archaeological Services of Clark County in February 2005; this report documented site 45Cl00658. Finally, report number 1353109 documented sites 45CL00850 and 45CL00851.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc. [help]

A full archaeological review will occur with the subsequent land use applications for the Project.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required. [help]

If cultural resources are discovered within the ADI or APE, site boundary delineation will occur using radially-placed STPs until the soil returns negative results. DAHP will then be contacted for further instruction regarding Project work inside site boundaries. All work within site boundaries requires a DAHP archaeological permit, which will assess the Indigenous history of the landscape; Project background, plans, and impacts; and thoroughly describe Project implementation including all forms of planned ground disturbance and design plans which include specific ground disturbing activities and their provenience. Additionally, Tribes will be consulted through the DAHP permit review process, and any efforts related to documentation, artifact curation, subsurface testing methodologies and research, and overall documentation of the site will be agreed upon by both the affected Tribes and DAHP, and carried out by Chronicle Heritage's professional archaeological staff under the guidance of Secretary of Interior-qualified Principle Investigators and qualified Field Directors.

14. **Transportation** [help]

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any. [help]

Primary access to the project site is anticipated via North Shore Boulevard, a portion of which would be extended from the current termination near Lacamas Lake Elementary School east through the site in conjunction with site development. The development will create internal roads to access the single-family

residential areas, commercial areas, and residential-commercial mixed areas.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop? [help]

No. C-Tran provides transit service within the City of Camas. There are no fixed-route transit services currently operated in the site vicinity. The nearest fixed-route service provides east-west service along NE 3rd Avenue in the downtown Camas area and is located over two miles south of the project site.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate? [help]

TBD

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private). [help]

Yes. The project proposes new roads within the project site to provide access to the single-family residential areas, commercials areas, and residential-commercial mixed areas. Primary access to the project site is anticipated via North Shore Boulevard, a portion of which will be extended from the current termination near Lacamas Lake Elementary School east through the site in conjunction with site development. The Transportation Impact Study prepared for the development that North Shore Boulevard is built out from the current terminus near NE 232nd Avenue east to the planned SE Everett Street/SE Everett Drive roundabout by others by the year 2030.

In addition to the on-site transportation infrastructure to be delivered with site development, the Transportation Impact Study prepared for the development recommends the following to be implemented in conjunction with site development:

- *Subject to Clark County approval, install a traffic signal with permissive left-turn phasing on all approaches at the existing NE 232nd Avenue/NE 28th Street intersection in conjunction with Phase 1 residential site development.*
- *Make a proportional financial mitigation contribution to the City of Camas' planned NW Sierra Street/NW Lake Road roundabout project with each phase of site development.*
    - *The City is currently assessing a fee of $1,423 per PM peak hour trip added to this intersection for developments in the Traffic Impact Fee (TIF) North District. Accordingly, the resulting fee estimate for buildout of this development totals $136,608 estimated as follows:*
        - *Residential uses: $65,458 based on 46 PM peak hour trips added*
        - *Commercial retail uses: $41,267 based on 29 PM peak hour trips added*
        - *Employment uses: $29,883 based on 21 PM peak hour trips added*

  The City of Camas will determine the final contribution amount.
- *Collaborate with WSDOT and the City of Camas to implement capacity mitigation at the SR 500 (NE 242nd Avenue)/NE 28th Street intersection in the form of all-way stop control if required in conjunction with Phase 1 site development (or with subsequent phases as determined by WSDOT).*
- *Coordinate with the City of Camas to establish and implement a school zone*

along North Shore Boulevard at Lacamas Lake Elementary School in conjunction with the North Shore Boulevard extension west with site development.

- *Subject to City of Vancouver concurrence and final residential unit count confirmation, pay the following proportional share intersection fees as identified per City of Vancouver requirements:*

Mitigation Location	Mitigation Cost/Peak Hour Trip	Residential Uses		Retail Uses		Employment Uses	
		Peak Hour Trips Added	Estimated Mitigation Cost	Peak Hour Trips Added	Estimated Mitigation Cost	Peak Hour Trips Added	Estimated Mitigation Cost
192nd Avenue & NE 13th Street	$400/PM	66	$26,400	0	$0	31	$12,400
NE 172nd Avenue & NE 18th Street	$300/PM	46	$13,800	0	$0	22	$6,600
NE 179th Place & NE 18th Street	$900/PM	46	$41,400	0	$0	22	$19,800
NE 187th Avenue & NE 18th Street	$1,200/PM	53	$63,600	0	$0	25	$30,000
NE 192nd Avenue & NE 9th Street	$1,100/PM	7	$7,700	0	$0	3	$3,300
Total Proportional Share Cost by Land Use			$152,900		$0		$72,100
					Grand Total Proportional Share Cost		*$225,000*

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe. [help]

The project will occur within the vicinity of air transportation. Grove Field (airfield run by Port of Camas Washougal) is within 0.25 miles of the project site.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates? [help]

The Transportation Impact Study prepared for the development estimates total site trip generation at 16,704 vehicles per day including 908 during the weekday AM peak hour (415 entering/493 exiting) and 1,544 during the weekday PM peak hour (787 entering/757 exiting). The weekday daily, AM, and PM peak hour vehicle trips for the proposed development were estimated using data from the Trip Generation Manual, 11th Edition, published by the Institute of Transportation Engineers. Further detailed breakdown of the vehicle trips is documented in Tables 5-8 of the project Transportation Impact Study. The residential and commercial retail portions of the proposed project can be expected to generate 1% or fewer of the vehicle trips in the form of trucks. Estimates of truck volumes for the future employment phases of the project are not available at this time given the unknown nature of potential future employment based tenants.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe. [help]

No

h. Proposed measures to reduce or control transportation impacts, if any: [help]

Please see transportation mitigation measures documented in response to item 14.d above. Note that the proposed extension of North Shore Boulevard from Lacamas Lake Elementary School east through the project site in conjunction with site development will construct an essential component of the City's planned transportation network, providing alternative access, connectivity and redundancy for the City's multimodal system.[help]

15. **Public Services** [help]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe. [help]

Yes. The increase in housing can potentially require the increase of fire and police protection services. If families move to the single-family residences, school services may need to be increased. In terms of utility demand, based on discussion with the city, there is capacity within the existing city's sewer and water systems to provide the required sewer capacity and water flows, including fire protection, for the project.

b. Proposed measures to reduce or control direct impacts on public services, if any. [help]

The Lacamas Northshore project is designed with a connected street network to support efficient fire, safety, and emergency access. Building layouts, fire lanes, and hydrant spacing will meet City of Camas Fire Code requirements. The walkable, mixed-use town center reduces reliance on vehicles, supports public health, and provides natural surveillance to reduce poling demand. The project is coordinated with Camas School District, with housing densities aligned to their long-range planning. Safe walking routes and trail connections reduce pressure on school transportation systems.

16. **Utilities** [help]

a. Circle utilities currently available at the site: [help]
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other _____

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed. [help]

Water, sanitary sewer, natural gas, and refuse service will be accessed from the public utility district. Electricity will be accessible from Bonneville Power as their power lines run through the center of the project area. Telephone will be provided by CenturyLink.

Water service is provided by the City of Camas. Based on the City's Water System Plan and follow up conversations with city staff, there is currently capacity in the system for this development. As part of the project development, water lines will be extended onto and through the development to provide water service and fire flow to each proposed lot.

Sanitary service is provided by the City of Camas. Based on the City's General Sewer Plan and follow up conversations with city staff, there is capacity in the city's sewer system to accept all sewer flows from the developed site. Service for the site will be from the 232nd Street Sewer Pump Station. A gravity line will be required to route flows from the site to the Pump Station. Sewer connections to

onsite lots can generally gravity from the site with the exception of the localized depression in the southwest corner of the site. Bedrock will likely preclude this area using gravity lines to route sewer to the offsite pump station. To address this issue, a smaller local pump station will be required to collect and route this flow from the site.

C. Signature [help]

Under the penalty of perjury, the above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: James S. Hardy

Name of signee Jamie Howsley

Position and Agency/Organization Attorney for the Applicant

Date Submitted: 01/21/26

D. supplemental sheet for nonproject actions [help]

(**IT IS NOT NECESSARY** to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

   Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

   Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

   Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

   Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

   Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

   Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.