



Town Council Meeting

January 22, 2024 at 6:00 PM

Howey-in the-Hills Town Hall 101
N. Palm Ave., Howey-in-the-Hills,
FL 34737

Join Zoom Meeting:

<https://us06web.zoom.us/j/89093931399?pwd=99uP0QoNoL6VSzOdFdAJ0HwbJFsmBw.1>

Meeting ID: 890 9393 1399 | Passcode: 147123

AGENDA

Call the Town Council Meeting to order
Pledge of Allegiance to the Flag
Invocation by Councilor Reneé Lannamañ

ROLL CALL

Acknowledgement of Quorum

AGENDA APPROVAL/REVIEW

CONSENT AGENDA

Routine items are placed on the Consent Agenda to expedite the meeting. If Town Council/Staff wish to discuss any item, the procedure is as follows: (1) Pull the item(s) from the Consent Agenda; (2) Vote on the remaining item(s); and (3) Discuss each pulled item and vote.

- 1.** The approval of the minutes and ratification and confirmation of all Town Council actions at the January 08, 2024 Town Council Meeting.
- 2.** Consideration and Approval: **Water Treatment Plant Design Proposal - Half Contract**

PUBLIC HEARING

- 3.** Discussion: (first reading) **Ordinance 2024-001 Mission Rise PUD Rezoning**

AN ORDINANCE OF THE TOWN OF HOWEY-IN-THE-HILLS, FLORIDA, PERTAINING TO LAND USE; REZONING FOUR PARCELS OF LAND LOCATED GENERALLY IN THE SOUTHWEST PART OF THE TOWN AND COMPRISING THE PROPOSED PLANNED UNIT DEVELOPMENT TO BE KNOWN AS “MISSION RISE” ON AN L-SHAPED AGGREGATE OF ABOUT 243.3 ACRES WEST AND SOUTH OF THE DEVELOPMENT KNOWN AS “THE RESERVE AT HOWEY-IN-THE-HILLS” (NOW ALSO KNOWN AS “HILLSIDE GROVES”), WITH PART OF THE LANDS BEING SOUTH OF NUMBER TWO ROAD AND EAST OF SILVERWOOD LANE AND OTHER PARTS OF THE LAND BEING WEST OF STATE ROAD 19 AND SOUTH OF REVELS ROAD, THE FOUR PARCELS BEING IDENTIFIED WITH LAKE COUNTY PROPERTY APPRAISER ALTERNATE KEY NUMBERS 1780616, 1780811,

1030421, AND 3835991; AMENDING THE TOWN’S ZONING MAP TO APPROVE PLANNED-UNIT-DEVELOPMENT (PUD) ZONING FOR THE PARCELS; PROVIDING FINDINGS OF THE TOWN COUNCIL; APPROVING PUD ZONING FOR THE PARCELS, WITH DEVELOPMENT TO BE GOVERNED BY A DEVELOPMENT AGREEMENT AND A REVISED CONCEPTUAL LAND USE PLAN AND BY THE TOWN’S LAND DEVELOPMENT CODE AND OTHER TOWN ORDINANCES GOVERNING THE DEVELOPMENT OF LAND; REPEALING PRIOR ORDINANCES AND SUPERSEDING CONFLICTING ORDINANCES; PROVIDING FOR SEVERABILITY, CODIFICATION AND AN EFFECTIVE DATE.

- Mayor MacFarlane will read the Ordinance title
- Town Planner will explain Ordinance 2024-001
- Mayor MacFarlane will open Public Comment for this item only.
- Mayor MacFarlane will close Public Comment.
- Council Discussion

OLD BUSINESS

- 4.** Discussion: **Wastewater Options**

NEW BUSINESS

- 5.** Discussion: **Potential Library Expansion**

DEPARTMENT REPORTS

- 6.** Town Manager

COUNCIL MEMBER REPORTS

- 7.** Mayor Pro Tem Gallelli
- 8.** Councilor Lehning
- 9.** Councilor Miles
- 10.** Councilor Lannamañ
- 11.** Mayor MacFarlane

PUBLIC COMMENTS

Any person wishing to address the Mayor and Town Council and who is not on the agenda is asked to speak their name and address. Three (3) minutes is allocated per speaker.

ADJOURNMENT

To Comply with Title II of the Americans with Disabilities Act (ADA):

Qualified individuals may get assistance through the Florida Relay Service by dialing 7-1-1. Florida Relay is a service provided to residents in the State of Florida who are Deaf, Hard of Hearing, Deaf/Blind, or Speech Disabled that connects them to standard (voice) telephone users. They utilize a wide array of technologies, such as Text Telephone (TTYs) and ASCII, Voice Carry-Over (VCO), Speech to Speech (STS), Relay Conference Captioning (RCC), CapTel, Voice, Hearing Carry-Over (HCO), Video Assisted Speech to Speech (VA-STTS) and Enhanced Speech to Speech.

Howey Town Hall is inviting you to a scheduled Zoom meeting.

Topic: **Town Council Meeting**

Time: **Jan 22, 2024 06:00 PM Eastern Time** (US and Canada)

Join Zoom Meeting

<https://us06web.zoom.us/j/89093931399?pwd=99uP0QoNoL6VSzOdFdAJ0HwbJFsmBw.1>

Meeting ID: 890 9393 1399

Passcode: 147123

Dial by your location

+1 646 558 8656 US (New York)

+1 346 248 7799 US (Houston)

Meeting ID: 890 9393 1399

Passcode: 147123

Find your local number: <https://us06web.zoom.us/u/kbIrmB6TCj>

Please Note: In accordance with F.S. 286.0105: Any person who desires to appeal any decision or recommendation at this meeting will need a record of the proceedings, and that for such purposes may need to ensure that a verbatim record of the proceedings is made, which includes the testimony and evidence upon which the appeal is based. The Town of Howey-in-the-Hills does not prepare or provide this verbatim record. Note: In accordance with the F.S. 286.26: Persons with disabilities needing assistance to participate in any of these proceedings should contact Town Hall, 101 N. Palm Avenue, Howey-in-the-Hills, FL 34737, (352) 324-2290 at least 48 business hours in advance of the meeting.



Town Council Meeting
January 08, 2024 at 6:00 PM
Howey-in the-Hills Town Hall
101 N. Palm Ave.,
Howey-in-the-Hills, FL 34737

MINUTES

Call the Town Council Meeting to order
Pledge of Allegiance to the Flag
Invocation by Councilor Reneé Lannamañ

ROLL CALL

Acknowledgement of Quorum

MEMBERS PRESENT:

Councilor Reneé Lannamañ | Councilor David Miles | Councilor George Lehning | Mayor Pro Tem Marie V. Gallelli | Mayor Martha MacFarlane

STAFF PRESENT:

Sean O’Keefe, Town Manager | Morgan Cates, Public Works Director | Fred DeVito, Finance Supervisor | Tom Wilkes, Town Attorney | Don Griffey, Town Engineer | John Brock, Town Clerk

AGENDA APPROVAL/REVIEW

Motion made by Councilor Miles to approve the Meeting’s Agenda; seconded by Councilor Lannamañ. Motion approved unanimously by voice vote.

Voting

Yea: Councilor Lannamañ, Councilor Miles, Councilor Lehning, Mayor Pro Tem Gallelli, Mayor MacFarlane

Nay: None

CONSENT AGENDA

Routine items are placed on the Consent Agenda to expedite the meeting. If Town Council/Staff wish to discuss any item, the procedure is as follows: (1) Pull the item(s) from the Consent Agenda; (2) Vote on the remaining item(s); and (3) Discuss each pulled item and vote.

Town Manager, Sean O’Keefe stated that Item #5 “Consideration and Approval: **Water Treatment Plant Design Proposal - Half Contract**” was not ready and asked for it to be removed from the Consent Agenda.

1. The approval of the minutes and ratification and confirmation of all Town Council actions at the December 11, 2023 Town Council Meeting.

2. The approval of the minutes and ratification and confirmation of all Town Council actions at the December 12, 2023 Town Council Workshop.
3. Consideration and Approval: **10-year Water Supply Facilities Work Plan Proposal**
4. Consideration and Approval: **Parks and Recreation Board Appointment**
5. Consideration and Approval: **Water Treatment Plant Design Proposal - Half Contract**

ITEM #5 WAS REMOVED FROM CONSIDERATION

6. Consideration and Approval: **New Account - Seacoast Money Market Account**

Motion made by Councilor Miles to approve Consent Items 1, 2, 3, 4, and 6; seconded by Mayor Pro Tem Gallelli. Motion approved unanimously by voice-vote.

Voting

Yea: Councilor Lannamañ, Councilor Miles, Councilor Lehning, Mayor Pro Tem Gallelli, Mayor MacFarlane

Nay: None

PUBLIC HEARING

7. Consideration and Approval: (transmittal hearing) **Ordinance 2023-013 - Comprehensive Plan Amendment - Future Land Use Element**

Mayor MacFarlane read Ordinance 2023-013 out loud by title only:

AN ORDINANCE OF THE TOWN OF HOWEY-IN-THE-HILLS, FLORIDA, PERTAINING TO COMPREHENSIVE PLANNING; AMENDING THE FUTURE LAND USE ELEMENT (FLUE) OF THE TOWN'S ADOPTED COMPREHENSIVE PLAN PURSUANT TO SECTION 163.3184 OF FLORIDA STATUTES; DESCRIBING THE ANALYSIS AND REEVALUATION UNDERTAKEN BY TOWN COUNCIL REGARDING RESIDENTIAL DENSITIES AND LOT SIZES IN POST-2010 RESIDENTIAL DEVELOPMENT IN THE TOWN; AMENDING CERTAIN FLUE POLICIES TO MODIFY THE REQUIREMENTS IN THE "VILLAGE TOWN CENTER" AND "MEDIUM DENSITY RESIDENTIAL" LAND-USE DESIGNATIONS REGARDING DWELLING UNITS PER ACRE, LOT SIZES, AND OPEN SPACE; AMENDING OTHER RELATED REQUIREMENTS FOR THE TWO LAND-USE DESIGNATIONS; AMENDING POLICY 1.2.6 OF THE FUTURE LAND USE ELEMENT TO SPECIFY AREAS WHERE THE TOWN MAY ALLOW LOTS SMALLER THAN ONE-FOURTH ACRE (10,890 SQ. FT.); PROVIDING FOR CODIFICATION, SEVERABILITY, AND AN EFFECTIVE DATE.

Mayor MacFarlane asked Town Attorney, Tom Wilkes, to introduce and explain this item. Mr. Wilkes explained the process the Town needed to follow to amend its Comprehensive Plan. Mr. Wilkes stated that this meeting was considered the Transmittal Hearing and, assuming the Town Council approved the Ordinance, the next step was transmitting the Ordinance to the Department of Economic Opportunity for State review.

Mr. Wilkes reviewed the amendments that the Ordinance would make to the Town's current Comprehensive Plan. Councilor Miles pointed out that, in different areas of the Ordinance, 10,800 square feet was used for a size of a lot and, in other areas of the Ordinance, 10,890 square feet was used and he suggested that a consistent number be chosen. Mr. Wilkes said that 10,800 square feet had been used because that was the square footage that a 90' x 120' lot would give you. Councilor Miles said that

10,890 square feet was the exact square footage of a 1/4-acre lot. Mr. Wilkes and Councilor Miles then both suggested going with the 10,890 square feet for a lot.

Mayor MacFarlane opened Public Comment for this item only.

Tim Everline, 1012 N. Lakeshore Blvd. – Mr. Everline was upset the meeting packet was late and wanted people to be held accountable.

Mayor MacFarlane closed Public Comment for this item.

Councilor Miles made a motion to approve Ordinance 2023-013 with some changes to be made during a discussion period; there was no second for this motion.

Councilor Lehning made a motion to table this item to a future meeting and this was seconded by Councilor Lannamañ. Councilor Lehning stated that an example of a reason to table this item for further discussion was that, at one point in the amendment, developers are allowed 4 units per acre if the development has a “substantial park.” Councilor Lehning wanted to know what a “substantial park” was.

Councilor Miles stated that the amendment states that at least 1/4-acre lots are required for 50% of a development, but he wants that changed to 100%. Councilor Miles stated that he thinks the edit that the Planning and Zoning Board made needed to be rewritten by the Town Attorney.

Motion made by Councilor Lehning to table this item to a future meeting; seconded by Councilor Lannamañ. Motion was approved by roll call vote.

Voting

Yea: Councilor Lannamañ, Councilor Lehning, Mayor Pro Tem Gallelli

Nay: Councilor Miles, Mayor MacFarlane

The Town Council decided to hold a Town Council Workshop meeting at 4 PM on January 22, 2024, to discuss this item.

OLD BUSINESS

None

NEW BUSINESS

8. Presentation: **Annual Town Attorney Sunshine Law Training**

Town Attorney, Tom Wilkes, gave a 15-minute training presentation on Sunshine Law and Public Records.

9. Discussion: **FDOT Update - Hillside Groves**

Town Engineer, Don Griffey, reviewed his report about his meeting with the Florida Department of Transportation (FDOT) regarding the proposed intersection on SR19 in front of Hillside Groves development. Mr. Griffey explained that the 4-lane divided intersection that the Town Council had wanted to require the developer to create going into the development would not be allowed due to safety issues.

Mr. Griffey stated that FDOT told him that their evaluation was currently based only off of the residential component of the development and would be reevaluated at a later time when and if the commercial component is proposed. Councilor Miles was concerned about the cost for the Town if and when the commercial phase is proposed. Councilor Miles stated that he just tonight learned that the owners of the commercial property were different from the residential property owners and Councilor Miles wanted to require them to 4-lane the intersection when they submit a proposal in the future.

Mr. Griffey stated that FDOT's preference for this intersection would be a roundabout and would be safer for traffic going through that area. Mr. Griffey stated that a roundabout would work to slow down traffic on SR 19. Mr. Griffey stated that he went and reviewed the plans, and a roundabout would fit if the Town allowed some encroachment on the Town's property on the other side of SR 19.

Mr. Griffey stated that the next step in the process for this intersection was for FDOT to issue a Notice of Intent (NOI) for the intersection. After the NOI, a permit would be issued for the construction and there would be time for the Town to consider a roundabout for the intersection.

Mayor Pro Tem Gallelli asked who would pay for a roundabout. Mr. Griffey stated that the developers would have to pay for it.

Mayor MacFarlane opened Public Comment for this item only.

Tim Everline, 1012 N. Lakeshore Blvd. – Mr. Everline stated that the intersection of SR 19 and 455 was so congested that people were cutting through the Arrowhead neighborhood.

Mayor MacFarlane closed Public Comment for this item.

Motion made by Councilor Miles to move forward with the roundabout at the intersection on SR 19 in front of the proposed Hillside Groves development; seconded by Councilor Lannamañ. Motion passed unanimously by voice-vote.

Voting

Yea: Councilor Lannamañ, Councilor Miles, Councilor Lehning, Mayor Pro Tem Gallelli, Mayor MacFarlane

Nay: None

Mr. Griffey stated that he would get with both FDOT and the Hillside Groves developer to let them know about the Town's decision.

10. Discussion: **Capital Improvement Plan (CIP)**

Motion made by Councilor Miles to table this item to a future Workshop meeting; seconded by Councilor Lannamañ.

Voting

Yea: Councilor Lannamañ, Councilor Miles, Councilor Lehning, Mayor Pro Tem Gallelli, Mayor MacFarlane

Nay: None

The Town Council decided that the Workshop for the CIP discussion would be on February 12, 2024, at 4 PM.

DEPARTMENT REPORTS

11. Town Hall

Town Clerk, John Brock, let the Town Council know that Alpha Inspection and the Town's previous Building Official, Shane Gerwig, had gone their separate ways. In the interim of Alpha Inspections hiring/promoting a new Building Official for the Town, Jeff Gerling would be the Town's temporary Building Official. Starting on February 1, 2024 Matt Fretwell would be the Town's new Building Official.

12. Police Department

This report was included in the meeting's packet.

13. Code Enforcement

This report was included in the meeting's packet.

14. Public Works

Public Works Director, Morgan Cates, stated that the Town has contracted a surveyor for the North Citrus Ave. project.

Mr. Cates stated that the Town Engineer has contracted a geotechnical surveyor for Peak Park area. The cost of the survey would be between \$8,500 and \$11,600.

Mr. Cates stated that he had completed the Request for Proposal (RFP) for the replacement of the boardwalk at Sara Maude Mason Preserve. Councilor Miles was concerned about the cost of this project and the expected life of a new boardwalk.

Mr. Cates stated that he expected to send out the RFP for the repair/replacement of some of the Town's finger piers by the end of the month.

15. Library

Councilor Miles stated that he had seen the design for a further expansion of the library in the CIP. Councilor Miles stated that he wanted the Library Director to come and present this project to the Town Council during to the CIP workshop.

16. Parks & Recreation Advisory Board / Special Events

None

17. Town Attorney

None

18. Finance Supervisor

Finance Supervisor, Fred DeVito, stated that the Town's audit was moving forward. Councilor Miles asked about the status of the encumbrance module in the Town's accounting software. Mr. DeVito stated that he had completed a test run using the encumbrance module.

Councilor Miles stated that he wanted to see changes in the monthly finance report that was submitted to the Town Council. Mr. DeVito stated that he would work with Councilor Miles to make changes to the monthly report.

19. Town Manager

Town Manager, Sean O’Keefe, reminded the Town Council about the two Workshop meetings that the Town Council had just created. Mr. O’Keefe stated that the Town offices were closed for the holiday on Martin Luther King Jr. Day.

Mr. O’Keefe stated that a resident had recently voiced concerns about the Town’s water quality, Mr. O’Keefe let the Town Council know that the Town had completed a water quality test at the resident’s house and the Town’s water passed this test.

Mr. O’Keefe wished Councilor Lehning a happy 80th birthday.

COUNCIL MEMBER REPORTS

20. Mayor Pro Tem Gallelli

Mayor Pro Tem Gallelli told the Town Council that they should see more details about the wastewater treatment option during the January 22, 2024 meeting.

Mayor Pro Tem Gallelli suggested that the Town look into installing electric car chargers at the library. Mayor MacFarlane tasked Public Works Director, Morgan Cates, to direct his new Administrative Assistant, Brianna Pino, to research installing electric car chargers.

Councilor Miles congratulated the Finance Supervisor on getting a new interest-bearing Money Market account for the Town and transferring money into it. Councilor Miles noted that this change was estimated to bring over \$78,000 in previously unbudgeted revenue into the Town.

21. Councilor Lehning

Councilor Lehning stated that he wanted to see an estimate of the cost to operate a Town-owned Wastewater Treatment Plant. Councilor Lehning stated that he wanted to see this prior to making a decision on this issue and wanted an independent expert to review the numbers.

Councilor Lehning stated that a resident had complained to him about not having a good number to reach the Howey Police Department for non-emergency issues. Town Clerk, John Brock, stated that the Police Department did have a good number to use for off hours for non-emergency issues. The non-emergency phone number that a resident could use was 352-343-2101, option 4. Mr. Brock showed where the Town advertised this on the Town’s website.

Councilor Lehning reminded residents not to park on the road in a manner that blocks the roads.

22. Councilor Miles

Councilor Miles asked about a status update on the grant submission for the project that would purchase and install backup lift station pumps. Mr. Cates stated that he is in constant contact with FDEM and is awaiting their decision.

Councilor Miles asked for an update on the Stormwater Grant proposal. Mr. Cates stated he had spoken with the St. John River Water Management District and the Town would be giving them a survey of the property where the project would occur, and this process was ongoing.

Councilor Miles brought up the water quality issue that the Town Manager had brought up during his report. Councilor Miles stated that the Town has budgeted an amount each year to work on replacing ductile iron pipes in the Town. Councilor Miles suggested that the Town get a new SRF loan to pay for the project and get it done sooner, rather than breaking this up over multiple years.

Councilor Miles suggested that the Town would need more Engineering assistance than the Town's contracted Engineer, Don Griffey, could supply. Councilor Miles wanted a status update on the Town's Consultants Continuing Negotiations Agreement for Engineering Services that was underway. Councilor Miles wanted the new staff in the Town to assist with the project and assist with the Town acquiring grants.

Councilor Miles reminded the Town Council that they would be revisiting the issue of Wastewater Options in two weeks and that he would make sure that there was an answer for Councilor Lehning's cost question.

Councilor Miles asked for a status update on the Pine Park Project. Mr. Cates stated that he was working on getting the driveway and trails completed this year.

Councilor Miles asked the other Town Councilors to agree that N. Citrus Ave. should be widened to 24' during its repair project. Councilor Lannamañ and Mayor Pro Tem Gallelli were concerned about the cost of widening the road and wanted to see what this cost would be before making a decision.

Councilor Miles asked the Town Manager if Number Two Road would be sufficiently widened from the border of the Town to SR 19 once both Hillside Groves and Mission Rise were built. Mr. O'Keefe stated that it would be just within the Town's border though, not the county portion of the road.

Councilor Miles stated that he noticed in the Public Utilities Monthly Report that the Venezia Townhomes builder had caused a sewer line to need repairing. Councilor Miles wanted to know if the builder would be charged. It was stated that the builder would be charged.

Councilor Miles stated that he wanted to see a project of moving Talichet's wastewater lift station into the Town's control/inventory. Councilor Miles tasked Mr. Cates to approach Ron Roberts, the developer of Talichet, and ask him to pay for bringing the lift station up to Town specifications.

Councilor Miles stated that he had seen that there was a repair needed on one of the bathrooms in the Town's Library and asked Mr. Cates if this was a major repair. Mr. Cates stated that it was not a major repair.

Councilor Miles asked Mr. DeVito about the Police Retirement Fund and why it seemed to go down in a recent report. Mr. DeVito stated that this was because the report had incomplete information, that he was still waiting on some Police Retirement Fund banking numbers.

Councilor Miles stated that the interest rate that was on the 10-year Water Supply Facilities Work Plan Proposal that the Town Council approved had an incorrect interest rate on it and he asked the Town Manager to correct it prior to signing the contract.

23. Councilor Lannamañ

Councilor Lannamañ asked about the possibility of finding a grant to pay for repainting the Town's historic water tower. Councilor Lannamañ stated that she would like to see the water tower repainted prior to the Town's 100th anniversary.

Councilor Lannamañ suggested that the Town set up a contest to create a new logo to help celebrate the Town's 100th anniversary. Councilor Lannamañ stated she would like to see the Town's Events Committee start working on planning the Founder's Day celebration for the 100th anniversary now.

24. Mayor MacFarlane

Mayor MacFarlane stated that she would like a status update in the future about the project to replace the Town’s water lines.

Mayor MacFarlane stated that Lake County was closing fire stations, like the new fire station at Lake Gem. Mayor MacFarlane wanted an update on the County’s interest in land acquisition of purchasing a portion of the Town’s property. Mr. O’Keefe stated that the County Fire Department wanted to purchase a minimum of 3 acres as close to the Mission Inn front gates as possible.

Councilor Miles stated that he would like to talk about the Town purchasing the Langford land during the CIP workshop.

Mayor MacFarlane asked Councilor Lannamañ for the Venezia HOA to give a definitive statement about whether the HOA would like a back entrance to the neighborhood and if the HOA would like a trail that connects to Pine Park. Councilor Lannamañ stated that the HOA would put out a poll for the residents to vote on it.

PUBLIC COMMENTS

Any person wishing to address the Mayor and Town Council and who is not on the agenda is asked to speak their name and address. Three (3) minutes is allocated per speaker.

Ann Griffin, 215 E Laurel Ave. – Ms. Griffin asked, when the Town widens a road, would it be the resident’s responsibility to move their sprinkler system. Mr. Cates stated that it would be and that he described his process of notifying affected residents.

Ms. Griffin read out loud a letter that the owner of the Howey Mansion had given her in reference to the proposed Asma rezoning parcel, which lies next to the Howey Mansion. This letter stated that the owner of the Howey Mansion does not want the Town to allow that parcel of land to be rezoned commercial.

Ms. Griffin stated that she wants the Town’s fire engine to be repaired prior to the Town’s 100th anniversary.

Tim Everline, 1012 N Lakeshore Blvd. – Mr. Everline stated that he never received a Welcome Packet when he moved into the Town. Mr. Everline stated that a dog was defecating along N. Lakeshore Blvd., and he wanted something to be done about it.

ADJOURNMENT

There being no further business to discuss, a motion was made by Councilor Lannamañ to adjourn the meeting; Councilor Miles seconded the motion. Motion was approved unanimously by voice vote.

The Meeting adjourned at 8:55 p.m. | **Attendees: 29**

Mayor Martha MacFarlane

ATTEST:

John Brock, Town Clerk



AIA® Document B102® – 2017

Standard Form of Agreement Between Owner and Architect without a Predefined Scope of Architect's Services

Standard Form of Agreement Between Owner and Engineer without a Predefined Scope of Engineer's Services

AGREEMENT made as of the ___ day of January in the year 2024
(In words, indicate day, month and year.)

BETWEEN the Engineer's client identified as the Owner:
(Name, legal status, address and other information)

Town of Howey-in-the-Hills ("Owner" or "Town")
101 N. Palm Ave.
Howey-in-the-Hills, Florida 34737

and the Engineer:
(Name, legal status, address and other information)

Halff Associates, Inc.
902 North Sinclair Avenue
Tavares, FL 32778

for the following (hereinafter referred to as "the Project"):
(Insert information related to types of services, location, facilities, or other descriptive information as appropriate.)

Water Treatment Plant #3
Adjacent to Town's existing potable water distribution system
Corner of SR48 and SR19
Howey-in-the-Hills, Florida

The Owner and Engineer agree as follows.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Init.

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User Notes:

(826692941)

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6	COMPENSATION
7	MISCELLANEOUS PROVISIONS
8	SPECIAL TERMS AND CONDITIONS
9	SCOPE OF THE AGREEMENT

ARTICLE 1 ENGINEER'S RESPONSIBILITIES

§ 1.1 The Engineer shall provide the following professional services:

(Describe the scope of the Engineer's services or identify an exhibit or scope of services document setting forth the Engineer's services and incorporated into this document in Section 9.2.)

The Scope and Schedule of Services is attached as Exhibit "A" ("Scope of Services"). The schedule for the Engineer's Scope of Services is set forth in Exhibit "A". Owner retains the right to reduce the scope of any portion of the Scope of Services. In such event, Owner shall be entitled to proportionally reduce the Engineer's compensation.

§ 1.1.1 The Engineer represents that it is properly licensed in the jurisdiction where the Project is located to provide the services required by this Agreement, or shall cause such services to be performed by appropriately licensed design professionals.

§ 1.2 The Engineer shall perform its services consistent with the professional skill and care ordinarily provided by Engineers practicing in the same or similar locality under the same or similar circumstances. The Engineer shall perform its services as expeditiously as is consistent with such professional skill and care and the orderly progress of the Project. The Engineer shall, without additional compensation, correct and revise any errors or deficiencies in its designs, drawings, specifications, and services.

§ 1.3 The Engineer identifies the following representative authorized to act on behalf of the Engineer with respect to the Project.

(List name, address, and other contact information.)

Michael Scullion, PE, DBIA

902 North Sinclair Avenue

Tavares, FL 32778

352-557-9235

mjscullion@half.com

§ 1.4 Except with the Owner's knowledge and consent, the Engineer shall not engage in any activity, or accept any employment, interest or contribution that would reasonably appear to compromise the Engineer's professional judgment with respect to this Project.

§ 1.5 The Engineer shall maintain at its own expense, the following insurance until four (4) years after the termination of this Agreement.

Init.

§ 1.5.1 Commercial General Liability with policy limits of not less than two million dollars (\$2,000,000) for each occurrence and two million dollars (\$2,000,000) in the aggregate for bodily injury and property damage and umbrella excess liability coverage of five million dollars (\$5,000,000).

§ 1.5.2 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Engineer with policy limits of not less than one million dollars (\$1,000,000) per accident for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles, along with any other statutorily required automobile coverage.

§ 1.5.3 The Engineer may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella liability insurance policies result in the same or greater coverage as the coverages required under Sections 1.5.1 and 1.5.2, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ 1.5.4 Workers' Compensation at statutory limits.

§ 1.5.5 Employers' Liability with policy limits not less than one million dollars (\$ 1,000,000) each accident, one million dollars (\$ 1,000,000) each employee, and one million dollars (\$ 1,000,000) policy limit.

§ 1.5.6 Professional Liability covering negligent acts, errors and omissions in the performance of professional services with policy limits of not less than two million dollars (\$ 2,000,000) per claim and two million dollars (\$2,000,000) in the aggregate.

§ 1.5.7 **Additional Insured Obligations.** The Engineer shall cause the primary and excess or umbrella policies for Commercial General Liability and Automobile Liability to include the Owner as an additional insured for claims caused in whole or in part by the Engineer's negligent acts or omissions. The additional insured coverage shall be primary and non-contributory to any of the Owner's insurance policies and shall apply to both ongoing and completed operations.

§ 1.5.8 The Engineer shall provide certificates of insurance to the Owner that evidence compliance with the requirements in this Section 1.5 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. Each policy shall contain a provision that the policy will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner.

§ 1.5.9 Engineer shall require its professional and licensed subconsultants to maintain a minimum of \$1,000,000 per occurrence for General Liability insurance, \$1,000,000 automobile liability insurance, statutory workers' compensation coverage, and if such subconsultant has a professional license, \$1,000,000 per claim for Professional Liability Insurance.

ARTICLE 2 OWNER'S RESPONSIBILITIES

§ 2.1 Unless otherwise provided for under this Agreement, the Owner shall provide information in a timely manner regarding requirements for and limitations on the Project, including a written program, which shall set forth the Owner's objectives; schedule; constraints and criteria, including space requirements and relationships; flexibility; expandability; special equipment; systems; and site requirements.

§ 2.2 The Owner identifies the following representative authorized to act on the Owner's behalf with respect to the Project. The Owner shall render decisions and approve the Engineer's submittals in a timely manner in order to avoid unreasonable delay in the orderly and sequential progress of the Engineer's services.

(List name, address, and other contact information.)

Sean O'Keefe or a Town employee designated in writing by Sean O'Keefe
Town Manager
Town of Howey-in-the-Hills
P.O. Box 128

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101 N. Palm Avenue
 Howey-in-the-Hills, FL 34737
 Town Hall: 352-324-2290
 Cell: 352-705-6100
sokeefe@howey.org

§ 2.3 The Engineer shall schedule regular communications with and coordinate with the Town Engineer (Don Griffey, P.E.) to provide information to the Owner's consultants so that the Owner's consultants can coordinate their services through the Town Engineer.. The Owner shall furnish the services of consultants other than those designated as the responsibility of the Engineer in this Agreement.

§ 2.4 Electronic mail may be used by the parties for notices using the email addresses in §1.3 and §2.2.

(Paragraphs deleted)

ARTICLE 3 COPYRIGHTS AND LICENSES

§ 3.1 Drawings, specifications, reports, and all other documents, including those in electronic form, specifically prepared by the Engineer and the Engineer's consultants for this Project ("Design Documents") are the sole and exclusive property of the Owner, shall be considered as being specially ordered by Owner as "works made for hire" under 17 U.S.C. §101, and may be used in any manner at the sole discretion of Owner. Owner shall have full and sole ownership rights to the Design Documents, regardless of any payment disputes with Engineer. Engineer shall furnish Owner with such reproductions of any Design Documents as the Owner may request at any time in both electronic and printed form. Any reproductions shall be the sole and exclusive property of the Owner who may use them without Engineer's permission for any purpose determined to be proper by the Owner. Owner shall own all rights, copyrights, or other intellectual property there may be with respect to the Design Documents. In the event that the Design Documents are held not to be "works made for hire", then Engineer agrees that all Design Documents, whether in final form or draft, which result from any Services performed by Engineer under this Agreement, are hereby assigned exclusively to Owner, including any copyright, patent, trademark, and all other intellectual property rights. In all cases, Engineer further hereby expressly assigns all of its present and future rights therein to Owner, and agrees to execute and furnish, and to cause all the Engineer's consultants to execute and furnish, in favor of Owner separate assignment documents from time to time as requested by Owner. This Section shall survive any termination or expiration of this Agreement. The Engineer shall be entitled to retain copies of the Design Documents for the Engineer's use and records. Owner shall be free to use the Design documents for any purpose, including, but not limited to, completion, renovation, additions, and expansion of the Project. The Engineer shall have no liability for the Owner's use of the Design Documents for a use unrelated to the Project. Engineer shall require language in each of its subconsultants' contracts providing for Owner's ownership of all Project documents and the Design Documents. Notwithstanding any provision contained above or anywhere in this Agreement to the contrary, Engineer shall however, retain the right to use and reuse all standard discrete elements contained within the Design Documents, including standard details, specifications or other design materials generated and authored by the Engineer for its repeated, regular and ongoing use in plans, specifications, reports or other instruments of service for its clients.

§ 3.2 The provisions of this Article 3 shall survive the termination of this Agreement.

(Paragraphs deleted)

ARTICLE 4 CLAIMS AND DISPUTES

§ 4.1 General

§ 4.1.1 The Owner and Engineer shall commence all claims and causes of action against the other and arising out of or related to this Agreement, whether in contract, tort, or otherwise, in accordance with the requirements of the binding dispute resolution method selected in this Agreement and within the period specified by Florida law.

§ 4.1.2 To the extent damages are covered by property insurance, the Owner and Engineer waive all rights against each other and against the contractors, consultants, agents, and employees of the other for damages, except such rights as they may have to the proceeds of such insurance as set forth in Owner's revised AIA Document A201-2017, General Conditions of the Contract for Construction. The Owner or the Engineer, as appropriate, shall require of the contractors, consultants, agents, and employees of any of them, similar waivers in favor of the other parties enumerated herein.

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§ 4.1.3 The Engineer and Owner waive special, indirect, speculative, liquidated and all other damages ("Consequential Damages"), except direct damages for claims, disputes, or other matters in question, arising out of or relating to this Agreement. This mutual waiver is applicable, without limitation, to all Consequential Damages due to either party's termination of this Agreement. Redesign and remedial construction costs shall not be considered "consequential damages".

§ 4.2 Mediation

§ 4.2.1 Any claim, dispute or other matter in question arising out of or related to this Agreement shall be subject to mediation pursuant to Florida Statutes as a condition precedent to binding dispute resolution.

§ 4.2.2 The Owner and Engineer shall endeavor to resolve claims, disputes and other matters in question between them by mediation, which, unless the parties mutually agree otherwise, shall be in accordance with Florida Statutes. A request for mediation shall be made in writing, delivered to the other party to this Agreement, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of a complaint or other appropriate demand for binding dispute resolution but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order.

§ 4.2.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 4.2.4 If the parties do not resolve a dispute through mediation pursuant to this Section 4.2, the method of binding dispute resolution shall be the following:

(Check the appropriate box.)

- Arbitration pursuant to Section 4.3 of this Agreement
- Litigation in a court of competent jurisdiction with exclusive venue in Lake County, Florida.
- Other *(Specify)*

If the Owner and Engineer do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, the dispute will be resolved in a court of competent jurisdiction.

§ 4.3 not used.

(Paragraphs deleted)

§ 4.4 The provisions of this Article 4 shall survive the termination of this Agreement.

ARTICLE 5 TERMINATION OR SUSPENSION

§ 5.1 If the Owner fails to make payments to the Engineer in accordance with this Agreement, such failure shall be considered substantial nonperformance and cause for termination or, at the Engineer's option, cause for suspension of performance of services under this Agreement. If the Engineer elects to suspend services, the Engineer shall give seven days' written notice to the Owner before suspending services. In the event of a suspension of services, the Engineer shall have no liability to the Owner for delay or damage caused the Owner because of such suspension of services. Before resuming services, the Owner shall pay the Engineer all sums due prior to suspension.

§ 5.2 If the Owner suspends the Project, as its sole remedy, the Engineer shall be compensated for services performed prior to notice of such suspension. When the Project is resumed, the Engineer's fees for the remaining services and the time schedules shall remain the same as set forth in this Agreement.

§ 5.3 If the Owner suspends the Project for more than 180 cumulative days for reasons other than the fault of the Engineer, the Engineer may terminate this Agreement by giving not less than seven days' written notice.

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§ 5.4 Either party may terminate this Agreement upon not less than seven (7) days' written notice should the other party fail substantially to perform in accordance with the terms of this Agreement through no fault of the party initiating the termination.

§ 5.5 The Owner may suspend or terminate this Agreement upon not less than seven (7) days' written notice to the Engineer for the Owner's convenience and without cause.

§ 5.6 If the Owner terminates or suspends this Agreement for its convenience pursuant to Section 5.5, the Engineer terminates this Agreement pursuant to Section 5.1, or the Engineer terminates this Agreement pursuant to Section 5.3, the Owner shall compensate the Engineer for services performed prior to termination, together with Reimbursable Expenses incurred, which compensation shall be Engineer's sole and exclusive remedy for any termination or suspension.

§ 5.7
(Paragraphs deleted)
not used.

§ 5.8 Except as otherwise expressly provided herein, this Agreement shall terminate
(Check the appropriate box.)

- One year from the date of commencement of the Engineer's services
- One year from the date of Substantial Completion of the Construction of the Project.
- Other
(Insert another termination date or refer to a termination provision in an attached document or scope of service.)

If the Owner and Engineer do not select a termination date, this Agreement shall terminate one year from the date of commencement of the Engineer's services.

(Paragraph deleted)

ARTICLE 6 COMPENSATION

§ 6.1 The Owner shall compensate the Engineer as set forth below for services described in Section 1.1, or in the attached exhibit or scope document incorporated into this Agreement in Section 9.2.

(Insert amount of, or basis for, compensation or indicate the exhibit or scope document in which compensation is provided for.)

Compensation shall be in the amounts set forth in Exhibit "A" for delivery to Owner of the submittals and deliverable documents set forth for each phase described in Exhibit "A".

§ 6.2 Compensation for Reimbursable Expenses

§ 6.2.1 Reimbursable Expenses are in addition to compensation set forth in Section 6.1 and include expenses incurred by the Engineer and the Engineer's consultants directly related to the Project, as follows:

- .1 not used;
- .2 Long distance services, dedicated data and communication services, teleconferences, Project web sites, and extranets; but only if authorized in writing in advance by the Owner;
- .3 Permitting and other fees required by authorities having jurisdiction over the Project; but only if authorized in writing in advance by the Owner;
- .4 Printing, reproductions, plots, and standard form documents;
- .5 Postage, handling and delivery;
- .6 Expense of overtime work requiring higher than regular rates, but only if authorized in writing in advance by the Owner;
- .7 Renderings, physical models, mock-ups, professional photography, and presentation materials requested by the Owner or required for the Project; but only if authorized in writing in advance by the Owner;
- .8 not used; and

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.9 All taxes levied on professional services and on reimbursable expenses;
(Paragraphs deleted)

§ 6.2.2 For Reimbursable Expenses the compensation shall be the actual expenses incurred by the Engineer and the Engineer's consultants without markup. Reasonable back-up documentation such as receipts shall be submitted with any invoices for Reimbursable Expenses. Travel expenses are not reimbursable. Reimbursable Expenses shall not exceed the amount stated in Phase 2100 on Exhibit "A".

§ 6.2.3
(Paragraphs deleted)

Additional Services. Compensation for Additional Services that are not included in the Scope of Services shall be negotiated by the Owner and Engineer at the time of Owner's request for said Additional Services. Engineer shall not perform and shall not be entitled to any payment for such Additional Services unless the Owner and Engineer execute a written document setting forth a description of the Additional Services and the compensation to be paid for same in advance of Engineer performing such Additional Services. Before negotiating Additional Services, Engineer shall provide Owner with a list of personnel, proposed hourly rates, hours for each task, and itemization of proposed reimbursables for Owner's review, and any other additional information Owner may require. Subconsultants shall provide the same information on subconsultant's letterhead for their Additional Services. The costs of any Additional Services performed without prior written authorization are waived by Engineer.

§ 6.3 Payments to the Engineer

§ 6.3.1 Submittal of Invoices. Invoices shall be submitted by electronic mail to Owner, by emailing to the Town Manager, Sean O'Keefe sokeefe@howey.org, the Grant Manager, Morgan Cates mcates@howey.org, and the Town Clerk, John Brock, jbrock@howey.org. Engineer's invoices shall be supported by such data substantiating the Engineer's right to payment as the Owner may require, such as, but not limited to, copies of invoices from subconsultants, receipts for Reimbursable Expenses, and records of detailed description of services performed, names of personnel performing the services, and listing of the progress submittals or phase deliverable documents delivered to Owner during the pay period.

(Paragraph deleted)

§ 6.3.2 Progress Payments

§ 6.3.2.1 Payments for services shall be made monthly for the completion and delivery to Owner of each progress submittal or phase deliverable documents described in Exhibit "A" that were delivered to Owner in the respective pay period. When Exhibit "A" provides for 60%, 90%, and 100% submittals, payment for that phase shall be made 1/3 for 60% submittals, 1/3 for 90% submittals, and 1/3 for 100% submittals. Payments are due and payable thirty (30) days after the date of Owner's approval of the Engineer's properly prepared and completed invoice. Amounts unpaid after the due date shall bear interest at the rate entered below:

(Insert rate of monthly or annual interest agreed upon.)

Per Florida Statute Chapter 218.

(Paragraphs deleted)

ARTICLE 7 MISCELLANEOUS PROVISIONS

§ 7.1 This Agreement shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules.

§ 7.2 Except as separately defined herein, terms in this Agreement shall have the same meaning as those in the Owner's revised AIA Document A201™-2017, General Conditions of the Contract for Construction.

§ 7.3 The Owner and Engineer, respectively, bind themselves, their agents, successors, assigns, and legal representatives to this Agreement. Neither the Owner nor the Engineer shall assign this Agreement without the written consent of the other.

§ 7.4 n/a.

(Paragraph deleted)

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§ 7.5 If the Owner requests the Engineer to execute certificates, the proposed language of such certificates shall be submitted to the Engineer for review at least 14 days prior to the requested dates of execution. If the Owner requests the Engineer to execute consents reasonably required to facilitate assignment to a lender, the Engineer shall execute all such consents that are consistent with this Agreement, provided the proposed consent is submitted to the Engineer for review at least 14 days prior to execution. The Engineer shall not be required to execute certificates or consents that would require knowledge, services, or responsibilities beyond the scope of this Agreement or that would increase or enhance the Engineer's scope of services or risk beyond that specifically identified in this Agreement.

§ 7.6 Nothing contained in this Agreement shall create a contractual relationship with, or a cause of action in favor of, a third party against either the Owner or Engineer.

§ 7.7 Unless otherwise required in this Agreement, the Engineer shall have no responsibility for the discovery, presence, handling, removal or disposal of, or exposure of persons to, hazardous materials or toxic substances in any form at the Project site, except in the case of the Engineer specifying the use of such substance. Engineer shall notify the Owner immediately upon Engineer's discovery of any hazardous or toxic substance on the Project site.

§ 7.8 The Engineer shall have the right to include photographic or artistic representations of the design of the Project among the Engineer's promotional and professional materials, subject to the prior written approval of Owner which approval shall not be unreasonably withheld or delayed. The Engineer shall be given reasonable access to the completed Project to make such representations. However, the Engineer's materials shall not include the Owner's confidential or proprietary information if the Owner has previously advised the Engineer in writing of the specific information considered by the Owner to be confidential or proprietary. The Engineer shall coordinate all press releases and promotional/industry articles with the Owner and the Owner shall pre-approve all press releases and articles, which approval shall not be unreasonably withheld or delayed. This Section 7.8 shall survive the termination of this Agreement unless the Owner terminates this Agreement for cause pursuant to Section 5.4.

§ 7.9 This is a public project. In general all information and documents are public records except confidential information pursuant to Florida Statute Chapter 119. If confidential, Engineer shall keep such information strictly confidential and shall not disclose it to any other person except only as permitted by Florida Statute Chapter 119. This Section 7.9 shall survive the termination of this Agreement.

§ 7.9.1 not used.

§ 7.10 The invalidity of any provision of the Agreement shall not invalidate the Agreement or its remaining provisions. If it is determined that any provision of the Agreement violates any law, or is otherwise invalid or unenforceable, then that provision shall be deleted and the remainder of the Agreement shall be interpreted as if such deleted provision had never been included.

ARTICLE 8 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Agreement are as follows:

(Include other terms and conditions applicable to this Agreement.)

1. Availability of Funds. All activities under or pursuant to this Agreement are subject to the availability of appropriated funds to the Owner. Owner shall immediately notify Engineer should funds become unavailable. In such case, either party shall have the right to stop work and/or terminate this Agreement.

2. Public Records.

a. To the extent Engineer is acting on behalf of Owner as provided under Subsection 119.011(2) of the Florida Statutes, Engineer shall:

i. Keep and maintain public records required by Owner to perform the services under this Agreement.

ii. Upon request from Owner's custodian of public records, provide Owner with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the costs provided in Chapter 119 of the Florida Statutes or otherwise provided by law.

iii. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the Agreement term and following completion of the Agreement if the Engineer does not transfer the records to Owner.

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iv. Upon completion of the Agreement, transfer, at no cost, to Owner all public records in possession of Engineer or keep and maintain public records required by Owner to perform the service. If the Engineer transfers all public records to Owner upon completion of the Agreement, the Engineer shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Engineer keeps and maintains public records upon completion of the Agreement, the Engineer shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to Owner, upon request from Owner's custodian of public records, in a format that is compatible with the information technology systems of Owner.

b. If the Engineer fails to provide the public records to Owner within a reasonable time the Engineer may be subject to penalties under Section 119.10 of the Florida Statutes. Further, Owner may exercise any remedies at law or in equity, including, without limitation, the right to (i) impose sanctions and assess financial consequences, (ii) withhold and/or reduce payment, and (iii) terminate this Agreement in accordance with the terms hereof.

Engineer shall defend, at its own cost, indemnify, and hold harmless Owner, their officers, directors, and employees from and against all claims, damages, losses, and expenses, (including but not limited to fees and charges of attorneys or other professionals and court and arbitration or other dispute resolution costs) arising out of or resulting from Engineer's failure to comply with the terms of this Section.

c. IF THE ENGINEER HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE ENGINEER'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT OWNER'S CUSTODIAN OF PUBLIC RECORDS FOR THIS PROJECT, JOHN BROCK, TOWN CLERK, AT 352-324-2290, JBROCK@HOWEY.ORG , 110 N. PALM AVE., HOWEY-IN-THE-HILLS, FLORIDA 34737.

3. **Sovereign Immunity.** Owner's limits of liability are set forth in Section 768.28 of the Florida Statutes, and nothing herein shall be construed to extend the liabilities of Owner beyond that provided in Section 768.28 of the Florida Statutes. Nothing herein is intended as a waiver of Owner's sovereign immunity under Section 768.28 of the Florida Statutes. Nothing hereby shall inure to the benefit of any third party for any purpose, including but not limited to anything which might allow claims otherwise barred by sovereign immunity or operation of law. Furthermore, all of Owner's obligations under this Agreement are limited to the payment of no more than the per person amount limitation and the aggregate contained in Section 768.28 of the Florida Statutes, even if the sovereign immunity limitations of that statute are not otherwise applicable to the matters as set forth herein.

In no event shall Owner be liable to Engineer for indirect, special, or consequential damages, including, but not limited to, loss of revenue, loss of profit, cost of capital, or loss of opportunity regardless of whether such liability arises out of contract, tort (including negligence), strict liability, or otherwise. Owner shall not assume any liability for the acts, omissions, or negligence of Engineer, its agents, servants, employees, or subconsultants. In all instances, Engineer shall be responsible for any injury or property damage resulting from any activities conducted by Engineer.

4. **No Harassment.** Engineer shall provide a harassment-free workplace, with any allegation of harassment given priority attention and action by management. Engineer shall insert a similar provision in accordance with this section, in all subcontracts for this Project.

5. **Independent Contractor.** Engineer is and shall remain an independent contractor and not an employee or agent of Owner. There are no intended or unintended third-party beneficiaries of this Agreement, and no parties other than the Owner and Engineer shall have the right to enforce this Agreement. This Agreement shall not be construed as a teaming, joint venture or other such arrangement. Nothing in this Agreement shall grant to either party the right to make commitments of any kind for or on behalf of the other party without the prior written consent of the other party.

6. **Non-Discrimination.** Engineer and its subconsultants shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin. Engineer shall take affirmative action to ensure that qualified applicants are employed if work is available and that employees are treated during employment without

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regard to their race, religion, color, sex, creed, handicap, marital status, or national origin. Engineer agrees to post in places available to all employees and applicants for employment, notices setting forth the policies of nondiscrimination.

Engineer shall, in all solicitations or advertisements for employees, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex, creed, handicap, marital status, or national origin.

7. Public Entity Crime Notice. Engineer affirms that it is aware of the provisions of Section 287.133(2)(a), Florida Statutes, and that at no time has Engineer been convicted of a Public Entity Crime. Engineer agrees that it shall not violate such law and further acknowledges and agrees that any conviction during the term of this Agreement may result in termination of this Contract by Owner.

8. Records. Engineer shall preserve all contract records and documents for the entire term of this Agreement and for five (5) years after the later of: (i) the date of submission of Engineer's final services, or (ii) until all claims (if any) regarding the Agreement are resolved. During such period of time, Engineer shall retain and maintain all records and make such records available for an audit as may be requested by Owner. The records shall be subject at all times to inspection, review, or audit by Owner, which may, at any time and for any reason whatsoever, review, audit, copy, examine and investigate in any manner, any records of Engineer which include, but are not limited to, papers, books, documents, vouchers, bills, invoices, requests for payment, accounting records, and other supporting documentation, which according to generally accepted accounting principles, procedures and practices, sufficiently and properly reflect all costs expended in the performance of this Agreement.

9. Whenever the term "Contractor" is used in the Contract Documents it shall refer to and mean "Construction Manager" or the "Contractor" as the case may be for the specific Project.

10. No Use of Funds for Lobbying or Litigation. Engineer shall not use any funds received pursuant to this Agreement for lobbying the Florida Legislature, the judicial branch, or any state agency. Engineer shall not use any funds received pursuant to this Agreement for any legal action against Owner.

11. Discriminatory Vendor List. Engineer represents that it is not on the State's discriminatory vendor list and that for services related to this Agreement, Engineer shall not transact business with any entity that has been placed on the State's discriminatory vendor list.

12. No Contingency Fees. Engineer warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Engineer to solicit or secure this agreement and that he or she has not paid or agreed to pay any person, company, corporation, individual, or firm, other than a bona fide employee working solely for the Engineer any fee, commission, percentage, gift, or other consideration contingent upon or resulting from the award or making of this Agreement.

13. Schedule. Engineer shall perform its services in accordance with the schedule set forth in Exhibit "A".

14. Whenever the term, "AIA Document A201-2017" is used in the Contract Documents, it shall refer to and mean the Town's revised AIA A201-2017, Revised General Conditions of the Contract for Construction.

15. Engineer is familiar with and shall comply with all applicable federal, state and local laws, rules, regulations, and requirements, as applicable.

16. E-Verify. Engineer shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all employees hired by Engineer during the term of this Agreement; and Engineer shall expressly require any subconsultants to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all employees hired by the subconsultants during the contract term. The Department of Homeland Security's E-Verify system can be found at:

http://www.dhs.gov/files/programs/gc_1185221678150.shtm

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The employment by Engineer or any of its subconsultants of unauthorized aliens, as described by Section 274A(e) of the Immigration and Nationalization Act, shall be cause for termination of this Agreement. **Only those employees determined eligible to work within the United States shall be employed under this Agreement.**

17. **No Smoking.** Smoking and all tobacco products are prohibited on the Project site and prohibited anywhere on Owner's property. Tobacco is defined as tobacco products including, but not limited to, cigars, cigarettes, e-cigarettes, pipes, chewing tobacco and snuff. Failure to abide by this policy may result in civil penalties levied under Chapter 386, Florida Statutes and/or contract enforcement remedies.

18. **Proposal Terms Not Incorporated.** In the event Engineer has presented a proposal to Owner which may contain terms and conditions other than a description of the scope of Services, such terms and conditions shall not be valid, shall not be enforceable, and shall not be considered a part of this Agreement. Only the description of the scope of Services to be performed shall be considered a part of this Agreement.

19. **COVID19.** Engineer's Fees include all amounts necessary to comply with all regulations, ordinances, and laws concerning COVID19, including PPE, sanitation, and social distancing requirements.

20. **Scrutinized Companies List.**

a. By executing this Agreement, Engineer certifies that it is not: (1) listed on the Scrutinized Companies that Boycott Israel List, created pursuant to section 215.4725 of the Florida Statutes, (2) engaged in a boycott of Israel, (3) listed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to section 215.473 of the Florida Statutes, or (4) engaged in business operations in Cuba or Syria. Pursuant to section 287.135(5) of the Florida Statutes, Owner may immediately terminate this Agreement for cause if the Engineer is found to have submitted a false certification as to the above or if the Engineer is placed on the Scrutinized Companies that Boycott Israel List, is engaged in a boycott of Israel, has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or has been engaged in business operations in Cuba or Syria, during the term of the Agreement. If Owner determines that the Engineer has submitted a false certification, Owner will provide written notice to the Engineer. Unless the Engineer demonstrates in writing, within 90 calendar days of receipt of the notice, that Owner's determination of false certification was made in error, Owner shall bring a civil action against the Engineer. If Owner's determination is upheld, a civil penalty equal to the greater of \$2 million or twice the amount of this Agreement shall be imposed on the Engineer, and the Engineer will be ineligible to bid on any Agreement with a Florida agency or local governmental entity for three years after the date of Owner's determination of false certification by the Engineer.

b. If federal law ceases to authorize the states to adopt and enforce the contracting prohibition in this Section, this Section shall be null and void without further action of the parties.

21. **CADD.** The Engineer shall provide copies of the Design Documents to Owner prepared in 3D Revit, Sketchup, Autocad, or another CADD format approved by Owner.

22. **Subconsultants.** All subconsultants utilized by Engineer for the Project are subject to the approval of Owner. After approval from Owner, the Engineer shall not remove or substitute any of the subconsultants without the written consent of Owner which consent shall not be unreasonably withheld.

23. Engineer shall coordinate and conduct with the Owner and Engineer a Project Warranty Inspection at the Project site on a mutually convenient date within the 14 day period before the expiration of the Contractor's one (1) year warranty period.

24. The terms and conditions of any subconsultant agreements with Engineer shall not be binding on Owner regardless if Owner has approved the use of the subconsultant or their scope and fee.

25. The provisions of Florida Statute Chapter 558 are waived by both Parties and shall not be applicable to this Agreement.

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26. Engineer shall indemnify and hold harmless the Owner and its officials, officers and employees to the fullest extent permitted by law from and against all claims, damages, losses, and costs, including but not limited to reasonable attorneys' fees to the extent caused by the negligence, recklessness, or intentional wrongful conduct of Engineer and any other persons employed or utilized by Engineer in the performance of this Agreement. The provisions of this paragraph shall survive the expiration or earlier termination of this Agreement.

27. Not used.

28. Engineer is encouraged to use Florida's minority and service-disabled veteran businesses as subconsultants under this Agreement. The Certified Vendor Directory can be accessed from the website of the Florida Department of Economic Opportunity of Management Services, Office of Supplier Diversity located at:
https://www.dms.myflorida.com/agency_administration/office_of_supplier_diversity_osd

29. Prohibited Gratuities. Engineer shall not offer or give a gratuity (e.g., an entertainment or gift) to any officer, official, or employee of Owner.

30. PURSUANT TO FLORIDA STATUTES, SECTION 558.0035, AN INDIVIDUAL EMPLOYEE OR AGENT OF ENGINEER MAY NOT BE HELD INDIVIDUALLY LIABLE FOR NEGLIGENCE IN ANY CLAIM(S) ARISING OUT OF OR RELATED TO THIS AGREEMENT, THE SERVICES PERFORMED IN THIS AGREEMENT, OR THE PROJECT.

31. No Individual Liability. No covenant or agreement contained in this Agreement shall be deemed to be the covenant or agreement of any individual officer, agent, employee, or representative of the Owner, in his or her individual capacity, and none of such persons shall be subject to any personal liability or accountability by reason of the execution of this Agreement, whether by virtue of any constitution, statute, or rule of law, or by the enforcement of any assessment or penalty, or otherwise. Further, Engineer waives and releases any and all claims of any kind against the individual officers, agents, employees, and representatives of the Owner.

32. Electronic Signatures. The Parties agree that this Agreement and any amendments may be executed by electronic signature, which shall be considered as an original signature for all purposes and shall have the same force and effect as an original signature. For purposes of this Agreement "electronic signature" includes faxed versions of an original signature, electronically scanned and transmitted versions (via pdf) of an original signature, and portable document formats which include, but are not limited to, Abode or DocuSign.

ARTICLE 9 SCOPE OF THE AGREEMENT

§ 9.1 This Agreement represents the entire and integrated agreement between the Owner and the Engineer and supersedes all prior negotiations, representations or agreements, either written or oral. This Agreement may be amended only by written instrument signed by both the Owner and Engineer.

§ 9.2 This Agreement is comprised of the following documents identified below:

- .1 AIA Document B102™–2017, Standard Form Agreement Between Owner and Engineer
- .2 not used.
- .3 Exhibits:
(Check the appropriate box for any exhibits incorporated into this Agreement.)

AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204–2017 incorporated into this Agreement.)

Other Exhibits incorporated into this Agreement:
(Clearly identify any other exhibits incorporated into this Agreement.)

(Paragraphs deleted)

Init.

Exhibit "A" – Scope and Schedule of Services
Exhibit "B" – Project Schedule
Exhibit "C" – Fee Breakdown

This Agreement entered into as of the day and year first written above.

OWNER *(Signature)*

Sean O’Keefe, Town Manager
(Printed name and title)

ENGINEER *(Signature)*

Robert A. Ern, Jr., PE, DBIA, Vice President
(Printed name, title, and license number, if required)



Init.

/

User Notes:

Via Email

November 20, 2023

Exhibit A - Scope and Schedule of Services and Fees

Sean O'Keefe
Town Manager
Town of Howey-in-the-Hills
PO Box 128
Howey-in-the-Hills, FL 34737

RE: RFQ 2023-002 Water Treatment Plant No. 3

PROFESSIONAL SERVICES PROPOSAL/AGREEMENT

Halff Associates, Inc. is pleased to submit this Proposal to the Town of Howey-in-the-Hills for professional services related to the design, permitting, bidding assistance, and construction administration of Water Treatment Plant No. 3. Water Treatment Plant No. 3 will be constructed on Town owned property adjacent to the Town's existing potable water distribution system allowing the proposed Water Treatment Plant to be connected to the distribution system, and the existing Water Treatment Plant to be decommissioned and demolished. The following tasks are proposed as part of the project:

PHASE 100 Hydraulic Analysis and Master Plan Update

Halff will review information provided by the Town related to projected development within the potable water service area and update the existing hydraulic model to include the extension of potable water service to areas of known projected development. Recommended sizing of potable water main extensions to provide the desired level of service to each area of development will be verified through the hydraulic model. The hydraulic model will include both existing Water Treatment Plant No. 1 and proposed Water Treatment No. 3 as well as the interconnect valve between the pressure zones served by each WTP. Recommendations for modifications to the existing interconnect control valve will be developed.

Halff will update the previously prepared Potable Water Master Plan to incorporate the results of the hydraulic modeling, and recommendations for potable water main extensions and modifications to the interconnect control valve. A draft Potable Water Master Plan report will be provided to the Town for review. Halff will coordinate a review meeting with the Town and will incorporate comments received into the final Potable Water Master Plan Report.

FEE: \$19,880.00

PHASE 200 Subsurface Utility Location

Halff will subcontract with Precise Locating Services, Inc. to designate the horizontal positions of underground utilities on the existing Water Treatment Plant No. 2 site, as well as along approximately 900 feet on the northern right of way State Route 19 and the eastern right of way of County Road 48.

FEE: \$3,108.00

PHASE 300 Topographic and Boundary Surveying

Halff will prepare a boundary, topographic, and tree survey of the project site, Lake County Alternate Key 3946511, in accordance with Section 5J-17, Florida Administrative Code, the Standards of Practice for land surveying in the State of Florida. Additionally, Halff will prepare a topographic survey of the adjacent eastern right of way of County Road 48, and the existing Water Treatment Plant No. 2 site. The boundary survey will include establishing exterior boundary lines of the site, including all public rights of way. Boundary monuments will be recovered or set as required. All improvements including existing above ground structures, utilities designated as part of Phase 200, storm drainage and sanitary sewer manholes and structures, and the location and elevation of the existing well casing will be located on the survey. Sewer pipe size, type, and elevation data will be depicted, along with spot elevations sufficient to develop a 1-foot digital terrain model. Vertical control will be established based on the 1988 North American Vertical Datum (NAVD) including two benchmarks for use during construction. All trees 6 inches DBH and larger will be located and shown on the survey per the requirements of the Town Land Development Code.

FEE: \$30,500.00

PHASE 400 Phase I Environmental Assessment

Halff will subcontract with Andreyev Engineering, Inc. to conduct a Phase I Environmental Site Assessment in accordance with ASTM E1527-21 to determine if Recognized Environmental Conditions are present either on-site or off-site. As part of the Phase I Environmental Site Assessment Andreyev will:

- Conduct a review of applicable historical sources including available historical aerial photographs, U.S.G.S quadrangle maps, and city directory listings.
- Conduct a review of regulatory database search information, and contact appropriate and relevant County, State, and Federal agencies to further review applicable information present in their files concerning contamination on site, or in the immediate vicinity of the site, and determine whether any off-site facilities may potentially impact the subject site.
- Conduct interviews as applicable with the current owner and previous owners, current and previous tenants, and applicable government officials.
- Conduct a site reconnaissance to look for visual evidence of past or current deposition of hazardous materials on or adjacent to the site. Further investigate any areas of concern disclosed by the review of the historical sources or regulatory agency records.
- Prepare a Phase I Environmental Site Assessment Report documenting the findings of the assessment including: documentation of the investigation methods and results, determination of the presence of Recognized Environmental Conditions pursuant to ASTM E1527-21, determination of the need for a Phase II Environmental Site Assessment pursuant to ASTM E1903-19 is warranted due to the presence of Recognized Environmental Conditions.

FEE: \$2,640.00

PHASE 500 Cultural Resources Assessment Survey

Halff will subcontract with Archaeological Consultants, Inc. to provide a Cultural Resources Assessment Survey report of the project site in compliance with Chapter 1A-46, Florida Administrative Code and the Florida Division of Historic Resources' *Module Three, Guidelines for Use by Historic Preservation Professionals*.

FEE: \$2,970.00

PHASE 600 Environmental Site Evaluation

Halff will conduct a field review of the project site for the purpose of evaluating the onsite habitats and the potential occurrence of any species considered Endangered, Threatened, or of Special Concern by the Florida Fish and Wildlife Conservation Commission (FWC) under Chapter 68A-27.003-005 F.A.C. or the US Fish and Wildlife Service (USFWS) under C.F.R. 17.11-12. Halff will complete the following tasks as part of the evaluation:

- Prior to the field review, conduct a comprehensive desktop review of government and other publicly available databases to determine whether occurrences of State and/or Federal listed plant or animal species may occur or have been documented in areas with similar habitat within or immediately adjacent to the project site. Databases to be reviewed will include, but not be limited to the US Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC), and Florida Natural Areas Inventory (FNAI), including the FWC bald eagle (*Haliaeetus leucocephalus*) nest database and the FWC wading bird rookery database.
- Review the project area to map and assess the extent and condition of the onsite habitats using the Florida Land Use, Cover, and Forms Classification System (FLUCFCS: Florida Department of Transportation, 1999).
- Conduct meandering pedestrian transect surveys for listed species on the project site in general accordance with the Florida Wildlife Conservation Guide (2011) as developed by the USFWS, FWC, and FNAI. Any items of concern that could potentially affect the project and permitting schedule will be recorded and reported to the Town.
- Conduct a species-specific survey for the gopher tortoise in accordance with the FWC Gopher Tortoise Permitting Guidelines (Revised 2022), conducted by an FWC Authorized Gopher Tortoise Agent. The survey will include a 100% survey of suitable habitats to locate gopher tortoise burrows and estimate the overall gopher tortoise density for the project site.
- Complete a summary report detailing the findings of the site review and listed species surveys conducted on the project site. If protected habitats, wetlands or listed species are encountered, their approximate locations will be depicted on an aerial photograph of the project site. If there are any regulatory constraints to development of the project due to wetlands or listed species, detailed recommendations on how to resolve the constraints prior to initiating construction will be provided to the Town.

FEE: \$3,780.00

PHASE 610 Sand Skink Coverboard Survey

The Sand Skinks and Blue-tailed Mole Skinks Survey Protocol (July 2020) requires that all areas within the USFWS sand skink consultation area which are above 82' elevation containing excessively well drained soils are to be sampled for the presence of the sand skink (*Plestiodon reynoldsi*). Sampling consists of coverboard surveys (0.5-inch thick, 2 ft. by 2 ft. plywood boards) at a density of 40 boards per acre, with monitoring for four consecutive weeks over the period of March 1 – May 15. A GIS assessment of the parcel indicates the entire 2.23-acre parcel is comprised of potential sand skink habitat. In accordance with the Sand Skinks and Blue-Tailed Mole Skinks Survey Protocol, Halff will:

- Install coverboards in accordance with the Sand Skinks and Blue-tailed Mole Skinks Survey Protocol. For this effort, a total of 90 coverboards are estimated to sample the parcel. Prior to coverboard placement, any rooted vegetation will be removed, and the resulting exposed sand area will be leveled and smoothed to allow for detection of sand skink tracks.
- Inspect the coverboards once per week for four consecutive weeks for the presence of sand skink tracks.
- Prepare a brief summary report of the results of the coverboard sampling. The report will include a summary of the site conditions and documentation of the sampling effort and any skink observations. The report will also provide a summary of permitting requirements or recommendations to avoid skinks if they are documented within the project limits.

FEE: \$13,960.00

PHASE 700 Geotechnical Evaluation

Halff will subcontract with Andreyev Engineering, Inc. to conduct a geotechnical investigation and evaluation to assess the subsoil and groundwater conditions at the project site, and to provide recommendations for the design of the foundation of the proposed tanks and other structures and recommendations of aquifer parameters for the design of the proposed stormwater retention pond. The scope of the geotechnical evaluation will include:

- Four Standard Penetration Test (SPT) borings at each of the two ground storage tanks to a depth of 100 feet or SPT refusal in limestone, whichever comes first.
- Two SPT borings to a depth of 25 feet at the location of the proposed building.
- One SPT boring to a depth of 25 feet at the location of the proposed generator building.
- Two SPT borings to a depth of 20 feet at the location of the proposed stormwater retention pond.
- Two permeability tube samples from a depth of 2 to 3 feet from the pond boring locations and two laboratory falling head permeability tests on the samples.
- Limited index testing of soils in the laboratory.

- Observation of groundwater levels during drilling and after stabilization.
- Development of a geotechnical engineering report that includes the data collected, as well as engineering recommendations for shallow foundation design for the proposed structures, and aquifer parameters for the recovery analysis of the proposed stormwater retention pond.

FEE: \$18,894.00

PHASE 800 Civil Site Design

Halff will prepare engineering drawings for the civil site design. Progress submittals will be provided at the 30%, 60%, 90%, and 100% design milestones, including an opinion of probable construction cost. The civil site plans will be prepared in accordance with the Town of Howey-in-the-Hills Land Development Regulations and St. Johns River Water Management District (SJRWMD) requirements. This task includes the development of:

- Cover Sheet including a vicinity map, legal description, required names and addresses.
- Geometry Plans including site geometry, building and structure locations, setbacks, landscape buffers, parking, drive aisles, and sidewalks/ADA accessible routes as required.
- Stormwater and Drainage Master Plans including site grading, drainage structures, storm water piping (size, material, inverts and slopes), rim and invert elevations for structures.
- Site Grading Plans including finished floor elevations, parking lot and drive aisle elevations, stormwater pond grading, and tie-in grades at property lines.
- Stormwater/Erosion Control Plans including minimum Best Management Practices for stormwater and erosion control during construction as needed for Town and SJRWMD permitting.
- Paving and Drainage Detail Plans to include details in accordance with Town, Florida Department of Transportation (FDOT), and SJRWMD criteria. Site specific details will be provided as required.

FEE: \$26,220.00

PHASE 900 Landscape Architecture

Halff will prepare minimum code landscape plans in conformance with local agency regulations, in addition to tree removal plans denoting trees to be preserved and removed and tree mitigation calculations for removal and replacement. The quantity, species, size and spacing of all materials will be specified in a material schedule on the plans. Details for the proper installation of plants will also be included. The landscape design will incorporate Florida Native plants and xeriscape to avoid the requirements to install an irrigation system. The final plans will be signed and sealed by a professional Landscape Architect.

FEE: \$7,720.00

PHASE 1000 Architecture Design

Halff will subcontract with Powell Studio Architecture, LLC to provide architectural and structural engineering design for an approximately 2,800 square foot Operations Building. It is assumed that a single building will be provided to house offices, plan storage, restrooms, laboratory, 480-volt electrical gear, chlorine storage and feed equipment, and high service pumps. Design drawings and specifications will be developed including floor plans, exterior elevations, building sections and details. Specifications will be prepared in the 16 Division CSI format. Progress submittals will be provided to the Town at the 60%, 90%, and 100% design milestones.

FEE: \$15,620.00

PHASE 1010 Mechanical, Electrical, and Plumbing Design

Halff will subcontract with Ingenuity Engineers, Inc. to prepare engineering drawings for the mechanical, electrical, and plumbing design for the operations building. Specifications will be prepared in the 16 Division CSI format. Design progress submittals will be provided at the 60%, 90%, and 100% design milestones, including an opinion of probable construction cost. Ingenuity Engineers, Inc. will also provide construction administration services including the review of requests for information, review of shop drawing submittals, and will visit the site at substantial and final completion.

FEE: \$14,740.00

PHASE 1100 Water Treatment Plant Process Design – Base Design

Halff will prepare engineering drawings for the water treatment plant design. This task includes the design of the well pumps, ground storage tanks, high service pump station, gas chlorination system, and tank mounted natural draft aerator based upon water quality from the wells with less than 0.6 mg/L total sulfide, less than 0.1 mg/L dissolved iron, less than 0.3 mg/L total iron, and pH greater than 7.2. Water quality not meeting these parameters will require advanced levels of treatment, the design of which is included in subsequent tasks in this proposal.

Halff will prepare a Preliminary Design Report in accordance with the requirements of 62-555.520, FAC. The report will include 30% design drawings, and a preliminary opinion of probable construction cost. Halff will submit a draft report and conduct a review meeting with the Town. Comments received will be incorporated into the final Preliminary Design Report.

Design drawings and specifications will be developed in accordance with Florida Department of Environmental Protection regulations. Specifications will be prepared in the 16 Division CSI format, and Halff will prepare front end Division 0 bid documents. Progress submittals will be provided at the 60%, 90%, and 100% design milestones, including an opinion of probable construction cost.

FEE: \$97,500.00

PHASE 1200 Structural Engineering Design

Halff will subcontract with Wekiva Engineering, LLC to prepare engineering drawings for the structural design of the generator slab. Design progress submittals will be provided at the 60%, 90%, and 100% design milestones, including an opinion of probable construction cost. Specifications will be prepared in the 16 Division CSI format.

FEE: \$2,915.00

PHASE 1300 Electrical and Instrumentation & Controls Design

Halff will subcontract with Bailey Engineering Consultants, Inc. to prepare engineering drawings for the electrical and instrumentation and controls aspects of the water treatment plant design. This task includes design related to the well pumps, high service pumps, chlorination system, and site lighting. A generator with a diesel fuel tank to provide a redundant source of power will be included in the design. The instrumentation system design will be based on the Town's existing VTSCADA system with PLC controls. Design progress submittals will be provided at the 60%, 90%, and 100% design milestones, including an opinion of probable construction cost.

FEE: \$112,200.00

PHASE 1400 Permitting

Halff will prepare applications and make submittal for the following permits anticipated to be required for the construction of the project:

- Town of Howey-in-the-Hills Site Plan Permit
- FDEP Environmental Resources Permit
- FDEP Specific Permit to Construct PWS Components
- FDOT Drainage Connection Permit (Exemption Request)
- FDOT Right of Way Utilization Permit
- Lake County Right of Way Utilization Permit
- Lake County Driveway Connection Permit
- Lake County Department of Health Septic Tank Permit

Halff will conduct pre-application meetings, attend Development Review Committee Meetings, and respond to requests for additional information as required during the permitting process.

FEE: \$58,946.00

PHASE 1500 Bidding Services

Halff will provide the following services during bidding:

- Attend and conduct the pre-bid meeting, and compile and distribute meeting notes.
- Prepare addenda and responses to questions received from bidders.
- Review bids, prepare the bid tabulation, and make recommendation of award of the construction contract.
- Prepare conformed documents.

FEE: \$14,105.00

PHASE 1600 Construction Administration

Halff and our subconsultants will provide construction administration services including:

- Attend and conduct the pre-construction meeting, and compile and distribute meeting notes.
- Attend and conduct monthly construction progress meetings, and compile and distribute meeting notes.
- Review shop drawing submittals.
- Respond to requests for information (RFIs).
- Review change order requests.
- Observe construction progress weekly.
- Prepare a project punch list and verify its completion.
- Certify substantial and final completion.
- Review Contractor Applications for Payment

FEE: \$156,624.00

PHASE 1700 Project Management

Halff will prepare monthly progress reports, including data needs, pending decisions, activities completed in the prior month, activities planned for the upcoming month, and an updated project schedule. Halff will meet with the Town monthly to review the progress reports and overall status of the project. Internal quality assurance and quality control activities for the water treatment plant design, invoicing, and project management are also included in this Task.

FEE: \$42,680.00

PHASE 1800 WTP Alternative No. 1: Sulfuric Acid System

Adjustment of the pH of the raw water from the wells will be required if total sulfide concentrations exceed 0.3 mg/L, and pH exceeds 7.2. If required by the raw water quality from the wells, a sulfuric acid storage and feed system will be incorporated into the water treatment plant design. The sulfuric acid storage and feed system will consist of a tank or tanks for storage of bulk sulfuric acid, a concrete secondary containment structure, duplex chemical metering pump skid, and associated electrical and control improvements.

Halff will incorporate the sulfuric acid storage and feed system into the Preliminary Design Report prepared under Phase 1100. Design drawings and specifications for the sulfuric acid storage and feed system will be incorporated into the 60%, 90%, and 100% design submittals, and the associated opinions of probable construction cost.

FEE: \$16,890.00

PHASE 1900 WTP Alternative No. 2: Packed Tower Aeration & Odor Control

Forced draft aeration will be required if total sulfide concentrations in the raw water from the wells exceeds 0.6 mg/L. The forced draft aeration system will release large quantities of hydrogen sulfide into the air, requiring an associated odor control system. If required by the raw water quality from the wells, a packed tower aeration and odor control system will be incorporated into the water treatment plant design. The system will include a packed tower aerator, blower, odor control system, and associated duct work, and a concrete clearwell with vertical turbine transfer pumps.

Halff will incorporate the packed tower aeration and odor control system into the Preliminary Design Report prepared under Phase 1100. Design drawings and specifications for the packed tower aeration and odor control system will be incorporated into the 60%, 90%, and 100% design submittals, and the associated opinions of probable construction cost.

FEE: \$33,740.00

PHASE 2000 WTP Alternative No. 3: Iron Filtration

Iron filtration will be required if iron concentrations in the raw water from the wells exceeds 0.3 mg/L. If required by the raw water quality from the wells, an iron filtration system will be incorporated into the water treatment plant design. The system will include a pre-filter chlorine feed system and iron filtration units located on a concrete slab. Modifications to the septic tank and drain field design will also be required to accommodate backwash from the iron filtration system.

Halff will incorporate the iron filtration system into the Preliminary Design Report prepared under Phase 1100. Design drawings and specifications for the iron filtration system will be incorporated into the 60%, 90%, and 100% design submittals, and the associated opinions of probable construction cost.

FEE: \$28,660.00

PHASE 9999 Reimbursables

Costs for reimbursables, including printing, copying, blueprints, binding, FedEx, etc., shall be billed per Exhibit A Section II Compensation. Reimbursables for mileage will not be charged to the Town.

FEE: \$12,000.00

Exclusions:

This proposal does not include the following:

- Ornamental landscaping or additional plantings beyond code minimum requirements.
- LEED design of the operations building or other structures.
- Permitting for the incidental take or relocation of any listed species of flora or fauna, including gopher tortoises.
- Recording of historical resources discovered on the site during the Cultural Resources Assessment.
- Design of turn lanes or other improvements to County Road 48.
- Permit fees are not included in this proposal and shall be paid by the Town.

Deliverables:

Halff will provide the following deliverables as part of this project:

- Draft Potable Water Master Plan Update
- Final Potable Water Master Plan Update
- Boundary & Topographic Survey
- Phase I Environmental Assessment Report
- Cultural Resources Assessment Survey Report

- Environmental Site Assessment Report
- Sand Skink Cover Board Survey Summary Report
- Geotechnical Engineering Report
- Draft Preliminary Design Report
- Final Preliminary Design Report
- 60% Design Drawings, Specifications, and Opinion of Probable Construction Cost
- 90% Design Drawings, Specifications, and Opinion of Probable Construction Cost
- 100% Design Drawings, Specifications, and Opinion of Probable Construction Cost
- Town of Howey-in-the-Hills Permit Application
- FDEP Environmental Resources Permit Application
- FDEP Specific Permit to Construct PWS Components Application
- FDOT Drainage Connection Permit Application
- FDOT Right of Way Utilization Permit Application
- Lake County Right of Way Utilization Permit Application
- Lake County Driveway Connection Permit Application
- Lake County Department of Health Septic Tank Permit Application
- Bid Tabulation and Recommendation of Award

Halff will provide two hard copies and one electronic copy of all deliverables. Final documents will be signed and sealed as appropriate.

Schedule:

The time period for the performance of Halff's services for design and permitting will be 270 days from the issuance of a Notice to Proceed (NTP) by the Town. Time periods for performance of individual tasks are as follows:

- | | |
|---|----------------------------------|
| ▪ Hydraulic Analysis & Master Plan Update: | 60 days from NTP |
| ▪ Subsurface Utility Location: | 60 days from NTP |
| ▪ Topographic & Boundary Surveying: | 150 days from NTP |
| ▪ Phase I Environmental Assessment: | 60 days from NTP |
| ▪ Cultural Resources Assessment Survey: | 60 days from NTP |
| ▪ Environmental Site Assessment: | 90 days from NTP |
| ▪ Sand Skink Coverboard Survey: | 150 days from NTP |
| ▪ Geotechnical Evaluation: | 90 days from NTP |
| ▪ Draft Preliminary Design Report & 30% Design: | 120 days from NTP |
| ▪ Final Preliminary Design Report & 30% Design: | 14 days from receipt of comments |
| ▪ 60% Design Documents: | 60 days from Final PDR |
| ▪ 90% Design Documents: | 60 days from receipt of comments |
| ▪ 100% Design Documents: | 30 days from receipt of comments |
| ▪ Permitting: | 270 days from NTP |

This schedule assumes that water quality data for the first well is available within six weeks of the Notice to Proceed, that water quality for both wells is available within six months of Notice to Proceed, and that review meetings will be held with fourteen days of each submittal. A detailed schedule is presented in Exhibit B.

EXHIBIT B

Item 2.

ID	Task Name	Duration	Start	Finish	2024												2025					20												
					4th Quarter			1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd Quarter		3rd Quarter		4th Quarter		1st Quarter					
					Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
1	Well No. 1 Drilling & Water Quality	90 days	Mon 10/2/23	Fri 2/2/24	[Task bar from Sep 2023 to Feb 2024]																													
2	Well No. 2 Drilling & Water Quality	90 days	Mon 2/5/24	Fri 6/7/24	[Task bar from Feb 2024 to Jun 2024]																													
3	Town Council Approval & Notice to Proceed	0 days	Mon 12/11/23	Mon 12/11/23	[Milestone diamond at 12/11/23]																													
4	Hydraulic Analysis & Master Plan Update	39 days	Mon 12/11/23	Thu 2/1/24	[Task bar from 12/11/23 to 2/1/24]																													
5	Subsurface Utility Location	15 days	Mon 1/15/24	Fri 2/2/24	[Task bar from 1/15/24 to 2/2/24]																													
6	Topographic & Boundary Surveying	75 days	Mon 1/1/24	Fri 4/12/24	[Task bar from 1/1/24 to 4/12/24]																													
7	Phase I Environmental Assessment	15 days	Mon 1/1/24	Fri 1/19/24	[Task bar from 1/1/24 to 1/19/24]																													
8	Cultural Resources Assessment Survey	10 days	Mon 1/8/24	Fri 1/19/24	[Task bar from 1/8/24 to 1/19/24]																													
9	Environmental Site Assessment	20 days	Fri 1/26/24	Thu 2/22/24	[Task bar from 1/26/24 to 2/22/24]																													
10	Sand Skink Coverboard Survey	21 days	Mon 3/4/24	Mon 4/1/24	[Task bar from 3/4/24 to 4/1/24]																													
11	Geotechnical Evaluation	25 days	Fri 1/19/24	Thu 2/22/24	[Task bar from 1/19/24 to 2/22/24]																													
12	Draft Preliminary Design Report & 30% Submittal	45 days	Mon 1/15/24	Fri 3/15/24	[Task bar from 1/15/24 to 3/15/24]																													
13	Town Review of Draft PDR & 30% Submittal	10 days	Mon 3/18/24	Fri 3/29/24	[Task bar from 3/18/24 to 3/29/24]																													
14	Finalize Preliminary Design Report	5 days	Mon 4/1/24	Fri 4/5/24	[Task bar from 4/1/24 to 4/5/24]																													
15	60% Design Development	45 days	Mon 4/1/24	Fri 5/31/24	[Task bar from 4/1/24 to 5/31/24]																													
16	Town Review of 60% Design	10 days	Mon 6/3/24	Fri 6/14/24	[Task bar from 6/3/24 to 6/14/24]																													
17	90% Design Development	30 days	Mon 6/17/24	Fri 7/26/24	[Task bar from 6/17/24 to 7/26/24]																													
18	Town Review of 90% Design	10 days	Mon 7/29/24	Fri 8/9/24	[Task bar from 7/29/24 to 8/9/24]																													
19	100% Design Development	15 days	Mon 8/12/24	Fri 8/30/24	[Task bar from 8/12/24 to 8/30/24]																													
20	Bid Documents Completed	0 days	Fri 8/30/24	Fri 8/30/24	[Milestone diamond at 8/30/24]																													
21	Town of Howey-in-the-Hills Permitting	45 days	Mon 5/6/24	Fri 7/5/24	[Task bar from 5/6/24 to 7/5/24]																													
22	FDEP Environmental Resources Permit	60 days	Mon 4/8/24	Fri 6/28/24	[Task bar from 4/8/24 to 6/28/24]																													
23	FDEP Specific Permit to Construct PWS Components	60 days	Mon 6/10/24	Fri 8/30/24	[Task bar from 6/10/24 to 8/30/24]																													
24	FDOT Drainage Connection Permit	25 days	Mon 7/29/24	Fri 8/30/24	[Task bar from 7/29/24 to 8/30/24]																													
25	FDOT Right of Way Utilization Permit	25 days	Mon 7/29/24	Fri 8/30/24	[Task bar from 7/29/24 to 8/30/24]																													
26	Lake County Right of Way Permit	25 days	Mon 7/29/24	Fri 8/30/24	[Task bar from 7/29/24 to 8/30/24]																													
27	Lake County Driveway Connection Permit	25 days	Mon 7/8/24	Fri 8/9/24	[Task bar from 7/8/24 to 8/9/24]																													
28	Lake County Department of Health Septic Tank Permit	45 days	Mon 4/15/24	Fri 6/14/24	[Task bar from 4/15/24 to 6/14/24]																													
29	Bid Advertisement	0 days	Fri 9/13/24	Fri 9/13/24	[Milestone diamond at 9/13/24]																													
30	Bid Period	30 days	Fri 9/13/24	Thu 10/24/24	[Task bar from 9/13/24 to 10/24/24]																													
31	Review of Bids	10 days	Fri 10/25/24	Thu 11/7/24	[Task bar from 10/25/24 to 11/7/24]																													
32	Award of Construction Contract	0 days	Thu 12/5/24	Thu 12/5/24	[Milestone diamond at 12/5/24]																													
33	Construction Notice to Proceed	0 days	Wed 12/11/24	Wed 12/11/24	[Milestone diamond at 12/11/24]																													
34	Construction	263 days	Wed 12/11/24	Fri 12/12/25	[Task bar from 12/11/24 to 12/12/25]																													
35	Construction - Substantial Completion	0 days	Fri 12/12/25	Fri 12/12/25	[Milestone diamond at 12/12/25]																													
36	Construction - Final Completion	30 days	Fri 12/12/25	Thu 1/22/26	[Task bar from 12/12/25 to 1/22/26]																													
37	Project Complete	1 day	Fri 1/23/26	Fri 1/23/26	[Milestone diamond at 1/23/26]																													

Project: Howey-in-the-Hills WT
Date: Fri 10/27/23

Task		Project Summary		Manual Task		Start-only		Deadline	
Split		Inactive Task		Duration-only		Finish-only		Progress	
Milestone		Inactive Milestone		Manual Summary Rollup		External Tasks		Manual Progress	
Summary		Inactive Summary		Manual Summary		External Milestone			

Exhibit C: Fee Estimate Breakdown

PHASE	Engineer V	Engineer III	Engineer I	Office Tech V	Office Tech III	Administrative III	Landscape Architect III	Scientist III	Surveyor IV	2-Man Survey Crew	Sub Consultant \$	Staff Hours By Activity	Total Task Fee
	\$270.00	\$190.00	\$125.00	\$165.00	\$100.00	\$95.00	\$145.00	\$160.00	\$195.00	\$190.00			
Phase 100: Hydraulic Analysis and Master Plan Update	8	24	80		24	8						144	\$19,880.00
Phase 200: Subsurface Utility Location											\$3,108.00	0	\$3,108.00
Phase 300: Topographic and Boundary Surveying				80					40	50		170	\$30,500.00
Phase 400: Phase I Environmental Assessment											\$2,640.00	0	\$2,640.00
Phase 500: Cultural Resources Assessment Survey											\$2,970.00	0	\$2,970.00
Phase 600: Environmental Site Evaluation					2	4		20				26	\$3,780.00
Phase 610: Sand Skink Coverboard Survey					4	8		80				92	\$13,960.00
Phase 700: Geotechnical Evaluation											\$18,894.00	0	\$18,894.00
Phase 800: Civil Site Design	16	32	40	20	60	16						184	\$26,220.00
Phase 900: Landscape Architecture						8	48					56	\$7,720.00
Phase 1000: Architecture Design											\$15,620.00	0	\$15,620.00
Phase 1010: Mechanical, Electrical, and Plumbing Design											\$14,740.00	0	\$14,740.00
Phase 1100: WTP Process Design	40	120	200	80	200	60						700	\$97,500.00
Phase 1200: Structural Engineering Design											\$2,915.00	0	\$2,915.00
Phase 1300: Electrical and Instrumentation & Controls Design											\$112,200.00	0	\$112,200.00
Phase 1400: Permitting	8					16						24	\$3,680.00
Phase 1410: Town of Howey-in-the-Hills Permit	4	12	12			4						32	\$5,240.00
Phase 1420: FDEP Environmental Resources Permit	4	48	24	24		4						104	\$17,540.00
Phase 1430: FDEP Specific Permit to Construct PWS Components	4	20	8			4						36	\$6,260.00
Phase 1440: FDOT Drainage Connection Permit	2	8				4						14	\$2,440.00
Phase 1450: FDOT Right of Way Utilization Permit	2	12	24			4						42	\$6,200.00
Phase 1460: Lake County Right of Way Utilization Permit	2	8	8			2						20	\$3,250.00
Phase 1470: Lake County Driveway Connection Permit	2	20	12			2						36	\$6,030.00
Phase 1480: Lake County Department of Health Septic Tank Permit											\$1,166.00	0	\$1,166.00
Phase 1500: Bidding Services	4	8	16	4		8						40	\$6,020.00
Phase 1510: Architectural Bidding Services											\$2,200.00	0	\$2,200.00
Phase 1520: Structural Bidding Services											\$935.00	0	\$935.00
Phase 1530: Electrical and I&C Bidding Services											\$4,950.00	0	\$4,950.00
Phase 1600: Construction Administration	40	80	160			60						340	\$51,700.00
Phase 1610: Architectural Construction Administration											\$9,350.00	0	\$9,350.00
Phase 1620: Structural Construction Administration											\$5,500.00	0	\$5,500.00
Phase 1630: Electrical and I&C Construction Administration											\$90,074.00	0	\$90,074.00
Phase 1700: Project Management	144					40						184	\$42,680.00
Phase 9999: Reimbursables												0	\$12,000.00
Base Staff Hours	280	392	584	208	290	252	48	100	40	50		2,244	
Base Staff Cost	\$75,600.00	\$74,480.00	\$73,000.00	\$34,320.00	\$29,000.00	\$23,940.00	\$6,960.00	\$16,000.00	\$7,800.00	\$9,500.00	\$287,262.00		\$649,862.00
Alternatives													
Phase 1800: WTP Alternative 1: Sulfuric Acid System	2	8	16	4	48							78	\$9,520.00
Phase 1810: WTP Alt 1: Structural Engineering											\$3,520.00	0	\$3,520.00
Phase 1820 WTP Alt 1: Electrical & I&C Engineering											\$3,850.00	0	\$3,850.00
Phase 1900: WTP Alternative 2: Packed Tower Aeration & Odor Control	2	16	40	8	80							146	\$17,900.00
Phase 1910: WTP Alt 2: Structural Engineering											\$9,900.00	0	\$9,900.00
Phase 1920 WTP Alt 2: Electrical & I&C Engineering											\$5,940.00	0	\$5,940.00
Phase 2000: WTP Alternative 3: Iron Filtration	2	8	24	4	60							98	\$11,720.00
Phase 2010: WTP Alt 3: Structural Engineering											\$2,200.00	0	\$2,200.00
Phase 2020 WTP Alt 3: Electrical & I&C Engineering											\$14,740.00	0	\$14,740.00
Alternative Staff Hours	6	32	80	16	188	0	0	0	0	0		322	
Alternative Staff Cost	\$1,620.00	\$6,080.00	\$10,000.00	\$2,640.00	\$18,800.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40,150.00		\$79,290.00
Total Staff Hours	286	424	664	224	478	252	48	100	40	50		2,566	
Total Staff Cost	\$77,220.00	\$80,560.00	\$83,000.00	\$36,960.00	\$47,800.00	\$23,940.00	\$6,960.00	\$16,000.00	\$7,800.00	\$9,500.00	\$327,412.00		\$729,152.00

From: [David Miles](#)
To: [Sean O'Keefe](#); [John Brock](#); [Morgan Cates](#)
Subject: Agenda item on Wastewater Alternatives
Date: Saturday, January 20, 2024 1:35:03 PM

Caution: This email originated from outside the organization. DO NOT CLICK links or open attachments unless you recognize the sender and know the content is safe.

I see a major major flaw in the WW table on the agenda items (which by the way was not sent to my private address as requested, had to go to public site to get the details). You added the info of \$2.33 million a year to operate the City alternative, which I assume includes both the collection system maintenance and the treatment plant O&M, but in the private plant column you only have the cost to the town of buying treatment service. Two flaws that need to be corrected; 1. You need to add the cost of maintaining the collection system to the plant cost for the private plant. 2. The rate you used to buy services from the private plant is the existing rate negotiated years ago. The private operator has been insisting he needs a rate increase, has that been factored in as this number undercuts the actual cost of this alternative and makes the line not comparable.
Sent from my iPhone



TMHConsulting@cfl.rr.com
 97 N. Saint Andrews Dr.
 Ormond Beach, FL 32174
 PH: 386.316.8426

MEMORANDUM

TO: Howey-in-the-Hills Town Council
CC: J. Brock, Town Clerk
FROM: Thomas Harowski, AICP, Planning Consultant
SUBJECT: Mission Rise Planned Development Proposal
DATE: January 12, 2024

The Town has received an application for approval of a planned unit development agreement for the Mission Rise parcel which lies south of and west of The Reserve (Hilltop Groves) development. The request is a zoning action which requires the Town Council to consider a proposed development agreement that will govern development of the parcel. The applicant has submitted a conceptual development plan and draft development agreement along with a traffic study and required application forms. The project has been reviewed by the Development Review Committee (DRC) on several occasions. While not all of the comments offered by the DRC have been adopted, the project has reached the stage where it needs to move to the policy decision stage.

Project Description

The project is requesting approval for 499 single-family homes with lots measuring 55 x 120 and 75 x 120. The larger lots are located at the perimeter of the project and the smaller lots are located toward the interior of the project site. The project will access from SR-19 via Revels Road on the eastern side and access from Number Two Road on the north side. There is also a minor connection to Orange Blossom Road on the south. The site design provides for connections to the Hilltop Groves portion of The Reserve on the east and to Silverwood Lane on the west.

The residential portion of the project proposes three phases as shown on the graphic submitted with the application. The units by phase are as follows:

Proposed Development Phasing			
Phase	55-foot lots	75-foot lots	Total
Phase 1	150	41	191
Phase 2	100	13	113
Phase 3	166	29	195
Total	416	83	499

The project contains about 60 acres of wetlands with half of the total being credited to the required project open space and the balance identified as additional open space. The proposed plan will impact 0.3 acres which is for a road and utility crossing. The site includes an active eagles nest location, and the plan identifies 330 foot and 660 foot protection zones. No development activity is permitted within the 330 foot protection zone, but some development is proposed within the 660 foot protection zone. The development outside the 330 foot protection zone but within the 660 foot protection zone consists of single-family homes and roads. Some development within the outer protection zone is allowed.

Community facilities and parks are provided. Phase 1 and Phase 3 each include an amenity center including a cabana and pool. The project includes a multi-use trail along the central collector road to join with the Town's overall trail system, including a trail head adjacent to the Phase 1 amenity center. Phase 2 and Phase 3 each include smaller active miniparks, and Phase 2 includes a larger and more passive neighborhood park area. The neighborhood park area includes walking trails that connect to the multi-use trail.

Village Mixed Use Policy Assessment

The project is required to meet the village mixed use land use criteria as presented in Policy 1.1.1 of the future land use element. As a threshold requirement the project must comply with these criteria.

Maximum density is four units per net acre:

The net land area is identified as 153.1 acres which would allow a maximum of 612 units. The proposed project size is 499 units.

Residential land use maximum is 85%

Maximum allowable residential acreage is 130 acres and the proposed project will apply 129.3 acres to residential use.

Non-Residential land use minimum is 15%

Non-Residential land use will occupy 23.1 acres including the amenity centers, park areas, and multi-use trail area outside the right-of-way. The application includes a graphic identifying the non-residential land assignments.

Five percent of the non-residential land is to be applied to public/civic uses

Public and civic land use minimum is 1.16 acres. The two amenity centers will occupy 2.6 acres as civic land uses.

Public recreational uses must be at least 10% of the usable open space

Ten percent of the usable open space is 3.0 acres. Passive and active park areas are reported as 16.9 acres.

Total open space is 25% of the gross project area.

Total open space required is 60.8 acres which may include up to 50% of wetlands on the site. Total wetlands are reported as 60.1 acres, and when applied to the open space calculation the total site open space comes to 90.2 acres. Note that 0.3 acres of wetland will be impact by road construction.

Comprehensive Plan Assessment

The proposed project has been reviewed in comparison to the applicable comprehensive plan policies. The applicant has submitted a project narrative that offers their view on compliance with the goals, objectives and policies laid out in the comprehensive plan. The primary policy relating to Village Mixed Use development is Policy 1.1.1 of the Future Land Use Element. This policy lays out the minimum standards that a village mixed use project must meet including the percentage of land allocated to various uses, including open space, and associated activities such as civic activities and recreation. As noted in the preceeding section, the application meets these basic requirements. Additionally, the applicant cites compliance with Policy 1.11.2 encouraging cluster development.

The applicant also cites compliance with Policy 1.3.1 regarding wetlands protection. The plan as proposed does include wetland areas in the designated open space areas. There is a minor wetland impact in the central area of the project where there is some disturbance, about 0.3 acres for a road and utility crossing. This type of limited wetland impact has been approved in other developments. The open space preservation areas also include the flood prone areas in Zone AE. The project will be required to provide the 25-foot wetland buffer and 50 foot setback from wetlands to upland structures as part of the Preliminary Subdivision Plan should the zoning package be approved. This action is required by Conservation Element Policy 1.2.3 as well as Future Land Use Policy 1.3.1.

Policy 1.2.6 encourages the allocation of more dense residential development along the major road corridors and in areas that support the Central Avenue commercial area. The proposed central collector is part of the recommended traffic network and could support some increased density. Serving as a parallel facility to SR-19 it can help direct traffic to the Central Avenue commercial area as that portion of the Town develops. Compliance with the policy might benefit from a reduced density and/or larger lot sizes at the western and southern perimeter of the project.

For evaluation of the proposed project design, Policy 1.1.2 as it relates to Village Mixed Use areas may be the key determinant. The effective portions of the policy read as follows:

POLICY 1.1.2: *Land Use Categories.* The land use categories, as depicted on the Town's 2035 *Future Land Use Map (FLUM)* shall permit the following uses and activities.

Village Mixed Use – Primarily intended to create sustainability and maintain the unique charm of the Town, including the provisions of reducing the dependability on the automobile, protecting more open land, and providing quality of life by allowing people to live, work, socialize, and recreate in close proximity. Elementary, middle, and high schools are also permitted in this category.

The applicant has submitted a statement with the project narrative offering their position on how the plan complies with the policy. The Town is deep into a process of assessing how other village mixed use projects have performed relative to the policy. The recent summary of this village mixed use evaluation is captured in the draft amendments to the comprehensive plan that have emerged from the recent series of workshops and public discussions. The Town Attorney framed the findings from this process as follows:

7. 2023 Analysis and Reevaluation of Residential Densities and Lot Sizes

In 2023 the Town Council and the Town’s Planning and Zoning Board analyzed and reevaluated post-2010 residential development in the Town. Residential development under the Village Mixed Use designation resulted after 2010 in substantially increased housing densities and substantially smaller residential lots than were prevalent in the Town’s historical development.

The evaluation and analysis was accompanied by robust public participation. Public sentiment agreed overwhelmingly with Town Council: the increased densities and downsized lots after 2010 were inconsistent with the character, appearance, and ambiance of the Town’s historical neighborhoods. Contrary to FLUE Policy 1.1.2, development in Village Mixed Use had failed to “maintain the unique charm of the Town.”

Consequently, the Town Council determined that amendments to this Future Land Use Element to redirect future residential densities and lot sizes were warranted and desirable.

As the Town Council is well aware, the discussion about consistency of character, appearance and ambiance has focused on lot sizes. Newer developments have represented current housing markets as demanding smaller and narrower lots than is typical for the older neighborhoods in Howey. The Reserve located adjacent to the subject property on the east includes the Hilltop Groves residential development that includes single-family lots with 50-foot widths and groupings of townhouse units. This project was approved in the 2006 time frame and amended in 2018 including a redesign that stressed a higher percentage of owner-occupied units. The first phase final plat has recently been approved by the Town, and the Town will be able to assess the design impacts and contributions once construction begins.

The Venezia and Talichet developments are the most recent large scale developments including lot sizes ranging from 60-foot wide lots to 75-foot and 85-foot wide lots. Reaction to these developments has been mixed with the primary concern being the visual massing of large houses on smaller lots and lesser setbacks than the

Town's traditional neighborhoods. These projects have also been called out as lacking some public recreation elements. The proposed Mission Rise project includes a fairly robust recreation and civic facility support. The Watermark development has been approved with somewhat larger lots as a minimum of 50% of the 225 lots required to be 80-foot wide and the balance are allowed at 70-feet.

During the Development Review Committee phase of the Mission Rise project review, the applicants were clearly advised of the ongoing community debate regarding lot sizes and dimensions so these factors could be considered in their development proposal. The town Council now has the task of assessing the current application in comparison to Policy 1.1.2 as addressed by the applicant and as considered within the context of the ongoing policy review.

Conceptual Development Plan Review

The conceptual development plan includes a series of graphics and a written development agreement. The conceptual plan has done a good job of identifying wetland and flood prone areas and including them in the open space areas of the project. The residential development areas clearly break out into three sub-areas that form the three project phases, and each phase is supported by recreation and/or civic facilities and an integrated bicycle and pedestrian network. The bicycle network will tie into the bicycle facilities in the adjacent Hilltop Groves development to provide a loop system connecting cyclists from both projects and offering a high quality cycling opportunity for Howey citizens generally.

The project design includes connected open space areas between Phase 1 and Phase 2 and again between Phase 2 and Phase 3. The staff has requested the applicant eliminate the stormwater retention area in the open space area between Phase 2 and Phase 3 in order to preserve more trees in this upland area and to maximize the open space connectivity. The staff believes that the stormwater retention is a residential support activity and should be located in the residential portions of the project. The applicants have been responsive to a number of other design suggestions, but have chosen to keep the stormwater retention area in the open space corridor.

The conceptual development plan package includes layouts for both the proposed 55-foot and 75-foot wide lots showing a minimum of 20 feet from the front property line to the garage and rear setbacks for the principal structure of 25-feet. The Town has been asking for these setbacks to provide for adequate off-street parking and to allow for accessory structures like swimming pools while meeting the setbacks for accessory structures.

Concurrency Considerations

Concurrency issues relate to the provision of necessary public services to support new developments. There are two concurrency issues related to the Mission Rise project, sanitary sewer service and traffic.

Sanitary Sewer: The project does not currently have an agreement with the Central Lake Community Development District, which is the current provider for the Town. The CLCDD reports that they do not have currently available capacity. The applicants will need to reach an agreement with the CLCDD on service or arrange for service from an alternate provider. The Town is currently reviewing options for alternative treatment sources to provide options to the CLCDD.

The applicant has addressed the sewage treatment issue in the development agreement by linking the project approval to the acquisition of treatment service. Section 10 of the development agreement provides a two year window from the date of approval of the agreement for the applicants to obtain a commitment for sewage treatment. If the commitment is obtained, the project may move forward to submit plans for construction. If a commitment is not obtained within the prescribed time period, the Town Council may vacate the agreement.

Traffic Considerations: The applicants prepared a traffic analysis which projected traffic based on current conditions, anticipated traffic from the proposed development, and anticipated traffic from other projects which have been approved, but not yet constructed. Planned traffic improvements were considered, and given the concerns related to Number 2 Road, the capacity for Number 2 Road was reduced by 25%. The study reported two roadway links and three intersections that will have capacity concerns. The affected links are on SR -19. The first is from Lane Park Road to Central Avenue, and the second is from CR 455 to CR 478. Both of these segments will have capacity issues without the Mission Rise project, and both may be affected by re-classification of the roadway capacities to more accurately reflect current conditions.

The affected intersections are also on SR 19 and include the intersections at CR 48, Central Avenue and Revels Road. Typically the project is required to contribute a "fair share" amount to the improvements at each intersection. The applicant has proposed an alternative of paying for the full upgrade of the SR 19 and Revels road intersection. The upgrade may be a traffic signal if warranted or a roundabout. After discussion with the town's traffic engineer, this alternative is preferred as it will result in an actual physical improvement addressing one of the potential impact sites. The standard approach would likely result in a fair share payment sitting idle until sufficient funding is found to complete an improvement.

On Number 2 Road the project will provide additional right-of-way to help bring the right-of-way up to standard. The project will also provide turn lanes and bring the current lane width up to standard for the length of the project frontage. Combined with the approved upgrades from Hilltop Groves, the combined project will bring the road close to standard from the western terminus of the project to approximately Mare Avenue. Based on the timing for the proposed development as stated in the termination provisions, it may be up to four years before units in Phase 1 appear and another three years before Phase 2 units begin construction. The proposal for the collector road is to build the road with each residential phase, the actual connection to Number 2 Road could be five to ten years in the future.

The project design includes a connection to the Hilltop Groves project in Phase 2 of Mission Rise. The model predicts this connection will draw up to 10% of the project traffic primarily as a link to the commercial area in The Reserve development. This link also offers an indirect connection to SR-19. Lake County is discouraging use of the southerly connection to Orange Blossom Road due to the poor condition of that roadway.

Summary of Findings

The list of findings presented below is offered to summarize for the Town Council the most salient points from the discussion to this point.

- The applicants have presented a conceptual plan that meets the minimum Village Mixed Use requirements as presented in Future Land Use Policy 1.1.1.
- The development agreement includes setbacks that address the issues related to onsite parking and adequate area to accommodate accessory structures.
- The conceptual plan includes recreation and civic components that have been issues for other VMU projects.
- The development agreement includes minimum and maximum dwelling unit sizes in an effort to address the building mass concerns from other VMU projects.
- The conceptual development provides some larger lots at the project periphery, but the project is dominated by 50 x 120 lots.
- Compliance with Future Land Use Policy 1.1.2 relating to community character is an open discussion item.
- The project development agreement provides a tiered termination clause so that the project has specific sunset action points.
- The project needs to obtain sanitary sewer service sufficient to serve the project.
- The project traffic will impact three intersections on SR 19, and the applicant has proposed full improvement of the SR-19 and Revels Road intersection as a “fair share” contribution.
- While the traffic study shows that Number 2 Road and most segments on SR-19 will operate within the designated level of service, there will be additional traffic added to each facility.
- The project will provide limited improvements to Number 2 Road.
- Based on the timing for phased development the actual connection of the central collector road to Number 2 Road is expected to occur between five and ten years from the project start.

Planning Board Analysis and Recommendation

The Town's planning board considered the application at their December 21, 2023 regular meeting. The Board review the planning staff report and heard an extensive presentation from the applicant. Public testimony was also considered. The Planning Board found that the project as presented did not adequately support Future Land Use Policy 1.1.2, but could support the policy with specific changes. The Planning Board recommended a conditional approval of the project including the following conditions:

1. Eighty percent of the single-family lots meet a minimum lot size of 10,840 square feet.
2. Up to 20% of the residential lots may have lot widths of 75 feet as proposed by the applicant.
3. Access connection to Number 2 Road cannot be opened until after Phase 1 and Phase 2 have been completed, but should be opened when 50% of the units in Phase 3 have received a certificate of occupancy.
4. The open space area between Phase 2 and Phase 3 shall be redesigned to eliminate stormwater retention ponds from this area.

Action Options

The Town Council has received the recommendation from the Planning Board and has the opportunity to consider:

- Whether to approve the project based on the conditions proposed by the Planning Board;
- Approve the project with other conditions either in place of or supplementary to the Planning Board recommendation;
- Approve the project as submitted; or
- Deny project.

An action to deny the project needs to be accompanied by a statement as to why the project fails to meet the conditions for approval either through the comprehensive plan goals, objectives, and policies or through the failure to comply with other elements of the land development regulations.

If the Town Council takes an action including conditions recommended by the Planning Board or other conditions that will result in changes to the lot patterns proposed in the development, the project will need to undergo a revision to the conceptual development plan that conforms to these conditions. If the applicant elects to redesign the project in line with the Planning Board recommendations or meeting other conditions that the Town Council may apply, some work will need to be done to clarify the conditions to be certain about how and when they would be satisfied.



Planning & Zoning Board Meeting

December 21, 2023 at 6:00 PM
Howey-in the-Hills Town Hall
101 N. Palm Ave.,
Howey-in-the-Hills, FL 34737

MINUTES

CALL TO ORDER ROLL CALL

BOARD MEMBERS PRESENT:

Board Member Alan Hayes | Board Member Richard Mulvany | Board Member Ellen Yarckin | Board Member Shawn Johnson | Board Member Frances Wagler | Vice-Chair Ron Francis III | Chair Tina St. Clair

STAFF PRESENT:

Sean O'Keefe, Town Manager | John Brock, Town Clerk | Tom Harowski, Town Planner | Tom Wilkes, Town Attorney

CONSENT AGENDA

Routine items are placed on the Consent Agenda to expedite the meeting. If a Planning & Zoning Board Member wishes to discuss any item, the procedure is as follows: (1) Pull the item(s) from the Consent Agenda; (2) Vote on the remaining item(s); and (3) Discuss each pulled item and vote.

1. Consideration and Approval of the November 16, 2023, Planning and Zoning Board Meeting minutes.

Motion made by Board Member Johnson to approve the Consent Agenda; seconded by Board Member Mulvany. Motion approved unanimously by voice-vote.

Voting

Yea: Board Member Hayes, Board Member Mulvany, Board Member Yarckin, Board Member Johnson, Board Member Wagler, Vice-Chair Francis III, Chair St. Clair

Nay: None

PUBLIC HEARING

2. Consideration and Recommendation: **Mission Rise Development PUD Rezoning Submittal**

Town Planner, Tom Harowski, introduced and explained this item. Mr. Harowski reviewed his staff report with the Board. Mr. Harowski explained that the project included 499 single-family homes with lots measuring 55' x 120' and 75' x 120'.

Mr. Harowski summarized that the applicants have presented a conceptual plan that meets the minimum Village Mixed Use requirements as presented in Future Land Use Policy 1.1.1 and that the proposed development agreement includes setbacks that address the issues related to onsite parking and adequate area to accommodate accessory structures.

Mr. Harowski explained to the Board that there were three options before the Board. Those options included: recommending approval of the proposed development as submitted; recommending denial of the proposed application (based on a failure to comply with Policy 1.1.2 regarding community character, the addition of traffic to road segments that are projected to fall below the level of service standard [even though the road segments will still fail without the project], failure to comply with Policy 1.2.6 on the allocation of residential density in the community, and/or other findings that the Planning Board may determine); or recommending a conditional approval providing the project make some changes.

Chair St. Clair asked the applicant to introduce themselves and give their presentation to the Board. Jonathan Huels (Attorney for the applicant) introduced himself and the group of applicant representatives. They included Jason Humm (Owner Representative), Jacqueline St. Juste (Engineer), Charlotte Davidson (Transportation Planner), Mark Ausley (Biologist), Jack Caldwell (Landscape Architect), and Alexis Crespo (Planner). Ms. Crespo gave the applicant's presentation to the Board.

Board Member Yarckin quoted proposed changes to the Town's Comprehensive Plan that would require developers to have at least 50% of all Single-Family Residences to have a minimum area of 10,800 square feet and the applicant's biggest lots were only 9,000 square feet. Mr. Huels stated that this is a policy under consideration and has not yet been adopted and the applicant has been working with the existing regulations.

Chair St. Clair open Public Comment for this item only.

Eric Gunesch, 448 Avila Place – Mr. Gunesch stated that he wanted a recommendation of denial until the applicant comes back with a site plan that follows the Town's MDR-2 zoning requirements.

Greg Kiffer, 11348 Valley View Dr., Howey-in-the-Hills (unincorporated Lake County) – Mr. Kiffer had questions about school concurrency. Mr. Kiffer was concerned about the traffic getting worse in the area.

Frank Martinez, 10400 Woodland Hills Ct., Howey-in-the-Hills (unincorporated Lake County) – Mr. Martinez stated that he appreciated the applicant's consideration as it relates to the connection to Orange Blossom on the south side of the project but does not think it is enough. Mr. Martinez stated that he wanted a recommendation for denial.

Nathaniel White, Owner of Contours Landscaping Solutions – Mr. White was concerned about the flow of traffic around his business and wanted an access to the neighborhood through the south side of his property.

Janice McLain, 109 S Lakeshore Blvd. – Ms. McLain stated that she thought her 65' wide lot that she lives on is too small and that she wanted the Board to make a recommendation of denial.

Tim Everline, 1012 N Lakeshore Blvd. – Mr. Everline stated that Florida is no longer a paradise due to growth. Mr. Everline stated that he believed the lots were too small and that Number Two Rd. may not be fixed in 10 years. Mr. Everline stated that he wanted a recommendation for denial.

Ken Dunsmoor, 9950 Orange Blossom Rd., Howey-in-the-Hills (unincorporated Lake County) – Mr. Dunsmoor stated that he did not think they could stop people from exiting out onto Orange Blossom Rd. and he was not in favor of this proposed development.

David Miles (Town Councilor), 500 E Camelia Way – Councilor Miles stated that he thinks 100% of all future lots should be at least 10,800 square feet and reminded the audience that he had stated this in a recent Town Council Meeting. Councilor Miles stated that he thought the Town’s staff was dragging their feet on getting the Town’s Comprehensive Plan amended.

Councilor Miles stated that he will make a motion in a future Town Council meeting to put a moratorium on building within the Town if they cannot come get this developer to change their path.

Councilor Miles asked the Planning and Zoning Board to reject this proposal. Councilor Miles stated that this proposal would not get his vote and that it would not get several other Councilors’ votes.

Sandy Russ, 6813 Lakeview Dr. Yalaha, FL. – Mrs. Russ stated that she did not think Number Two Road could handle more traffic. Mrs. Russ wanted to know what employment opportunities this development would bring. Mrs. Russ stated that the board should not recommend approval.

Chair St. Clair closed Public Comment for this item.

Mr. Huels addressed several points from the public’s comments.

Board Member Wagler stated that Number Two Rd was a major concern and was dangerous. Board Member Wagler stated the Planning and Zoning Board and Town Council were in favor of restoring larger lot sizes for the Town.

Board Member Mulvany said that the Town Planner has told developers to look at lot sizes and to look at keeping traffic off of Number Two Rd. and developers have yet to come back with larger lots. Board Member Mulvany stated that 55’ x 120’ was an unacceptable size for a lot.

Vice-Chair Francis stated that his 1/4-acre lot was too small and 55’ x 120’ lot was also too small.

Mr. Wilkes explained that the property that the Board was reviewing was currently zoned as PUD and without an active Development Agreement the owners could not develop their land. Mr. Wilkes explained that there had to be a negotiated agreement between the Town and the landowner. Mr. Wilkes explained that the Town cannot refuse to give the landowners a Development Agreement, and that there needed to be a reasonable negotiation. The Planning and Zoning Board was tasked with making a recommendation to the Town Council.

Board Member Wagler asked if the applicant had secured wastewater rights yet. Mr. Huels stated that they had not yet, but that the Development Agreement would have a time frame to allow for them to secure the rights.

Board Member Yarckin stated that she liked the clubhouse and the trail head, but she only wanted to allow them to have 250 homes in the development.

Board Member Wagler made a motion that was seconded by Board Member Yarckin. Board Member Wagler moved that the Planning and Zoning Board recommend approval of Ordinance 2024-001 and the Village Mixed Use PUD for Mission Rise only if the proposed Development Agreement is modified to include:

- 1) 80% of the residential lots can be no smaller than 1/4 acre in size (10,890 sq feet) – the remainder of the lots can be 75' lots as proposed by the applicant.
- 2) Access to Number Two Rd can be constructed but cannot be open to access until Phases 1 and 2 have been completed and access to Number Two Rd shall be constructed and ready to open before a certificate of occupancy is issued for 50% of the lots in Phase 3.

3) The open space area between Phase 2 and Phase 3 shall be redesigned to eliminate the drainage ponds (as recommended in the Town Planner's staff report).

Board Member Hayes made a motion to amend the current motion to require 100% of all the residential lots to be 1/4 acre lots. There was no second to his motion to amend the standing motion, so the motion to amend died.

Motion made by Board Member Wagler; seconded by Board Member Yarckin. Board Member Wagler moved that the Planning and Zoning Board recommend approval of Ordinance 2024-001 and the Village Mixed Use PUD for Mission Rise only if the proposed Development Agreement is modified to include:

- 1) **80% of the residential lots can be no smaller than 1/4 acre in size (10,890 sq feet) – the remainder of the lots can be 75' lots as proposed by the applicant.**
- 2) **Access to Number Two Rd can be constructed but cannot be open to access until Phases 1 and 2 have been completed and access to Number Two Rd shall be constructed and ready to open before a certificate of occupancy is issued for 50% of the lots in Phase 3.**
- 3) **The open space area between Phase 2 and Phase 3 shall be redesigned to eliminate the drainage ponds (as recommended in the Town Planner's staff report).**

Motion was approved by roll call vote.

Voting

Yea: Board Member Mulvany, Board Member Yarckin, Board Member Johnson, Board Member Wagler, Vice-Chair Francis III, Chair St. Clair

Nay: Board Member Hayes

3. Consideration and Recommendation: **Ordinance 2023-013 Comprehensive Plan Amendment - Future Land Use Element**

Town Planner, Tom Harowski, introduced and explained this item. Mr. Harowski reviewed his staff report with the Board. Town Attorney, Tom Wilkes, explained that this Ordinance would amend the Town Comprehensive Plan and would create limitations on future Town Councils.

Mr. Harowski said that, if you limit the lot size too much, the developers would not be able to create amenities to their developments.

Board Member Yarckin stated that she wanted a moratorium on all development within the Town until after the Town changes its Comprehensive Plan and LDC.

Chair St. Clair open Public Comment for this item only.

David Miles (Town Councilor), 500 E Camelia Way – Councilor Miles stated that three developers had already taken advantage of the Town. Those three developments were filled with affordable housing due to the small lot sizes. Councilor Miles stated that he had provided 12 pages of recommendations for amendments to the Comprehensive Plan and LDC. Councilor Miles submitted those recommendations in June of 2023. Councilor Miles had stated that many of the recommendations were designed to create larger setbacks.

Councilor Miles reminded everyone that the Talichet neighborhood had no amenities and narrow streets. Councilor Miles also stated that he wanted to get rid of PUDs in the Town.

Tim Everline, 1012 N. Lakeshore Blvd. – Mr. Everline stated that Mission Inn was not what it was, people do not like the small lots in Las Colinas and people cannot get tee times on the golf course because there are too many people living there. Mr. Everline stated he had met with a Talichet resident that told him that they didn't like cars parked on the street in their neighborhood.

David Miles (Town Councilor), 500 E Camelia Way – Councilor Miles stated he wanted a High Density Residential (HDR)-1 and a HDR-2 zoning category to be created. Councilor Miles wanted to know if the Planning and Zoning Board had received all of the Comprehensive Plan and Land Development Code (LDC) comments that the Town Councilors had created and submitted to Mr. Harowski. Many of the Planning and Zoning Board members stated that they had not and would like a copy of them.

Joshua Husemann, 671 Avila Pl. – Mr. Husemann suggested that the Town should create rules that only allow parking on one side of the road to make it easier for emergency vehicles to travel through the Town. Mr. Husemann was also concerned that, if the Town did not allow PUDs in the future, it would remove potential for new parks.

Greg Kiffer, 11348 Valley View Dr., Howey-in-the-Hills (unincorporated Lake County) – Mr. Kiffer stated that, with the size of homes these days, 1/4 of an acre lot may not be big enough.

Chair St. Clair closed Public Comment for this item.

Board Member Wagler reviewed Policy 1.2.6 and recommended striking the current version and rewriting it. After discussion by the Board, it was decided Policy 1.2.6 should be changed to the following:

Reorientation of Residential Densities. The Town may allow lot sizes smaller than one-fourth acre (10,890 sq. ft.) only in the following locations: areas in or adjacent to the Town center (e.g., the Town central commercial district) and areas abutting major arterial road corridors such as state roads and county roads, not neighborhood roads with higher traffic counts and areas abutting commercial or industrial land uses. The Town shall require single family residential lots in all other areas to be one-fourth of an acre (10,890 sq. ft.) or larger.

Motion made by Board Member Wagler to strike through the original Policy 1.2.6 and amend it to the above listed policy; seconded by Board Member Hayes. Motion approved unanimously by roll call vote.

Voting

Yea: Board Member Hayes, Board Member Mulvany, Board Member Yarckin, Board Member Johnson, Board Member Wagler, Vice-Chair Francis III, Chair St. Clair

Nay: None

Motion made by Board Member Hayes recommend approval of the amended Ordinance 2023-013; seconded by Board Member Johnson. Motion approved unanimously by roll call vote.

Voting

Yea: Board Member Hayes, Board Member Mulvany, Board Member Yarckin, Board Member Johnson, Board Member Wagler, Vice-Chair Francis III, Chair St. Clair

Nay: None

OLD BUSINESS

None

NEW BUSINESS

None

PUBLIC COMMENTS

Any person wishing to address the Planning and Zoning Board and who is not on the agenda is asked to speak their name and address. Three (3) minutes is allocated per speaker.

David Miles (Town Councilor), 500 E Camelia Way – Councilor Miles thanked the Planning and Zoning Board for their hard work.

Janice McLain, 109 S Lakeshore Blvd - Mrs. McLain stated that there was a stop sign and a Do Not Enter sign posted before an alleyway in front of her house. Mrs. McLain stated that no one pays attention to the signs, and she wanted them removed. Sean O’Keefe, Town Manager, said that he would speak with Mrs. McLain after the meeting.

BOARD COMMENTS

Board Member Mulvany stated that he wanted the Board to discuss a letter that the Town had received from Lake County in reference to Number Two Road and he wanted it added to the next Board Meeting’s agenda.

ADJOURNMENT

There being no further business to discuss, a motion was made by Board Member Yarckin to adjourn the meeting; Vice-Chair Francis III seconded the motion. Motion was approved unanimously by voice vote.

The Meeting adjourned at 9:12 p.m. | **Attendees: 38**

Tina St. Clair Chairperson

ATTEST:

John Brock, Town Clerk

ORDINANCE NO. 2024 - 001

AN ORDINANCE OF THE TOWN OF HOWEY-IN-THE-HILLS, FLORIDA, PERTAINING TO LAND USE; REZONING FOUR PARCELS OF LAND LOCATED GENERALLY IN THE SOUTHWEST PART OF THE TOWN AND COMPRISING THE PROPOSED PLANNED UNIT DEVELOPMENT TO BE KNOWN AS “MISSION RISE” ON AN L-SHAPED AGGREGATE OF ABOUT 243.3 ACRES WEST AND SOUTH OF THE DEVELOPMENT KNOWN AS “THE RESERVE AT HOWEY-IN-THE-HILLS” (NOW ALSO KNOWN AS “HILLSIDE GROVES”), WITH PART OF THE LANDS BEING SOUTH OF NUMBER TWO ROAD AND EAST OF SILVERWOOD LANE AND OTHER PARTS OF THE LAND BEING WEST OF STATE ROAD 19 AND SOUTH OF REVELS ROAD, THE FOUR PARCELS BEING IDENTIFIED WITH LAKE COUNTY PROPERTY APPRAISER ALTERNATE KEY NUMBERS 1780616, 1780811, 1030421, AND 3835991; AMENDING THE TOWN’S ZONING MAP TO APPROVE PLANNED-UNIT-DEVELOPMENT (PUD) ZONING FOR THE PARCELS; PROVIDING FINDINGS OF THE TOWN COUNCIL; APPROVING PUD ZONING FOR THE PARCELS, WITH DEVELOPMENT TO BE GOVERNED BY A DEVELOPMENT AGREEMENT AND A REVISED CONCEPTUAL LAND USE PLAN AND BY THE TOWN’S LAND DEVELOPMENT CODE AND OTHER TOWN ORDINANCES GOVERNING THE DEVELOPMENT OF LAND; REPEALING PRIOR ORDINANCES AND SUPERSEDING CONFLICTING ORDINANCES; PROVIDING FOR SEVERABILITY, CODIFICATION AND AN EFFECTIVE DATE.

BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF HOWEY-IN-THE-HILLS, FLORIDA:

Section 1. Findings. In enacting this ordinance, the Town Council of the Town of Howey-in-the-Hills, Florida declares the following findings, purposes, and intent:

- A. Approximately 243.3 acres of land more specifically described in **Attachment A** and generally located in southwest Howey-in-the-Hills on an L-shaped group of lands west and south of the land development known as “The Reserve at Howey-in-the-Hills (now also known as “Hillside Groves”), with part of the subject lands being south of No. 2 Road and east of Silverwood Lane and other parts of the

subject lands being west of State Road 19 and south of Revels Road (**Property**), are currently designated on the Future Land Use Map of the Town’s Comprehensive land for Village Mixed Use. Planned Unit Development (**PUD**) zoning is required to develop land designated for Village Mixed Use.

- B. The current PUD zoning was approved by Town Council through the enactment of Ordinances 2005-353, 2005-354, 2005-355, 2005-356, and 2005-357 and by that certain Mission Rise Developer’s Agreement between the Town and the then-owners, Richard H. Langley and Roxbury Ventures, LLC, dated February 6, 2007. No development occurred on the Property under those 2005 ordinances and the 2007 development agreement. The current PUD zoning and the 2007 development agreement have both expired under the terms of the development agreement.
- C. The owners of the Property have applied for PUD zoning to develop the Property with a mix of single-family residential, institutional, and recreational land uses in a Planned Unit Development to be known as “Mission Rise.” The Owners have requested Town Council approval of the PUD zoning subject to a new Development Agreement in the form in **Attachment B**, including its conceptual land use plan for the Property.
- D. The Town Council has determined that approval of the PUD zoning on the Property as requested by the owners and subject to the requirements and restrictions of the Development Agreement would be consistent with the Town’s Comprehensive Plan and the Town’s Land Development Code (**LDC**) and will not adversely affect the public health, safety, and welfare of the Town.

Section 2. Amendment of the Official Zoning Map. The Town Council hereby approves the PUD – planned unit development zoning for the Property. Development and use of the Property under its PUD zoning is subject to the conditions, requirements, restrictions, and other terms of the following:

- A. This Ordinance 2024-001. Ordinances 2005-353, 2005-354, 2005-355, 2005-356, and 2005-357 are repealed.
- B. The Development Agreement for Mission Rise PUD between the Town and ASF TAP FL I, LLC (**Owner**). The Development Agreement is approved for execution and delivery by the Mayor and Town Clerk in the form and substance contained in Attachment B, subject to such changes, if any, approved by Town Council. The Mission Rise Developer’s Agreement dated February 6, 2007, is

rescinded and superseded in its entirety by the Development Agreement approved hereby.

- C. The Town’s Land Development Code.
- D. All other Town ordinances governing the development of land.

Section 3. Severability. If any part of this ordinance is declared by a court of competent jurisdiction to be void, unconstitutional, or unenforceable, the remaining parts of this ordinance shall remain in full effect. To that end, this ordinance is declared to be severable.

Section 4. Conflicts. In a conflict between this ordinance and other existing ordinances, this ordinance shall control and supersede.

Section 5. Codification. The PUD zoning for the Property, as approved in Section 2, may be codified and made part of the Town’s Official Zoning Map.

Section 6. Effective Date. This ordinance shall take effect upon the later of (i) its enactment by the Town Council or (ii) the date on which the Development Agreement in Attachment B takes effect.

ORDAINED AND ENACTED this ____ day of _____, 2024, by the Town Council of the Town of Howey-in-the-Hills, Florida.

**TOWN OF HOWEY-IN-THE-HILLS,
FLORIDA**

By: its Town Council

By: _____
Hon. Martha MacFarlane, Mayor

ATTEST:

APPROVED AS TO FORM AND LEGALITY:
(for the use and reliance of the Town only)

John Brock, Town Clerk

Thomas J. Wilkes, Town Attorney

Planning and Zoning hearing held _____, **2023**
First Reading held _____, **2024**
Second Reading and hearing held _____, **2024**
Advertised _____, **202**__

ATTACHMENT A

Legal Description of the Property

**Lake County Property Appraiser
Alternate Key No.'s:**

1780616, 1780811, 1030421, and 3835991

CONTAINING 243.3± ACRES

[insert legal description]

ATTACHMENT B

**Mission Rise PUD
Development Agreement**

[insert form of development agreement]

#52366265 v2

This instrument prepared by and should be returned to:
 Thomas J. Wilkes
 GrayRobinson
 301 East Pine Street, Suite 1400
 Orlando, Florida 32801

MISSION RISE PUD DEVELOPMENT AGREEMENT

This **MISSION RISE PUD DEVELOPMENT AGREEMENT** (“Agreement”) is made as of the _____ day of _____, 2023 (“Effective Date”), between the **Town of Howey-in-the-Hills**, Florida, a Florida municipal corporation (the “Town”), and **ASF TAP FL I, LLC**, a Delaware limited liability company (the “Owner”).

RECITALS

A. The Owner owns approximately 243 acres of property more particularly described in Attachment A to this Agreement (“the Property”).

B. The Property is within the corporate limits of the Town. The Town has assigned the Property a future-land-use designation of Village Mixed Use. To be developed the Property must be zoned PUD - Planned Unit Development.

C. The Property was zoned PUD in or about 2010, but the PUD zoning and its related development agreement expired.

D. The Owner intends to develop and use the Property as a mixed-use planned development consisting of single-family residential, civic and public uses more specifically set forth herein (“the Project”), to be known as the “Mission Rise PUD.”

E. In connection with the Owner’s request for Village Mixed Use PUD zoning, the Town and the Owner now enter into this Agreement to set forth the terms and conditions of approval negotiated between them for the development and use of the Property as the Mission Rise PUD.

NOW, THEREFORE, the Town and the Owner agree as follows:

Section 1. Land development and uses. Development and use of the Property is subject to the following conditions, requirements, restrictions, and terms:

(a) **General.** Development of the Project and use of the Property shall be governed by this Agreement, the Town’s Comprehensive Plan, the Town’s Land Development Code (“LDC”) and Code of Ordinances (“Town Code”), and all other applicable state laws and regulations and Town ordinances and rules.

Unless otherwise noted, the definition of terms in this Agreement shall be the same as the definitions set forth in the LDC. Where in conflict, the terms of this Agreement shall supersede and prevail over the LDC and Town Code, but only to the extent of the conflict.

The Conceptual Land Use Plan, or Conceptual Plan, is contained in Attachment B to this Agreement and consists of seven pages of the following graphics:

- i. Conceptual Plan;
- ii. Phasing Plan;
- iii. Parks, Trails & Open Space Plan;
- iv. Non-Residential Areas;
- v. Buffer Typical;
- vi. Street Cross Sections; and
- vii. Lot Fit.

In the Conceptual Land Use Plan for the Project the term “conceptual” means the location of land uses on the site, including areas for residential development, open space, stormwater management, parks, and roads in relation to the site area and other uses on the site. Subsequent plan development may refine the details based on detailed engineering design. “Conceptual” does not mean or contemplate the modification of proposed housing types or the relocation of land uses and roads other than minor adjustments dictated by engineering needs and best practices.

(b) **Phasing.** The Project will be developed in three phases, as shown on the Conceptual Land Use Plan or “Conceptual Plan” in Attachment B to this Agreement. Each phase must be designed and built to operate independently with all necessary public services and utilities infrastructure, including roads, multimodal trails, and master stormwater systems, consistent with Conceptual Land Use Plan. Building permits for residential units in Phase 2 will not be issued until permits for residential units have been issued for Phase 1. Building permits for residential units in Phase 3 will not be issued until permits for residential units have been issued for Phase 2. Revisions to the phasing schedule shall be considered as minor amendments to this Agreement that may be approved by Town Council with no formal amendment to this Agreement required.

- (c) **Purpose.** The purpose of the Mission Rise PUD is to:
1. Create an attractive and high-quality single-family housing development compatible with the scale and character of existing residential development and land uses in the Town;
 2. Develop a residential area that is safe, comfortable and attractive for and to pedestrians;

3. Create a community with direct visual and physical access to open land, with a strong community identity, and with amenities in the form of community open space;
4. Provide a network of open space for future homeowners; and
5. Provide a variety of lot sizes and housing choices for diverse age and income groups and residential preferences.

(d) **Land uses.** The Conceptual Land Use Plan for the Project in Attachment B is an integral part of the approval of the Project. Elements in the Concept Plan include single-family detached homes, civic uses, multimodal trails and approximately 90 [??] acres of open space. No manufactured or modular homes are allowed. Uses that would be prohibited under the LDC for SFR, MDR-1, or MDR-2 zoning are likewise prohibited in residential areas of the Project.

(e) **Development standards.**

Lot Size

A range of lot sizes shall be provided in order to create variety and offer opportunity for different income households. Minimum lot size will be 55' x 120'. The Project may consist of up to 499 total single-family residential detached lots of 55' x 120' and 75' x 120'.

Setbacks

The setbacks for single family residential lots shall be as follows:

Front:	20 feet / 15 feet (w/ recessed garage)
Rear:	25 feet
Side:	7.5 feet
Corner:	12.5 feet
Pool / Accessory	10 feet

Dwelling Size

The minimum dwelling size for all single-family residences shall be 1,400 square feet of heated/air-conditioned space under roof plus a two-car garage with a minimum of 400 square feet. Maximum dwelling size shall be 4,600 square feet of heated/air-conditioned space under roof.

Lot Width

The minimum lot width at building line shall be 55 feet for 55-foot wide lots and 75 feet for 75-foot wide lots, with a minimum street frontage for all lots of 30 feet.

Lot Coverage

Lots may have a maximum lot coverage of 60%, to include principal dwelling, all paved areas, and swimming pools.

Height of Structures

No residential structure may exceed 35 feet in height.

Building Design

If and to the extent not inconsistent with Florida law, building design shall be in accordance with the Architectural Requirements of the Town's LDC and will comply specifically with the design requirements of LDC Sections 4.06.02 and 4.06.03.

The following principles seek to promote a high-quality development that will create a sense of place and community through the development of the site.

- If and to the extent not inconsistent with Florida law, housing styles, shapes and materials shall meet the Towns Land Development Regulations.
- The different housing types shall be integrated architecturally in order to give the development a harmonious appearance.
- The creation of visual richness shall be considered when choosing materials and details. Local characteristics are encouraged.
- Side entrances for garages are encouraged.
- A variety of roof heights, pitches and materials are encouraged.
- Landscaping shall be incorporated into the overall design as a means of linking the development areas with the open spaces.
- Each exterior wall for a single-family home must be a minimum of two materials and a minimum of two colors. Primary facades must have one base color and a complementary wall material may be used to meet the second color requirement.
- Block face restrictions may be reduced to 300 linear feet. The same house model may not be used more than three times within a single block face. For purposes of this requirement, a different house model is a different floor plan, not the same floor plan flipped in a different direction and not the same floor plan with a different exterior treatment.

(f) **Wetlands.** Impacts to wetlands, if any, and wetland buffering shall be subject to the Town's Land Development Regulations, as well as St. Johns River Water Management District regulations.

(g) **Potable water, wastewater, and reclaimed water.** For potable water and wastewater service, well and septic systems are not allowed. The Project must be connected to and served by the Town's potable-water and wastewater systems prior to a certificate of occupancy being issued for a structure in the Project (except temporary construction uses).

Except as may be set forth otherwise in this Agreement, the Owner must install all on-site potable-water, wastewater, and reclaimed-water infrastructure and connect to central water and wastewater systems, and to the Town's reclaimed-water system when available at the Property boundary, all at no cost to the Town. The Owner must pay potable-water, wastewater, and reclaimed-water capital and connection charges, impact fees, and other Town rates, fees, and charges, either applicable currently or in the future.

1. *Potable Water.* The Town will provide potable water, and may in the future provide reclaimed water, to the Project in accordance with its applicable ordinances, resolutions, operating regulations, policies and procedures. The Town will provide potable water to the Property in sufficient quantities for development of the Project as contemplated herein,

subject to the limitations and requirements of permits issued to the Town from time to time by the St. John's River Water Management District in connection with water consumption.

The Owner shall construct, at no expense to the Town, all off-site potable-water-system facilities, lines, pumps, valves, control structures, and appurtenances (other than water-treatment plants) necessary to serve the Project. The construction and route of off-site lines and other structures shall be done according to engineering plans prepared by the Owner and approved by the Town Manager. Potable water shall not be used for irrigation.

2. *Wastewater.* The Town will provide wastewater-collection and transmission service to the Project, transmitting Project wastewater either to the Central Lake Community Development District ("CDD") or to another wastewater utility service provider of the Town's choosing with available capacity to treat and dispose the Project's wastewater ("Wastewater Utility"). The Owner must obtain from the CDD or Wastewater Utility a contract right for the Project to receive treatment and disposal of its wastewater at such provider's treatment and disposal facilities.

The Owner shall construct, at no expense to the Town, all off-site wastewater-system transmission and disposal facilities, lines, lift stations, pumps, valves, control structures, and appurtenances (other than wastewater-treatment plants) necessary to serve the Project. The construction and route of off-site lines, lift stations, pumps, and other structures shall be done according to engineering plans prepared by the Owner and approved by the Town Manager.

3. *Town Option to Oversize Water and Wastewater Lines.* In its review and processing of the preliminary subdivision plans for each phase of the Project, the Town may elect to oversize the off-site lines, pumps, improvements, or other facilities or appurtenances for the Town's water or wastewater system, or for both, necessary to serve such phase. If the Town elects to oversize one or both systems, it must inform the Owner in writing of the specifications for the oversizing(s) prior to or as part of the Town's first round of review comments on the preliminary subdivision plan application. The Town shall reimburse the Owner for the difference in the increase in cost of design, materials and construction to oversize the improvements based on plans and cost estimates provided by the Owner to the Town and approved by the Town Manager, which approval shall not be unreasonably withheld, conditioned or delayed. The Town shall reimburse the Owners for the difference in the costs within 60 days following (i) completion of the improvements and (ii) receipt by the Town of documentation reasonably demonstrating that the Owner has completed the work and has incurred the costs attributable to the over-sizing, all in keeping with the plans and cost estimate previously approved by the Town Manager.

4. *Permit-Induced Costs, Restrictions, Requirements, and Risks.* Under state and federal laws and regulations, the Town may provide its potable-water and wastewater services to the Property and the Owner and its successors only if the Town first has been issued certain required permits. The Owner acknowledges that the permits are inevitably conditioned with requirements and restrictions that typically impose costs and risks. The Owner further acknowledges that, for the Town to operate its potable-water and wastewater systems in an orderly, dependable, and cost-effective manner, the Town must have the ability legally to spread the costs and risks among customers and property owners benefiting from the services. The

Owner acknowledges, therefore, that (i) from time to time the Town may impose rates, fees, and charges and may issue potable-water system and wastewater-system regulations and policies that impose restrictions and requirements on its customers and benefiting property owners, such as the Owner and its successors, and (ii) so long as the Owner or successors are required to pay only their fair share for such rates, fees, and charges, then the imposition of such rates, fees, and charges and the issuance of such system regulations are not prohibited by or otherwise a breach of this Agreement.

5. *Reclaimed Water.* The Owner must install reclaimed water lines, both on-site and off-site as directed by the Town and as required by the Town's Code of Ordinances. Until such time as reclaimed water is available to the Property the Owner and its successors shall use the reclaimed water lines to irrigate properties within the Project boundaries, but only with stormwater from on-site stormwater-retention ponds or with sources other than potable water as may be approved by the Town and St. John's River Water Management District. Except for installation of reclaimed lines at the time of development as noted above, connection to reclaimed water after the development of the Project may not result in additional costs to the Owner or developer.

(h) **Solid Waste.** Solid Waste collection shall be pursuant to Town regulations.

(i) **Drainage.** The maintenance, repair, and replacement of the drainage system shall be the responsibility of the homeowners association(s).

(j) **Transportation**

1. Roadways

- A. The Project must have a connected street system that serves vehicles, pedestrians and bicycles and that connects to recreation facilities and adjacent residential/community areas.
- B. There must be ingress and egress points at Revels Road, County Number Two Road and Orange Blossom Road in the approximate location shown on the Conceptual Land Use Plan.
- C. The access at County Road Number Two must be a full intersection, with dedication of right-of-way sufficient for both (i) construction of turn lanes and (ii) reconstruction of No. 2 Road lanes along the Project frontage with 12-foot travel lanes, 4-foot curb lanes, and 2-foot curb and gutter. Otherwise, design of the No. 2 Road improvements are subject to review and approval by Lake County.
- D. Ingress and egress points at the western and eastern boundaries of the Property must also be provided, as shown on the Conceptual Land Use Plan. On the west the Project internal roads must connect to Silverwood Lane. On the east the internal roads must connect to Road DD shown on the Master Site Plan for The Reserve at Howey-in-the-Hills PUD that is to be stubbed to the boundary of the Property. If for whatever reason the internal roads

cannot be connected by the Owner to Silverwood Lane on the west or to Road DD in The Reserve on the east, the Owner must stub the Project roads to the Property boundary for future connection.

- E. Revels Road and the north-south Spine Road must be constructed in phases consistent with the phasing plan shown on the Conceptual Land Use Plan. Revels Road and the Spine Road must be public, dedicated to and maintained by the Town. Revels Road and the Spine Road must have a minimum 90-foot right-of-way, 2-foot curb and gutter, and a minimum 32-foot-wide pavement with minimum 12-foot travel lanes and 4-foot curb lanes.
- F. All other internal neighborhood roads must have a minimum 50-foot right-of-way, curb and gutter, and a minimum 24-foot-wide pavement with minimum 12-foot travel lanes, which may be reduced to 11-foot travel lanes when adjacent to on-street parking. All alley roads must have a minimum 22-foot right-of-way, curb and gutter, and a minimum 20-foot-wide pavement. Provision must be made in the rights-of-way for underground utilities.

2. Sidewalks and trails.

All portions of the development must be accessible by a direct, convenient, attractive, safe, and comfortable system of pedestrian facilities. The development must provide appropriate pedestrian amenities. A multimodal trail with minimum width of twelve feet must be constructed within each phase of the Project consistent with Conceptual Land Use Plan and the Town's bicycle/pedestrian plan. The multimodal trail and all sidewalks within rights-of-way must be dedicated to and will be maintained by the Town.

2. Intersection Improvements in Lieu of Proportionate Fair Share Mitigation

The Owner has offered, and the Town accepts the Owner's offer, (i) to undertake and complete at no cost to the Town the reconstruction of the intersection at Revels Road and State Road 19 as a roundabout facility, in return for (ii) the Town waiving its customary transportation-concurrency review and a proportionate fair-share payment by the Owner. The intersection and its design are subject to required approval and permits from the Florida Department of Transportation (FDOT).

The intersection construction must be complete before the issuance of the 51st residential building permit in Phase 2 of the Project.

If the Owner cannot obtain required state permits for an intersection roundabout, the Owner shall undertake and complete construction of the intersection with a traffic signal if allowed by FDOT. For either intersection type both Revels Road and State Road 19 must be constructed in the intersection as four-lane roads.

If the Owner obtains the required state permits for the roundabout intersection or, alternatively, the signalized intersection, the Town will be deemed to have waived its

transportation-concurrency review. If the Owner cannot obtain required state permits for reconstruction of the intersection in either configuration, the Project must undergo transportation-concurrency review. The Owner must complete and submit for review prior to final development order a traffic-impact analysis.

If the results of the traffic-impact analysis require any mitigation for traffic generation, the Town and the Owner will work together and with any other applicable jurisdiction as required by applicable law to address such mitigation requirements through Owner's funding of its proportionate fair share of traffic improvements. Payment of the Owner's fair share must be made in pro-rata amounts upon the issuance of each building permit.

(k) **Schools.** The Project must apply for concurrency review at Lake County Public Schools. The school district has a specific application process. The Project must be shown to have appropriate school concurrency before building permits are issued.

(l) **Landscaping Requirements.** All landscaping and buffer requirements shall be in accordance with the LDC and as illustrated on the Conceptual Land Use Plan with the exception of the following:

1. All buffer, street, and canopy trees planted at the Project will be a minimum of a 2" caliper;
2. the Owner shall require homebuilders to plant at least one canopy tree for each single-family lot of at least 3" DBH; and
3. the developer will replace the equivalent of 30% of total tree-inches removed.

All trees planted at the Project shall adhere to the current guidelines established by the Florida Grades and Standards for nursery-grown trees and must be Florida grade #1 or better.

Developer must install street trees along each roadway where a common area abuts the road as required by the LDC.

(m) **Tree Protection.** Under no circumstances may any tree, regardless of size or species, be removed from any designated wetland or conservation easement. Trees proposed to be maintained on-site must comply with LDC requirements. No construction activity, equipment or material is permitted inside a tree protection barrier.

(n) **Lighting.** Decorative street lighting (Sanibel fixture, a Duke Energy standard fixture) must be installed (i) at every intersection, (ii) at the end of each cul-de-sac, and (iii) at intervals of 300 feet or as approved otherwise by the Town Manager. Street lighting must be installed by the Owner. All lighting must be directional, shielded lighting designed to minimize light pollution. All lighting must be maintained by the HOA.

(o) **Utilities.** All utilities must be underground.

(p) **Signage.** Entrance signs and informational signage may be located in buffers, setbacks/and or signage easements as approved by the Planning and Zoning Board. Unless stated otherwise in this Agreement all signage must comply with requirements and restrictions in the

LDC. The Owner shall present a sign plan for review and approval by the Planning and Zoning Board with the final site plan for each phase of the Project.

The Owner and/or builder(s) may erect temporary vertical marketing flags, also known as feather banners, with the following stipulations:

1. Feather banners must be placed no less than 200 feet apart.
2. A maximum of 10 feather banners, in total.
3. Feather banners cannot be placed within the right of way.
4. Feather banners cannot be located offsite of PUD property.
5. Feather banners cannot exceed 12 feet in height.
6. Feather banners must be replaced or removed if they become faded, torn, or tattered.
7. Feather banners must be removed when 90% of the homes in the development have received building permit approval.

Billboards and pole signs are prohibited. Unless defined differently in the LDC, a pole sign is a permanent sign supported by at least one upright pole, pylon, or post secured to the ground, with the bottom of the sign face four feet or higher above the finished grade.

(q) **Maintenance of Common Areas.** Maintenance of each common area within the Project is the responsibility of the homeowners' association(s) for the affected subdivision.

(r) **Parks, Trails, and Open Spaces.** Each phase of the Project must include (i) the recreation and civic facilities for the phase and (ii) an integrated bicycle network that ties into the bicycle facilities in The Reserve PUD so as to loop the system to connect cyclists from both developments. Structures, facilities, and other improvements to be constructed and installed at the sites designated on the Conceptual Land Use Plan as parks, trails and open spaces must be included for review and approval as part of the final site plan approval for each phase or subdivision of each phase. Plans submitted must be in sufficient detail to provide reasonable understanding and certainty of the improvements, facilities, and uses to be made at each such site..

Section 2. Amendments. Amendments to the Conceptual Land Use Plan that occur after the effective date of this Agreement shall take effect only if and when approved by the Town Council or Town staff as applicable. Major amendments include material changes such as:

- changes to the location of individual land uses;
- any increase in the total number of residential units; and
- relocation and realignment of roads and routes for pedestrian and bicycle facilities.

Major amendments take effect only if approved by the Town Council in the manner required by law or otherwise as determined by Town Council, which may include public notice(s) and hearing(s).

Minor amendments shall include lesser changes such as:

- minor adjustments of roads, trails and pedestrian ways based on more detailed site-specific data;
- modifications to the phasing schedule;
- adjustments to utility locations based on more detailed engineering data; or
- adjustments to parks and open space based on more detailed subdivision design.

Minor amendments may be approved by the Town Manager without referral to the Planning and Zoning Board or Town Council. Whether a proposed amendment is major or minor will be determined by the Town Manager. Minor amendments to the Conceptual Land Use Plan shall be deemed incorporated into this Agreement and shall modify or replace the Conceptual Land Use Plan in Attachment B to the extent of such amendment to the Conceptual Land Use Plan, without the necessity for an amendment to this Agreement.

Section 3. Notices. All notices or payments required to be made hereunder shall be made at the following addresses:

To Town:	Sean O’Keefe, Town Manager Town of Howey-in-the-Hills 101 North Palm Avenue Howey-in-the-Hills, FL 34737 sokeefe@howey.org
With copies to:	John Brock, CMC, Town Clerk Town of Howey-in-the-Hills 101 North Palm Avenue Howey-in-the-Hills, FL 34737 jbrock@howey.org
	Thomas J. Wilkes, Town Attorney Gray Robinson, P.A. 301 East Pine Street, Suite 1400 Orlando, FL 32801 twilkes@gray-robinson.com
To Owner:	Jason Humm 1170 Peachtree Street NE, Suite 1150 Atlanta, GA 30309 jhumm@turnstonegroup.com

With copies to:

Rhea Lopes, AICP
 RVI Planning + Landscape Architecture
 10150 Highland Manor Dr, Suite 450
 Tampa FL 33610
rlopes@rviplanning.com

Mike Ripley
 Land Advisors
 399 Carolina Ave, Suite 200
 Winter Park, Florida 32789
MRipley@landadvisors.com

Jonathan Huels
 Lowndes
 215 North Eola Drive
 Orlando, Florida 32801
Jonathan.huels@lowndes-law.com

Section 4. Severability. If any provision or portion of this Agreement is declared by a court of competent jurisdiction to be void, unconstitutional, or unenforceable, then all remaining provisions and portions of this Agreement shall remain in full force and effect. To that end, this Agreement is declared to be severable.

Section 5. Binding Effect. This Agreement runs with the land and is binding on and enforceable by and against the parties hereto and all their successors in interest. However, no Lot Owner shall have the obligations imposed on the Owner as the developer of the Project under this Agreement. For that purpose, a “Lot Owner” means an end-user of a lot created within the Property with a completed residential unit constructed thereon, for which a certificate of occupancy has been issued. Each party covenants to each other party that this Agreement is a legal, valid, and binding agreement, enforceable against the party in accordance with its terms.

Section 6. Negotiated Agreement. The land uses, densities, intensities, and other conditions of approval of the Project have been negotiated and agreed to by the Owner and the Town. The Conceptual Land Use Plan and this Agreement together constitute an agreement between the parties with the knowledge that the Owner’s successors in title, the future homeowners, and other landowners within the Property, as well as the Town and its affected property owners and residents, all will rely justifiably on the agreed-to land uses, densities, and intensities authorized hereby for the Property. For that reason, the Owner and the Owner’s successors in interest have the contract right to develop the PUD with the uses, densities, and intensities approved by the Town, subject to the restrictions and requirements in the conditions of approval set forth in this Agreement. Neither the Owner (and its successors in interest) nor the Town shall have the right in the future to rezone or downzone the property, or otherwise alter the uses, densities and intensities, or delete, waive or amend any conditions of approval except through an amendment to the Plan negotiated and approved by the Town Council and the owner or owners of the then-

subject parcel or parcels. This section shall survive the termination and expiration of this Agreement.

Section 7. Homeowners' Association(s).

(a) **Association Responsibilities.** A homeowner's association and/or a property owner's association ("HOA") must be created by the Owner. Membership in the HOA shall be mandatory for all property owners within the Project. The HOA, not the Town, must maintain, repair, and replace all parks, open-space and buffer areas, streetlights, stormwater-management areas and drainage systems, entrance features, boundary walls and/or fences, access tracts, and landscaped tracts within the Project. The Town may opt, however, to undertake any such project of maintenance, repair, and replacement of those structures, facilities and systems. If the Town exercises its option, it may charge or assess either the HOA or its homeowners and property owners to recover the cost of the project.

(b) **Requirement for Plat Recording.** Before a plat may be recorded for the Property and the Project, the Owner shall furnish to the Town copies of the pertinent documents for the homeowners' or property owners' association or associations, which documents must contain the covenants, conditions and restrictions for the Property and must set forth the requirements and restrictions imposed on the HOA and its homeowners and property owners as enumerated in this section 7 and other applicable parts of this Agreement.

Section 8. Additional Requirements.

(a) **Letter of credit.** Construction and dedication to the Town of the public facilities and improvements required under this Agreement and the LDC for each phase of the Project is a condition precedent to final plat approval for such phase. In lieu of construction and dedication, however, the Owner may post a letter of credit or performance bond with the Town for 125% of the cost of such improvements not completed at the time of plat, in which event this condition precedent to final plat approval (but not the requirement to complete construction and to dedicate the public facilities and improvements required under this Agreement and the LDC) will be deemed satisfied.

(b) **Conveyances to the Town.** Property dedicated or otherwise conveyed to the Town under this Agreement must be free and clear of encumbrances unless and to the extent an encumbrance is acceptable to the Town. Encumbrances discovered after the Effective Date of this Agreement must be removed or resolved by the Owner or its successor developer prior to dedication or conveyance of the affected property to the Town.

(c) **Changes in status of land.** Until completion of the Project, the Owner or its successor developer of the Project has a continuing duty (i) to disclose promptly to the Town all changes in ownership, encumbrances, and other matters of record affecting the Property and (ii) to resolve all issues, title or otherwise, that may be identified by the Town as a result of such changes. Failure to disclose such changes or to resolve resulting issues may result in delay in issuance of building and other development permits.

(d) **Developer representations binding.** If at Town Council hearings on the approval of the Project the Owner makes a written or oral promise or representation, and if the

promise or representation was relied upon by Town Council in approving the Project or otherwise acted to induce or materially influence Town Council in its vote to approve the Project, the promise or representation is a condition of approval of the Project. The promise or representation is binding on the Owner and its successors and enforceable by the Town against the Owner and its successors as if set forth fully in this Agreement.

Section 9. Governing Law. This Agreement shall be governed by the laws of the State of Florida. Venue for any judicial proceeding pertaining to the Agreement shall be in the Fifth Judicial Circuit of Florida, in Lake County, Florida.

Section 10. Effective Date; Termination.

(a) **Effective Date.** This Agreement shall take effect upon the Effective Date above, or on the date when it has been executed by both the Town Council and the Owner, whichever is later.

(b) **Termination.** This Agreement shall remain in effect unless and until terminated under one of the following conditions:

1. If as of the second anniversary of the Effective Date of this Agreement an Owner's contract right to treatment and disposal services by the CDD or Wastewater Utility, as required under Section 1(g) above, has not taken effect, the Town may terminate this Agreement by vote of its Town Council. The vote must occur no later than (i) the third anniversary of the Effective Date or (ii) the CDD or Wastewater Utility Contract Date, whichever occurs first. The "Contract Date" is the date on which the Owner's contract right to treatment and disposal services by the CDD or Wastewater Utility takes effect.

2. If as of the second anniversary of the Contract Date no building permit for a residential unit in the Project has been issued, the Town may terminate this Agreement by vote of its Town Council. The vote must occur no later than (i) the third anniversary of the Contract Date or (ii) the date a building permit is issued, whichever occurs first.

3. If as of the fifth anniversary of the Contract Date no building permit for a residential unit in the second phase of the Project has been issued, the Town may terminate this Agreement by vote of its Town Council, but only as it applies to development of the second phase. The vote must occur no later than (i) the sixth anniversary of the Contract Date or (ii) the date a building permit is issued for a residential unit in the second phase, whichever occurs first. Termination of the Agreement for this reason will not act to preclude the Owner or its successor from completing the first phase of the Project.

4. If as of the tenth anniversary of the Contract Date no building permit for a residential unit in the third phase of the Project has been issued, the Town may terminate this Agreement by vote of its Town Council, but only as it applies to development of the third phase. The vote must occur no later than (i) the eleventh anniversary of the Contract Date or (ii) the date a building permit is issued for a residential unit in the third phase, whichever occurs first. Termination of the Agreement for this reason will not act to preclude the Owner or its successor from completing the first or second phase of the Project.

Termination of this Agreement, in whole or in part, under this section shall be without prejudice to the Owner or its successor to apply for Town approvals to undertake or continue development of the Property in light of the circumstances and subject to the land-development regulations then existing in the Town.

Section 11. Recording. This Agreement shall be recorded by the Town, at the Owner's expense, in the Public Records of Lake County, Florida, and shall constitute a covenant running with the land.

Section 12. Authority. This Agreement is entered into by the Town under the home-rule powers granted to it by the Florida constitution (including specifically Article VIII, Section 2(b) thereof), the home-rule powers granted municipalities by statute (including specifically Chapter 166, Florida Statutes), and the Town's Charter. This Agreement does not constitute a "development agreement" under the Florida Local Government Development Agreement Act.

Section 13. Entire Agreement. This Agreement constitutes the entire agreement of the parties with respect to the transactions contemplated herein. It supersedes all prior understandings or agreements between the parties relating to the Property and the Project. No amendment to the terms of this Agreement shall be effective unless in writing signed by all parties hereto. Amendments to this Agreement will take effect and will be binding against the Town only if approved by a vote of the Town Council.

Section 14. Waiver. The failure of a party hereto to insist upon or enforce any right or privilege granted hereunder shall not constitute or operate as a waiver thereof and nothing shall constitute a waiver of any party's right to insist upon strict compliance with the terms hereof. However, any party may waive in writing the benefit of any provision or condition for its benefit which is contained herein. Waivers of material provisions of either this Agreement or the Town's LDC will be valid and binding against the Town only if approved by a vote of the Town Council.

[Signature pages follow]

IN WITNESS WHEREOF, the parties are signing this Agreement as of the Effective Date or, if later, the date by which both parties have fully executed this Agreement.

**TOWN OF HOWEY-IN-THE-HILLS,
FLORIDA**

By: its Town Council

By: _____
Hon. Martha McFarlane, Mayor

Attest:

By: _____
John Brock, CMC, Town Clerk

Approved as to form and legality:
(for the use and reliance of the Town only)

Thomas J. Wilkes, Town Attorney

STATE OF FLORIDA
COUNTY OF LAKE

The foregoing instrument was executed, sworn to and acknowledged before me this ____ day of _____, 2023, by Martha McFarlane, personally known to me to be the Mayor of the Town of Howey in the Hills.

(SEAL)

Signature of Notary

Name of Notary Public
(Typed, Printed or stamped)

Signed, sealed and delivered
in the presence of:

WITNESSES

Printed Name: _____

“OWNER”

ASF TAP FL I, LLC, a Delaware limited liability company

By: _____
Printed Name: _____
As its: _____

Printed Name: _____

STATE OF FLORIDA
COUNTY OF _____

The foregoing instrument was executed, sworn to and acknowledged before me by means of ____ physical presence or _____ online notarization, this _____ day of _____, 2022, by _____, as _____ of **ASF TAP FL I, LLC.**, a Delaware limited liability company, on its behalf.

(SEAL)

Signature of Notary Public

Name of Notary Public
(Typed, Printed or stamped)

Personally Known ____ **OR** Produced Identification _____
(Type of Identification Produced)

**Attachment A
To
MISSION RISE PUD DEVELOPMENT AGREEMENT**

LEGAL DESCRIPTION

**Attachment B
To
MISSION RISE PUD DEVELOPMENT AGREEMENT**

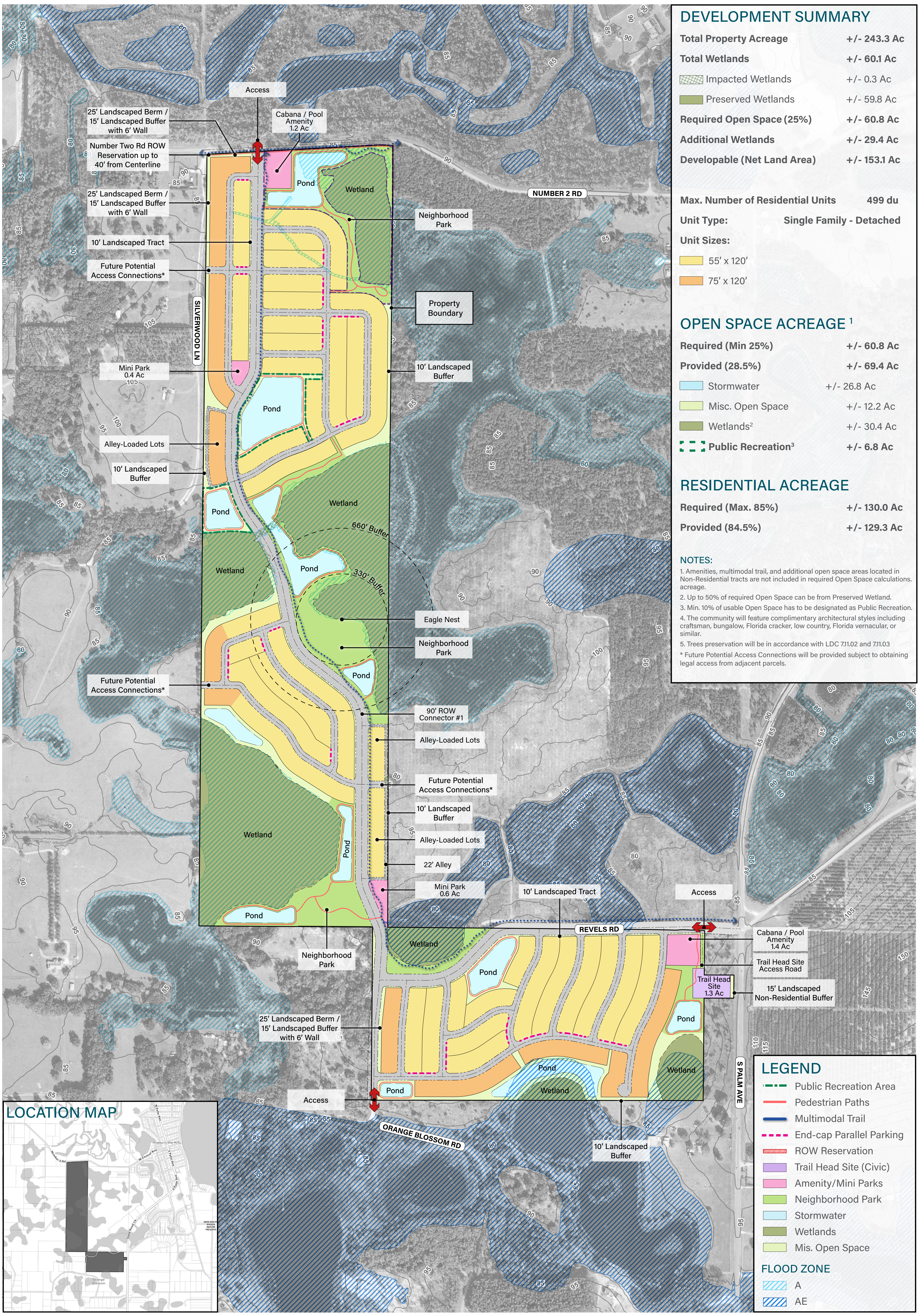
CONCEPTUAL LAND USE PLAN

Including the following graphics:

1. Conceptual Plan;
2. Phasing Plan;
3. Parks, Trails & Open Space Plan;
4. Non-Residential Areas;
5. Buffer Typical;
6. Street Cross Sections; and
7. Lot Fit.

[insert Conceptual Land Use Plan]

#52338764 v3



DEVELOPMENT SUMMARY

Total Property Acreage	+/- 243.3 Ac
Total Wetlands	+/- 60.1 Ac
Impacted Wetlands	+/- 0.3 Ac
Preserved Wetlands	+/- 59.8 Ac
Required Open Space (25%)	+/- 60.8 Ac
Additional Wetlands	+/- 29.4 Ac
Developable (Net Land Area)	+/- 153.1 Ac

Max. Number of Residential Units **499 du**
 Unit Type: **Single Family - Detached**

Unit Sizes:
 55' x 120'
 75' x 120'

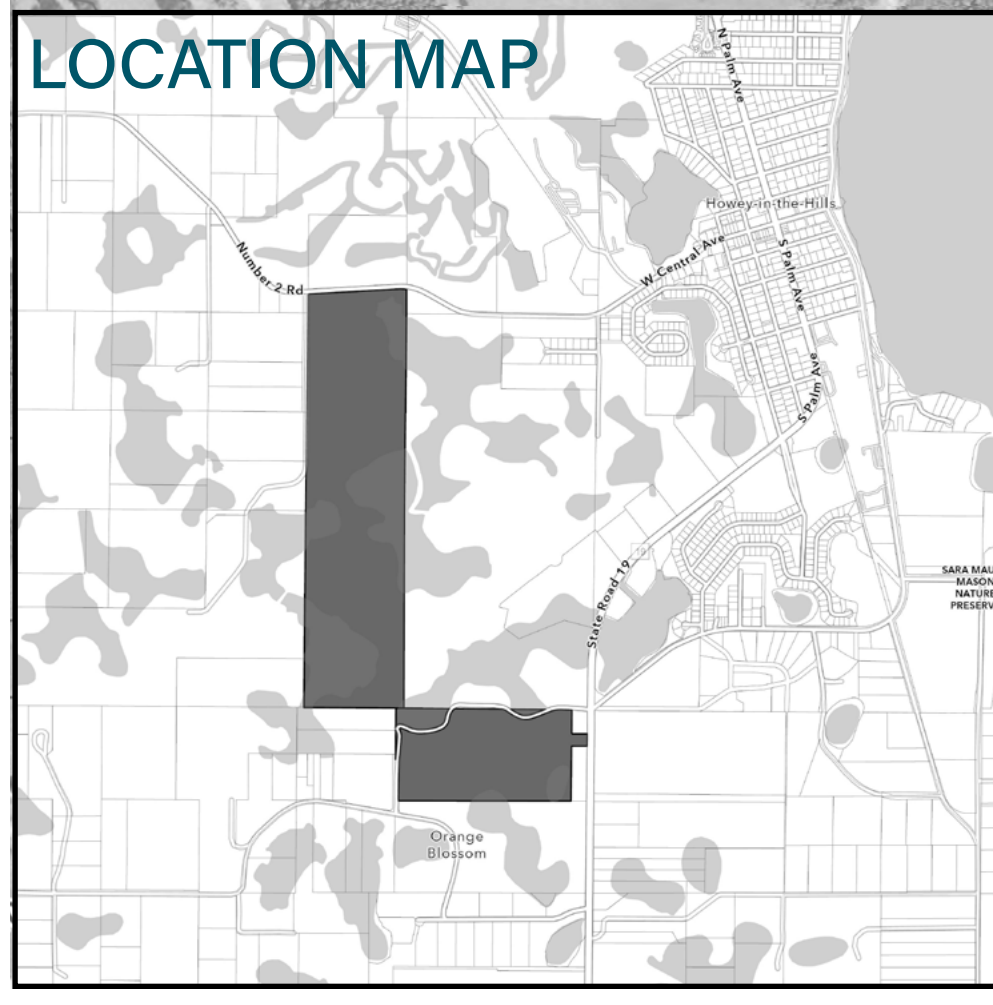
OPEN SPACE ACREAGE¹

Required (Min 25%)	+/- 60.8 Ac
Provided (28.5%)	+/- 69.4 Ac
Stormwater	+/- 26.8 Ac
Misc. Open Space	+/- 12.2 Ac
Wetlands ²	+/- 30.4 Ac
Public Recreation ³	+/- 6.8 Ac

RESIDENTIAL ACREAGE

Required (Max. 85%)	+/- 130.0 Ac
Provided (84.5%)	+/- 129.3 Ac

- NOTES:**
- Amenities, multimodal trail, and additional open space areas located in Non-Residential tracts are not included in required Open Space calculations.
 - Up to 50% of required Open Space can be from Preserved Wetland.
 - Min. 10% of usable Open Space has to be designated as Public Recreation.
 - The community will feature complimentary architectural styles including craftsman, bungalow, Florida cracker, low country, Florida vernacular, or similar.
 - Trees preservation will be in accordance with LDC 711.02 and 711.03
- * Future Potential Access Connections will be provided subject to obtaining legal access from adjacent parcels.

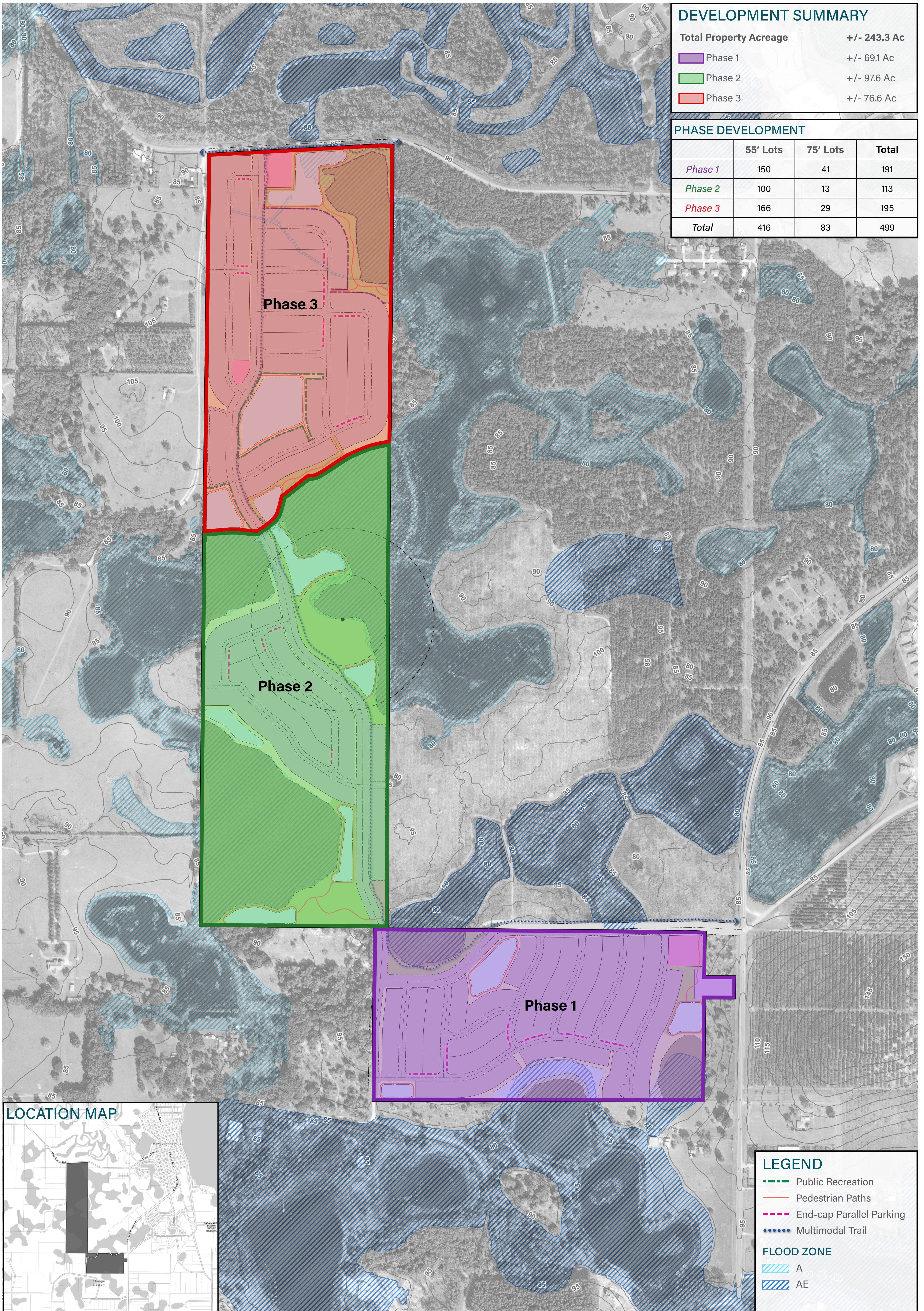


LEGEND

- Public Recreation Area
- Pedestrian Paths
- Multimodal Trail
- End-cap Parallel Parking
- ROW Reservation
- Trail Head Site (Civic)
- Amenity/Mini Parks
- Neighborhood Park
- Stormwater
- Wetlands
- Mis. Open Space

FLOOD ZONE

- A
- AE

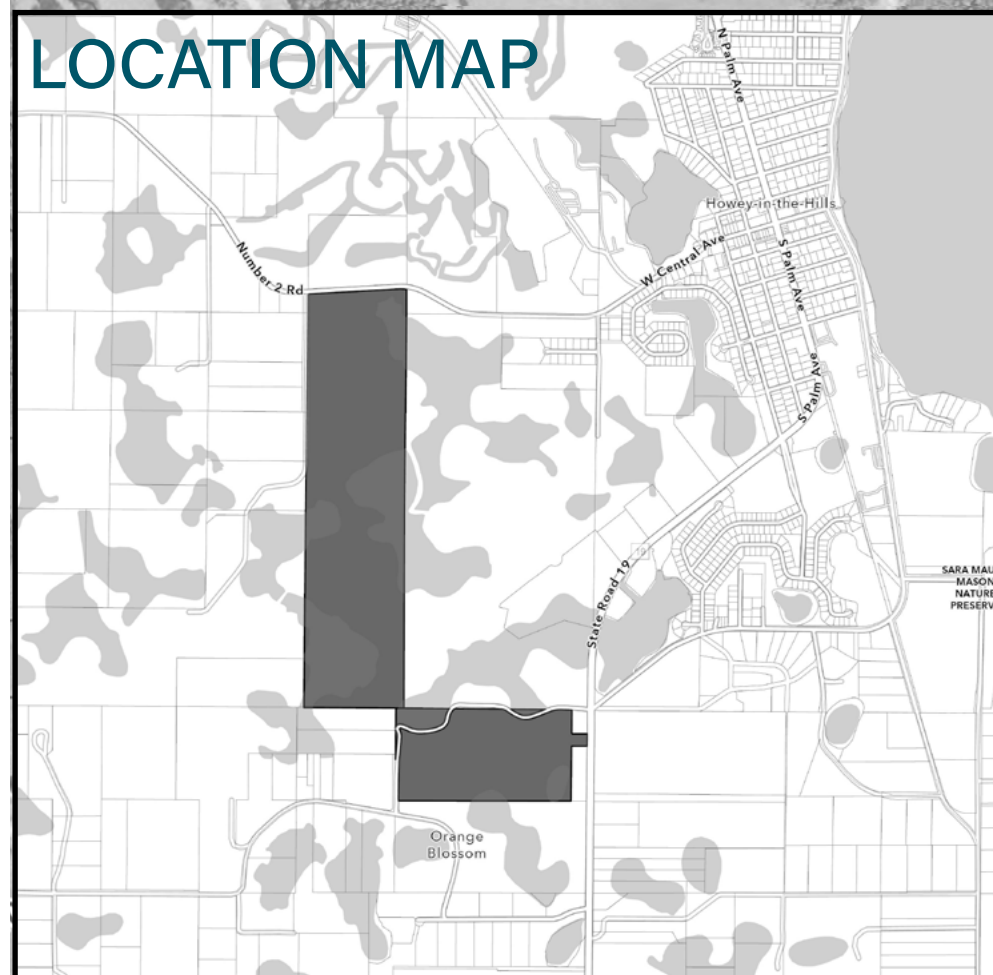


DEVELOPMENT SUMMARY

Total Property Acreage	+/- 243.3 Ac
Phase 1	+/- 69.1 Ac
Phase 2	+/- 97.6 Ac
Phase 3	+/- 76.6 Ac

PHASE DEVELOPMENT

	55' Lots	75' Lots	Total
Phase 1	150	41	191
Phase 2	100	13	113
Phase 3	166	29	195
Total	416	83	499



LEGEND

- Public Recreation
- Pedestrian Paths
- End-cap Parallel Parking
- Multimodal Trail

FLOOD ZONE

- A
- AE

PARKS & TRAILS PROGRAM



TRAIL HEAD SITE



MULTIMODAL TRAIL



WETLAND ENGAGEMENT



BIKE MAINTENANCE STATION



COOLING STATION



WATER STATION

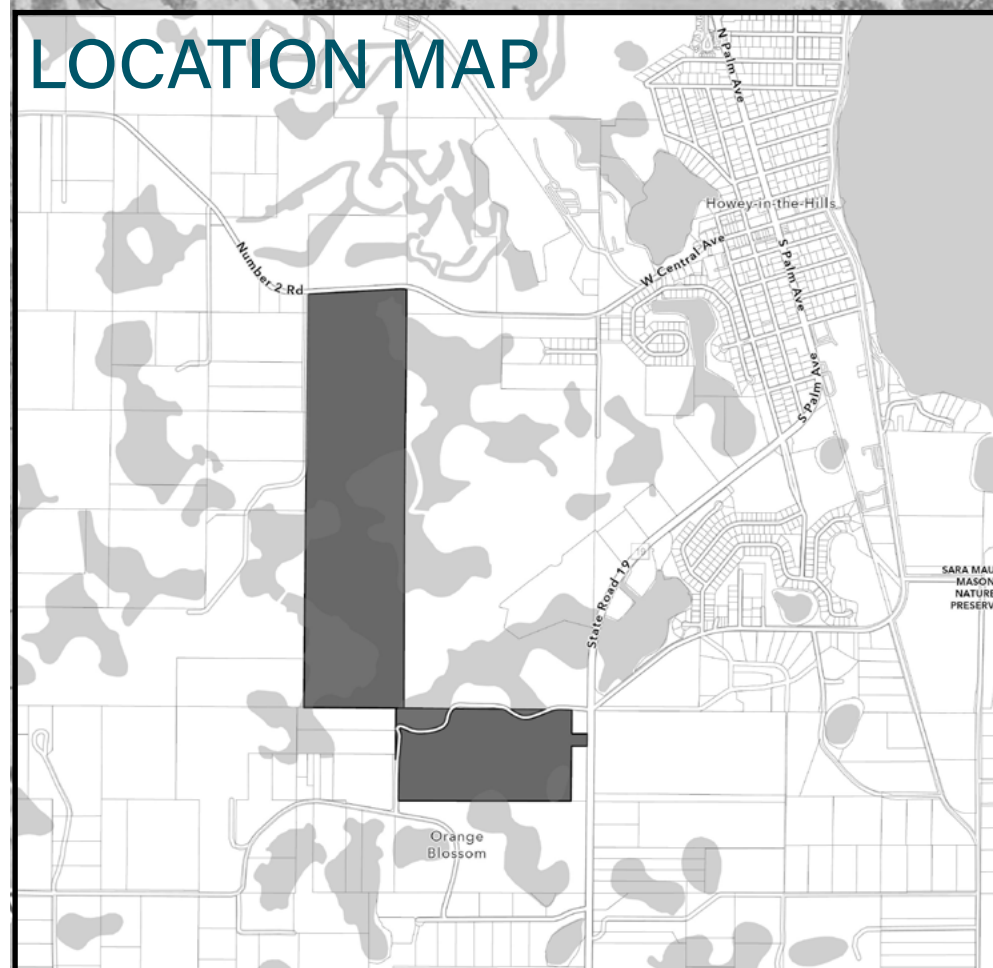
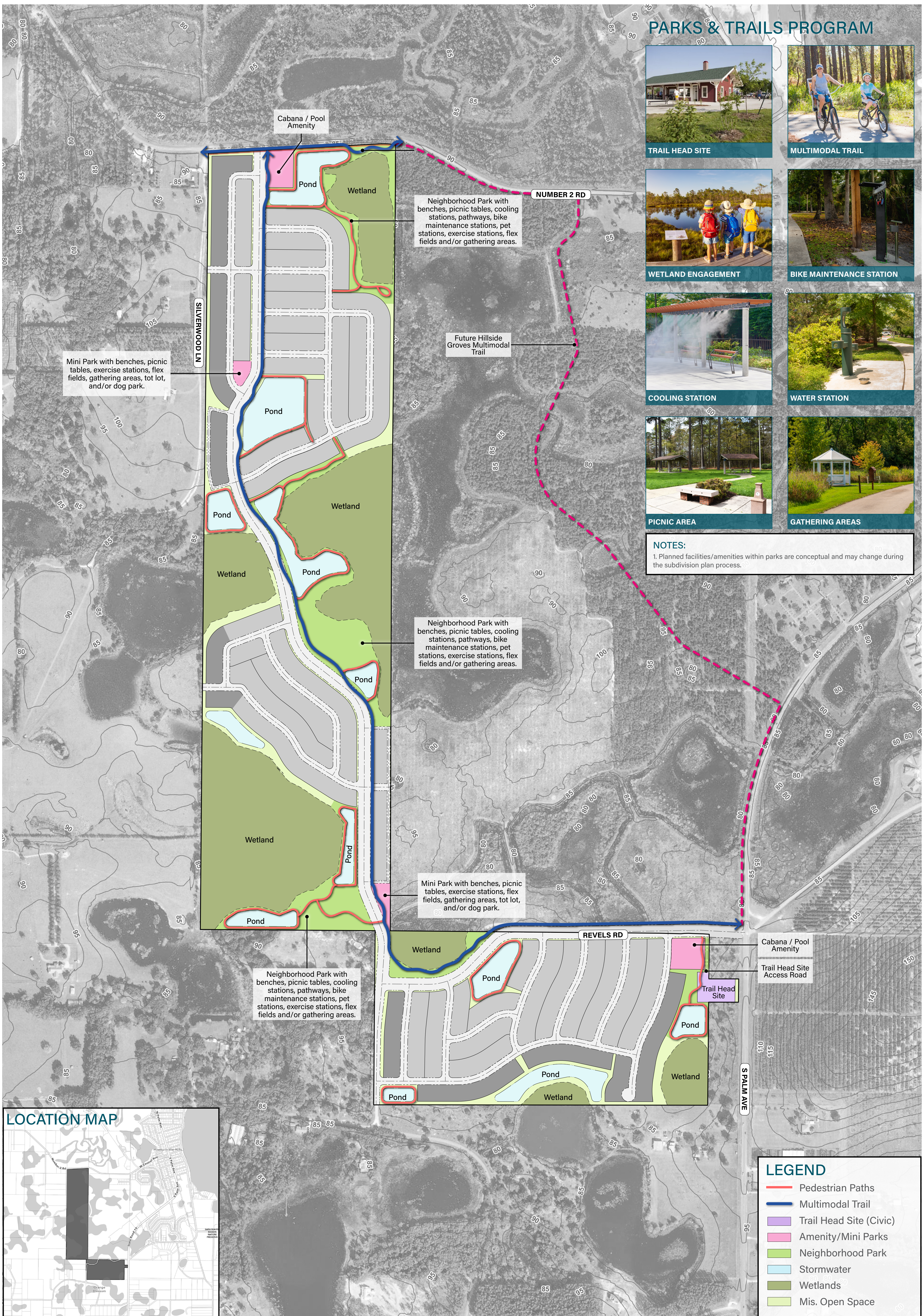


PICNIC AREA



GATHERING AREAS

NOTES:
1. Planned facilities/amenities within parks are conceptual and may change during the subdivision plan process.



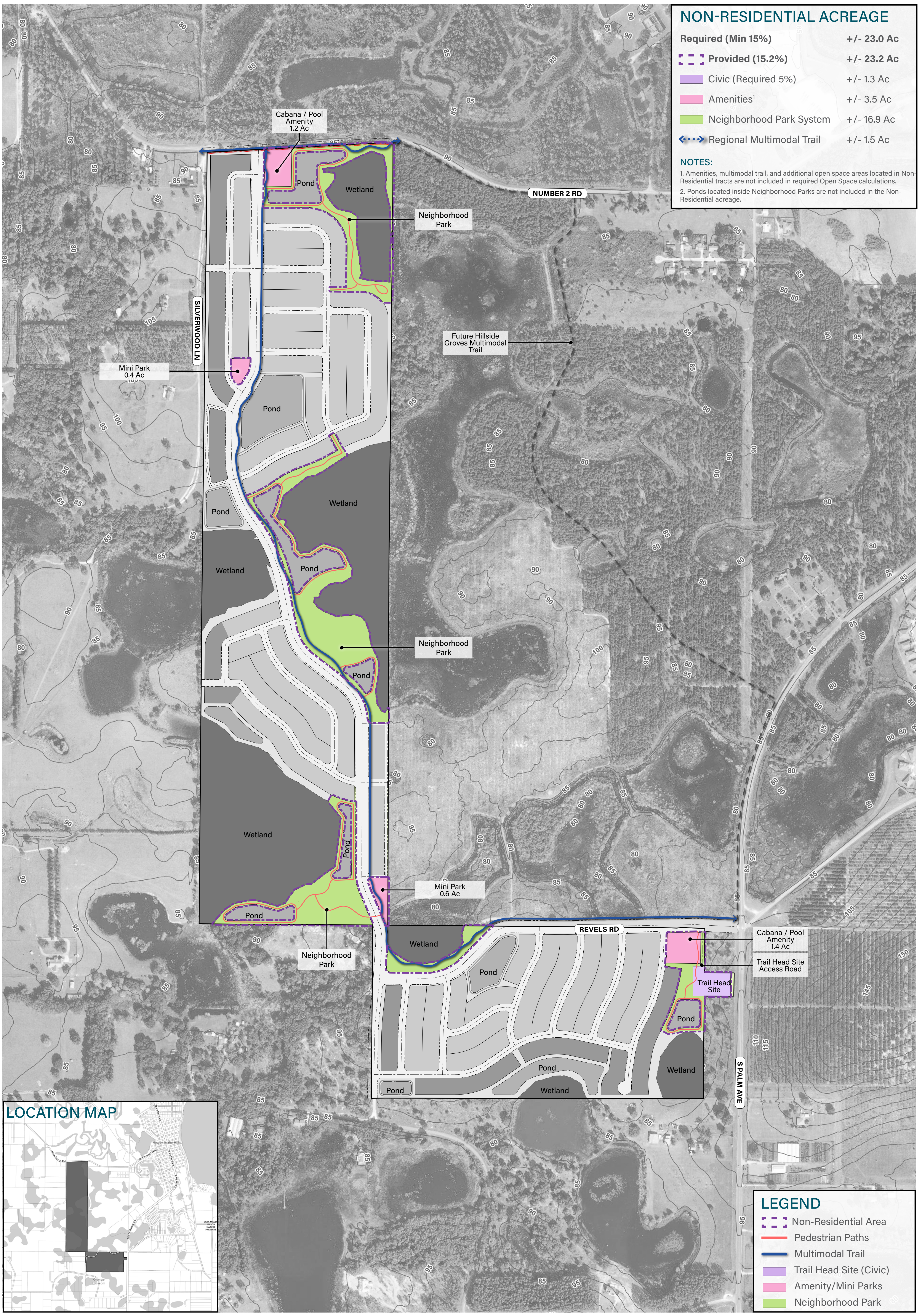
LEGEND	
	Pedestrian Paths
	Multimodal Trail
	Trail Head Site (Civic)
	Amenity/Mini Parks
	Neighborhood Park
	Stormwater
	Wetlands
	Mis. Open Space

NON-RESIDENTIAL ACREAGE

Required (Min 15%)	+/- 23.0 Ac
Provided (15.2%)	+/- 23.2 Ac
Civic (Required 5%)	+/- 1.3 Ac
Amenities ¹	+/- 3.5 Ac
Neighborhood Park System	+/- 16.9 Ac
Regional Multimodal Trail	+/- 1.5 Ac

NOTES:

- Amenities, multimodal trail, and additional open space areas located in Non-Residential tracts are not included in required Open Space calculations.
- Ponds located inside Neighborhood Parks are not included in the Non-Residential acreage.

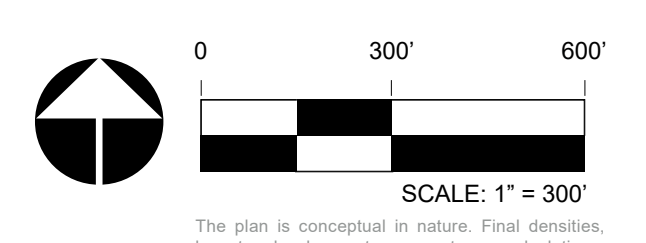


Copyright RVI



MISSION RISE • NON-RESIDENTIAL AREAS

Town of Howey Hills, FL
 September 22, 2023
 # 22003786
 Turnstone Group / ASF TAP FL I LLC.



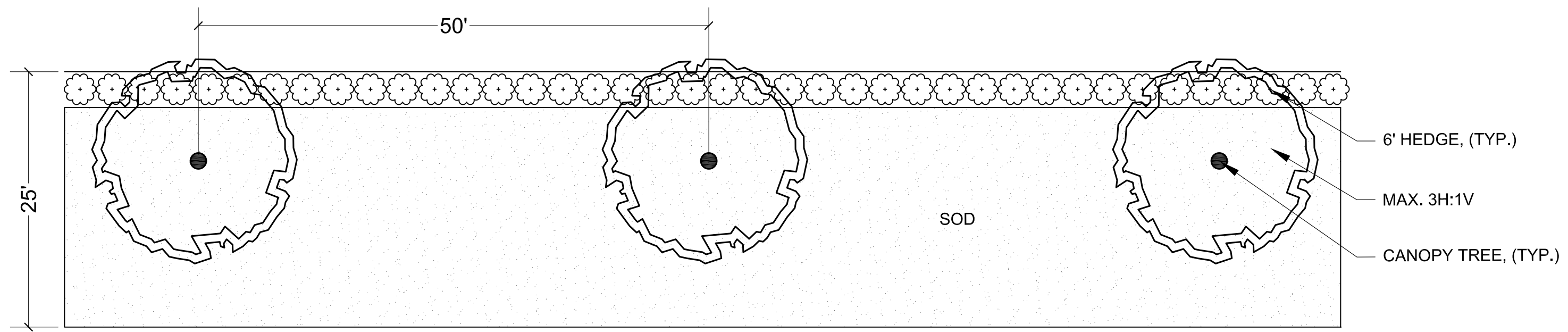
The plan is conceptual in nature. Final contours, layout, development parameters, calculations, and site conditions may change upon further development of the Preliminary and/or Master Site Plans, and upon evaluation of topographic survey, water management and existing historic and specimen trees to remain.

RESIDENTIAL BUFFERS

25' LANDSCAPE BUFFER, TYPICAL

A landscaped berm with a total depth of at least 25 feet and no steeper than 3H:1V. The berm shall be at least three feet (3') in height and the berm together with the landscaping, shall comprise a continuous screen of at least 5 and one half feet (5.5') at time of planting and six feet (6') within one year of planting. Canopy trees shall also be planted every 50 feet along the berm.

For single family subdivisions, these buffers shall be on common property and dedicated to the homeowners' association for ownership and maintenance responsibilities.

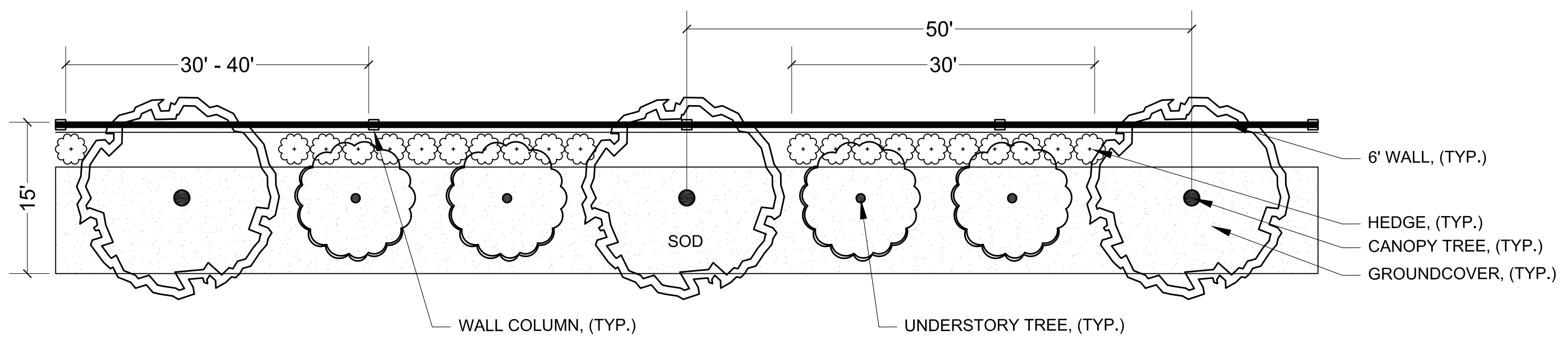


15' LANDSCAPE BUFFER, TYPICAL

A landscaped wall buffer with a minimum depth of 15 feet. The wall shall maintain a height of six feet (6') from grade on highest side and all walls shall have a decorative exterior (no exposed block). Acceptable materials for wall faces are brick, stucco or stone or a combination of those materials. Wall columns shall have a maximum spacing of thirty feet (30') on walls up to two hundred feet (200') in length and forty feet (40') on walls more than two hundred feet (200') in length. Wall columns may extend up to two feet (2') above the height of the wall.

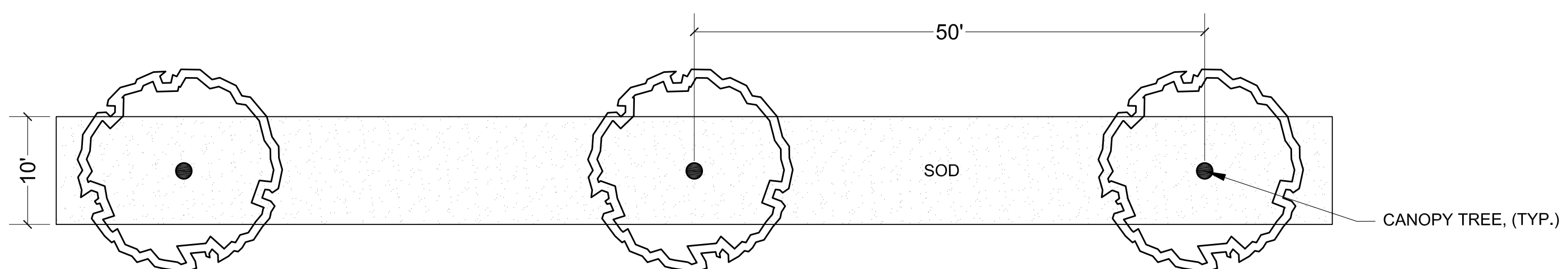
Within each fifty-foot (50') increment along the wall, two (2) canopy trees, two (2) understory trees, and 30 linear feet of shrubs shall be planted. The trees shall not be closer than five feet (5') to a walk or wall. The shrubs shall be at least 30" in height at time of planting.

For single family subdivisions, these buffers shall be on common property and dedicated to the homeowners' association for ownership and maintenance responsibilities.



10' LANDSCAPE BUFFER, TYPICAL

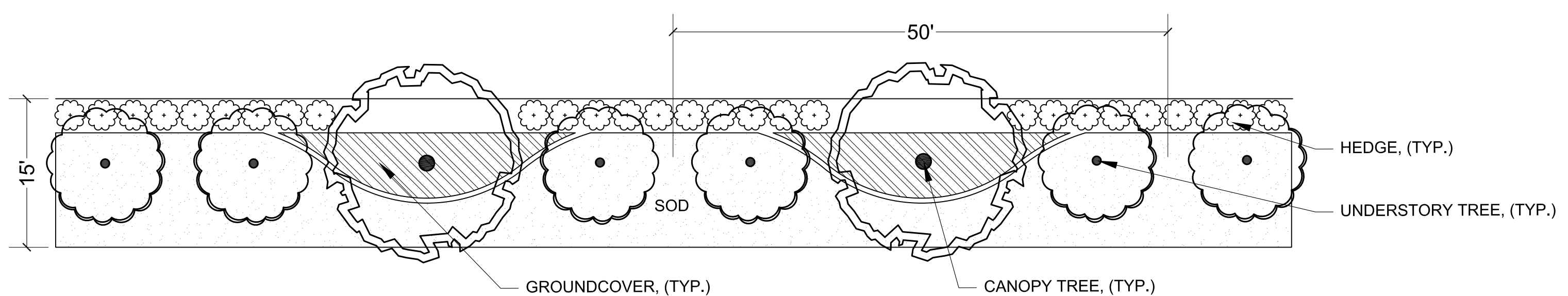
Ten-foot-wide (10') landscaped buffer with trees spaced no more than 50 feet on center.



NON-RESIDENTIAL BUFFERS

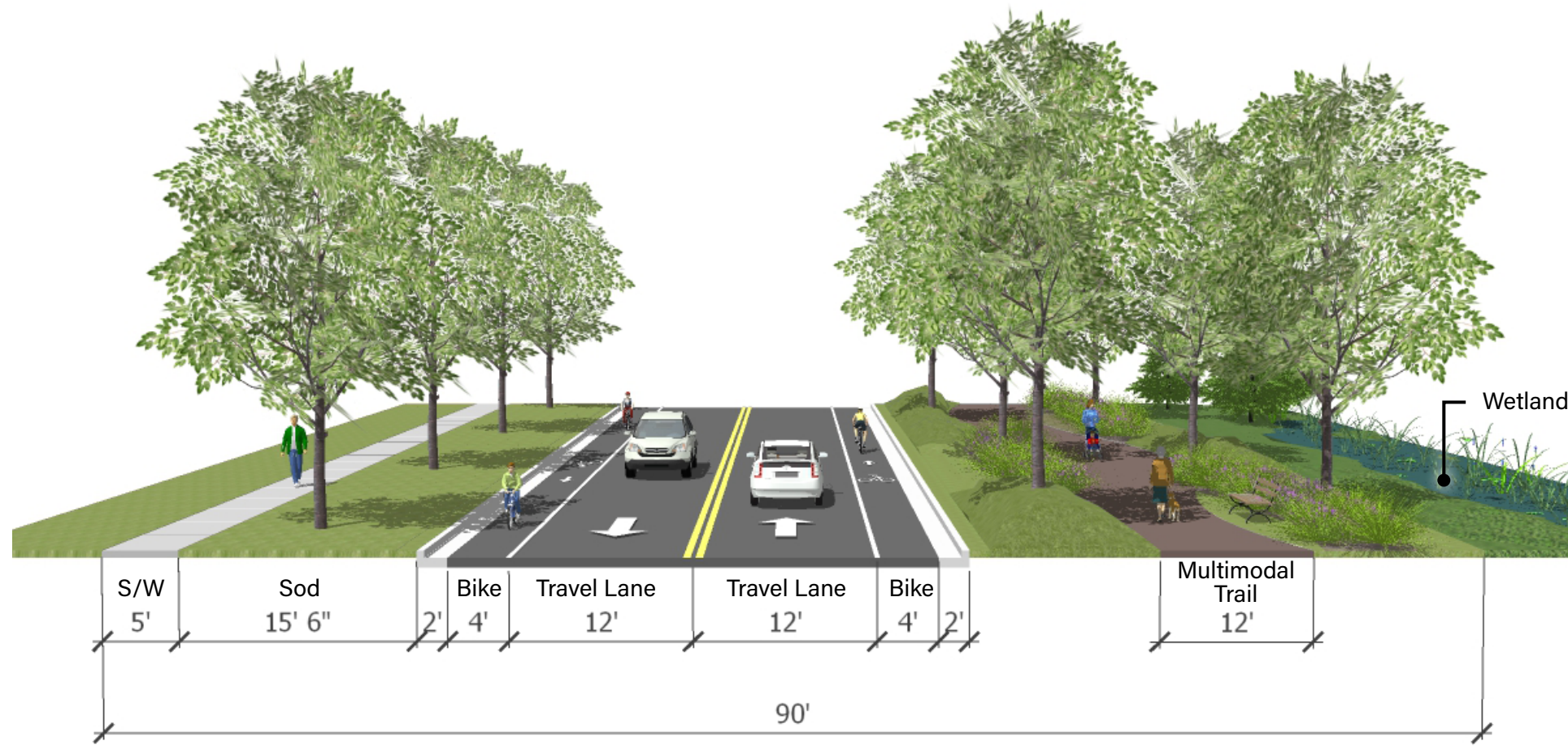
15' LANDSCAPE BUFFER, TYPICAL

The landscaped buffer shall contain at least one (1) canopy tree, two understory trees and 30 linear feet of shrubs and ground cover for each 50 linear feet of buffer. Canopy trees shall be located no less than five feet (5') and no more than eight feet (8') from sidewalks and other walkways in order to provide shade while minimizing conflicts between tree roots and sidewalks. Similarly, canopy trees shall be used to shade parking areas that adjoin buffers. Understory trees may be planted in groupings and palms may be planted in place of understory trees when clustered in groupings of three or more trees.



SPINE ROAD

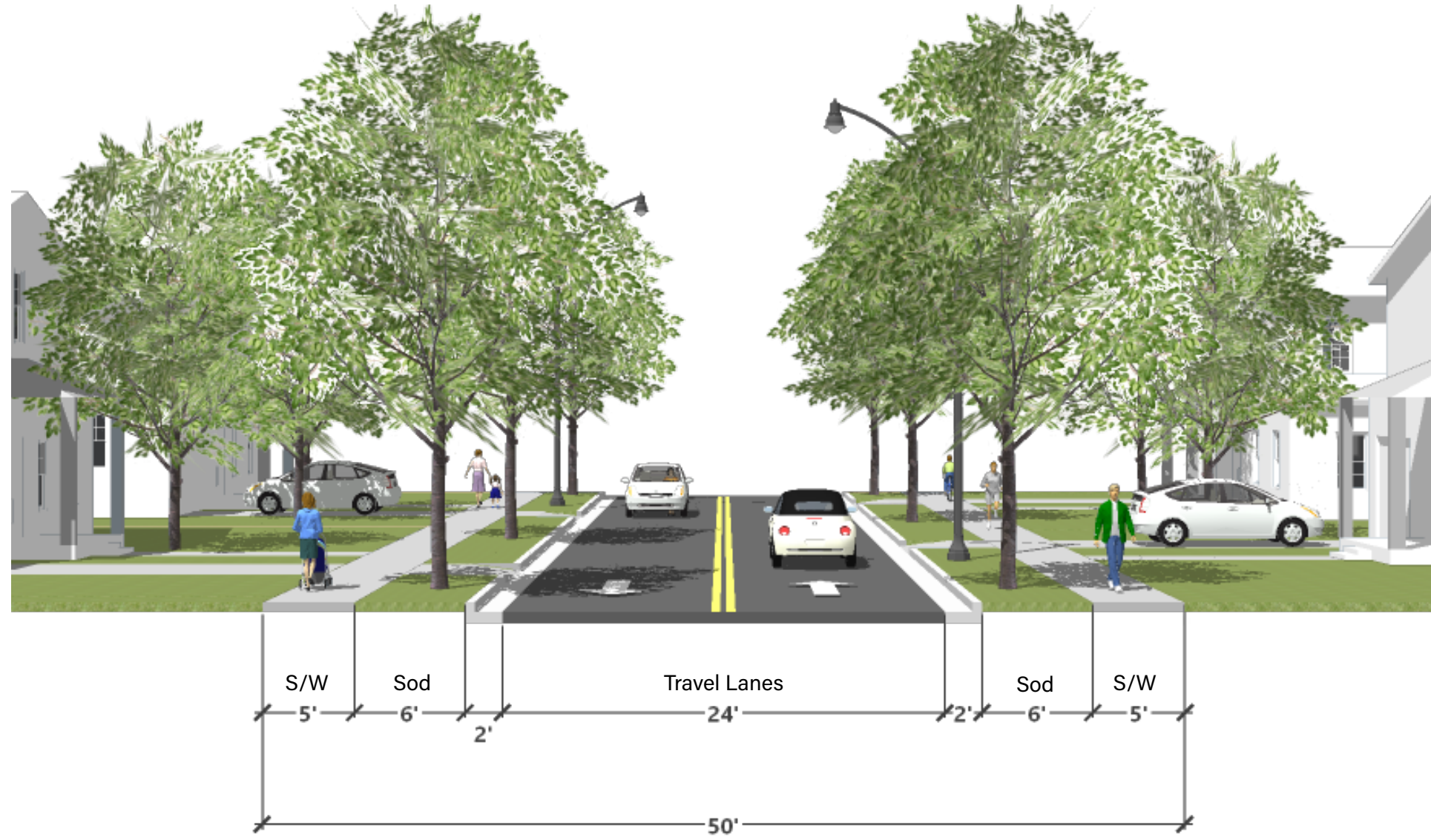
90' ROW WITH BIKE LANE & 12' MULTIMODAL TRAIL



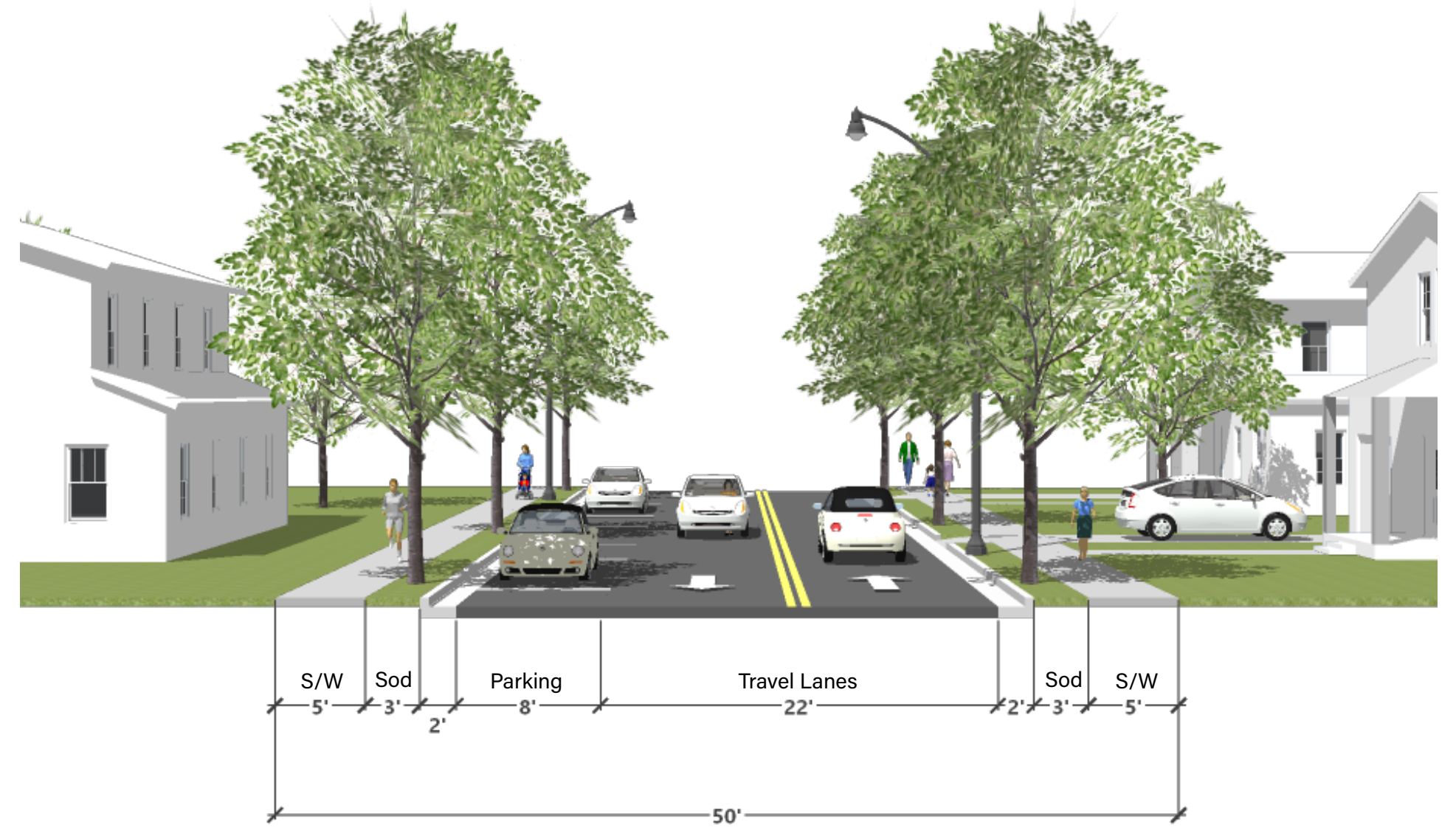
NOTE:

Multimodal Trail is intended to meander in and out of the proposed ROW. Final location may vary based on grading, utilities & final engineering.

NEIGHBORHOOD ROAD OPTION 1 - 50' ROW



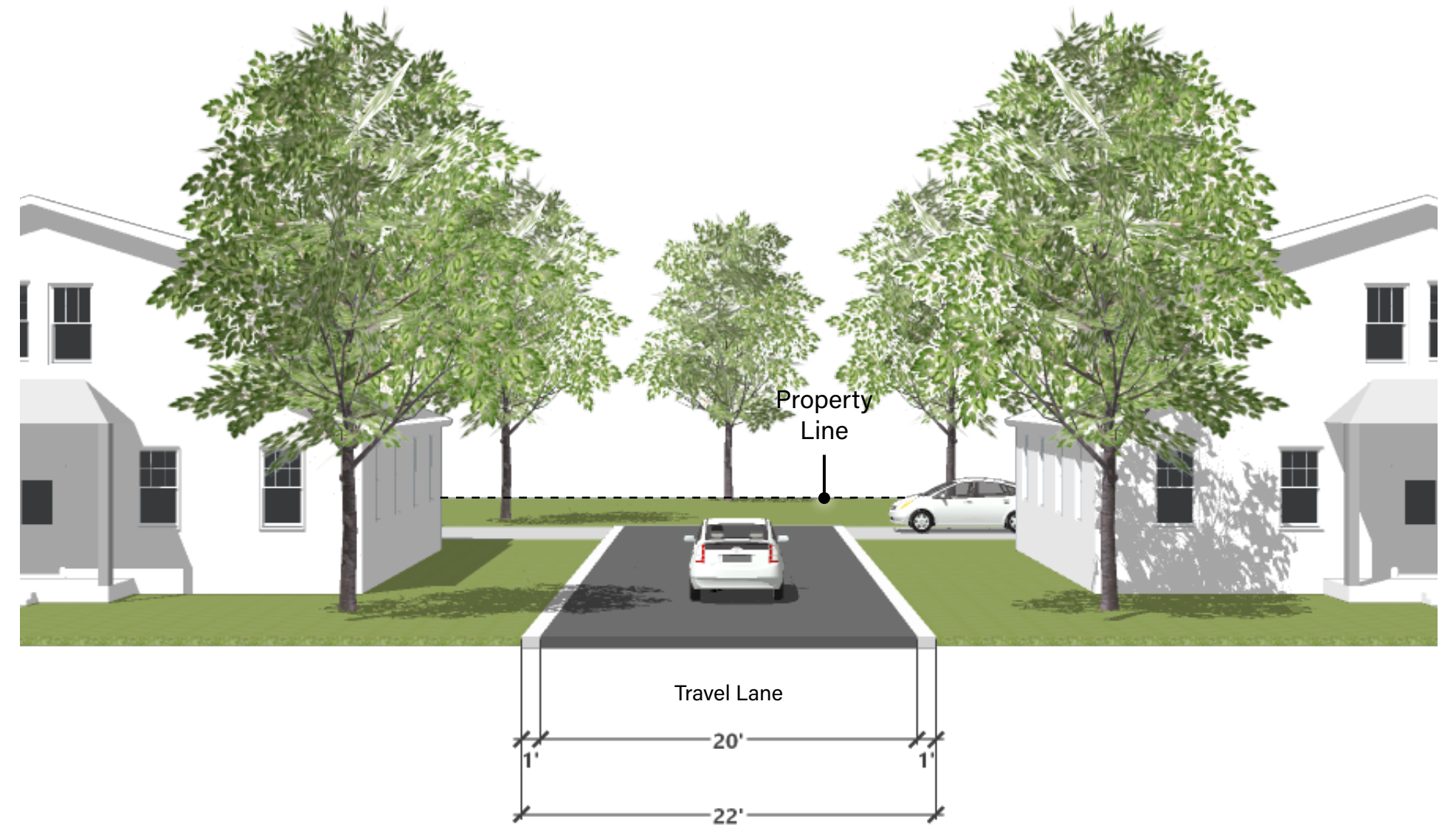
OPTION 2 - 50' ROW WITH PARKING ON ONE SIDE



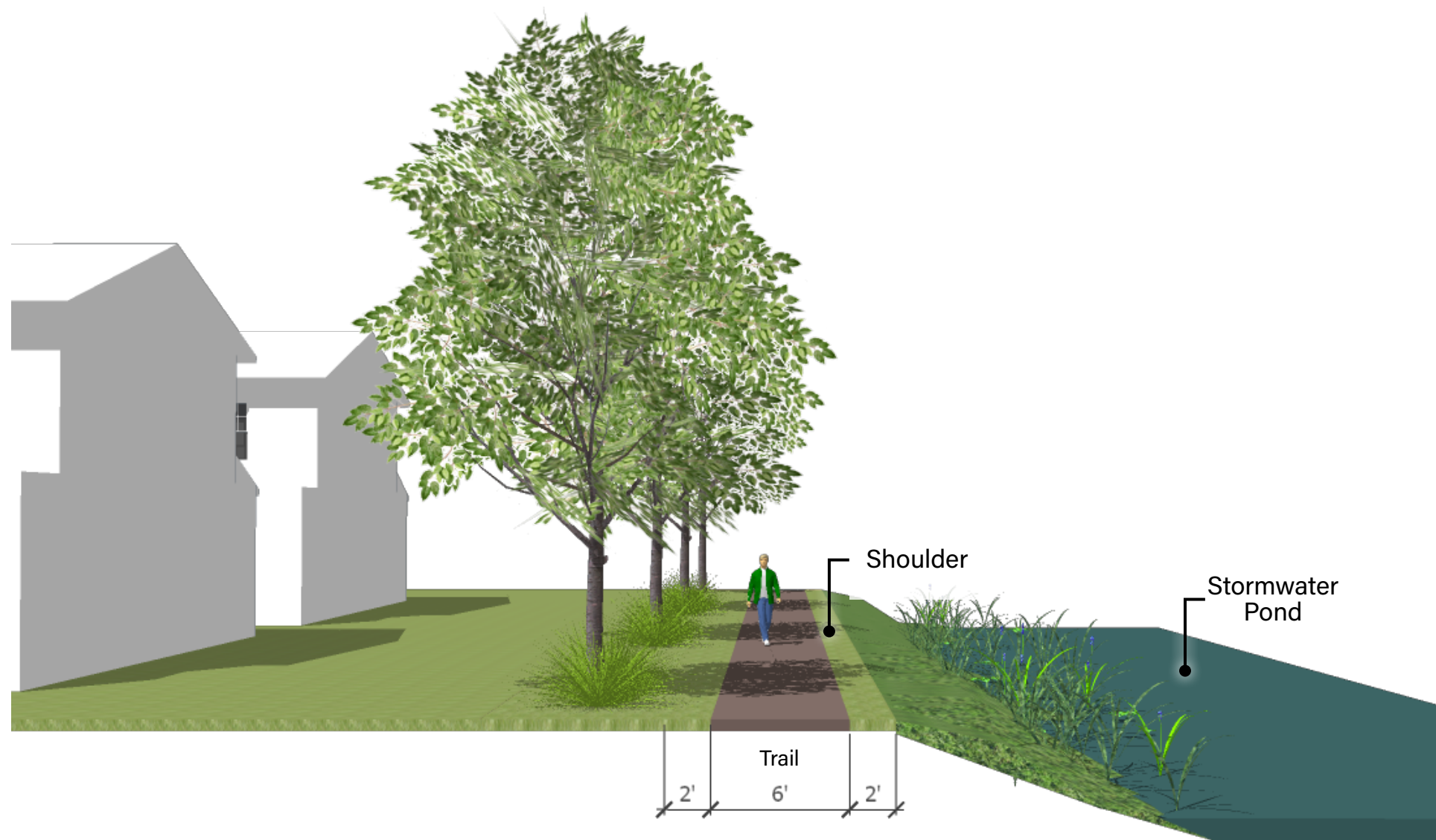
ALLEY ROAD OPTION 1 - PARALLEL 22' ROW



OPTION 2 - PAIRED 22' ROW

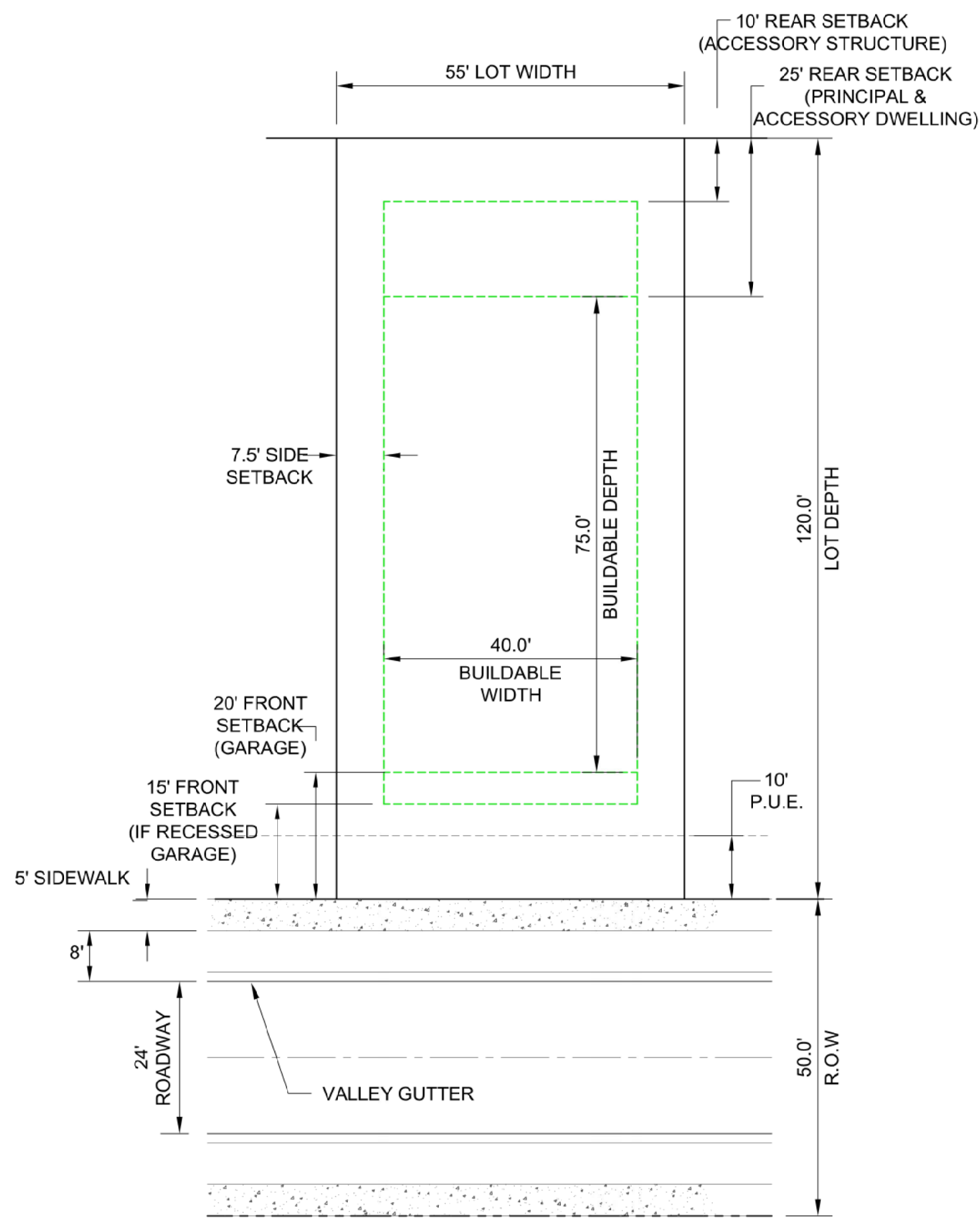


PEDESTRIAN PATH 6' TRAIL

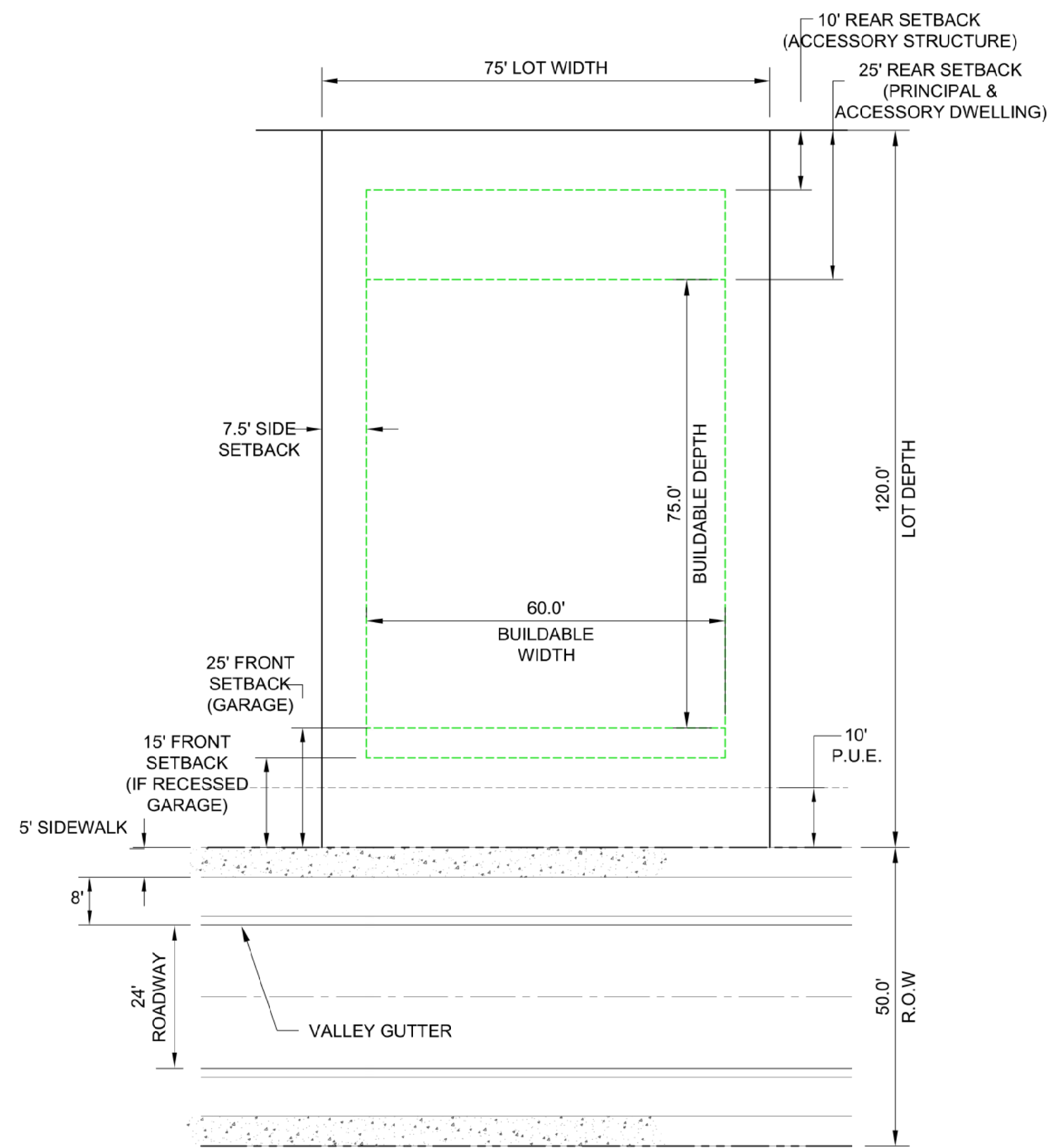


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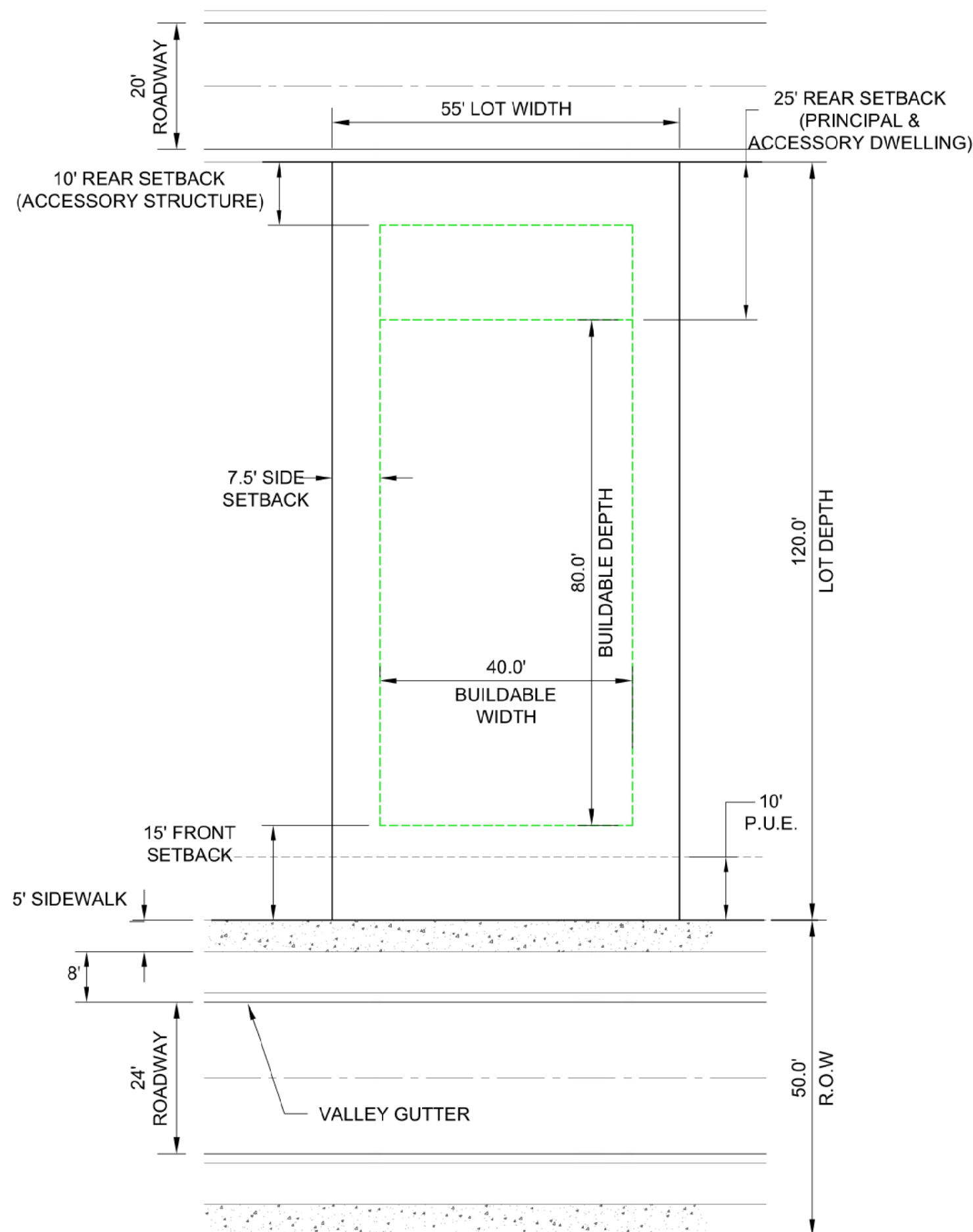
55' LOT FRONT LOAD GARAGE



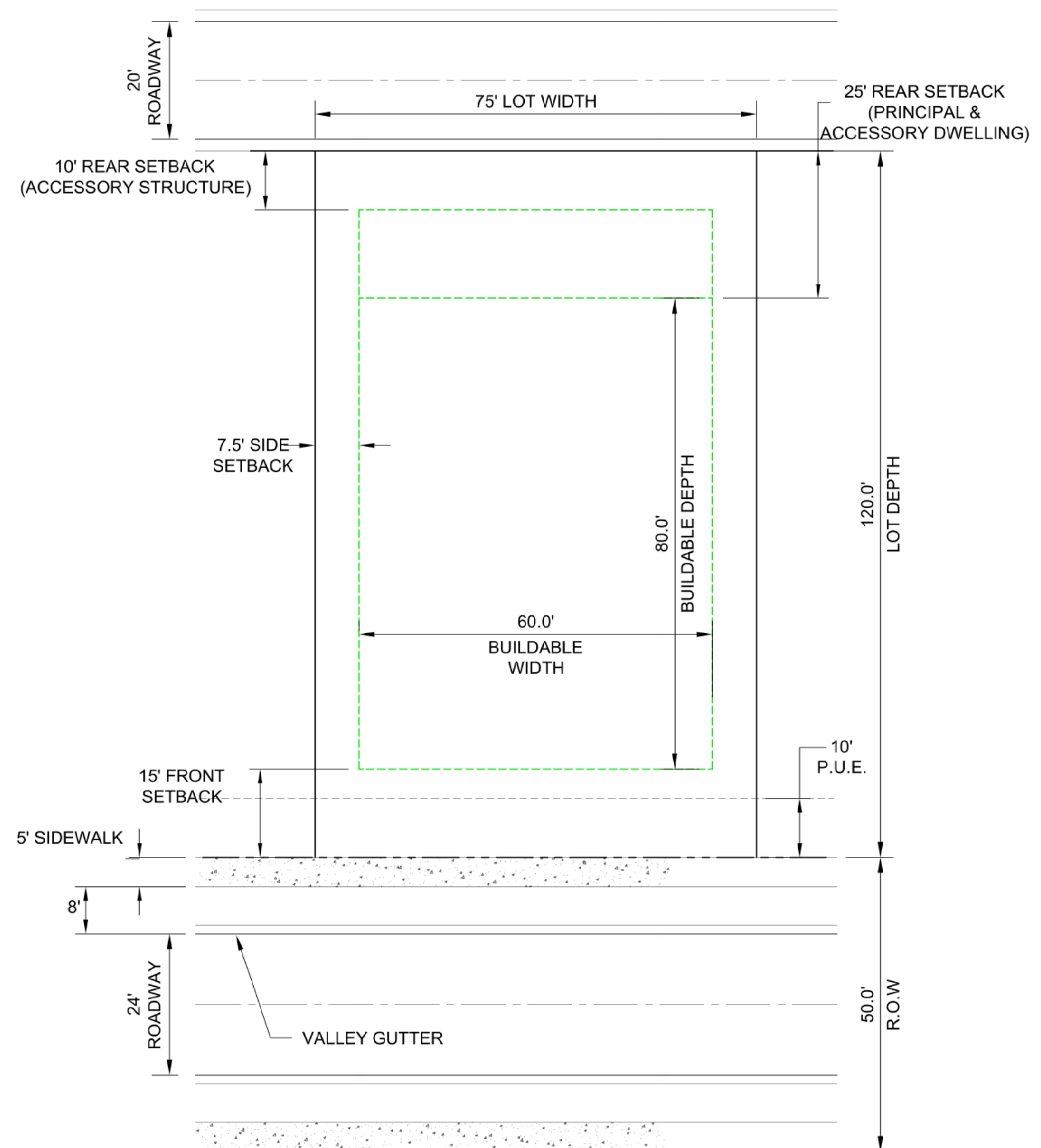
75' LOT FRONT LOAD GARAGE



55' LOT REAR LOAD GARAGE



75' LOT REAR LOAD GARAGE



MISSION RISE
Project № 23017.1, v1.3
October 2023

**TRAFFIC IMPACT ANALYSIS
TOWN OF HOWEY-IN-THE HILLS
FLORIDA**

Prepared by:



Traffic & Mobility Consultants
3101 Maguire Boulevard, Suite 265
Orlando, Florida 32803
www.trafficmobility.com
(407) 531-5332

Prepared for:

ASF TAP Florida I, LLC
1170 Peachtree Street Northeast, Suite 1150
Atlanta, Georgia 30309

EXECUTIVE SUMMARY

Project Information

Name: Mission Rise

Location: West of SR 19 (South Palm Avenue), east of Silverwood Lane, and south of Number 2 Road in the Town of Howey-in-the-Hills, Lake County, Florida

Description: 499 Single Family Residential Units

Access Plan: One (1) full access at the intersection of Number 2 Road and Spine Road
One (1) full access at the intersection of SR 19 and Revels Road
One (1) full access at the intersection of Revels Road and Orange Blossom Road (expected to carry limited traffic)

Findings

Trip Generation: 4,428 Daily Trips / 322 AM Peak Hour Trips / 451 PM Peak Hour Trips

Roadway Capacity: The segments of SR 19, from Lane Park Road to Central Avenue and from CR 455 to CR 478 are projected to operate over their capacities at the project buildout.

Intersection Capacity: The intersections of SR 19 and CR 48, SR 19 and Central Avenue, SR 19 and Revels Road, and SR 19 and CR 455 are projected to experience delays in the buildout condition. The project does not have a significant impact on the intersections.

Recommendations

Intersection Improvements: Retime the signal or construct a roundabout at the intersections of SR 19 and CR 48 to maintain LOS standards.

Provide traffic signals on SR 19 at Central Avenue, Revels Road, and CR 455 to maintain LOS standards. A signal warrant analysis is recommended and should be provided in separate reports.

Construct a 430-foot northbound left turn lane and a 405-foot southbound right turn lane at the intersection of SR 19 and Revels Road.

Construct a 655-foot westbound left turn lane and a 420-foot eastbound right turn lane at the intersection of Number 2 Road and Spine Road.

PROFESSIONAL ENGINEERING CERTIFICATION

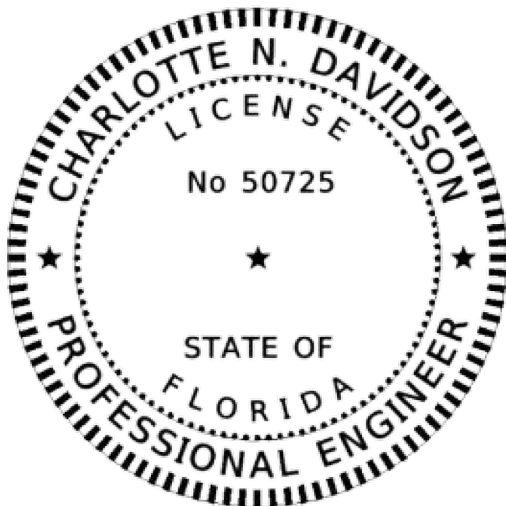
I hereby certify that I am a Professional Engineer properly registered in the State of Florida practicing with Traffic & Mobility Consultants LLC, a corporation authorized to operate as an engineering business, CA-30024, by the State of Florida Department of Professional Regulation, Board of Professional Engineers, and that I have prepared or approved the evaluations, findings, opinions, conclusions, or technical advice attached hereto for:

PROJECT: Mission Rise

LOCATION: Town of Howey-in-the-Hills, Florida

CLIENT: ASF TAP Florida, LLC

I hereby acknowledge that the procedures and references used to develop the results contained in these computations are standard to the professional practice of Transportation Engineering as applied through professional judgment and experience.



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

Charlotte N Davidson
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Date: 2023.10.18 13:47:46 -04'00'

ON THE DATE ADJACENT TO THE SEAL

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1.0 INTRODUCTION

This Traffic Impact Analysis (TIA) was conducted to assess the impact of the proposed Mission Rise development in the town of Howey-in-the-Hills, Florida. The proposed development consists of 499 single-family units with an anticipated buildout year of 2033. This study conforms to the Tier 2 TIA requirements of the Town of Howey-in-the-Hills and Lake County. The analysis was prepared in accordance with the approved methodology. The study has been updated to incorporate comments received from the Town of Howey-in-the-Hills. The methodology and the response to comments letter are included in **Appendix A**.

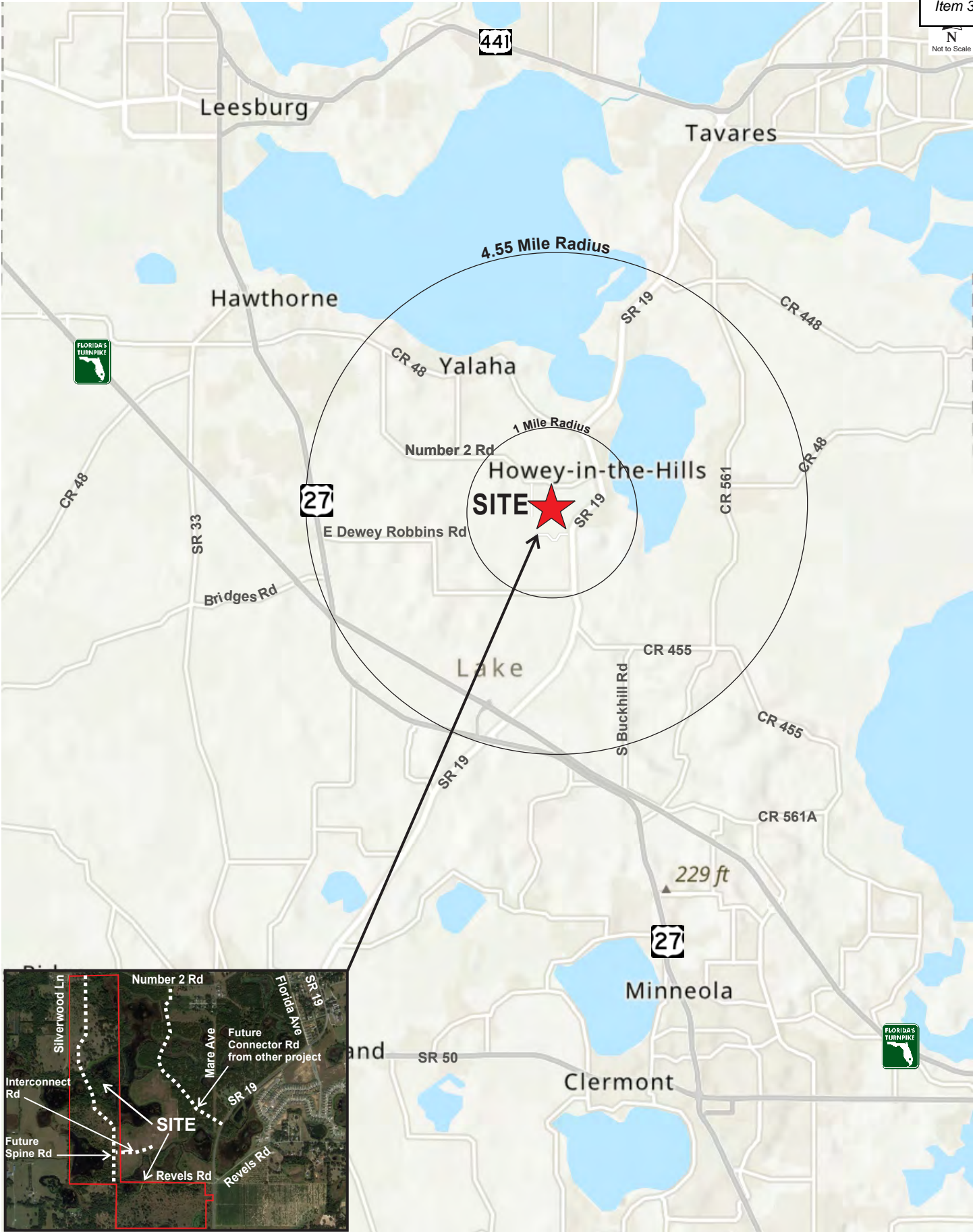
The site is located east of Silverwood Lane, west of SR 19 (South Palm Avenue), and south of Number 2 Road. **Figure 1** depicts the site location and the surrounding transportation network.

The development will be accessed via the intersections of Number 2 Road and Spine Road (future road), SR 19 and Revels Road, and Revels Road and Orange Blossom Road. The preliminary development site plan is provided in **Appendix B**.

Data used in the analysis consisted of site plan/development information provided by the project engineers, AM and PM peak hour intersection traffic counts obtained by Traffic & Mobility Consultants LLC, FDOT's *2023 Multimodal Quality/Level of Service (MQ/LOS) Handbook* and roadway capacities obtained from the *2022 Lake County Congestion Management Process (CMP) Database*.

1.1 Study Area

The project study area was established based on the standard requirements of the Lake Sumter Metropolitan Planning Organization (LSMPO) methodology and the Town of Howey-in-the-Hills *Land Development Code (LDC)*. In accordance with the requirements of Tier 2 TIA methodology, the impact area includes roadway segments and intersections within a 4.55-mile radius of the site in addition to roadways where the development traffic is expected to consume 5% or more of their adopted Level of Service (LOS) capacities. The roadway segments characteristics were obtained from the *2022 Lake County Congestion Management Process (CMP) Database* and *2023 FDOT Multimodal Quality/Level of Service (Q/LOS) Handbook Appendix B*, included in **Appendix C**. The project study area determination is provided in **Table 1**, as determined in the approved methodology.



**Table 1
Study Area**

Roadway Segment	SEG ID	No Lns	Area Type	Median Type	Speed Limit	LOS Std	Pk Dir Cap	Dir	Project		Within 1-Mile? **	% Cap	In Study?
									Dist	Trips			
CR 455													
SR 19 to CR 561	950	2	R	Undivided	45	C	740	EB WB	10%	17 28	NO	2.3% 3.8%	NO
CR 561 to CR 561A	960	2	R	Undivided	25	C	410	EB WB	5%	8 14	NO	2.0% 3.4%	NO
CR 48													
US 27 to Lime Ave	1240	2	U	Undivided	40	D	1,080	EB WB	15%	43 25	NO	4.0% 2.3%	NO
Lime Ave to SR 19	1250	2	U	Undivided	40	D	1,080	EB WB	2%	6 3	NO	0.6% 0.3%	NO
CR 561 to Ranch Rd	1260	2	U	Undivided	40	D	840	EB WB	3%	5 9	NO	0.6% 1.1%	NO
Ranch Rd to CR 448A	1270	2	R	Undivided	40	C	410	EB WB	3%	5 9	NO	1.2% 2.2%	NO
CR 561													
CR 448 to CR 48	1410	2	U	Undivided	50	D	1,080	NB SB	0%	0 0	NO	0.0% 0.0%	NO
CR 48 to South Astatula City Limit	1420	2	U	Undivided	40	D	620	NB SB	3%	9 5	NO	1.5% 0.8%	NO
South Astatula City Limit to CR 455	1430	2	U	Undivided	40	D	1,080	NB SB	3%	9 5	NO	0.8% 0.5%	NO
CR 455 to Howey Cross Rd	1440	2	R	Undivided	35	C	470	NB SB	2%	6 3	NO	1.3% 0.6%	NO
Howey Cross Rd to Turnpike Rd / CR 561A	1450	2	R	Undivided	40	C	640	NB SB	2%	6 3	NO	0.9% 0.5%	NO
SR 19													
Lane Park Rd to CR 48	3040	2	U	Undivided	55	D	920	NB SB	23%	38 65	NO	4.1% 7.1%	YES
CR 48 to Central Ave	3050	2	U	Undivided	40	D	700	NB SB	25%	42 71	NO	6.0% 10.1%	YES
Central Ave to CR 455	3060	2	U	Undivided	35	D	1,200	NB SB	50%	142 84	YES	11.8% 7.0%	YES
CR 455 to US 27 / SR 25	3070	2	R	Undivided	55	C	450	NB SB	35%	99 58	NO	22.0% 12.9%	YES
US 27 / SR 25 to CR 478	3080	2	R	Undivided	55	C	450	NB SB	20%	57 33	NO	12.7% 7.3%	YES
SR 91 (Florida Turnpike)													
US 27/SR 25 to US 27/SR 25/SR 19 Interchange	3566	4	U	Freeway	70	B	2,230	EB WB	10%	17 28	NO	0.8% 1.3%	NO
US 27/SR 25													
SR 19 to CR 561	3830	4	U	Divided	55	D	3,280	EB WB	15%	25 43	NO	0.8% 1.3%	NO
Central Ave													
SR 19 to Mare Ave	N/A	2	U	Undivided	30	D	770 *	EB WB	10%	17 28	YES	2.2% 3.6%	YES
Number 2 Rd													
Mare Ave to Silverwood Ln	N/A	2	U	Undivided	30	D	730 *	EB WB	35%	58 99	YES	7.9% 13.6%	YES
Silverwood Ln to CR 48	N/A	2	U	Undivided	45	D	730 *	EB WB	15%	25 43	YES	3.4% 5.9%	YES

Source: 2022 Lake County CMP Database

* 2023 FDOT Multimodal Quality/Level of Service Handbook, Appendix B: Florida's Generalized Service Volume Tables

Bold numbers represent capacity equal or higher than 5%.

Based on the study area analysis presented in **Table 1**, the following roadway segments were analyzed for the PM peak hour:

- SR 19
 - Lane Park Road to CR 48
 - CR 48 to Central Avenue
 - Central Avenue to CR 455
 - CR 455 to US 27 / SR 25
 - US 27 / SR 25 to CR 478
- Central Avenue
 - SR 19 to Mare Avenue
- Number 2 Road
 - Mare Avenue to Silverwood Lane
 - Silverwood Lane to CR 48

The following intersections were analyzed for the AM and PM peak hours:

- SR 19 and CR 48 (Signalized)
- SR 19 and Central Avenue (Unsignalized)
- Central Avenue and South Florida Avenue (Unsignalized)
- SR 19 and Revels Road (Unsignalized) (East Project Access)
- SR 19 and CR 455 (Unsignalized)
- Spine Road and Interconnect Road (Proposed)
- Number 2 Road and Spine Road (North Project Access) (Proposed)
- Revels Road and Spine Road (Proposed)
- Revels Road and Orange Blossom Road (South Project Access)

2.0 EXISTING CONDITIONS ANALYSIS

Existing conditions in the vicinity of the site were analyzed to establish a baseline for the traffic conditions prevailing in the vicinity of the proposed development. The analysis included a review of existing roadway segment capacity and analysis of the intersection operations at the study intersections.

2.1 Roadway Segment Capacity

Existing roadway conditions were analyzed by comparing the existing traffic volumes within the study area and the adopted level of service (LOS) standards for the roadway segments. **Table 2** summarizes the roadway segment capacity analysis.

Table 2
Existing Roadway Segment Capacity Analysis

Roadway Segment	Seg ID	No Lns	LOS Std	Pk Dir Cap	Dir	Existing Vol	LOS	V/C	Deficient?
*Central Ave									
SR 19 to Mare Ave	N/A	2	D	530	EB	57	C	0.11	NO
					WB	59	C	0.11	NO
SR 19									
Lane Park Rd to CR 48	3040	2	D	920	NB	610	C	0.66	NO
					SB	656	C	0.71	NO
CR 48 to Central Ave	3050	2	D	700	NB	433	C	0.62	NO
					SB	372	C	0.53	NO
Central Ave to CR 455	3060	2	D	1,200	NB	433	B	0.36	NO
					SB	372	B	0.31	NO
CR 455 to US 27 / SR 25	3070	2	C	450	NB	507	D	1.13	YES
					SB	435	C	0.97	NO
US 27 / SR 25 to CR 478	3080	2	C	450	NB	466	D	1.04	YES
					SB	519	D	1.15	YES
Number 2 Rd									
Mare Avenue to Silverwood Ln	N/A	2	D	400	EB	57	C	0.14	NO
					WB	59	C	0.15	NO
Silverwood Ln to CR 48	N/A	2	D	400	EB	57	C	0.14	NO
					WB	59	C	0.15	NO

Source: 2022 Lake County CMP Database

* Counts were obtained from PM Peak Turning Movement Counts

**A reduction of 25% was applied to the Peak Hour Directional Capacity of 530, as Number 2 Road is a substandard road

The analysis indicates that all study roadway segments currently operate adequately within their capacities except the segments of SR 19 from CR 455 to CR 478 which currently operate over capacity.

2.2 Intersection Capacity

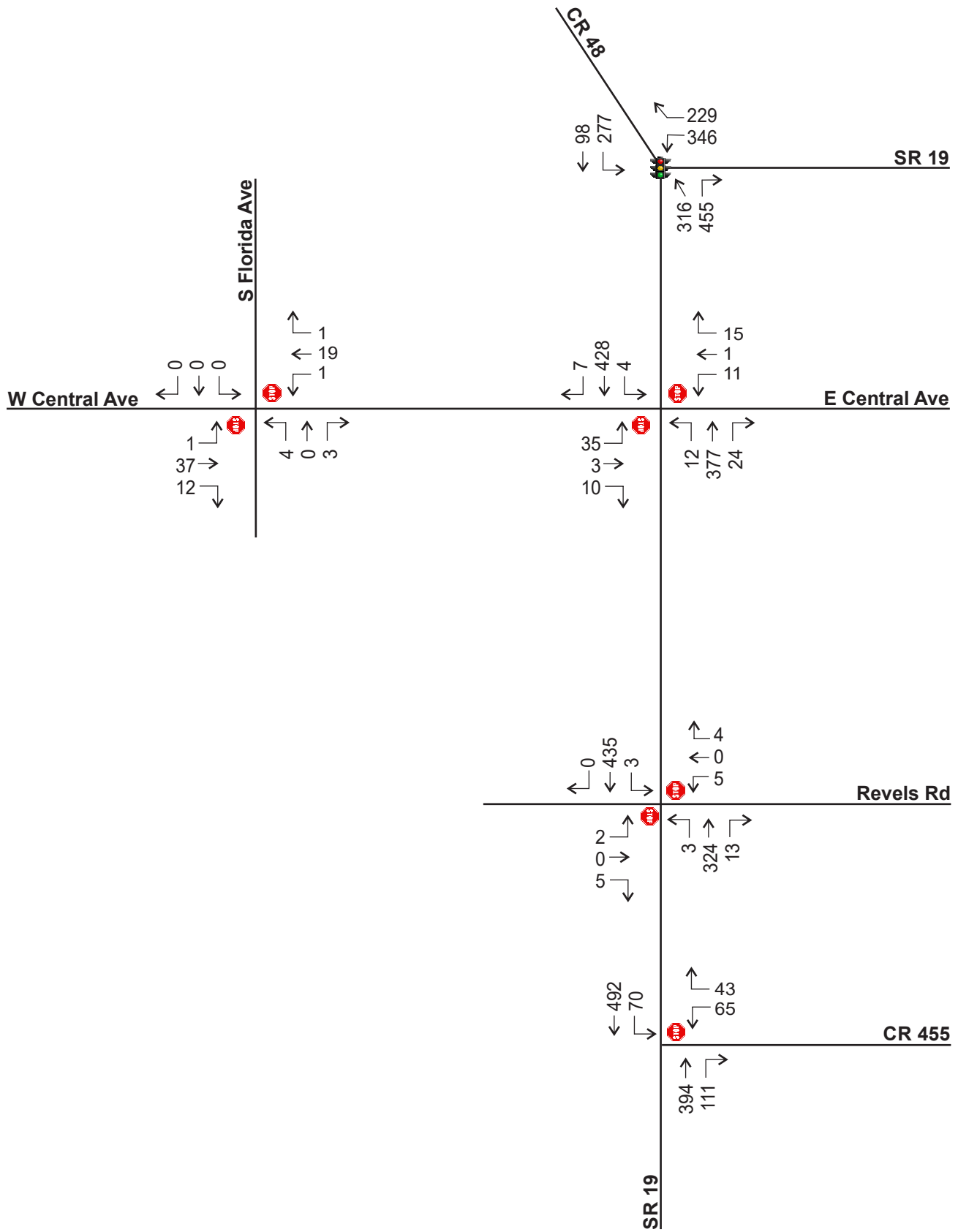
The intersection capacity analysis was performed for the AM and PM peak hour periods. The capacity analysis was performed using *Synchro* and the methods of the *Highway Capacity Manual (HCM)*. Turning movement volumes obtained during the AM and PM peak hour are displayed in **Figure 2** and **Figure 3**, respectively. The counts at SR 19 and CR 455 were collected on January 24, 2023, which coincides with a seasonal factor of 1.0. The remaining intersection turning movement counts were collected on July 19, 2023, during the off-peak season; therefore, a seasonal factor of 1.06 was applied to these counts. The turning movement counts and the seasonal factor report are included in **Appendix D**.

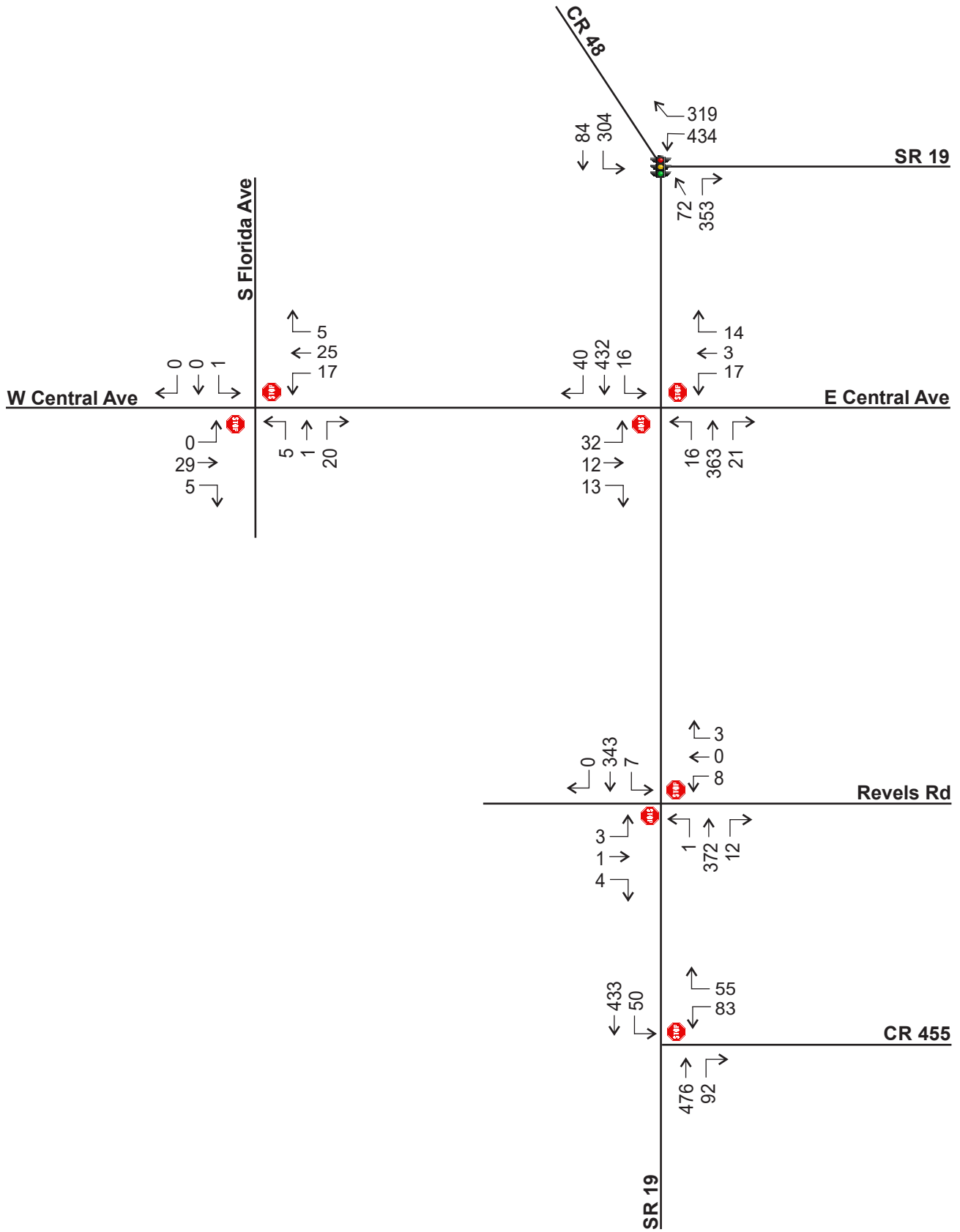
The results of the intersection capacity analysis, summarized in **Table 3**, reveal that all study intersections are currently operating at adequate LOS. Detailed *HCM* analysis worksheets are included in **Appendix E**.

Table 3
Existing Intersection Capacity Analysis

Intersection	Traffic Control	Time Period	EB		WB		NB		SB		Overall	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR 19 & CR 48	Signal	AM	--	--	50.7	D	20.3	C	11.2	B	29.5	C
		PM	--	--	87.5	F	17.1	B	10.7	B	55.7	E
SR 19 & Central Ave	TWSC	AM	20.7	C	15.1	C	8.9	A	8.8	A	--	--
		PM	22.6	C	17.9	C	9.0	A	8.8	A	--	--
W Central Ave & S Florida Ave	TWSC	AM	7.3	A	7.3	A	8.8	A	0.0	A	--	--
		PM	0.0	A	7.3	A	8.8	A	9.4	A	--	--
SR 19 & Revels Rd	TWSC	AM	13.3	B	15.0	C	8.3	A	8.0	A	--	--
		PM	14.0	B	16.1	C	8.1	A	8.2	A	--	--
SR 19 & CR 455	TWSC	AM	--	--	25.1	D	--	--	8.9	A	--	--
		PM	--	--	26.7	D	--	--	9.0	A	--	--

Average delay is in seconds





3.0 PROJECT TRAFFIC

3.1 Trip Generation

The Trip Generation Analysis was conducted using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*. The ITE Information sheets are included in **Appendix F**. **Table 4** summarizes the resulting trip generation analysis.

**Table 4
Trip Generation Analysis**

ITE Code	Land Use	Size	Daily		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	Total	Enter	Exit	Rate	Total	Enter	Exit
210	Single Family Residential (Detached)	499 DU	8.87	4,428	0.64	322	81	241	0.90	451	284	167

Trip Generation analysis based on ITE Trip Generation Manual, 11th Edition.

The proposed development is projected to generate 4,428 new daily trips, of which 322 trips occur during the AM peak hour and 451 trips occur during the PM peak hour.

3.2 Trip Distribution

A trip distribution pattern was developed using the *Central Florida Regional Planning Model (CFRPMv7)*. The model distribution was slightly adjusted based on local knowledge, professional engineering judgement, and the location of the development with respect to the study area attractions and activity centers to reflect the prevailing travel patterns in the study area and the surrounding transportation network. The raw model plots are provided in **Appendix G**, and the project trip distribution pattern is shown in **Figure 4**. Detailed trip distribution near the project site is shown in **Figure 5**.

4.0 PROJECTED CONDITIONS ANALYSIS

An analysis of projected conditions was conducted to determine the impact of the proposed development on the roadway segments capacity, as well as the proposed access connections and intersections to the site. The project buildout year for the analysis is 2033.

4.1 Planned and Programmed Improvements

The *Lake-Sumter Metropolitan Planning Organization (LSMPO) 2023-2027 Transportation Improvement Program (TIP)*, as well as *LSMPO 2022 List of Priority Projects (LOPP)* were reviewed to identify any planned or programmed improvements to the transportation facilities in this area. The improvements are listed in **Table 5**. Construction is not planned to be completed within the next three (3) years for either improvement. Excerpts from the *LSMPO TIP* and *LSMPO LOPP* are provided in **Appendix H**.

**Table 5
Planned and Programmed Improvements**

FM #	Project Name	From	To	Proposed Phase	Proposed Phase FY	Description of Improvement
2383191	SR 19 *	CR 48	CR 561	PDE-PE-ENV	2023	Add Lanes & Reconstruct
238319-1	SR 19 **	Howey Bridge	CR 561	-	-	Road Widening

* LSMPO TIP Fiscal Year 2023-2027
 ** LSMPO 2022 LOPP Tier 2 project

4.2 Background Traffic Projection

Projected traffic includes background traffic volumes, the project trips, and committed trips. Projected background traffic for the buildout year of 2033 was estimated by applying the growth rates obtained from *2022 Lake County CMP Database* to the existing traffic volumes. A minimum of 2% annual growth rate was applied to existing traffic volumes for which published annual growth rates are below 2%. The committed trips for the following approved developments within the study area are included in **Appendix I**:

- Whispering Hills
- Talichet Phase 1 and Phase 2
- The Reserve at Howey in the Hills
- Lake Hills (Four Seasons). Trips were estimated based on the trip generation analysis and the trip distribution obtained from the methodology.
- Watermark (Simpson)

4.3 Roadway Segment Capacity

Projected roadway conditions were analyzed by comparing the projected traffic volumes on the study segments to their service volumes and adopted LOS standards. The total projected traffic volume is composed of background traffic, vested trips and project trips. **Table 6** summarizes the roadway segment capacity analysis, which reveals the following:

- SR 19 from Lane Park Road to Central Avenue and from CR 455 to CR 478 are projected to operate over their capacities due to background traffic.
- All remaining roadway segments are projected to continue to operate adequately at project buildout.

Roadway Segment Capacity Analysis with Recommended Mitigation

Number 2 Road is a substandard road with reduced capacity. It is projected to operate at an acceptable LOS; however, operational safety is a concern due to its narrow width. Lake County would need to improve it in the future to achieve safety.

SR 19 from CR 48 to CR 561 is programmed in the *TIP* to be widened to four (4) lanes. The roadway segment capacity analysis reveals that the widening of SR 19 to 4-lanes is projected to improve the capacity of the segment from Lane Park Road to CR 48. The segments of SR 19 from CR 48 to Central Avenue and from CR 455 to CR 478 would need to be widened to 4-lanes to achieve acceptable LOS conditions at project buildout, as summarized in **Table 7**.

**Table 6
Projected Roadway Segment Capacity Analysis**

Roadway Segment	No Lns	LOS Std	PH Dir Capacity	Dir	Exist Vol	Growth Rate	2033 Backg'd	Vested Trips	Total Backg'd Volume	Backg'd LOS	Backg'd V/C	Trip Distr	Proj Dir	Project Volume	Total Volume	Final LOS	Final V/C
*Central Ave																	
SR 19 to Mare Ave	2	D	530	NB/EB SB/WB	57 59	2.00%	70 72	53 85	123 157	C C	0.23 0.30	10%	OUT IN	17 28	140 185	C C	0.26 0.35
SR 19																	
Lane Park Rd to CR 48	2	D	920	NB/EB SB/WB	610 656	2.00%	744 800	125 264	869 1,064	C F	0.94 1.16	23%	OUT IN	38 65	907 1,129	D F	0.99 1.23
CR 48 to Central Ave	2	D	700	NB/EB SB/WB	433 372	2.00%	528 454	266 355	794 809	F F	1.13 1.16	25%	OUT IN	42 71	836 880	F F	1.19 1.26
Central Ave to CR 455	2	D	1,200	NB/EB SB/WB	433 372	2.00%	528 454	437 272	965 726	D C	0.80 0.61	50%	IN OUT	142 84	1,107 810	D C	0.92 0.68
CR 455 to US 27/ SR 25	2	C	450	NB/EB SB/WB	507 435	2.00%	619 531	286 178	905 709	E D	2.01 1.58	35%	IN OUT	99 58	1,004 767	E E	2.23 1.70
US 27/ SR 25 to CR 478	2	C	450	NB/EB SB/WB	466 519	2.00%	569 633	286 178	855 811	E E	1.90 1.80	10%	IN OUT	28 17	883 828	E E	1.96 1.84
**Number 2 Rd																	
Mare Ave to Silverwood Ln	2	D	400	NB/EB SB/WB	57 59	2.00%	70 72	53 53	123 125	C C	0.31 0.31	35%	OUT IN	58 99	181 224	C D	0.45 0.56
Silverwood Ln to CR 48	2	D	400	NB/EB SB/WB	57 59	2.00%	70 72	53 53	123 125	C C	0.31 0.31	15%	IN OUT	43 25	166 150	C C	0.42 0.38

Source: 2022 Lake County Annual Traffic Counts

*Exiting Counts were obtained from PM Peak Turning Movement Counts

**A reduction of 25% was applied to the Peak Hour Directional Capacity of 530, as Number 2 Road is a substandard road

**Table 7
Projected Roadway Segment Capacity Analysis with Mitigation**

Roadway Segment	No Lns	LOS Std	PH Dir Capacity	Dir	Exist Vol	Growth Rate	2033 Backg'd	Vested Trips	Total Backg'd Volume	Backg'd LOS	Backg'd V/C	Trip Distr	Proj Dir	Project Volume	Total Volume	Final LOS	Final V/C	Project Responsible ?
SR 19																		
Lane Park Rd to CR 48	4	D	1,480	NB/EB SB/WB	610 656	2.00%	744 800	125 264	869 1,064	C D	0.59 0.72	23%	OUT IN	38 65	907 1,129	D D	0.61 0.76	NO NO
CR 48 to Central Ave	4	D	1,480	NB/EB SB/WB	433 372	2.00%	528 454	266 355	794 809	D D	0.54 0.55	25%	OUT IN	42 71	836 880	D D	0.56 0.59	NO NO
CR 455 to US 27/ SR 25	4	C	1,360	NB/EB SB/WB	507 435	2.00%	619 531	286 178	905 709	C C	0.67 0.52	35%	IN OUT	99 58	1,004 767	C C	0.74 0.56	NO NO
US 27/ SR 25 to CR 478	4	C	1,360	NB/EB SB/WB	466 519	2.00%	569 633	286 178	855 811	C C	0.63 0.60	10%	IN OUT	28 17	883 828	C C	0.65 0.61	NO NO
**Number 2 Rd																		
Mare Ave to Silverwood Ln	2	D	530	NB/EB SB/WB	57 59	2.00%	70 72	53 53	123 125	C C	0.23 0.24	35%	OUT IN	58 99	181 224	C D	0.34 0.42	NO NO
Silverwood Ln to CR 48	2	D	530	NB/EB SB/WB	57 59	2.00%	70 72	53 53	123 125	C C	0.23 0.24	15%	IN OUT	43 25	166 150	C C	0.31 0.28	NO NO

Source: 2022 Lake County Annual Traffic Counts

*Exiting Counts were obtained from PM Peak Turning Movement Counts

**A reduction of 25% was applied to the Peak Hour Directional Capacity of 530, as Number 2 Road is a substandard road

Note: Roadway mitigations are necessitated by background traffic. Number 2 Road is an existing substandard facility.

The development is not responsible for these improvements, per Florida Statutes.

4.4 Intersection Capacity Analysis

The projected volumes for the intersection capacity and operations analysis were calculated by assigning the project trips to the project driveways and adding those volumes to the background volumes and vested trips at the study intersections. Projected background traffic was estimated as discussed in the previous section. Projected background traffic on the proposed Spine Road and Revels Road were estimated based on the *CFRPMv7* model daily volumes. The AADT model plots are included in **Appendix J**.

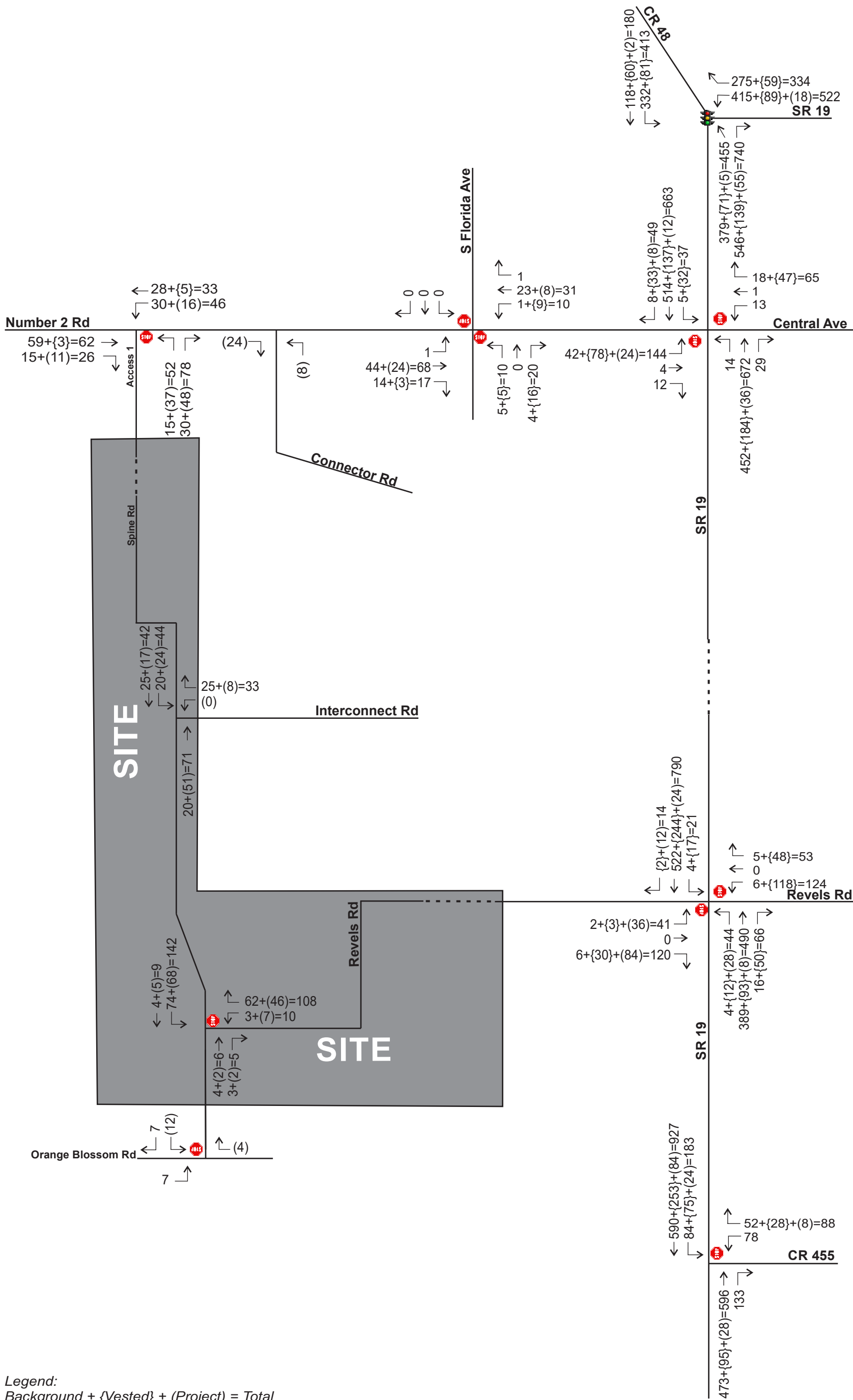
Intersection Capacity Analysis

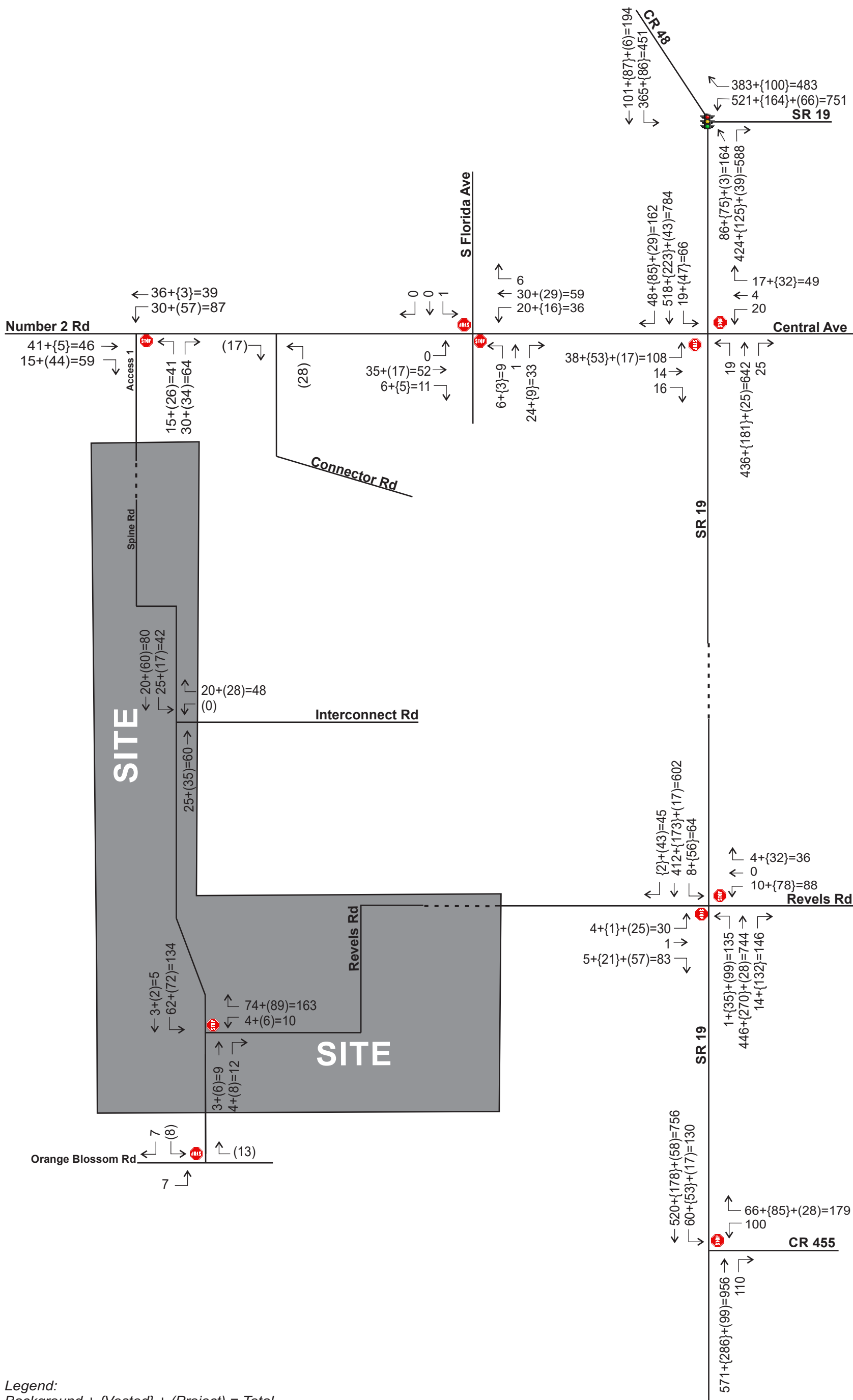
The projected AM and PM peak hour volumes are illustrated in **Figure 6** and **Figure 7**, respectively. The analysis includes right and left turn lanes on SR 19, and a right turn lane on Revels Road at the intersection of SR 19 and Revels Road. It also includes right and left turn lanes on Number 2 Road at the intersection of Spine Road and Number 2 Road. The results of the analysis are summarized in **Table 8**, and the analysis worksheets are included in **Appendix K**. The intersection volume projection sheets are included in **Appendix L**.

Table 8
Projected Intersection Capacity Analysis

Intersection	Traffic Control	Time Period	EB		WB		NB		SB		Overall	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR 19 & CR 48	Signal	AM	--	--	177.1	F	29.7	C	22.1	C	87.2	F
		PM	--	--	>300	F	21.5	B	12.1	B	234.3	F
SR 19 & Central Ave	TWSC	AM	>300	F	26.5	D	10.1	B	10.3	B	--	--
		PM	>300	F	89.7	F	11.4	B	10.3	B	--	--
W Central Ave & S Florida Ave	TWSC	AM	7.3	A	7.4	A	9.2	A	0.0	A	--	--
		PM	0.0	A	7.4	A	9.3	A	10.6	B	--	--
SR 19 & Revels Rd / Project Entrance	TWSC	AM	51.2	F	>300	F	10.1	B	8.8	A	--	--
		PM	135.1	F	>300	F	9.9	A	10.7	B	--	--
SR 19 & CR 455	TWSC	AM	--	--	>300	F	--	--	10.7	B	--	--
		PM	--	--	>300	F	--	--	12.7	B	--	--
Spine Rd & Interconnect Rd / Proposed	TWSC	AM	--	--	8.8	A	--	--	7.4	A	--	--
		PM	--	--	8.8	A	--	--	7.4	A	--	--
Number 2 Rd and Spine Rd / Project Entrance	TWSC	AM	--	--	7.5	A	9.8	A	--	--	--	--
		PM	--	--	7.6	A	9.9	A	--	--	--	--
Spine Rd & Revels Rd	TWSC	AM	--	--	9.1	A	--	--	7.5	A	--	--
		PM	--	--	9.3	A	--	--	7.5	A	--	--
Revels Rd & Orange Blossom Rd / Project Entrance	TWSC	AM	7.2	A	--	--	--	--	8.6	A	--	--
		PM	7.3	A	--	--	--	--	8.6	A	--	--

Average delay is in seconds





Legend:
Background + {Vested} + (Project) = Total

The analysis reveals the following:

- The intersection of SR 19 and CR 48 is projected to operate with delay during the AM and the PM peak hour. Further review is needed.
- The intersection of SR 19 and Central Avenue is projected to operate with delay in the eastbound and westbound directions. The westbound movement does not carry any project traffic and it is projected to operate at volume to capacity ratio less than 1.0. Further review is needed.
- The intersection of SR 19 and Revels Road is projected to operate with delay in the eastbound and westbound directions. The westbound movement does not carry any project traffic. Further review is needed.
- The intersection of SR 19 and CR 455 is projected to operate with delay for the westbound left movement. Project trips contribute no traffic to the movement. Further review is needed.

The remaining study intersections are projected to operate adequately at the project buildout.

Intersection Capacity Analysis with Recommended Mitigation

The proposed project does not significantly impact study area intersections. Four (4) intersections have been reviewed further. The intersections are determined to need the following improvements to achieve acceptable LOS conditions at project buildout:

- Retiming the signal is recommended at the intersection of SR 19 and CR 48 OR constructing a 2-lane roundabout at the intersection of SR 19 and CR 48.
- Installing a signal is recommended at the intersection of SR 19 and Central Avenue.
- Installing a signal is recommended at the intersection of SR 19 and Revels Road.
- Installing a signal is recommended at the intersection of SR 19 and CR 455.

The traffic operations for the mitigated intersections are projected to have acceptable LOS, as detailed in **Table 9**. The background conditions and the buildout conditions with the mitigation analysis worksheets are included in **Appendix M**.

**Table 9
Projected Intersection Capacity Analysis with Mitigation**

Intersection	Traffic Control	Peak Period	Scenario	EB		WB		NB		SB		Overall	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SR 19 & CR 48	Option 1: Retiming Signal	AM	Background	--	--	161.9	F	29.5	C	21.8	C	80.1	F
			Buildout	--	--	177.1	F	29.7	C	22.1	C	87.2	F
			Mitigation	--	--	59.4	E	72.4	E	54.1	D	60.9	D
		PM	Background	--	--	>300	F	21.5	C	12.1	B	187.5	F
			Buildout	--	--	>300	F	21.5	C	12.1	B	233.7	F
			Mitigation	--	--	48.7	D	56.5	E	58.2	E	52.6	D
SR 19 & CR 48	Option 2: Roundabout	AM	Background	--	--	161.9	F	29.5	C	21.8	C	80.1	F
			Buildout	--	--	177.1	F	29.7	C	22.1	C	87.2	F
			Mitigation	--	--	14.2	B	23.0	C	11.9	B	17.7	C
		PM	Background	--	--	>300	F	21.5	C	12.1	B	187.5	F
			Buildout	--	--	>300	F	21.5	C	12.1	B	233.7	F
			Mitigation	--	--	12.6	B	15.7	C	23.4	C	16.1	C
SR 19 & Central Ave	Signal	AM	Background	>300	F	24.5	C	9.9	A	10.1	A	--	--
			Buildout	>300	F	26.5	D	10.1	B	10.3	B	--	--
			Mitigation	21.0	C	18.3	B	8.2	A	8.2	A	9.9	A
		PM	Background	>300	F	65.2	E	11.0	B	10.2	B	--	--
			Buildout	>300	F	89.7	F	11.4	B	10.3	A	--	--
			Mitigation	13.3	B	12.0	B	6.8	A	24.7	C	16.9	B
SR 19 & Revels Road	Signal	AM	Background	22.5	C	>300	F	9.7	A	8.8	A	--	--
			Buildout	51.2	F	>300	F	10.1	B	8.8	A	--	--
			Mitigation	18.2	B	16.0	B	5.0	A	6.2	A	7.3	A
		PM	Background	30.0	D	>300	F	9.0	A	10.6	B	--	--
			Buildout	135.1	F	>300	F	9.9	A	10.7	B	--	--
			Mitigation	30.0	C	26.7	C	6.5	A	3.8	A	7.3	A
SR 19 & CR 455	Signal	AM	Background	--	--	>300	F	--	--	10.3	B	--	--
			Buildout	--	--	>300	F	--	--	10.7	B	--	--
			Mitigation	--	--	78.2	E	2.3	A	30.8	C	24.3	C
		PM	Background	--	--	>300	F	--	--	11.6	B	--	--
			Buildout	--	--	>300	F	--	--	12.7	B	--	--
			Mitigation	--	--	130.1	F	6.4	A	62.3	E	44.1	D

Average delay is in seconds

The analysis reveals the following:

- The intersection of SR 19 and CR 48 is projected to operate at an acceptable overall LOS by optimizing the signal timing or by constructing a 2-lane roundabout. Since the intersection can operate adequately by retiming the traffic signal; the project is not responsible to add a roundabout.
- The intersection of SR 19 and Central Avenue is projected to operate adequately at buildout with a signal. The westbound movement does not carry any project traffic. Project contribute 5.9% of the total traffic.
- The intersection of SR 19 and Revels Road is projected to operate adequately at buildout with a signal. The westbound movement does not carry any project traffic. Project contributes 13.6% of the total traffic.
- The intersection of SR 19 and CR 455 is projected to operate adequately at buildout with a signal. The westbound movement does not carry any project traffic. Project contribute 9.0% of the total traffic.

In lieu of contributing a proportionate share to the three (3) intersections needing new traffic signals, the developer is recommending to construct the new traffic signal at SR 19 and Revels Road, which serves as the main access to the project.

5.0 ACCESS REVIEW

The development will be accessed via the intersections of Number 2 Road and Spine Road (future road), SR 19 and Revels Road, and Revels Road and Orange Blossom Road. SR 19 is a 2-lane undivided facility with a posted speed limit of 55 miles per hour (mph) near the project entrance. Number 2 Road is a 2-lane undivided facility with a posted speed limit of 30 mph in the east direction and 45 mph in the west direction near the project entrance. Orange Blossom Road is a 2-lane undivided facility with a posted speed limit of 30 mph near the project entrance.

5.1 Turn Lane Review

A review of the need for turn lanes at the project entrance intersections was conducted based on the Lake County *Land Development Code (LDC)* guidelines, which are provided in **Appendix N**. In accordance with the *LDC* guidelines, right and left turn lanes are warranted at the intersections of SR 19 and Revels Road, and at Number 2 Road and Spine Road. The intersection of Orange Blossom Road and Revels Road is expected to carry limited traffic; therefore, exclusive turn lanes are not recommended.

The recommended lengths of the turn lanes on SR 19 were calculated based on the requirements of the *FDOT Design Manual Exhibit 212-1*, provided in **Appendix O**, and the recommended lengths of the turn lanes on Number 2 Road were calculated based on the Lake County *LDC* guidelines. Per Lake County requirement for turn lane widening on Number 2 Road, the length of tapers will need to be twice the standard length. The calculations are provided as follows:

SR 19 and Revels Road

Left Turn Lane Length = Deceleration Distance + Queue Length

Deceleration at 60 mph (design speed) = 405 feet

95th Percentile Queue Length = 1 x 25 = 25 feet

Northbound Left Turn Lane = 405 feet + 25 feet = 430 feet (including a 50-foot taper)

Right Turn Lane Length = Deceleration Distance

Deceleration at 60 mph (design speed) = 405 feet

Southbound Right Turn Lane = 405 feet

Number 2 Road and Spine Road

Left Turn Lane Length = Taper Length + Storage Length
Taper Length at 50 mph (design speed) = 230 feet x 2 = 460 feet
Storage Length at 50 mph (design speed) = 195 feet
Westbound Left Turn Lane = 460 feet + 195 feet = 655 feet

Right Turn Lane Length = Taper Length + Storage Length
Taper Length at 35 mph (design speed) = 170 feet x 2 = 340 feet
Storage Length at 35 mph (design speed) = 80 feet
Eastbound Right Turn Lane = 340 feet + 80 feet = 420 feet

6.0 STUDY CONCLUSIONS

This traffic analysis was conducted to assess the impact of the proposed Mission Rise development in the Town of Howey-in-the-Hills, Florida. The project will include 499 single family residential units. The analysis included a determination of project trip generation, a review of existing and projected roadway and intersection capacity.

The results of the traffic analysis are summarized as follows:

- The proposed development is projected to generate 4,428 trips per day, of which 322 trips occur during the AM peak hour and 451 trips occur during the PM peak hour.
- SR 19 SR 19 from Lane Park Road to Central Avenue and from CR 455 to CR 478 are projected to operate over their capacities due to background traffic. The development is not responsible for mitigating background deficiencies, per Florida's Statutes.
- SR 19 from CR 48 to CR 561 is programmed in the *TIP* to be widened to 4 lanes.
- All remaining roadway segments are projected to continue to operate adequately at project buildout.
- The intersection of SR 19 and CR 48 is projected to operate with delay during the AM and the PM peak hour. It is recommended to retime the signal or implement a 2-lane roundabout to maintain LOS standards. The development is not responsible to implement a roundabout.
- The intersection of SR 19 and Central Avenue is projected to operate with delay in the eastbound and the westbound movement. The westbound movement does not carry any project traffic.
- The intersection of SR 19 and Revels Road is projected to operate with delay in the eastbound and westbound directions. The westbound movement does not carry any project traffic.

- The intersection of SR 19 and CR 455 is projected to operate with delay for the westbound left movement. Project trips contribute no traffic to the movement.
- In lieu of contributing a proportional share to the three (3) intersections where traffic signals are projected to be needed, the developer is recommending to construct the traffic signal at the intersection of SR 19 and Revels Road.
- A traffic signal at SR 19 and Revels Road traffic signal needs to be warranted based on a signal warrant study of the in-field traffic volumes. An Intersection Control Evaluation (ICE) study will also need to be coordinated with FDOT.
- All remaining study intersections are projected to operate adequately at project buildout.
- The turn lane recommendations are as follows:
 - Construct a 430-foot northbound left turn lane and a 405-foot southbound right turn lane at the intersection of SR 19 and Revels Road.
 - Construct a 655-foot westbound left turn lane and a 420-foot eastbound right turn lane at the intersection of Number 2 Road and Spine Road.

APPENDICES

Appendix A
Study Methodology and Response to Comments Letter



MEMORANDUM

May 23, 2023

Re: Mission Rise
Traffic Impact Analysis Methodology, v1.1
Town of Howey-In-The-Hills, Florida
Project № 23017.1

This methodology outlines the proposed Traffic Impact Analysis (TIA) for the above referenced project. This methodology was prepared in accordance with the requirements of the Town of Howey-In-The-Hills and the Lake~Sumter Metropolitan Planning Organization (LSMPO) TIA guidelines for a Tier 2 TIA. This methodology has been revised in accordance with the comments provided by the Town of Howey-In-The-Hills. The comments and response to comments letter are included in the **Attachments**.

Project Description

The ±243.3-acre site is a single-family residential development consisting of 592 dwelling units. The project site consists of parcels 34-20-25-0001-000-00100, 34-20-25-0004-000-01003, 02-21-25-0002-000-04800, and 27-20-25-0004-000-01200. The anticipated buildout year is 2033. A preliminary site plan is included in the **Attachments**.

Project Location

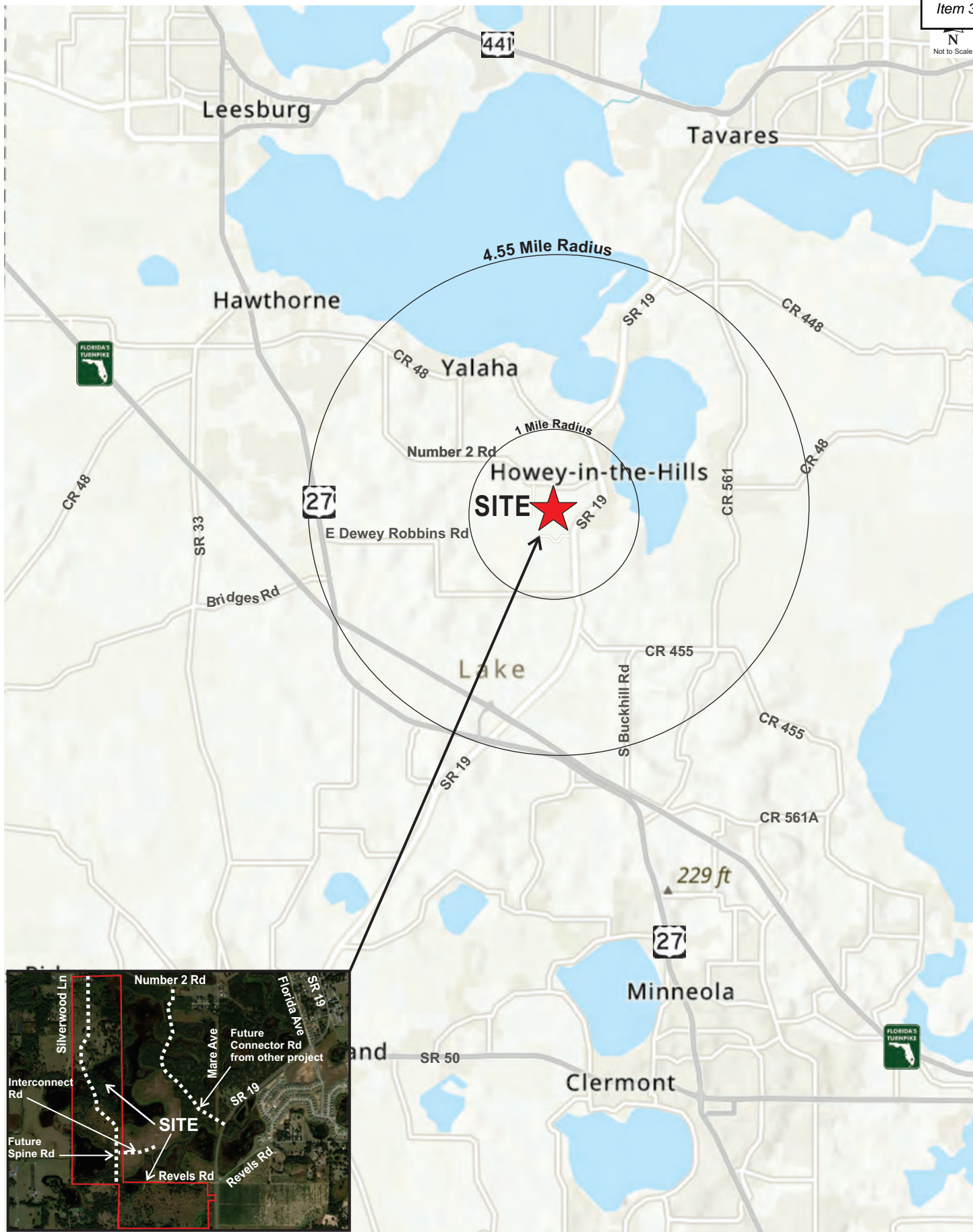
The site is located east of Silverwood Lane, west of SR 19 (South Palm Avenue), and south of Number 2 Road in the Town of Howey-in-the-Hills, Florida. The site will be crossed from north to south by a future two-lane spine road that will connect Number 2 Roadway with Revels Road, as shown in **Figure 1**.

Project Access

The project has access to the external network via one (1) full access driveway on Number 2 Road and one (1) full access driveway on SR 19. In addition, there is an emergency access to the south via Orange Blossom Road. The access configuration is depicted in the preliminary site plan included in the **Attachments**.

Trip Generation

A trip generation analysis was performed for the development using the trip generation information from the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*. The ITE information sheets are included in the **Attachments**. The trip generation of the proposed development is summarized in **Table 1**.



Mission Rise

Traffic Impact Analysis Methodology, v1.1
 Project № 23017.1
 May 23, 2023
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**Table 1
 Trip Generation Analysis**

ITE Code	Land Use	Size	Daily		AM Peak Hour			PM Peak Hour				
			Eqvlt Rate	Trips	Eqvlt Rate	Total	Enter	Exit	Eqvlt Rate	Total	Enter	Exit
210	Single Family Residential (Detached)	592 DU	8.75	5,181	0.63	376	94	282	0.89	529	333	196

Trip Generation analysis based on ITE Trip Generation Manual, 11th Edition.

The proposed development at project buildout is projected to generate 5,181 new daily trips of which 376 trips occur during the AM peak hour, and 529 trips occur during the PM peak hour.

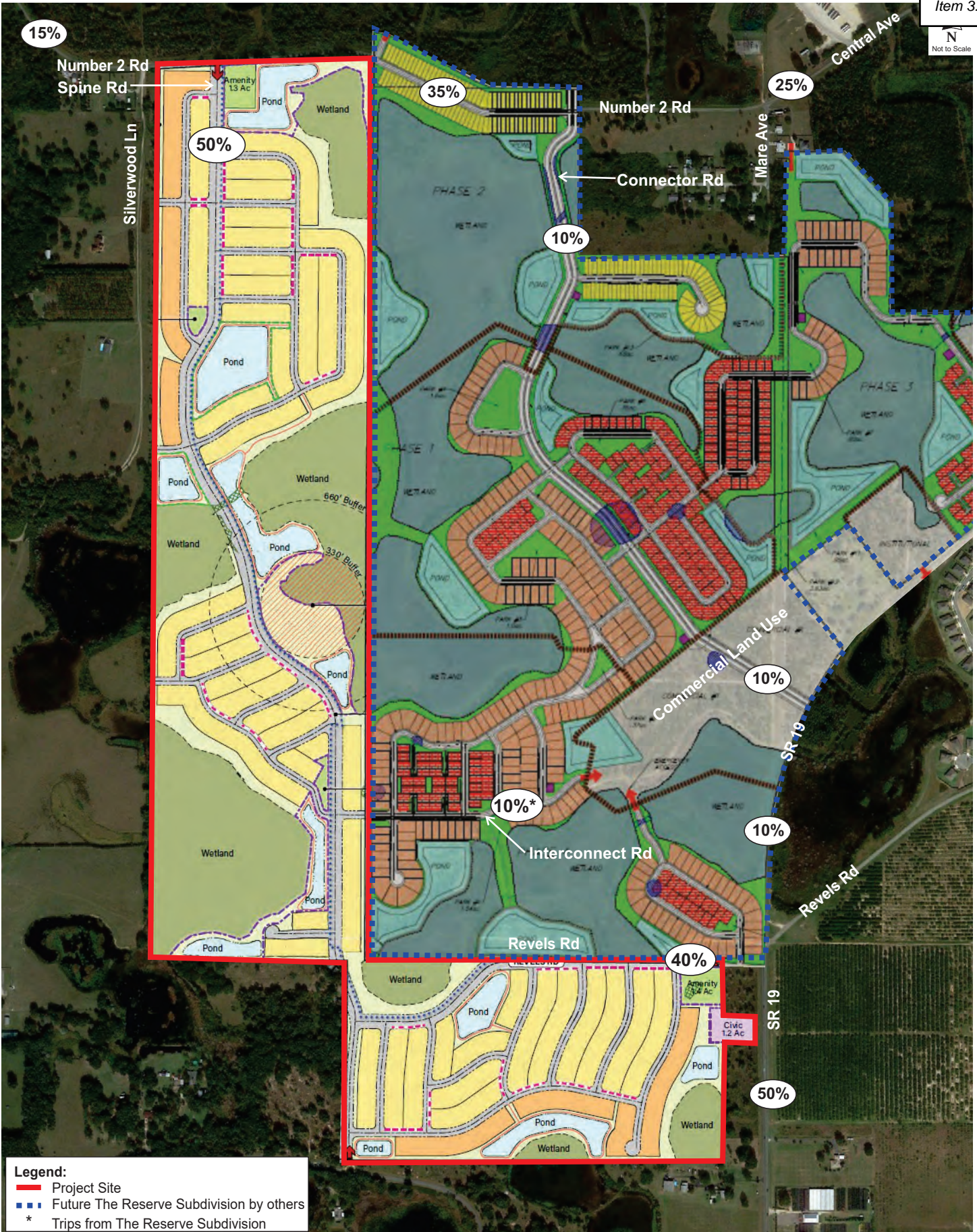
Trip Distribution

A trip distribution pattern in the general vicinity of the project site was initially determined based on the *Central Florida Regional Planning Model (CFRPM v7)*. Two (2) future connections (Spine Road and Connector Road) from SR 19 to Number 2 Road were included in the model for this project. The model distribution was modified to reflect the local network and prevailing traffic patterns. The proposed trip distribution pattern is provided in **Figure 2**. Detailed trip distribution near the project site is shown in **Figure 3**. The model distribution plots are included in the **Attachments**.

Study Area

In accordance with the LSMPO requirements for a Tier 2 TIA methodology, the study area will include a minimum 1-mile radius plus all roadway segments within a 4.55-mile radius in addition to roadways where the development is projected to consume 5% or more of their adopted Level of Service (LOS), unless otherwise specified by the City/LSMPO.

The extent of the study impact area shall be determined by the area of influence of the project. The area of influence shall be established as one-half (½) the total trip length associated with the land use of the proposed development, based upon the *2021 Lake County Transportation Impact Fee Update Study Final Report*. The total trip length for single-family is 9.1-miles. Accordingly, the area of influence will encompass all roadway segments within 4.55-mile radius. Excerpts of the *2022 Lake County Congestion Management Process (CMP) Database*, the *2021 Lake County Transportation Impact Fee Update Study Final Report*, and the *2023 FDOT Multimodal Quality/Level of Service (Q/LOS) Handbook Appendix B* are included in the **Attachments**. **Table 2** lists all roadway segments within the area of influence along with their capacities and percentages consumed by the project trips.



Legend:
 ■ Project Site
 ■■■ Future The Reserve Subdivision by others
 * Trips from The Reserve Subdivision

Mission Rise

Traffic Impact Analysis Methodology, v1.1

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**Table 2
Study Area**

Roadway Segment	SEG ID	No Lns	Area Type	Median Type	Speed Limit	LOS Std	Pk Dir Cap	Dir	Project		Within 1-Mile? **	% Cap	In Study?
									Dist	Trips			
CR 455													
SR 19 to CR 561	950	2	R	Undivided	45	C	740	EB WB	10%	20 33	NO	2.7% 4.5%	NO
CR 561 to CR 561A	960	2	R	Undivided	25	C	410	EB WB	5%	10 17	NO	2.4% 4.1%	NO
CR 48													
US 27 to Lime Ave	1240	2	U	Undivided	40	D	1,080	EB WB	15%	50 29	NO	4.6% 2.7%	NO
Lime Ave to SR 19	1250	2	U	Undivided	40	D	1,080	EB WB	2%	7 4	NO	0.6% 0.4%	NO
CR 561 to Ranch Rd	1260	2	U	Undivided	40	D	840	EB WB	3%	6 10	NO	0.7% 1.2%	NO
Ranch Rd to CR 448A	1270	2	R	Undivided	40	C	410	EB WB	3%	6 10	NO	1.5% 2.4%	NO
CR 561													
CR 448 to CR 48	1410	2	U	Undivided	50	D	1,080	NB SB	0%	0 0	NO	0.0% 0.0%	NO
CR 48 to South Astatula City Limit	1420	2	U	Undivided	40	D	620	NB SB	3%	10 6	NO	1.6% 1.0%	NO
South Astatula City Limit to CR 455	1430	2	U	Undivided	40	D	1,080	NB SB	3%	10 6	NO	0.9% 0.6%	NO
CR 455 to Howey Cross Rd	1440	2	R	Undivided	35	C	470	NB SB	2%	7 4	NO	1.5% 0.9%	NO
Howey CRoss Rd to Turnpike Rd / CR 561A	1450	2	R	Undivided	40	C	640	NB SB	2%	7 4	NO	1.1% 0.6%	NO
SR 19													
Lane Park Rd to CR 48	3040	2	U	Undivided	55	D	920	NB SB	23%	45 77	NO	4.9% 8.4%	YES
CR 48 to Central Ave	3050	2	U	Undivided	40	D	700	NB SB	25%	49 83	NO	7.0% 11.9%	YES
Central Ave to CR 455	3060	2	U	Undivided	35	D	1,200	NB SB	50%	167 98	YES	13.9% 8.2%	YES
CR 455 to US 27 / SR 25	3070	2	R	Undivided	55	C	450	NB SB	35%	117 69	NO	26.0% 15.3%	YES
US 27 / SR 25 to CR 478	3080	2	R	Undivided	55	C	450	NB SB	20%	67 39	NO	14.9% 8.7%	YES
SR 91 (Florida Turnpike)													
US 27/SR 25 to US 27/SR 25/SR 19 Interchange	3566	4	U	Freeway	70	B	2,230	EB WB	10%	20 33	NO	0.9% 1.5%	NO
US 27/SR 25													
SR 19 to CR 561	3830	4	U	Divided	55	D	3,280	EB WB	15%	29 50	NO	0.9% 1.5%	NO
Central Ave													
SR 19 to Mare Ave	N/A	2	U	Undivided	30	D	770 *	EB WB	25%	49 83	YES	6.4% 10.8%	YES
Number 2 Rd													
Mare Ave to Silverwood Ln	N/A	2	U	Undivided	30	D	730 *	EB WB	35%	69 117	YES	9.5% 16.0%	YES
Silverwood Ln to CR 48	N/A	2	U	Undivided	45	D	730 *	EB WB	15%	29 50	YES	4.0% 6.8%	YES

Source: 2022 Lake County CMP Database

* 2023 FDOT Multimodal Quality/Level of Service Handbook, Appendix B: Florida's Generalized Service Volume Tables

Bold numbers represent capacity equal or higher than 5%.

Mission Rise

Traffic Impact Analysis Methodology, v1.1

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Based on the study area analysis, the following roadway segments will be analyzed for the PM peak hour:

- SR 19
 - Lane Park Road to CR 48
 - CR 48 to Central Avenue
 - Central Avenue to CR 455
 - CR 455 to US 27 / SR 25
 - US 27 / SR 25 to CR 478
- Central Avenue
 - SR 19 to Mare Avenue
- Number 2 Road
 - Mare Avenue to Silverwood Lane
 - Silverwood Lane to CR 48

The following intersections will be analyzed for the AM and PM peak hours:

- SR 19 and CR 48 (Signalized)
- SR 19 and Central Avenue (Unsignalized)
- SR 19 and South Florida Avenue (Unsignalized)
- SR 19 and Revels Road (Unsignalized)
- SR 19 and CR 455 (Unsignalized)
- Spine Road and Interconnect Road (Proposed)
- Number 2 Road and Spine Road (North Project Access) (Proposed)
- Revels Road and Spine Road (South Project Access) (Proposed)

Mission Rise

Traffic Impact Analysis Methodology, v1.1
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Projected Traffic

Projected traffic includes background traffic volumes, the project trips, and committed trips. Projected background traffic will be calculated using the historical growth rates obtained from the *Lake County CMP* database and *FDOT Florida Traffic Online* web-based database. A 2%, minimum growth rate will be applied if the calculated growth rates are lower than 2%. The committed trips for the following approved developments within the study area will be added to the background traffic:

- The Reserve (traffic study obtained)
- Talichet Phase 2 (traffic study obtained)
- Whispering Hills (traffic study obtained)
- Lake Hills (City to provide traffic study)
- Watermark (City to provide traffic study)

Planned and Programmed Improvements

The *Lake-Sumter Metropolitan Planning Organization (LSMPO) 2023-2027 Transportation Improvement Program (TIP)*, as well as *LSMPO 2022 List of Priority Projects (LOPP)* were reviewed to identify any planned or programmed improvements to the transportation facilities in this area. As shown in **Table 3**, construction is not planned to be completed within the next three (3) years for either improvement. Excerpts from the *LSMPO TIP* and *LSMPO LOPP* are provided in the **Attachments**.

Table 3
Planned and Programmed Improvements

FM #	Project Name	From	To	Proposed Phase	Proposed Phase FY	Description of Improvement
2383191	SR 19 *	CR 48	CR 561	PDE-PE-ENV	2023	Add Lanes & Reconstruct
238319-1	SR 19 **	Howey Bridge	CR 561	-	-	Road Widening

* LSMPO TIP Fiscal Year 2023-2027

** LSMPO 2022 LOPP Tier 2 project

Capacity Analysis

The traffic study will include existing and 2033 buildout conditions for the roadway segment and intersection capacity analyses. A capacity analysis of the study roadway segments will be conducted for the PM peak hour under existing and projected conditions. The capacity analysis will be based on service volumes, capacities, and existing volumes, as documented in *2022 Lake County CMP Database* and the *FDOT's 2023 Multimodal Quality/Level of Service (MQ/LOS) Handbook*, included in the **Attachments**.

Mission Rise

Traffic Impact Analysis Methodology, v1.1

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The intersection turning movement counts will be seasonally adjusted, if needed, using the 2022 *FDOT Peak Season Factor Category Report* obtained from the *Florida Traffic Online (FTO)* website.

Right and left turn lane warrant reviews will be performed at the Spine Road accesses on Number 2 Road and at SR 19 and Revels Road in accordance with the Lake County requirements for turn lanes.

In cases where projected conditions require mitigation as a result of the proposed development, an analysis including the recommended mitigation will be conducted.

Alternative Mode Analysis

A review of transit, pedestrian, and bicycle facilities will be conducted in accordance with the LSMPO requirements.

Report

A TIA report detailing the methods and findings of the study, including all associated graphics, tables, calculations, and supporting information will be prepared for submittal to the Town of Howey-In-The-Hills.

ATTACHMENTS



May 23, 2023

Mr. John Brock
Town Clerk
PO Box 125
Howey-In-The-Hills, Florida 34737
jbrock@howey.org

Re: Mission Rise
Response to Methodology Comments
TMC Project № 23017.1
Town Howey-In-The-Hills, Florida

Dear Mr. Brock,

Please find below our responses to the review comments prepared on behalf of The Town of Howey-In-The-Hills by TMH Consulting Inc dated May 8, 2023, regarding the above referenced Methodology dated April 28, 2023. The comments are listed in **bold** typeface and the TMC responses follow in *italic* typeface. Additionally, a revised Methodology is provided under cover reflecting the changes resulting from these comments.

- 1. The Revels Road access to the south cannot be limited to emergency access as this is a public road now. Since we have received comments from residents to the south, it will be very useful to get some type of prediction about how many trips are likely to use this access point as opposed to SR 19 and Number 2 Road.**

TMC Response: The emergency access on Orange Blossom Road will be restricted to emergency vehicles only; therefore, no trips were assigned to that access.

- 2. There is an interconnect between the Mission Rise parcel and The Reserve parcel. Is the model sensitive enough to determine if this interconnect will impact trip assignments? The Reserve has an approved connecting road which is discussed in the TMC methodology. The Reserve also includes a future commercial development area that might be an attractor.**

TMC Response: Noted. The Reserve Subdivision includes a future commercial development, therefore, 10% of the trips are assumed to originate from The Reserve's commercial development and use the interconnect road to access the project site.

- 3. The study needs to include those projects that have some level of approval. TMC has done the traffic studies for several of these and been provided with traffic studies from others. The projects that need to be included are:**

- **The Reserve**
- **Watermark**
- **Talichet Phase 2 (Phase 1 is mostly in the background traffic by now.)**
- **Whispering Heights**
- **Lake Hills**

TMC Response: Noted. The vested trips from The Reserve, Watermark, Talichet Phase 2, Whispering Heights [Whispering Hills], and Lake Hills will be included in the traffic study as indicated in the revised methodology (attached).

- 4. The study needs to include CFRPM distributions that show the percentages of future background through traffic that will use the new roads in Mission Rise and The Reserve that link No 2 Road to SR 19. Use that data to project future background traffic volumes on those links.**

TMC Response: Noted. As reflected in Figure 2, the future Spine Road, which transverses the project site from north to south and connects Number 2 Road with Revels Road, and the future Connector Road, which connects SR 19 and Number 2 Road are included in the project trip distribution Figure 2 in the revised methodology (attached).

- 5. The project trip distribution map is basically unreadable. They need to provide a graphic that someone can review and understand.**

TMC Response: Noted. The distribution map has been revised to show an inset with the detail project distribution within the project site. See Figure 2 in the revised methodology (attached).

- 6. SR 19 at Central Avenue is listed as signalized, but it is only a flashing light. The analysis cannot assume it is a true signal.**

TMC Response: Noted. SR 19 at Central Avenue intersection is listed as an unsignalized intersection in the revised methodology (attached).

- 7. The ITE land use, code 210, shows traffic generation as 9.43 trips per unit with 0.70% for the AM Peak and 0.94% for the PM Peak. Why did they use 8.75, 0.63 and 0.89 respectively for the project traffic generation?**

TMC Response: Per the Trip Generation Handbook, 3rd Edition Figure 4.2 (Process for selecting average rate or equation in trip generation manual data) linear curve equations should be used for the weekday, AM, and PM peak period trip generation calculation. The linear curve equations have an R^2 equal to 0.75 or greater, therefore, the fitted curve equations were used instead of average rate.

The linear curve equations used for the 592 dwelling residential units corresponding to the weekday, AM, and PM trips are as follows:

*Weekday: $\ln(T)=0.92 \ln(X)+2.68$ which is equivalent to an average rate of 8.75 (5,181/592).
AM: $\ln(T)=0.91 \ln(X)+0.12$ which is equivalent to an average rate of 0.63 (376/592).
PM: $\ln(T)=0.94 \ln(X)+0.27$ which is equivalent to an average rate of 0.89 (529/592).*

Mr. John Brock
Mission Rise
Response to Methodology Comments
TMC Project № 23017.1
May 23, 2023
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END OF COMMENTS

We trust these responses and the revised Methodology adequately address the review comments. We remain available to discuss this matter further or to answer any questions you may have.

Kind regards,

TRAFFIC & MOBILITY CONSULTANTS LLC



Charlotte N. Davidson, PE
Senior Transportation Engineer



October 17, 2023

Mr. J. Brock
Town Clerk
Howey-in-the-Hills/Development Review Committee
101 North Palm Avenue
Howey-in-the-Hills, FL 34737
jbrock@howey.prg

Re: Mission Rise
Response to Traffic Impact Analysis Comments
TMC Project № 23017.1
Howey-in-the-Hills, Florida

Dear Mr. Brock,

Please find below our responses to the review comments prepared by Griffey Engineering Inc. on behalf of The Town of Howey-in-the-Hills, dated October 9, 2023, regarding the above referenced Traffic Impact Analysis dated August 2023. The comments are listed in **bold** typeface and the TMC responses follow in *italic* typeface. Additionally, a revised Traffic Impact Analysis is provided under cover reflecting the changes resulting from these comments.

Traffic Study

- 1. Figures in the report are missing. They need to be included.**

TMC Response: Figures have been included in the report.

- 2. For the future condition analysis of the intersection of SR 19 & CR 48, evaluate for a roundabout as well as signal timing adjustment.**

TMC Response: A roundabout at the intersection of SR19 & CR 48 has been evaluated and the results of the analysis have been included in the TIA v1.3 report.

Mr. J. Brock
Mission Rise
Response to Traffic Impact Analysis Comments
TMC Project № 23017.1
October 17, 2023
Page 2 of 2

Recommended Improvements

- 3. The traffic study identifies three intersections along SR 19 that will need to be signalized in the future (SR 19 & Central Ave., SR 19 & Revels Rd., and SR 19 & CR 455). The Development Agreement has a section that addresses proportionate share payment for off-site impacts. In the study's mitigation analysis it states: "In lieu of contributing a proportionate share to the three (3) intersections needing new traffic signals, the developer is recommending to construct the new traffic signal at SR 19 and Revels Road, which serves as the main access to the project." This is a reasonable mitigation alternative provided that there is a binding commitment for the developer to construct (or fund) the signal when it is deemed warranted by FDOT. This would be in addition to the turn lanes that the development will need to install at the intersection (right & left on SR 19, and right & through/left on EB Revels).**

TMC Response: Acknowledged.

END OF COMMENTS

We trust these responses and the revised Traffic Impact Analysis adequately address the review comments. We remain available to discuss this matter further or to answer any questions you may have.

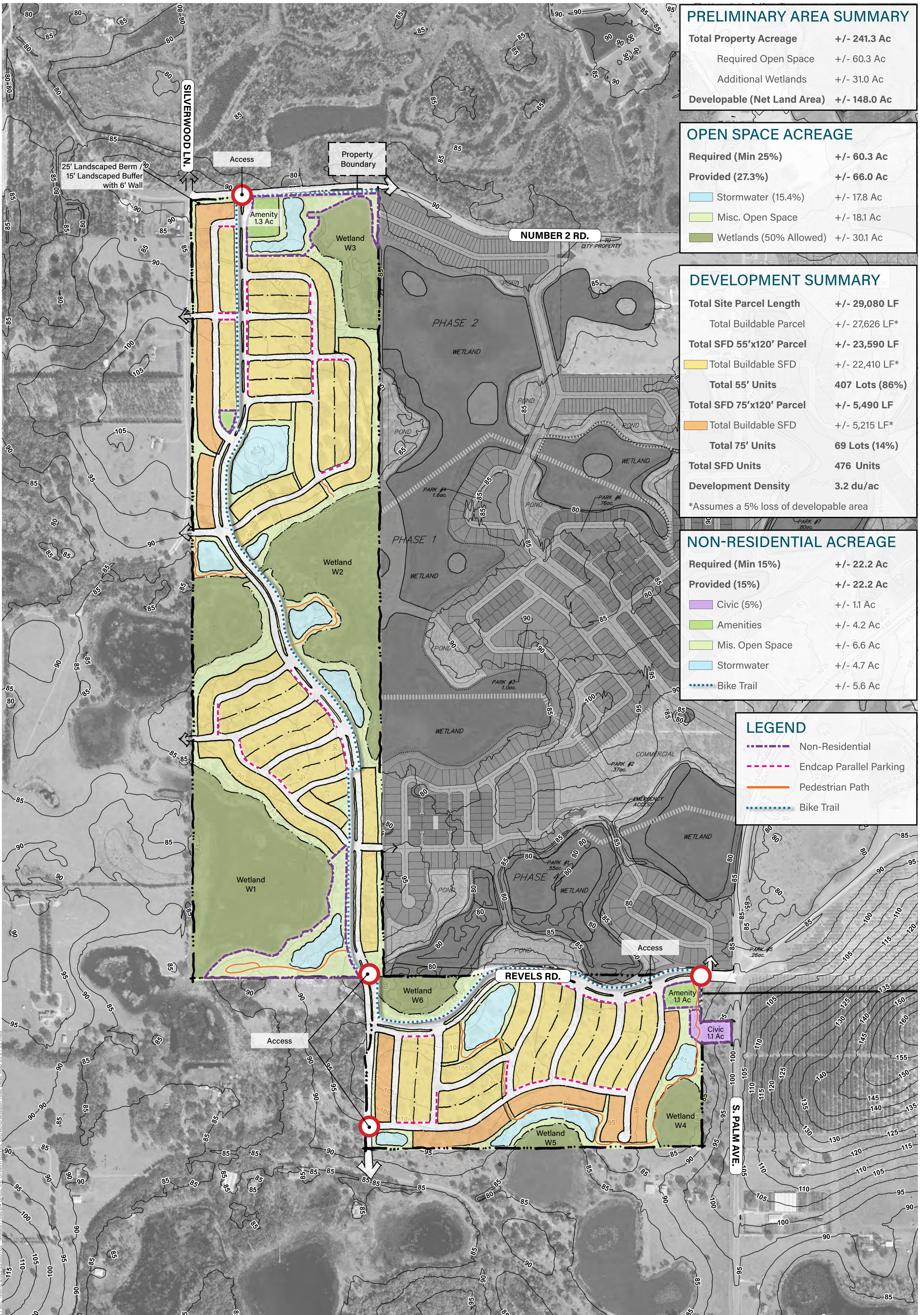
Kind regards,

TRAFFIC & MOBILITY CONSULTANTS LLC



Charlotte N. Davidson, PE
Senior Transportation Engineer

Appendix B
Preliminary Development Plan



PRELIMINARY AREA SUMMARY

Total Property Acreage	+/- 241.3 Ac
Required Open Space	+/- 60.3 Ac
Additional Wetlands	+/- 31.0 Ac
Developable (Net Land Area)	+/- 148.0 Ac

OPEN SPACE ACREAGE

Required (Min 25%)	+/- 60.3 Ac
Provided (27.3%)	+/- 66.0 Ac
Stormwater (15.4%)	+/- 17.8 Ac
Misc. Open Space	+/- 18.1 Ac
Wetlands (50% Allowed)	+/- 30.1 Ac

DEVELOPMENT SUMMARY

Total Site Parcel Length	+/- 29,080 LF
Total Buildable Parcel	+/- 27,626 LF*
Total SFD 55'x120' Parcel	+/- 23,590 LF
Total Buildable SFD	+/- 22,410 LF*
Total 55' Units	407 Lots (86%)
Total SFD 75'x120' Parcel	+/- 5,490 LF
Total Buildable SFD	+/- 5,215 LF*
Total 75' Units	69 Lots (14%)
Total SFD Units	476 Units
Development Density	3.2 du/ac

*Assumes a 5% loss of developable area

NON-RESIDENTIAL ACREAGE

Required (Min 15%)	+/- 22.2 Ac
Provided (15%)	+/- 22.2 Ac
Civic (5%)	+/- 1.1 Ac
Amenities	+/- 4.2 Ac
Mis. Open Space	+/- 6.6 Ac
Stormwater	+/- 4.7 Ac
Bike Trail	+/- 5.6 Ac

LEGEND

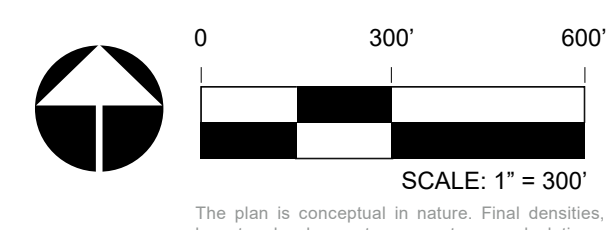
- Non-Residential
- Endcap Parallel Parking
- Pedestrian Path
- Bike Trail

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MISSION RISE • CONCEPTUAL PLAN

Town of Howey Hills, FL
 December 22, 2022
 # 22003786
 Turnstone Group



The plan is conceptual in nature. Final contours, layout, development parameters, calculations, and site conditions may change upon further development of the Preliminary and/or Master Site Plan, and upon evaluation of topographic survey, water management and existing historic and specimen trees to remain.

Appendix C
Lake County CMP Database and 2023 FDOT Q/LOS

Lake County CMP Database

Item 3.

SEGMENT ID	COUNTY STATION	FOOT STATION	DATA SOURCE	SPEED LIMIT	SEGMENT LENGTH (MI)	ROAD NAME	FROM	TO	LANES (2022)	LANES (2027)	URBAN / RURAL	DIVIDED / UNDIVIDED	MAINTAINING AGENCY	JURISDICTION	ADOPTED LOS STANDARD	DAILY SERVICE VOLUME	2022 AADT	2022 DAILY V.C.	2022 DAILY LOS	PEAK HOUR DIRECTIONAL SERVICE VOLUME	2022 PEAK HOUR NB/EB VOLUME	2022 PEAK HOUR SB/WB VOLUME	2022 PEAK HOUR V.C.	2022 PEAK HOUR LOS	GROWTH RATE	DAILY SERVICE VOLUME (2027)	2027 AADT	2027 DAILY V.C.	2027 DAILY LOS	PEAK HOUR DIRECTIONAL SERVICE VOLUME (2027)	2027 PEAK HOUR NB/EB VOLUME	2027 PEAK HOUR SB/WB VOLUME	2027 PEAK HOUR V.C.	2027 PEAK HOUR LOS
1100	497		County	35	1.75	C.R. 466B	EAGLE NEST ROAD	CR 466A	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	10,360	5,060	0.49	C	530	193	233	0.44	C	1.25%	10,360	5,385	0.52	D	530	205	248	0.47	C
1110	490		County	35	0.55	C.R. 468	CR 466A	PINE RIDGE DAIRY ROAD	2	2	URBAN	UNDIVIDED	COUNTY	FRUITLAND PARK	D	10,360	4,719	0.46	C	530	190	213	0.40	C	1.25%	10,360	5,021	0.48	D	530	202	227	0.43	C
1120	480		County	35	1.80	C.R. 468	PINE RIDGE DAIRY ROAD	GRIFFIN ROAD	2	2	URBAN	UNDIVIDED	COUNTY	FRUITLAND PARK	D	13,320	7,736	0.58	D	680	343	384	0.56	D	3.00%	13,320	8,968	0.67	D	680	398	445	0.65	D
1130	436		County	45	1.13	C.R. 468	GRIFFIN ROAD	SR 44	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	12,390	9,173	0.74	C	620	440	404	0.71	C	1.75%	12,390	10,005	0.81	C	620	480	440	0.77	C
1145	612		County	55	3.65	C.R. 46A REALIGNMENT	SR 44	SR 46	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	C	7,740	16,576	2.14	E	410	663	857	2.09	E	3.50%	7,740	19,687	2.54	E	410	788	1,018	2.48	E
1150	267		County	55	0.94	C.R. 470	SUMTER COUNTY LINE	FLORIDA TURNPIKE	2	4	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	13,300	11,303	0.85	D	690	530	376	0.77	D	8.50%	28,880	16,996	0.59	C	1,500	797	566	0.53	C
1155	266		County	55	2.39	C.R. 470	FLORIDA TURNPIKE	BAY AVENUE	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	12,600	8,826	0.70	D	660	436	278	0.66	D	1.00%	12,600	9,276	0.74	D	660	458	292	0.69	D
1160	266		ADJACENT	55	0.54	C.R. 470	BAY AVENUE	CR 33	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	12,390	8,826	0.71	C	620	436	278	0.70	C	1.00%	12,390	9,276	0.75	C	620	458	292	0.74	C
1170	499		County	35	2.99	C.R. 473	CR 44	FOUNTAIN LAKE BOULEVARD	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	14,060	6,957	0.49	D	710	322	242	0.45	C	1.00%	14,060	7,312	0.52	D	710	338	255	0.48	C
1180	443		County	40	1.03	C.R. 473	FOUNTAIN LAKE BOULEVARD	US 441	4	4	URBAN	DIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	35,820	14,713	0.41	C	1,800	811	461	0.45	C	1.00%	35,820	15,464	0.43	C	1,800	852	485	0.47	C
1190	4		County	55	5.21	C.R. 474	SR 33	GREEN SWAMP ROAD	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	7,740	5,062	0.77	C	410	151	240	0.59	C	2.50%	7,740	6,745	0.87	C	410	171	272	0.66	C
1200	3		County	55	3.35	C.R. 474	GREEN SWAMP ROAD	US 27	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	C	7,740	5,436	0.70	C	410	173	202	0.49	B	1.00%	7,740	5,713	0.74	C	410	182	212	0.52	B
1210	222		County	45	5.99	C.R. 478	SR 19	JAMARLY ROAD	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF GROVELAND	D	21,780	2,244	0.10	B	1,080	112	93	0.10	B	7.75%	21,780	3,259	0.15	B	1,080	162	135	0.15	B
1220	259		County	55	3.17	C.R. 48	SUMTER COUNTY LINE	CLEARWATER LAKE RD	2	2	RURAL	UNDIVIDED	COUNTY	CITY OF LEEBSBURG	C	7,740	3,504	0.45	B	410	112	180	0.44	B	4.25%	7,740	4,315	0.56	C	410	138	222	0.54	C
1225	248		County	55	2.41	C.R. 48	CLEARWATER LAKE RD	CR 33	2	2	RURAL	UNDIVIDED	COUNTY	CITY OF LEEBSBURG	C	7,740	3,327	0.43	B	410	123	206	0.50	B	1.75%	7,740	3,629	0.47	B	410	134	224	0.55	C
1230	263		County	45	0.46	C.R. 48	CR 33	HAYWOOD WORM FARM RD	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	15,930	8,836	0.55	C	790	370	297	0.47	C	2.75%	15,930	10,120	0.64	C	790	424	340	0.54	C
1235	262		County	45	0.68	C.R. 48	HAYWOOD WORM FARM RD	US 27	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	16,820	9,073	0.54	C	840	401	375	0.48	C	1.00%	16,820	9,536	0.57	C	840	421	394	0.50	C
1240	264		County	40	4.89	C.R. 48	US 27	LIME AVENUE	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	21,780	9,821	0.45	B	1,080	420	380	0.39	B	4.00%	21,780	11,949	0.55	C	1,080	511	462	0.47	B
1250	255		County	40	2.04	C.R. 48	US 27	LIME AVENUE	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	21,780	9,962	0.46	B	1,080	429	404	0.40	B	1.50%	21,780	10,754	0.49	C	1,080	462	435	0.43	B
1260	253		County	40	1.14	C.R. 48	CR 561	RANCH ROAD	2	2	URBAN	UNDIVIDED	COUNTY	TOWN OF ASTATULA	D	16,820	6,515	0.39	C	840	310	292	0.37	C	1.00%	16,820	6,847	0.41	C	840	326	307	0.39	C
1270	253		ADJACENT	40	3.17	C.R. 48	CR 448A	RANCH ROAD	2	2	RURAL	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	C	7,740	6,515	0.84	C	410	310	292	0.76	C	1.00%	7,740	6,847	0.68	C	410	326	307	0.68	C
1280	217		County	30	1.71	C.R. 50 (SUNSET AVENUE)	CR 33	CR 50	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MASCOTTE	D	10,360	1,592	0.15	C	530	96	95	0.11	C	1.75%	10,360	1,736	0.17	C	530	77	104	0.20	C
1290	210		County	45	1.74	C.R. 50	US 27	N HANCOCK ROAD	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MINNEOLA	D	16,820	6,981	0.42	C	840	285	348	0.41	C	1.00%	16,820	7,337	0.44	C	840	299	303	0.43	C
1300	202		County	45	2.47	C.R. 50	N HANCOCK ROAD	CR 455	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	21,780	6,977	0.32	B	1,080	228	491	0.45	B	2.00%	21,780	7,593	0.35	B	1,080	251	242	0.30	C
1310	42		County	45	1.92	C.R. 50	ORANGE COUNTY LINE	ORANGE COUNTY LINE	2	2	URBAN	UNDIVIDED	COUNTY	UNINCORPORATED LAKE COUNTY	D	16,820	6,828	0.41	C	840	195	557	0.66	C	1.00%	16,820	7,176	0.43	C	840	205	585	0.70	C
1320	417		County	35	1.08	C.R. 500A/OLD 441	SR 19	DORA AVENUE	2	2	URBAN	DIVIDED	COUNTY	CITY OF TAVARES	D	8,390	9,907	1.18	F	870	367	450	0.52	D	1.00%	8,390	10,412	1.24	F	870	396	473	0.54	D
1325	417		County	35	1.08	C.R. 500A/OLD 441	DORA AVENUE	SR 19	2	2	URBAN	DIVIDED	COUNTY	CITY OF TAVARES	D	8,390	9,907	1.18	F	870	367	450	0.52	D	1.00%	8,390	10,412	1.24	F	870	396	473	0.54	D
1330	413	115084	County	45	1.94	C.R. 500A/OLD 441/ALFRED ST	DORA AVENUE	BAY ROAD	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF TAVARES	D	16,820	9,558	0.57	C	840	489	424	0.58	C	1.00%	16,820	10,045	0.60	C	840	514	446	0.61	C
1340	420		County	35	0.79	C.R. 500A/OLD 441	BAY ROAD	CR 44C / EUDORA AVENUE	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MOUNT DORA	D	10,360	9,917	0.96	D	530	465	458	0.88	D	2.50%	10,360	11,200	1.08	F	530	526	518	0.99	D
1350	421		County	35	1.06	C.R. 500A/OLD 441	CR 44C / EUDORA DRIVE	LAKESHORE DRIVE	2	2	URBAN	DIVIDED	COUNTY	CITY OF MOUNT DORA	D	14,760	16,591	1.12	F	750	725	761	1.01	E	4.25%	14,760	20,430	1.38	F	750	893	937	1.25	F
1360	415		County	35	0.79	C.R. 500A/OLD 441	LAKESHORE DRIVE	5TH AVENUE	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MOUNT DORA	D	10,360	11,207	1.08	F	530	469	505	0.95	D	4.25%	10,360	13,800	1.33	F	530	577	621	1.17	F
1370	415		ADJACENT	25	0.63	C.R. 500A/5TH AVENUE	OLD 441	N HIGHLAND STREET	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MOUNT DORA	D	10,360	11,207	1.08	F	530	469	505	0.95	D	4.25%	10,360	13,800	1.33	F	530	577	621	1.17	F
1380	605		ADJACENT	30	0.26	C.R. 500A (HIGHLAND STREET)	SR 46	SR 46	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MOUNT DORA	D	13,320	2,792	0.21	C	680	179	127	0.26	C	3.50%	13,320	3,316	0.25	C	680	213	150	0.31	C
1390	602	115004	County	35	0.75	C.R. 500A/OLD 441	SR 46	ORANGE COUNTY LINE	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF MOUNT DORA	D	10,360	5,849	0.56	D	530	325	244	0.61	D	5.25%	10,360	7,555	0.73	D	530	419	316	0.79	D
1400	401		County	45	1.62	C.R. 561	SR 19	CR 448	2	2	URBAN	UNDIVIDED	COUNTY	CITY OF TAVARES	D	16,820	16,583	0.99	D	840	622	825	0.98	D	4.75%	16,820	20,914	1.24	F	840	784	1,041	1.24	F
1410	257		County	50	3.93	C.R. 561	CR 448	CR 48	2	2	URBAN	UNDIVIDED	COUNTY	ASTATULA/TAVARES	D	21,780	10,160	0.47	B	1,080	507	590	0.55	C	1.00%	21,780	10,678	0.49	C	1,080	533	620	0.57	C
1420	252		County	40	0.63	C.R. 561	CR 48	SOUTH ASTATULA CITY LIMIT	2	2	URBAN																							

Lake County CMP Database

Item 3.

SEGMENT ID	COUNTY STATION	FOOT STATION	DATA SOURCE	SPEED LIMIT	SEGMENT LENGTH (MI)	ROAD NAME	FROM	TO	LANES (2022)	LANES (2027)	URBAN / RURAL	DIVIDED / UNDIVIDED	MAINTAINING AGENCY	JURISDICTION	ADOPTED LOS STANDARD	DAILY SERVICE VOLUME	2022 AADT	2022 DAILY VIC	2022 DAILY LOS	PEAK HOUR DIRECTIONAL SERVICE VOLUME	2022 PEAK HOUR NB/EB VOLUME	2022 PEAK HOUR SB/WB VOLUME	2022 PEAK HOUR VIC	2022 PEAK HOUR LOS	GROWTH RATE	DAILY SERVICE VOLUME (2027)	2027 AADT	2027 DAILY VIC	2027 DAILY LOS	PEAK HOUR DIRECTIONAL SERVICE VOLUME (2027)	2027 PEAK HOUR NB/EB VOLUME	2027 PEAK HOUR SB/WB VOLUME	2027 PEAK HOUR VIC	2027 PEAK HOUR LOS
3020	11049	11049	State	45	1.38	SR 19	CR 452 (MAIN STREET)	CR 561	4	4	URBAN	DIVIDED	STATE	CITY OF TAVARES	D	41,790	45,500	1.09	F	2,100	2,203	1,892	1.05	F	4.50%	41,790	56,701	1.36	F	2,100	2,745	2,358	1.31	F
3030	11049	11049	ADJACENT	45	0.90	SR 19	CR 561	LANE PARK ROAD	2	2	URBAN	UNDIVIDED	STATE	CITY OF TAVARES	D	18,590	45,500	2.45	F	920	2,203	1,892	2.39	F	4.50%	18,590	56,701	3.05	F	920	2,745	2,358	2.98	F
3040	11049	11049	State	55	3.87	SR 19	LANE PARK ROAD	CR 48	2	2	URBAN	UNDIVIDED	STATE	HOWEY-IN-THE-HILLS/TAVARES	D	18,590	15,980	0.86	C	920	810	656	0.71	C	1.00%	18,590	16,795	0.90	C	920	641	689	0.75	C
3050	11049	11049	State	40	0.84	SR 19	CR 48	CENTRAL AVENUE	2	2	URBAN	UNDIVIDED	STATE	HOWEY-IN-THE-HILLS	D	14,160	8,950	0.63	C	700	433	372	0.62	C	1.00%	14,160	9,407	0.66	C	700	455	391	0.65	C
3060	11049	11049	ADJACENT	35	3.09	SR 19	CENTRAL AVENUE	CR 455	2	2	URBAN	UNDIVIDED	STATE	HOWEY-IN-THE-HILLS	D	24,200	8,950	0.37	B	1,200	433	372	0.36	B	1.00%	24,200	9,407	0.39	B	1,200	455	391	0.38	B
3070	11025	11025	State	55	2.72	SR 19	CR 455	US 27 / SR 25	2	2	RURAL	UNDIVIDED	STATE	CITY OF GROVELAND	C	8,600	9,910	1.15	D	450	507	435	1.13	D	1.00%	8,600	10,416	1.21	D	450	533	457	1.18	D
3080	110376	110376	State	55	4.73	SR 19	US 27 / SR 25	CR 478	2	2	RURAL	UNDIVIDED	STATE	CITY OF GROVELAND	C	8,600	9,350	1.09	D	450	466	519	1.15	D	1.00%	8,600	9,827	1.14	D	450	490	545	1.21	D
3090	110376	110376	ADJACENT	55	1.22	SR 19	CR 478	LAKE CATHERINE ROAD	2	2	URBAN	UNDIVIDED	STATE	CITY OF GROVELAND	D	17,700	9,350	0.53	C	880	466	519	0.59	C	1.00%	17,700	9,827	0.56	C	880	490	545	0.62	C
3100	110097	110097	State	45	0.70	SR 19	LAKE CATHERINE ROAD	SR 50 / SR 33	2	2	URBAN	UNDIVIDED	STATE	CITY OF GROVELAND	D	17,700	12,950	0.73	C	880	449	533	0.61	C	1.50%	17,700	13,951	0.79	C	880	484	574	0.65	C
3110	115072	115072	State	40	0.52	SR 33	SR 50 / SR 33	ANDERSON ROAD	2	2	URBAN	UNDIVIDED	STATE	CITY OF GROVELAND	D	18,590	14,760	0.79	C	920	470	667	0.73	C	4.25%	18,590	18,175	0.98	D	920	579	821	0.89	C
3120	110497	110497	State	60	3.16	SR 33	ANDERSON ROAD	CR 565B	2	2	RURAL	UNDIVIDED	STATE	CITY OF GROVELAND	C	8,600	10,428	1.21	D	450	533	458	1.18	D	3.75%	8,600	12,535	1.46	D	450	641	551	1.42	D
3130	111002	111002	State	60	6.76	SR 33	CR 565B	CR 561	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	8,600	8,242	0.96	C	450	421	362	0.94	C	1.75%	8,600	8,988	1.05	D	450	459	395	1.02	D
3140	5		County	60	2.33	SR 33	CR 561	CR 474	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	8,600	13,084	1.52	D	450	452	415	1.00	D	1.25%	8,600	13,923	1.62	D	450	480	441	1.07	D
3150	2		County	60	1.04	SR 33	CR 474	POLK COUNTY LINE	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	10,320	10,821	1.05	D	540	352	544	1.01	D	4.50%	10,320	13,485	1.31	F	540	438	678	1.26	F
3160	808		County	45	4.71	SR 40	MARION COUNTY LINE	CR 445A	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	8,600	5,068	0.59	C	450	169	217	0.48	B	2.75%	8,600	5,805	0.68	C	450	193	248	0.55	C
3170	110503	110503	State	55	1.61	SR 40	CR 445A	RIVER ROAD	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	10,320	5,370	0.52	C	540	274	236	0.51	C	1.00%	10,320	5,644	0.55	C	540	288	248	0.53	C
3180	110050	110050	State	45	1.43	SR 40	RIVER ROAD	VOLUISIA COUNTY LINE	2	2	RURAL	DIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	14,220	10,180	0.72	C	740	401	406	0.55	C	4.75%	14,220	12,839	0.90	C	740	506	512	0.69	C
3190	110496	110496	State	55	2.38	SR 44	SUMTER COUNTY LINE	CR 468	4	4	URBAN	DIVIDED	STATE	CITY OF LEESSBURG	D	39,800	21,800	0.55	C	2,000	1,071	964	0.54	C	1.00%	39,800	22,912	0.58	C	2,000	1,126	1,013	0.56	C
3200	110487	110487	State	45	1.54	SR 44	CR 468	S LONE OAK DRIVE	4	4	URBAN	DIVIDED	STATE	UNINCORPORATED LAKE COUNTY	D	39,800	16,540	0.42	C	2,000	610	720	0.36	C	1.00%	39,800	17,384	0.44	C	2,000	641	757	0.38	C
3210	115147	115147	State	35	0.76	SR 44	S LONE OAK DRIVE	US 27	4	4	URBAN	DIVIDED	STATE	CITY OF LEESSBURG	D	32,400	19,480	0.60	D	1,630	835	769	0.51	D	1.00%	32,400	20,474	0.63	D	1,630	878	808	0.54	D
3220	115179	115179	State	35	0.57	SR 44 (DNIE AVENUE)	US 27	S 97TH STREET	4	4	URBAN	DIVIDED	STATE	CITY OF LEESSBURG	D	32,400	27,300	0.84	D	1,630	1,322	1,135	0.81	D	1.25%	32,400	29,049	0.90	D	1,630	1,407	1,208	0.86	D
3230	115143	115143	ADJACENT	35	0.34	SR 44 (DNIE AVENUE)	US 27	G 97TH STREET	4	4	URBAN	DIVIDED	STATE	CITY OF LEESSBURG	D	32,400	23,200	0.72	D	1,630	922	929	0.57	D	1.00%	32,400	24,383	0.75	D	1,630	969	975	0.60	D
3240	115143	115143	State	40	0.41	SR 44 (DNIE AVENUE)	US 27	CANAL STREET	4	4	URBAN	DIVIDED	STATE	CITY OF LEESSBURG	D	39,800	23,200	0.58	C	2,000	922	929	0.46	C	1.00%	39,800	24,383	0.61	C	2,000	969	975	0.69	C
3250	115142	115142	State	40	0.79	SR 44 (DNIE AVENUE)	US 27	S LAKE STREET	4	4	URBAN	DIVIDED	STATE	CITY OF LEESSBURG	D	39,800	18,760	0.47	C	2,000	928	780	0.45	C	1.00%	39,800	19,717	0.50	C	2,000	954	820	0.48	C
3260	115183	115183	State	40	0.11	SR 44 (DNIE AVENUE)	US 27	E MAIN STREET	4	4	URBAN	DIVIDED	STATE	CITY OF LEESSBURG	D	41,790	18,760	0.45	C	2,100	928	780	0.43	C	1.00%	41,790	19,717	0.47	C	2,100	954	820	0.45	C
3262	110005	110005	State	45	0.45	SR 44 (OLD C.R. 44B)	US 441	WAYCROSS AVENUE	2	2	URBAN	DIVIDED	STATE	CITY OF MOUNT DORA	D	19,510	25,500	1.31	F	970	1,236	1,060	1.27	F	1.00%	19,510	26,801	1.31	F	970	1,298	1,114	1.34	F
3268	110006	110006	State	45	1.65	SR 44 (OLD C.R. 44B)	US 441	WAYCROSS AVENUE	2	2	URBAN	UNDIVIDED	STATE	EUSTIS/MOUNT DORA	D	18,590	17,880	0.96	D	920	907	837	0.99	D	1.00%	18,590	18,792	1.07	F	920	953	869	1.04	F
3270	110500	110500	ADJACENT	55	2.27	SR 44	US 441	THRILL HILL ROAD	2	2	URBAN	UNDIVIDED	STATE	CITY OF ELUSTIS	D	18,590	13,810	0.74	C	920	708	698	0.77	C	1.00%	18,590	14,514	0.78	C	920	742	637	0.81	C
3280	110500	110500	ADJACENT	55	1.14	SR 44	US 441	THRILL HILL ROAD	2	2	URBAN	UNDIVIDED	STATE	CITY OF MOUNT DORA	D	17,700	13,810	0.78	C	880	708	698	0.80	C	1.00%	17,700	14,514	0.82	C	880	742	637	0.84	C
3290	110500	110500	State	55	3.03	SR 44	CR 439	CR 437	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	15,700	13,810	0.88	C	820	708	698	0.88	C	1.00%	15,700	14,514	0.92	C	820	742	637	0.90	C
3300	110500	110500	ADJACENT	55	1.15	SR 44	CR 439	CR 437	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	13,550	13,810	1.02	D	700	708	698	1.01	D	1.00%	13,550	14,514	1.07	D	700	742	637	1.06	D
3310	110010	110010	ADJACENT	55	3.43	SR 44	CR 46A	CR 44A	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	8,600	9,383	1.09	D	450	480	412	1.07	D	1.00%	8,600	9,861	1.15	D	450	504	433	1.12	D
3320	110010	110010	ADJACENT	55	5.34	SR 44	CR 44A	OVERLOOK DRIVE	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	8,600	9,383	1.09	D	450	480	412	1.07	D	1.00%	8,600	9,861	1.15	D	450	504	433	1.12	D
3330	110010	110010	State	55	5.64	SR 44	CR 44A	OVERLOOK DRIVE	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	15,700	9,383	0.60	B	820	480	412	0.59	B	1.00%	15,700	9,861	0.63	B	820	504	433	0.61	B
3340	110010	110010	ADJACENT	55	0.26	SR 44	CR 42	VOLUISIA COUNTY LINE	2	2	RURAL	UNDIVIDED	STATE	UNINCORPORATED LAKE COUNTY	C	13,550	9,383	0.69	C	700	480	412	0.69	C	1.00%	13,550	9,861	0.73	C	700	504	433	0.72	C
3344	110200	110200	State	-	1.80	SR 429 (WEKIVA PKWY)	ORANGE CIL	CR 46A (REALIGNED)	4	4	URBAN	DIVIDED	STATE	UNINCORPORATED LAKE COUNTY	D	66,200	6,200																	

C3C & C3R

Motor Vehicle Arterial Generalized Service Volume Tables

Peak Hour Directional

Peak Hour Two-Way

AADT



(C3C-Suburban Commercial)

	B	C	D	E
1 Lane	*	760	1,070	**
2 Lane	*	1,520	1,810	**
3 Lane	*	2,360	2,680	**
4 Lane	*	3,170	3,180	**

	B	C	D	E
2 Lane	*	1,380	1,950	**
4 Lane	*	2,760	3,290	**
6 Lane	*	4,290	4,870	**
8 Lane	*	5,760	5,780	**

	B	C	D	E
2 Lane	*	15,300	21,700	**
4 Lane	*	30,700	36,600	**
6 Lane	*	47,700	54,100	**
8 Lane	*	64,000	64,200	**



(C3R-Suburban Residential)

	B	C	D	E
1 Lane	*	970	1,110	**
2 Lane	*	1,700	1,850	**
3 Lane	*	2,620	2,730	**

	B	C	D	E
2 Lane	*	1,760	2,020	**
4 Lane	*	3,090	3,360	**
6 Lane	*	4,760	4,960	**

	B	C	D	E
2 Lane	*	19,600	22,400	**
4 Lane	*	34,300	37,300	**
6 Lane	*	52,900	55,100	**

Adjustment Factors

The peak hour directional service volumes should be adjusted by multiplying by 1.2 for one-way facilities
 The AADT service volumes should be adjusted by multiplying 0.6 for one way facilities 2 Lane Divided
 Roadway with an Exclusive Left Turn Lane(s): Multiply by 1.05

2 lane Undivided Roadway with No Exclusive Left Turn Lane(s): Multiply by 0.80

Exclusive right turn lane(s): Multiply by 1.05

Multilane Undivided Roadway with an Exclusive Left Turn Lane(s): Multiply by 0.95

Multilane Roadway with No Exclusive Left Turn Lane(s): Multiply by 0.75

Non-State Signalized Roadway: Multiply by 0.90

This table does not constitute a standard and should be used only for general planning applications. The table should not be used for corridor or intersection design, where more refined techniques exist.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached.

C1 & C2

Motor Vehicle Highway Generalized Service Volume Tables

Peak Hour Directional

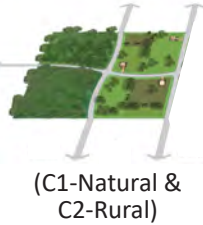
	B	C	D	E
1 Lane	240	430	730	1,490
2 Lane	1,670	2,390	2,910	3,340
3 Lane	2,510	3,570	4,370	5,010

Peak Hour Two-Way

	B	C	D	E
2 Lane	440	780	1,330	2,710
4 Lane	3,040	4,350	5,290	6,070
6 Lane	4,560	6,490	7,950	9,110

AADT

	B	C	D	E
2 Lane	4,600	8,200	14,000	28,500
4 Lane	32,000	45,800	55,700	63,900
6 Lane	48,000	68,300	83,700	95,900



(C1-Natural & C2-Rural)

Adjustment Factors

2 Lane Divided Roadway with Exclusive Left Turn Adjustment: Multiply by 1.05
 Multilane Undivided Highway with Exclusive Left Turn Adjustment: Multiply by 0.95
 Multilane Undivided Highway without Exclusive Left Turn Adjustment:: Multiply by 0.75

Appendix D
Turning Movement Counts and Seasonal Factor Data

**TURNING MOVEMENT COUNT ANALYSIS
AUTOS & TRUCKS**

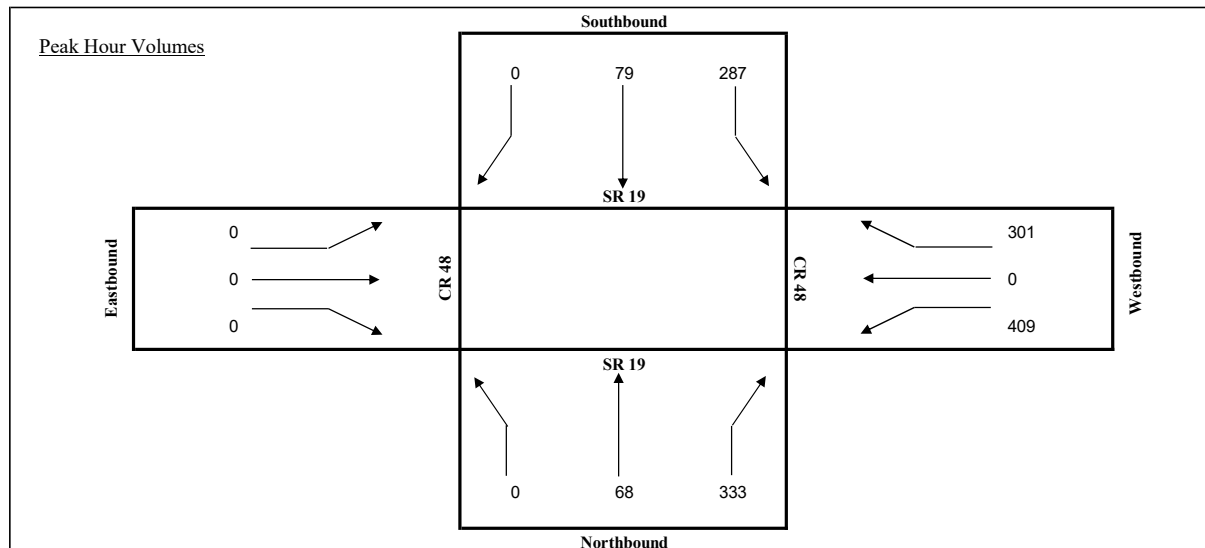
Intersection (N/S): SR 19

Intersection (E/W): CR 48

Date: 7/19/2023

Start	End	SR 19 NB			SR 19 SB			CR 48 EB			CR 48 WB			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	4:15 PM	0	19	82	68	13	0	0	0	0	84	0	65	331
4:15 PM	4:30 PM	0	24	91	71	13	0	0	0	0	83	0	79	361
4:30 PM	4:45 PM	0	18	72	68	17	0	0	0	0	93	0	76	344
4:45 PM	5:00 PM	0	23	90	85	15	0	0	0	0	92	0	61	366
5:00 PM	5:15 PM	0	18	71	73	23	0	0	0	0	88	0	73	346
5:15 PM	5:30 PM	0	15	80	71	19	0	0	0	0	114	0	80	379
5:30 PM	5:45 PM	0	12	92	58	22	0	0	0	0	115	0	87	386
5:45 PM	6:00 PM	0	16	70	54	14	0	0	0	0	94	0	72	320

Total for:	4:00 PM	5:00 PM	0	84	335	292	58	0	0	0	0	352	0	281	1402
Total for:	5:00 PM	6:00 PM	0	61	313	256	78	0	0	0	0	411	0	312	1431
Tota Peak Hour:	4:45 PM	5:45 PM	0	68	333	287	79	0	0	0	0	409	0	301	1477
Overall PHF:			0.96												

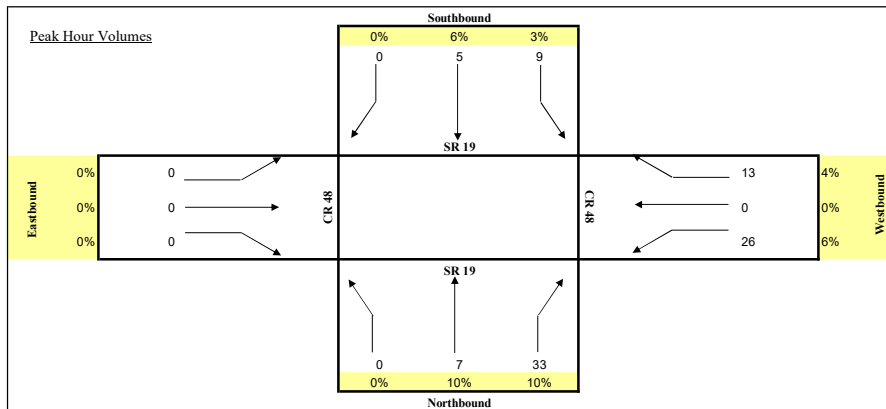


TURNING MOVEMENT COUNT ANALYSIS
TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): CR 48
Date: 7/19/2023

Start	End	SR 19			SR 19			CR 48			CR 48			TOTAL
		R	T	L	R	T	L	R	T	L	R	T	L	
4:00 PM	4:15 PM	0	3	10	5	0	0	0	0	0	4	0	6	28
4:15 PM	4:30 PM	0	4	11	1	3	0	0	0	0	8	0	2	29
4:30 PM	4:45 PM	0	0	8	2	1	0	0	0	0	7	0	4	22
4:45 PM	5:00 PM	0	0	4	1	1	0	0	0	0	7	0	1	14
5:00 PM	5:15 PM	0	1	7	2	2	0	0	0	0	6	0	0	18
5:15 PM	5:30 PM	0	0	7	2	0	0	0	0	0	6	0	0	15
5:30 PM	5:45 PM	0	0	2	0	0	0	0	0	0	2	0	1	5
5:45 PM	6:00 PM	0	2	4	2	1	0	0	0	0	5	0	1	15

Total for:	4:00 PM	5:00 PM	0	7	33	9	5	0	0	0	0	0	26	0	13	93
Total for:	5:00 PM	6:00 PM	0	3	20	6	3	0	0	0	0	0	19	0	2	53
Total Peak Hour:	4:00 PM	5:00 PM	0	7	33	9	5	0	0	0	0	0	26	0	13	93
Overall PHF:	0.80															

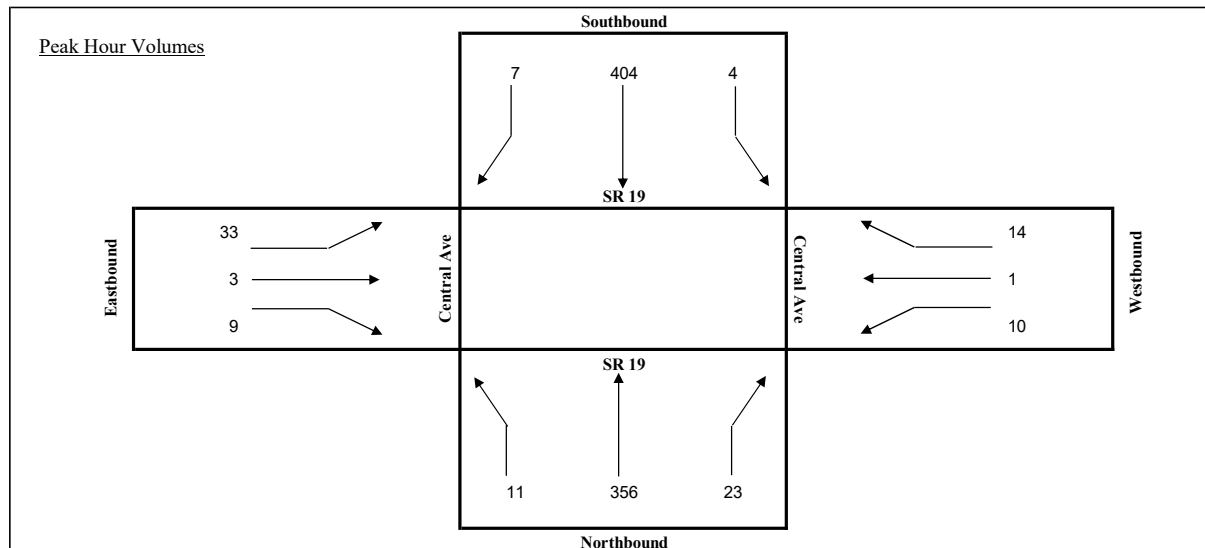


**TURNING MOVEMENT COUNT ANALYSIS
AUTOS & TRUCKS**

Intersection (N/S): SR 19
 Intersection (E/W): Central Ave
 Date: 7/19/2023

Start	End	SR 19 NB			SR 19 SB			Central Ave EB			Central Ave WB			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
7:00 AM	7:15 AM	7	76	6	1	88	3	5	0	4	3	1	3	197
7:15 AM	7:30 AM	3	92	4	1	101	0	15	1	1	1	0	2	221
7:30 AM	7:45 AM	1	96	4	1	106	2	9	0	1	2	0	4	226
7:45 AM	8:00 AM	5	85	4	2	93	2	4	1	4	4	0	3	207
8:00 AM	8:15 AM	2	83	11	0	104	3	5	1	3	3	1	5	221
8:15 AM	8:30 AM	8	70	1	1	91	5	7	2	0	0	0	4	189
8:30 AM	8:45 AM	3	96	5	1	101	5	5	2	6	2	0	1	227
8:45 AM	9:00 AM	3	77	10	4	68	2	13	0	1	2	0	4	184

Total for:	7:00 AM	8:00 AM	16	349	18	5	388	7	33	2	10	10	1	12	851
Total for:	8:00 AM	9:00 AM	16	326	27	6	364	15	30	5	10	7	1	14	821
Tota Peak Hour:	7:15 AM	8:15 AM	11	356	23	4	404	7	33	3	9	10	1	14	875
Overall PHF:	0.97														



**TURNING MOVEMENT COUNT ANALYSIS
TRUCKS**

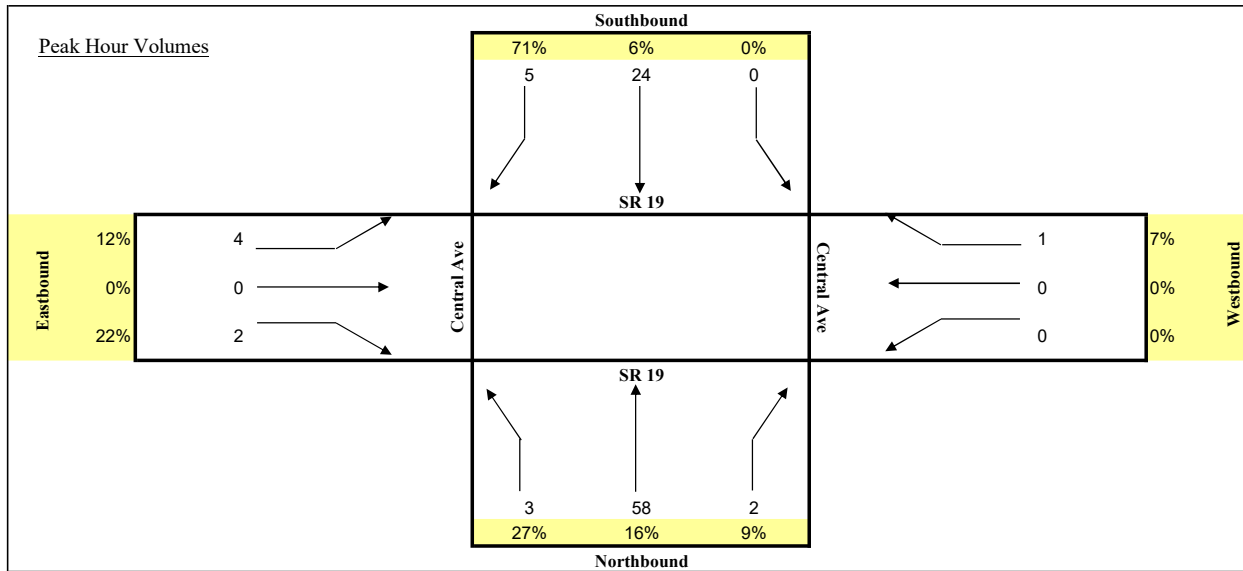
Intersection (N/S): SR 19

Intersection (E/W): Central Ave

Date: 7/19/2023

Start	End	SR 19			SR 19			Central Ave			Central Ave			TOTAL	
		NB			SB			EB			WB				
		R	T	L	R	T	L	R	T	L	R	T	L		
7:00 AM	7:15 AM	1	13	0	0	10	0	1	0	0	0	0	0	0	25
7:15 AM	7:30 AM	1	15	1	1	13	0	1	0	0	0	0	0	0	32
7:30 AM	7:45 AM	0	9	0	0	7	0	0	0	0	0	0	0	2	18
7:45 AM	8:00 AM	1	12	1	0	2	0	0	0	0	1	0	0	0	17
8:00 AM	8:15 AM	0	14	1	0	5	0	0	0	0	0	0	1	0	21
8:15 AM	8:30 AM	2	7	1	0	8	1	2	0	0	0	0	0	0	21
8:30 AM	8:45 AM	1	19	0	0	6	2	0	0	2	0	0	0	0	30
8:45 AM	9:00 AM	0	18	0	0	5	2	2	0	0	0	0	0	0	27

Total for:	7:00 AM	8:00 AM	3	49	2	1	32	0	2	0	0	1	0	2	92
Total for:	8:00 AM	9:00 AM	3	58	2	0	24	5	4	0	2	0	0	1	99
Tota Peak Hour:	8:00 AM	9:00 AM	3	58	2	0	24	5	4	0	2	0	0	1	99
Overall PHF:	0.83														

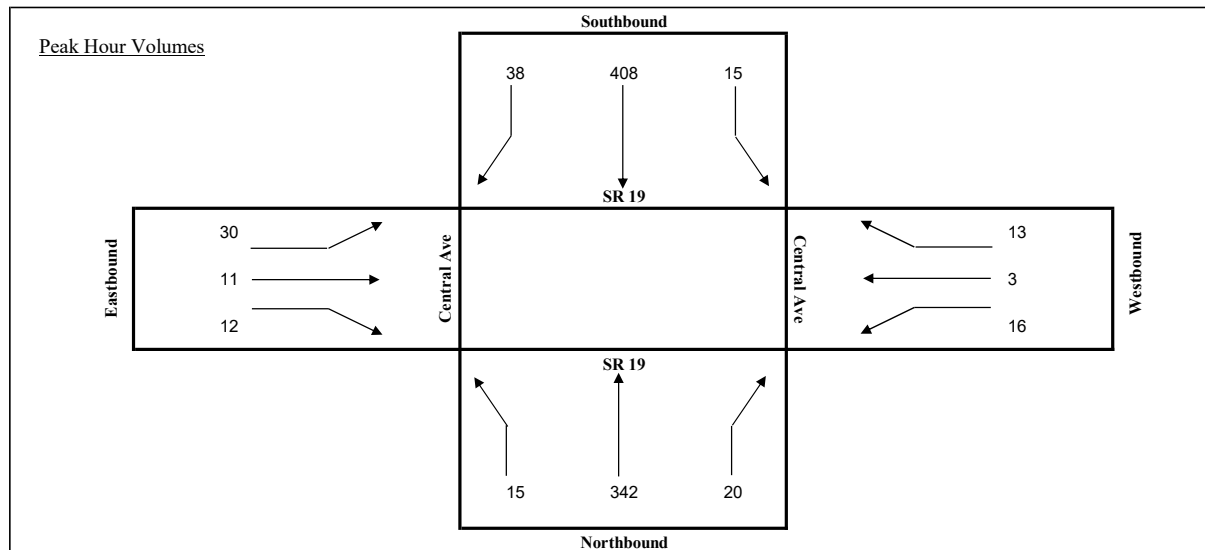


**TURNING MOVEMENT COUNT ANALYSIS
AUTOS & TRUCKS**

Intersection (N/S): SR 19
 Intersection (E/W): Central Ave
 Date: 7/19/2023

Start	End	SR 19 NB			SR 19 SB			Central Ave EB			Central Ave WB			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	4:15 PM	2	88	5	3	81	10	7	1	2	1	0	4	204
4:15 PM	4:30 PM	2	98	3	1	79	9	12	0	4	1	3	3	215
4:30 PM	4:45 PM	2	75	7	6	89	10	11	3	4	4	1	1	213
4:45 PM	5:00 PM	2	102	7	4	90	6	6	1	3	1	0	2	224
5:00 PM	5:15 PM	5	66	5	0	96	10	12	5	5	5	0	6	215
5:15 PM	5:30 PM	4	84	4	3	113	8	5	1	1	6	3	2	234
5:30 PM	5:45 PM	4	90	4	8	109	14	7	4	3	4	0	3	250
5:45 PM	6:00 PM	1	71	6	1	86	9	7	1	1	0	2	3	188

Total for:	4:00 PM	5:00 PM	8	363	22	14	339	35	36	5	13	7	4	10	856
Total for:	5:00 PM	6:00 PM	14	311	19	12	404	41	31	11	10	15	5	14	887
Tota Peak Hour:	4:45 PM	5:45 PM	15	342	20	15	408	38	30	11	12	16	3	13	923
Overall PHF:	0.92														

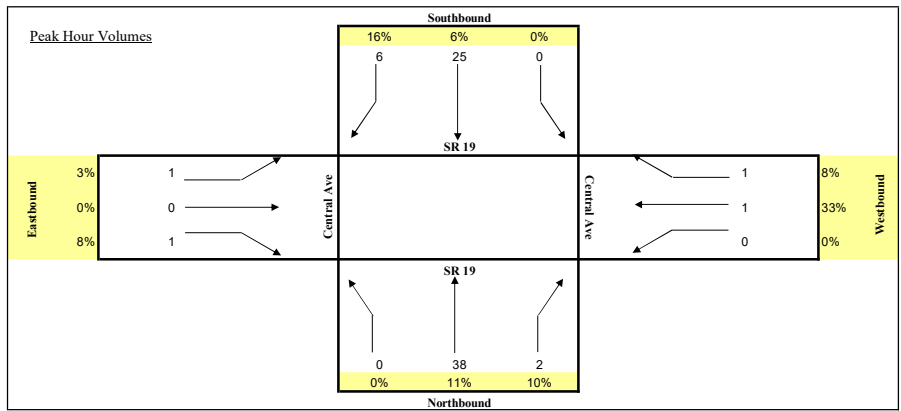


TURNING MOVEMENT COUNT ANALYSIS
TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): Central Ave
Date: 7/19/2023

Start	End	SR 19 NB			SR 19 SB			Central Ave EB			Central Ave WB			TOTAL
		R	T	L	R	T	L	R	T	L	R	T	L	
4:00 PM	4:15 PM	0	13	2	0	2	2	0	0	0	0	0	0	19
4:15 PM	4:30 PM	0	14	0	0	9	2	0	0	0	0	1	1	27
4:30 PM	4:45 PM	0	8	0	0	8	0	0	0	0	0	0	0	16
4:45 PM	5:00 PM	0	3	0	0	6	2	1	0	1	0	0	0	13
5:00 PM	5:15 PM	1	7	0	0	8	0	1	0	0	0	0	0	17
5:15 PM	5:30 PM	0	7	0	0	6	0	0	0	1	0	0	0	14
5:30 PM	5:45 PM	1	2	0	1	0	1	0	0	1	1	0	0	7
5:45 PM	6:00 PM	0	6	0	0	6	0	0	0	0	0	1	0	13

Total for:	4:00 PM	5:00 PM	0	38	2	0	25	6	1	0	1	0	1	1	75
Total for:	5:00 PM	6:00 PM	2	22	0	1	20	1	1	0	2	1	1	0	51
Total Peak Hour:	4:00 PM	5:00 PM	0	38	2	0	25	6	1	0	1	0	1	1	75
Overall PHF:	0.69														

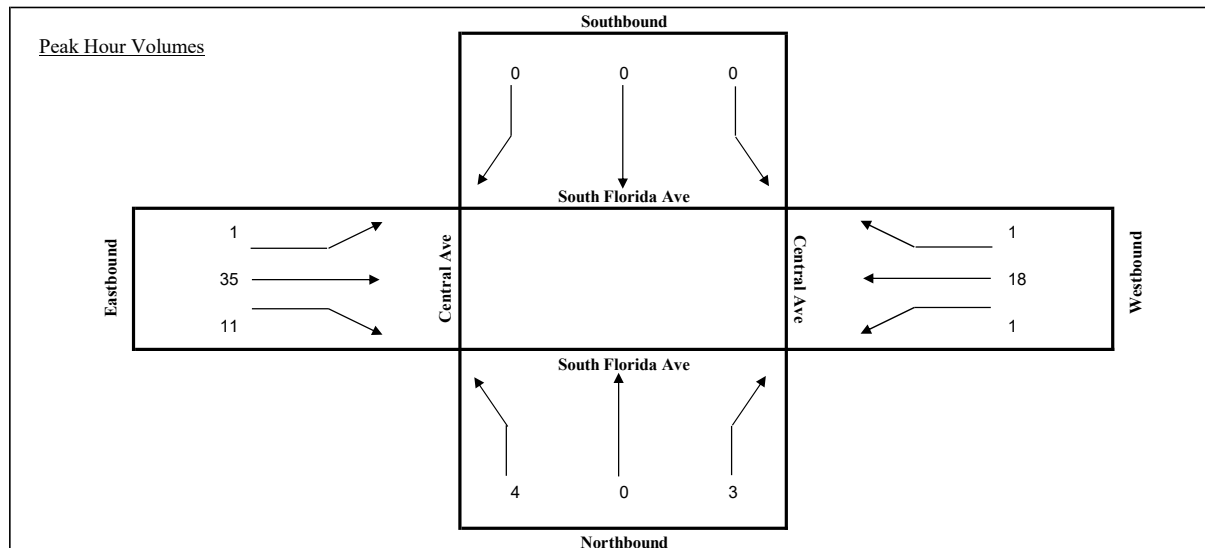


TURNING MOVEMENT COUNT ANALYSIS
AUTOS & TRUCKS

Intersection (N/S): South Florida Ave
Intersection (E/W): Central Ave
Date: 7/19/2023

Start	End	South Florida Ave			South Florida Ave			Central Ave			Central Ave			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
7:00 AM	7:15 AM	0	0	0	0	0	0	0	6	4	0	8	1	19
7:15 AM	7:30 AM	2	0	1	0	0	0	1	13	2	0	4	0	23
7:30 AM	7:45 AM	2	0	1	0	0	0	0	9	4	1	1	0	18
7:45 AM	8:00 AM	0	0	1	0	0	0	0	7	1	0	5	0	14
8:00 AM	8:15 AM	0	0	2	0	0	0	0	5	0	2	5	0	14
8:15 AM	8:30 AM	0	0	3	0	0	0	0	8	2	1	3	2	19
8:30 AM	8:45 AM	0	0	1	1	0	1	0	3	1	3	7	0	17
8:45 AM	9:00 AM	1	0	2	0	0	0	0	7	2	1	6	1	20

Total for:	7:00 AM	8:00 AM	4	0	3	0	0	0	1	35	11	1	18	1	74
Total for:	8:00 AM	9:00 AM	1	0	8	1	0	1	0	23	5	7	21	3	70
Tota Peak Hour:	7:00 AM	8:00 AM	4	0	3	0	0	0	1	35	11	1	18	1	74
Overall PHF:			0.80												

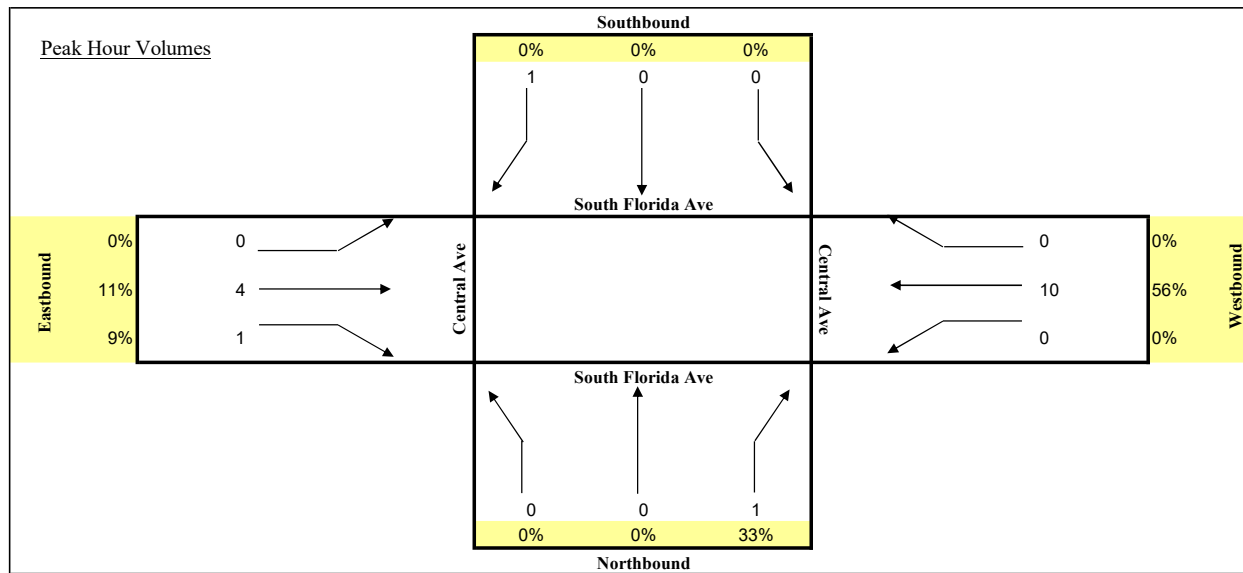


TURNING MOVEMENT COUNT ANALYSIS
TRUCKS

Intersection (N/S): South Florida Ave
 Intersection (E/W): Central Ave
 Date: 7/19/2023

		South Florida Ave			South Florida Ave			Central Ave			Central Ave			TOTAL
Start	End	NB			SB			EB			WB			
		R	T	L	R	T	L	R	T	L	R	T	L	
7:00 AM	7:15 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
7:15 AM	7:30 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
7:30 AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:00 AM	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	8:30 AM	0	0	1	0	0	0	0	2	0	0	2	0	5
8:30 AM	8:45 AM	0	0	0	0	0	1	0	1	0	0	3	0	5
8:45 AM	9:00 AM	0	0	0	0	0	0	0	1	1	0	5	0	7

Total for:	7:00 AM	8:00 AM	0	0	0	0	0	0	2	0	0	3	0	5
Total for:	8:00 AM	9:00 AM	0	0	1	0	0	1	0	4	1	0	10	0
Tota Peak Hour:	8:00 AM	9:00 AM	0	0	1	0	0	1	0	4	1	0	10	0
Overall PHF:	0.61													



**TURNING MOVEMENT COUNT ANALYSIS
AUTOS & TRUCKS**

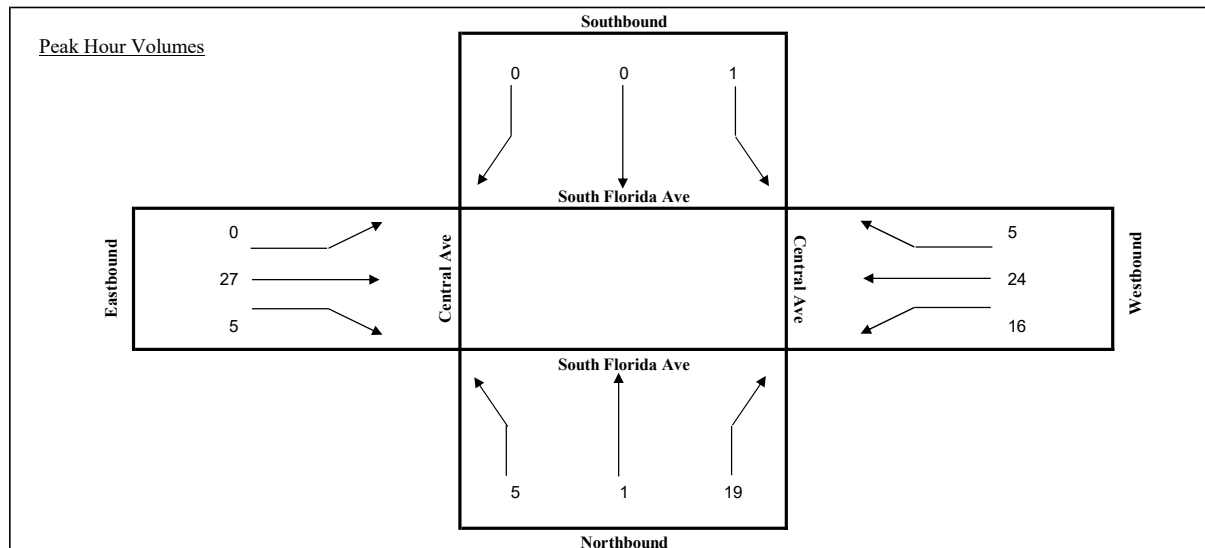
Intersection (N/S): South Florida Ave

Intersection (E/W): Central Ave

Date: 7/19/2023

Start	End	South Florida Ave			South Florida Ave			Central Ave			Central Ave			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	4:15 PM	3	0	3	0	0	0	0	3	0	4	5	0	18
4:15 PM	4:30 PM	3	0	5	0	0	0	0	6	2	4	8	0	28
4:30 PM	4:45 PM	2	0	6	0	0	0	0	2	3	3	7	0	23
4:45 PM	5:00 PM	1	0	4	0	0	0	0	5	1	1	4	0	16
5:00 PM	5:15 PM	1	1	7	0	0	0	0	10	2	5	6	0	32
5:15 PM	5:30 PM	1	0	4	0	0	0	0	5	1	0	4	4	19
5:30 PM	5:45 PM	1	0	4	1	0	0	0	6	2	5	9	0	28
5:45 PM	6:00 PM	2	0	4	0	0	0	0	6	0	6	5	1	24

Total for:	4:00 PM	5:00 PM	9	0	18	0	0	0	0	16	6	12	24	0	85
Total for:	5:00 PM	6:00 PM	5	1	19	1	0	0	0	27	5	16	24	5	103
Tota Peak Hour:	5:00 PM	6:00 PM	5	1	19	1	0	0	0	27	5	16	24	5	103
Overall PHF:	0.80														

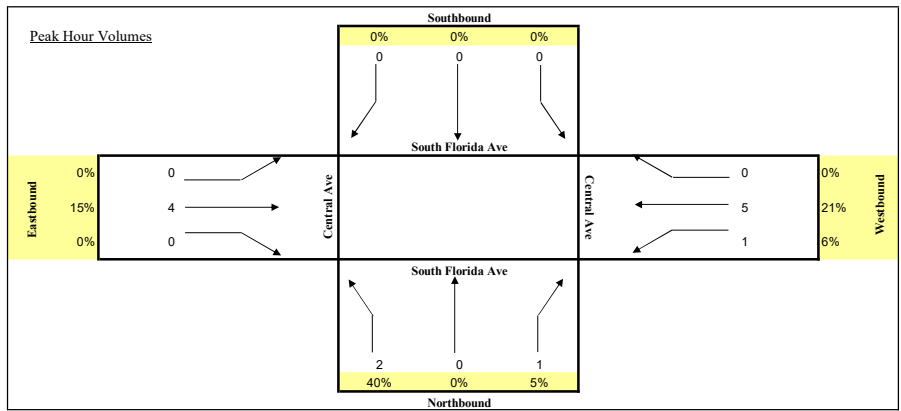


TURNING MOVEMENT COUNT ANALYSIS
TRUCKS

Intersection (N/S): South Florida Ave
Intersection (E/W): Central Ave
Date: 7/19/2023

Start	End	South Florida Ave			South Florida Ave			Central Ave			Central Ave			TOTAL
		R	T	L	R	T	L	R	T	L	R	T	L	
4:00 PM	4:15 PM	0	0	0	0	0	0	0	0	0	1	1	0	2
4:15 PM	4:30 PM	1	0	0	0	0	0	0	0	0	1	2	0	4
4:30 PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	5:00 PM	1	0	0	0	0	0	0	2	0	1	1	0	5
5:00 PM	5:15 PM	0	0	1	0	0	0	0	0	0	0	1	0	2
5:15 PM	5:30 PM	1	0	0	0	0	0	0	2	0	0	1	0	4
5:30 PM	5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
5:45 PM	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0

Total for:	4:00 PM	5:00 PM	2	0	0	0	0	0	0	2	0	3	4	0	11
Total for:	5:00 PM	6:00 PM	1	0	1	0	0	0	0	2	0	0	4	0	8
Total Peak Hour:	4:45 PM	5:45 PM	2	0	1	0	0	0	0	4	0	1	5	0	13
Overall PHF:	0.65														

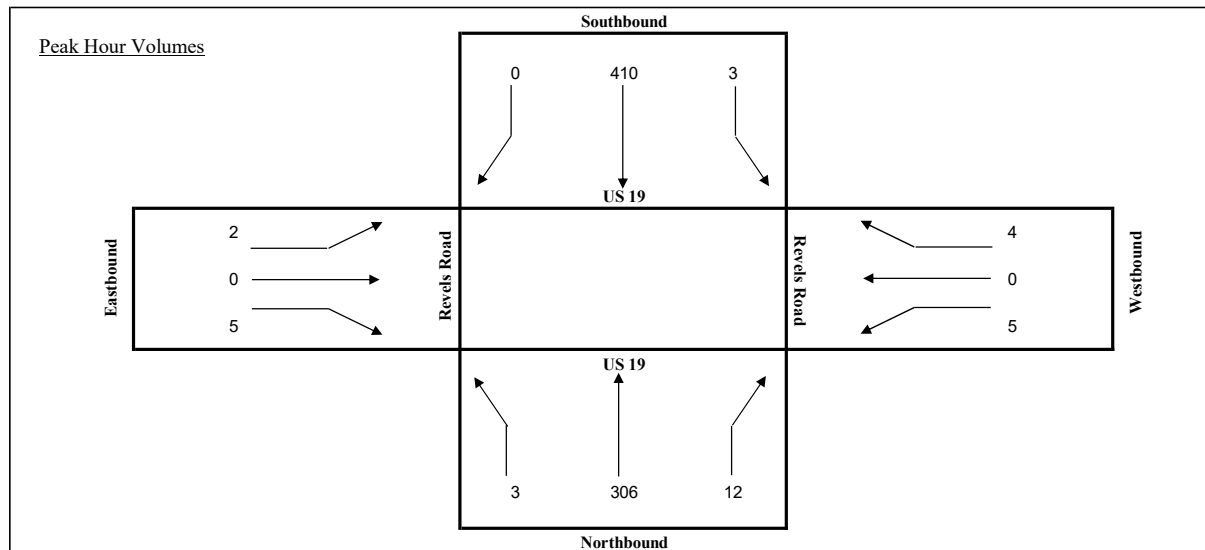


TURNING MOVEMENT COUNT ANALYSIS
AUTOS & TRUCKS

Intersection (N/S): US 19
 Intersection (E/W): Revels Road
 Date: 7/19/2023

Start	End	US 19 NB			US 19 SB			Revels Road EB			Revels Road WB			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
7:00 AM	7:15 AM	3	80	1	0	74	2	0	0	0	3	0	2	165
7:15 AM	7:30 AM	2	60	1	1	94	1	1	0	0	0	1	0	161
7:30 AM	7:45 AM	1	72	0	1	107	0	0	0	2	1	0	1	185
7:45 AM	8:00 AM	1	97	5	0	100	0	0	0	2	2	0	1	208
8:00 AM	8:15 AM	0	71	2	2	110	0	2	0	0	2	0	2	191
8:15 AM	8:30 AM	1	66	5	0	93	0	0	0	1	0	0	0	166
8:30 AM	8:45 AM	0	58	1	0	60	1	1	0	2	4	0	2	129
8:45 AM	9:00 AM	0	57	3	1	63	2	0	0	1	1	0	2	130

Total for:	7:00 AM	8:00 AM	7	309	7	2	375	3	1	0	4	6	1	4	719
Total for:	8:00 AM	9:00 AM	1	252	11	3	326	3	3	0	4	7	0	6	616
Tota Peak Hour:	7:30 AM	8:30 AM	3	306	12	3	410	0	2	0	5	5	0	4	750
Overall PHF:	0.90														

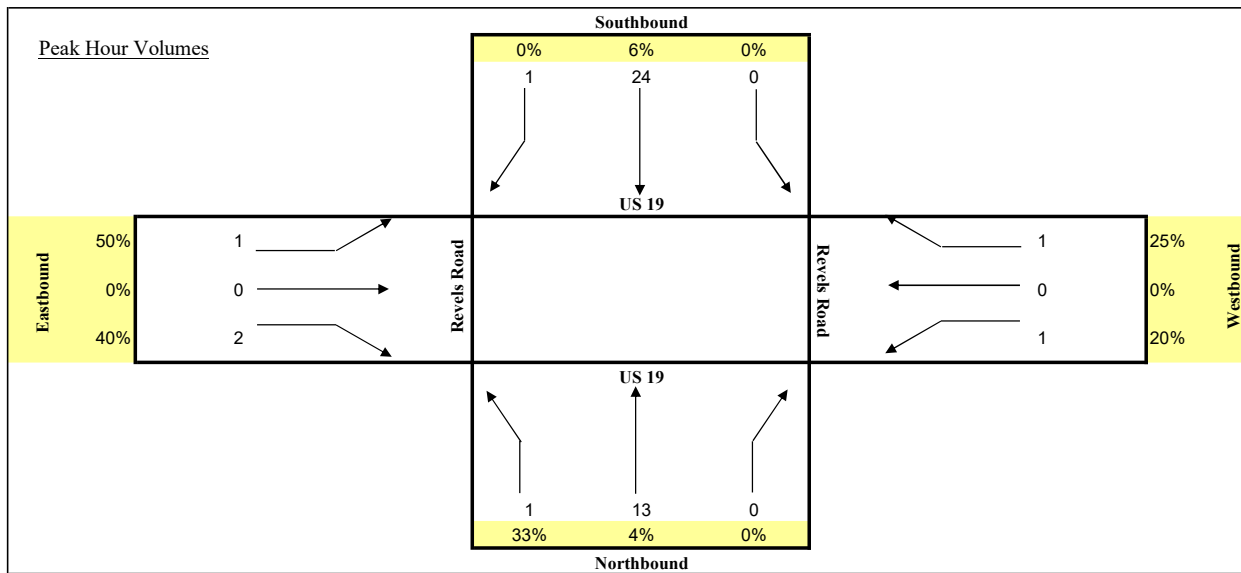


**TURNING MOVEMENT COUNT ANALYSIS
TRUCKS**

Intersection (N/S): US 19
 Intersection (E/W): Revels Road
 Date: 7/19/2023

Start	End	US 19			US 19			Revels Road			Revels Road			TOTAL
		NB			SB			EB			WB			
		R	T	L	R	T	L	R	T	L	R	T	L	
7:00 AM	7:15 AM	1	3	0	0	5	0	0	0	0	0	0	0	9
7:15 AM	7:30 AM	0	1	0	0	6	0	0	0	0	0	0	0	7
7:30 AM	7:45 AM	0	2	0	0	5	0	0	0	0	0	0	0	7
7:45 AM	8:00 AM	1	6	0	0	3	0	0	0	0	0	0	1	11
8:00 AM	8:15 AM	0	1	0	0	8	0	0	0	0	0	0	0	9
8:15 AM	8:30 AM	0	3	0	0	6	0	0	0	1	0	0	0	10
8:30 AM	8:45 AM	0	3	0	0	7	1	1	0	1	1	0	0	14
8:45 AM	9:00 AM	0	1	0	0	3	1	0	0	0	0	0	0	5

Total for:	7:00 AM	8:00 AM	2	12	0	0	19	0	0	0	0	0	1	34
Total for:	8:00 AM	9:00 AM	0	8	0	0	24	2	1	0	2	1	0	38
Tota Peak Hour:	7:45 AM	8:45 AM	1	13	0	0	24	1	1	0	2	1	0	44
Overall PHF:	0.79													

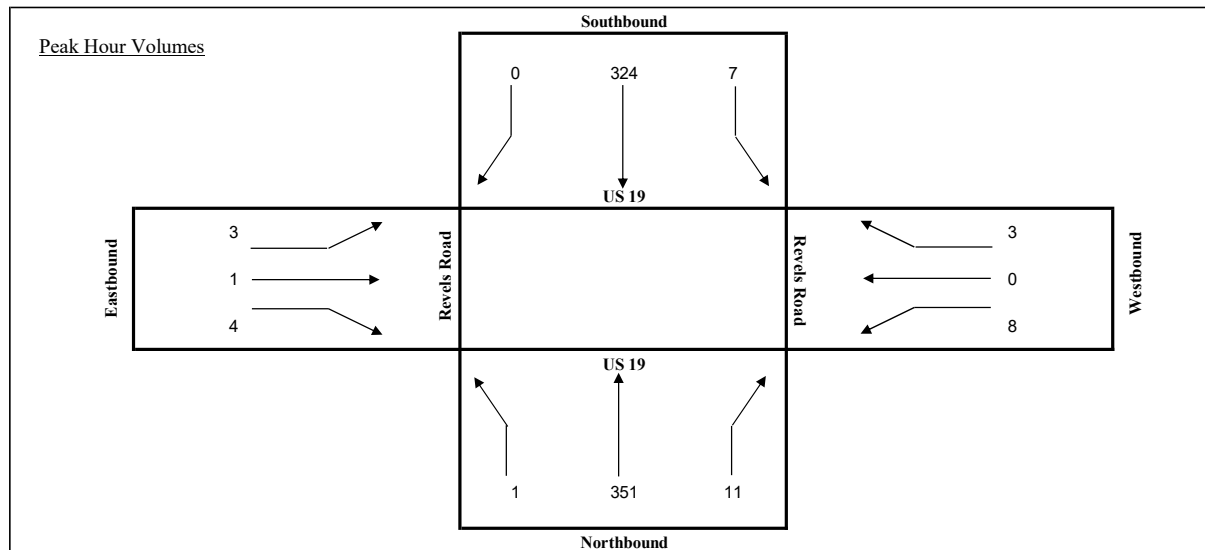


**TURNING MOVEMENT COUNT ANALYSIS
AUTOS & TRUCKS**

Intersection (N/S): US 19
 Intersection (E/W): Revels Road
 Date: 7/19/2023

Start	End	US 19 NB			US 19 SB			Revels Road EB			Revels Road WB			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	4:15 PM	2	89	6	5	61	3	1	0	0	1	1	2	171
4:15 PM	4:30 PM	0	76	3	0	74	1	1	0	1	3	0	1	160
4:30 PM	4:45 PM	1	78	1	2	88	0	0	0	1	2	0	0	173
4:45 PM	5:00 PM	0	93	6	1	91	0	0	0	0	2	0	2	195
5:00 PM	5:15 PM	0	88	3	2	70	0	1	0	2	2	0	0	168
5:15 PM	5:30 PM	0	92	1	2	75	0	2	1	1	2	0	1	177
5:30 PM	5:45 PM	0	92	2	1	70	0	0	0	1	0	0	0	166
5:45 PM	6:00 PM	0	86	3	0	72	0	1	0	0	2	0	1	165

Total for:	4:00 PM	5:00 PM	3	336	16	8	314	4	2	0	2	8	1	5	699
Total for:	5:00 PM	6:00 PM	0	358	9	5	287	0	4	1	4	6	0	2	676
Tota Peak Hour:	4:30 PM	5:30 PM	1	351	11	7	324	0	3	1	4	8	0	3	713
Overall PHF:			0.91												

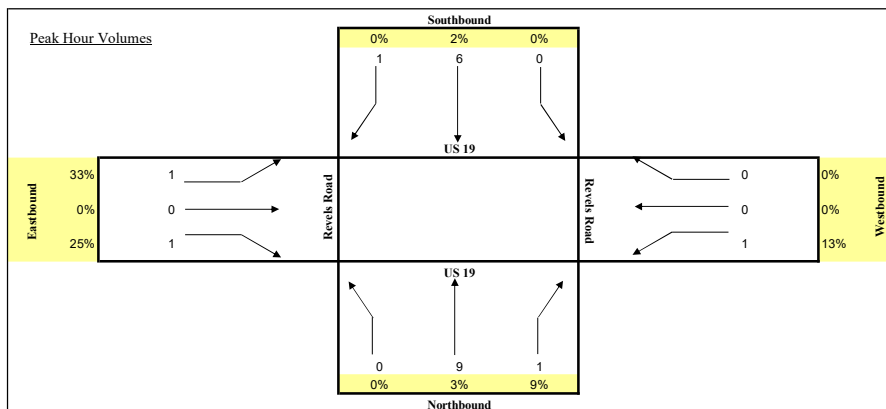


TURNING MOVEMENT COUNT ANALYSIS
TRUCKS

Intersection (N/S): US 19
Intersection (E/W): Revels Road
Date: 7/19/2023

Start	End	US 19 NB			US 19 SB			Revels Road EB			Revels Road WB			TOTAL	
		R	T	L	R	T	L	R	T	L	R	T	L		
4:00 PM	4:15 PM	0	1	0	0	1	1	0	0	0	0	0	0	0	3
4:15 PM	4:30 PM	0	4	1	0	2	0	1	0	0	0	0	0	0	8
4:30 PM	4:45 PM	0	1	0	0	0	0	0	0	1	1	0	0	0	3
4:45 PM	5:00 PM	0	3	0	0	3	0	0	0	0	0	0	0	0	6
5:00 PM	5:15 PM	0	2	0	0	1	0	0	0	0	0	0	0	0	3
5:15 PM	5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	2
5:30 PM	5:45 PM	0	5	0	0	2	0	0	0	0	0	0	0	0	7
5:45 PM	6:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1

Total for:	4:00 PM	5:00 PM	0	9	1	0	6	1	1	0	1	1	0	0	20
Total for:	5:00 PM	6:00 PM	0	9	0	0	4	0	0	0	0	0	0	0	13
Total Peak Hour:	4:00 PM	5:00 PM	0	9	1	0	6	1	1	0	1	1	0	0	20
Overall PHF:	0.63														

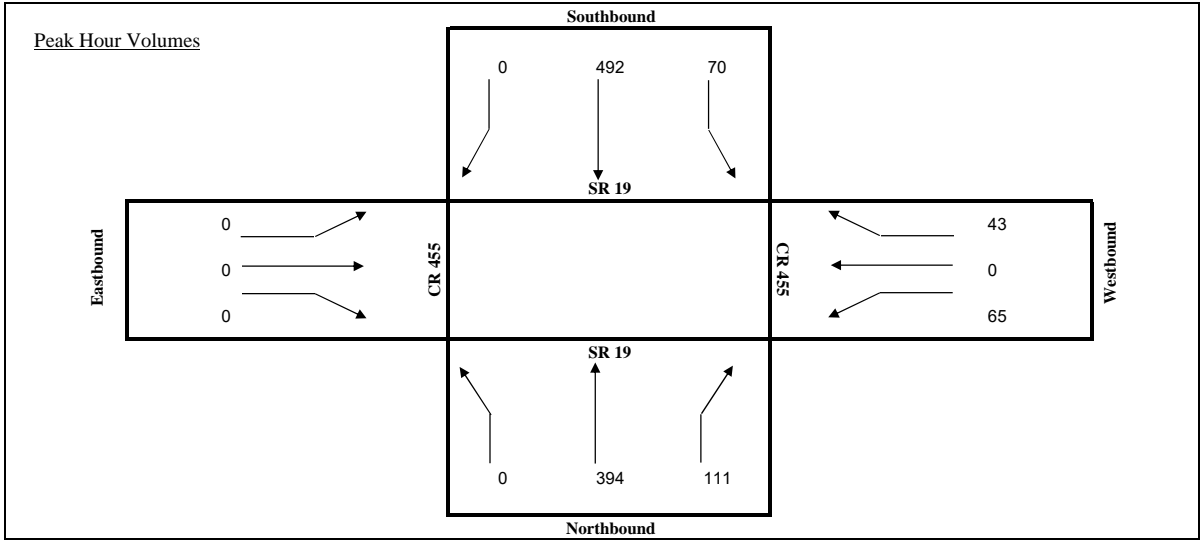


TURNING MOVEMENT COUNT ANALYSIS
AUTOS & TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): CR 455
Date: 1/24/2023

Start	End	SR 19 NB			SR 19 SB			CR 455 EB			CR 455 WB			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
7:00 AM	7:15 AM	0	92	15	11	131	0	0	0	0	7	0	4	260
7:15 AM	7:30 AM	0	93	23	16	144	0	0	0	0	9	0	6	291
7:30 AM	7:45 AM	0	111	27	21	105	0	0	0	0	13	0	11	288
7:45 AM	8:00 AM	0	91	26	20	124	0	0	0	0	17	0	12	290
8:00 AM	8:15 AM	0	99	35	13	119	0	0	0	0	26	0	14	306
8:15 AM	8:30 AM	0	93	29	18	98	0	0	0	0	22	0	11	271
8:30 AM	8:45 AM	0	74	27	11	94	0	0	0	0	22	0	12	240
8:45 AM	9:00 AM	0	81	22	9	94	0	0	0	0	17	0	9	232

Total for:	7:00 AM	8:00 AM	0	387	91	68	504	0	0	0	0	46	0	33	1129
Total for:	8:00 AM	9:00 AM	0	347	113	51	405	0	0	0	0	87	0	46	1049
Tota Peak Hour:	7:15 AM	8:15 AM	0	394	111	70	492	0	0	0	0	65	0	43	1175
Overall PHF:	0.96														

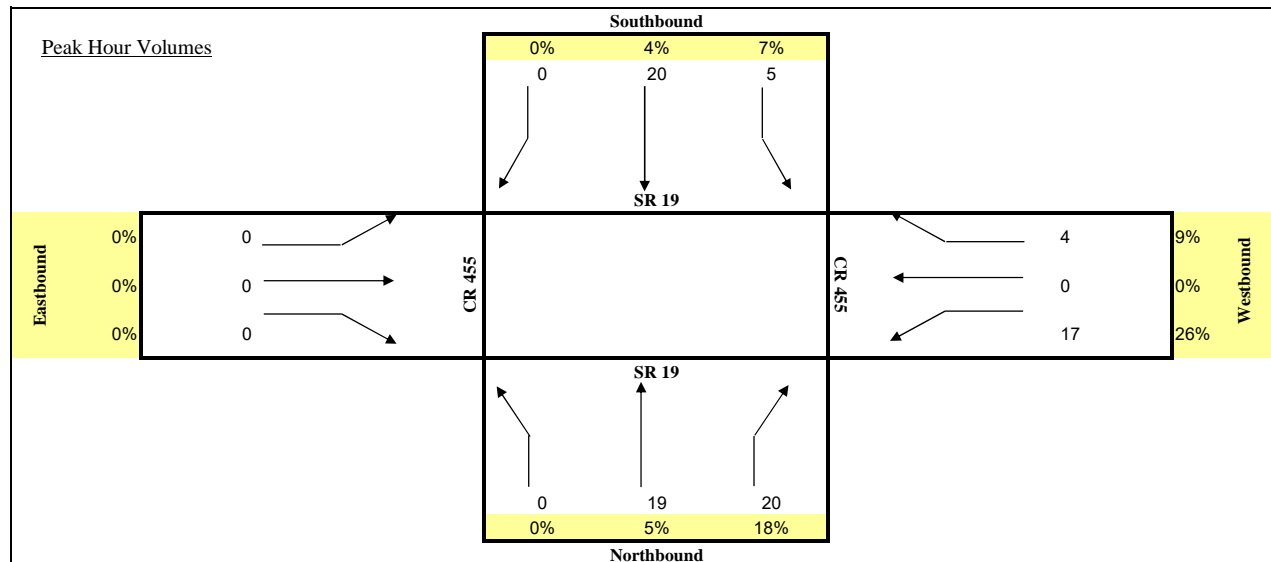


TURNING MOVEMENT COUNT ANALYSIS
TRUCKS

Intersection (N/S): SR 19
 Intersection (E/W): CR 455
 Date: 1/24/2023

Start	End	SR 19			SR 19			CR 455			CR 455			TOTAL
		NB			SB			EB			WB			
		R	T	L	R	T	L	R	T	L	R	T	L	
7:00 AM	7:15 AM	0	3	3	0	7	0	0	0	0	2	0	1	16
7:15 AM	7:30 AM	0	6	1	1	8	0	0	0	0	2	0	0	18
7:30 AM	7:45 AM	0	7	7	3	5	0	0	0	0	3	0	2	27
7:45 AM	8:00 AM	0	3	2	1	3	0	0	0	0	1	0	0	10
8:00 AM	8:15 AM	0	6	5	0	5	0	0	0	0	5	0	1	22
8:15 AM	8:30 AM	0	3	6	3	6	0	0	0	0	3	0	2	23
8:30 AM	8:45 AM	0	3	6	1	5	0	0	0	0	6	0	0	21
8:45 AM	9:00 AM	0	7	3	1	4	0	0	0	0	3	0	1	19

Total for:	7:00 AM	8:00 AM	0	19	13	5	23	0	0	0	0	8	0	3	71
Total for:	8:00 AM	9:00 AM	0	19	20	5	20	0	0	0	0	17	0	4	85
Tota Peak Hour:	8:00 AM	9:00 AM	0	19	20	5	20	0	0	0	0	17	0	4	85
Overall PHF:	0.92														

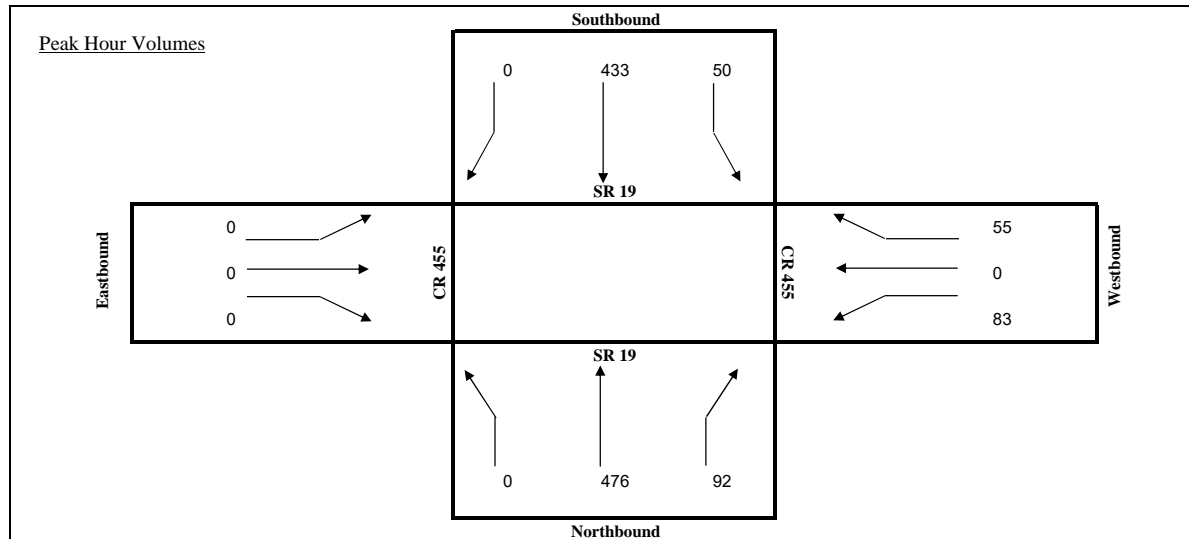


TURNING MOVEMENT COUNT ANALYSIS
AUTOS & TRUCKS

Intersection (N/S): SR 19
 Intersection (E/W): CR 455
 Date: 1/24/2023

Start	End	SR 19 NB			SR 19 SB			CR 455 EB			CR 455 WB			TOTAL
		L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	4:15 PM	0	97	20	6	117	0	0	0	0	18	0	14	272
4:15 PM	4:30 PM	0	111	22	9	109	0	0	0	0	22	0	11	284
4:30 PM	4:45 PM	0	114	25	13	108	0	0	0	0	19	0	16	295
4:45 PM	5:00 PM	0	118	22	9	108	0	0	0	0	25	0	13	295
5:00 PM	5:15 PM	0	131	21	14	104	0	0	0	0	18	0	10	298
5:15 PM	5:30 PM	0	113	24	14	113	0	0	0	0	21	0	16	301
5:30 PM	5:45 PM	0	96	28	17	94	0	0	0	0	17	0	19	271
5:45 PM	6:00 PM	0	87	21	10	102	0	0	0	0	21	0	12	253

Total for:	4:00 PM	5:00 PM	0	440	89	37	442	0	0	0	0	84	0	54	1146
Total for:	5:00 PM	6:00 PM	0	427	94	55	413	0	0	0	0	77	0	57	1123
Total Peak Hour:	4:30 PM	5:30 PM	0	476	92	50	433	0	0	0	0	83	0	55	1189
Overall PHF:	0.99														

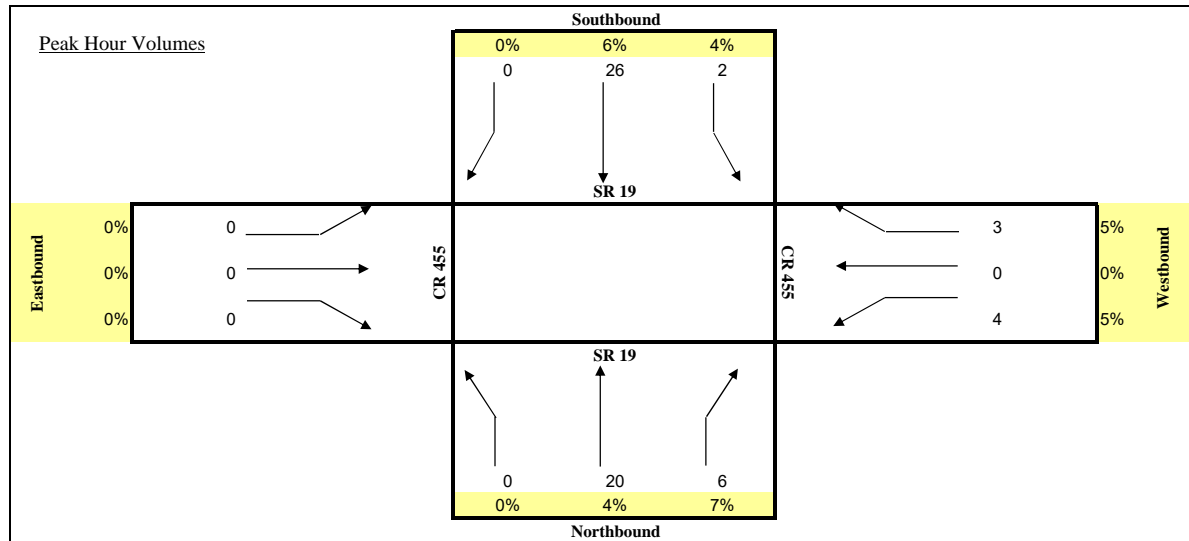


TURNING MOVEMENT COUNT ANALYSIS
TRUCKS

Intersection (N/S): SR 19
Intersection (E/W): CR 455
Date: 1/24/2023

Start	End	SR 19 NB			SR 19 SB			CR 455 EB			CR 455 WB			TOTAL
		R	T	L	R	T	L	R	T	L	R	T	L	
4:00 PM	4:15 PM	0	6	3	0	7	0	0	0	0	1	0	1	18
4:15 PM	4:30 PM	0	5	0	1	7	0	0	0	0	1	0	1	15
4:30 PM	4:45 PM	0	7	2	1	4	0	0	0	0	0	0	0	14
4:45 PM	5:00 PM	0	2	1	0	8	0	0	0	0	2	0	1	14
5:00 PM	5:15 PM	0	4	3	1	2	0	0	0	0	0	0	0	10
5:15 PM	5:30 PM	0	3	1	0	7	0	0	0	0	1	0	0	12
5:30 PM	5:45 PM	0	0	4	1	1	0	0	0	0	0	0	2	8
5:45 PM	6:00 PM	0	0	1	0	5	0	0	0	0	1	0	1	8

Total for:	4:00 PM	5:00 PM	0	20	6	2	26	0	0	0	0	4	0	3	61
Total for:	5:00 PM	6:00 PM	0	7	9	2	15	0	0	0	0	2	0	3	38
Tota Peak Hour:	4:00 PM	5:00 PM	0	20	6	2	26	0	0	0	0	4	0	3	61
Overall PHF:	0.85														



2022 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
 CATEGORY: 1100 LAKE COUNTYWIDE

Item 3.

WEEK	DATES	SF	MOCF: 0.95 PSCF
1	01/01/2022 - 01/01/2022	0.99	1.04
2	01/02/2022 - 01/08/2022	1.01	1.06
3	01/09/2022 - 01/15/2022	1.03	1.08
4	01/16/2022 - 01/22/2022	1.02	1.07
5	01/23/2022 - 01/29/2022	1.00	1.05
* 6	01/30/2022 - 02/05/2022	0.98	1.03
* 7	02/06/2022 - 02/12/2022	0.97	1.02
* 8	02/13/2022 - 02/19/2022	0.95	1.00
* 9	02/20/2022 - 02/26/2022	0.95	1.00
*10	02/27/2022 - 03/05/2022	0.94	0.99
*11	03/06/2022 - 03/12/2022	0.94	0.99
*12	03/13/2022 - 03/19/2022	0.93	0.98
*13	03/20/2022 - 03/26/2022	0.94	0.99
*14	03/27/2022 - 04/02/2022	0.95	1.00
*15	04/03/2022 - 04/09/2022	0.95	1.00
*16	04/10/2022 - 04/16/2022	0.96	1.01
*17	04/17/2022 - 04/23/2022	0.97	1.02
*18	04/24/2022 - 04/30/2022	0.98	1.03
19	05/01/2022 - 05/07/2022	0.99	1.04
20	05/08/2022 - 05/14/2022	0.99	1.04
21	05/15/2022 - 05/21/2022	1.00	1.05
22	05/22/2022 - 05/28/2022	1.01	1.06
23	05/29/2022 - 06/04/2022	1.02	1.07
24	06/05/2022 - 06/11/2022	1.03	1.08
25	06/12/2022 - 06/18/2022	1.04	1.09
26	06/19/2022 - 06/25/2022	1.05	1.11
27	06/26/2022 - 07/02/2022	1.05	1.11
28	07/03/2022 - 07/09/2022	1.06	1.12
29	07/10/2022 - 07/16/2022	1.06	1.12
30	07/17/2022 - 07/23/2022	1.06	1.12
31	07/24/2022 - 07/30/2022	1.05	1.11
32	07/31/2022 - 08/06/2022	1.05	1.11
33	08/07/2022 - 08/13/2022	1.04	1.09
34	08/14/2022 - 08/20/2022	1.04	1.09
35	08/21/2022 - 08/27/2022	1.05	1.11
36	08/28/2022 - 09/03/2022	1.06	1.12
37	09/04/2022 - 09/10/2022	1.07	1.13
38	09/11/2022 - 09/17/2022	1.08	1.14
39	09/18/2022 - 09/24/2022	1.05	1.11
40	09/25/2022 - 10/01/2022	1.02	1.07
41	10/02/2022 - 10/08/2022	1.00	1.05
42	10/09/2022 - 10/15/2022	0.97	1.02
43	10/16/2022 - 10/22/2022	0.98	1.03
44	10/23/2022 - 10/29/2022	0.99	1.04
45	10/30/2022 - 11/05/2022	0.99	1.04
46	11/06/2022 - 11/12/2022	1.00	1.05
47	11/13/2022 - 11/19/2022	1.01	1.06
48	11/20/2022 - 11/26/2022	1.00	1.05
49	11/27/2022 - 12/03/2022	1.00	1.05
50	12/04/2022 - 12/10/2022	0.99	1.04
51	12/11/2022 - 12/17/2022	0.99	1.04
52	12/18/2022 - 12/24/2022	1.01	1.06
53	12/25/2022 - 12/31/2022	1.03	1.08

* PEAK SEASON

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Appendix E
HCM Analysis Worksheets - Existing Conditions













HCM 6th Signalized Intersection Summary

1: SR 19 & CR 48

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	346	229	316	455	277	98
Future Volume (veh/h)	346	229	316	455	277	98
Initial Q (Qb), veh	0	0	0	0	0	0
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	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	357	117	326	0	286	101
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	390	315	751		564	1114
Arrive On Green	0.23	0.23	0.42	0.00	0.12	0.62
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	357	117	326	0	286	101
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	18.9	6.6	11.8	0.0	8.2	2.1
Cycle Q Clear(g_c), s	18.9	6.6	11.8	0.0	8.2	2.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	390	315	751		564	1114
V/C Ratio(X)	0.91	0.37	0.43		0.51	0.09
Avail Cap(c_a), veh/h	417	336	751		705	1114
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	33.9	29.2	18.4	0.0	11.8	7.1
Incr Delay (d2), s/veh	23.6	0.7	1.8	0.0	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.8	3.7	8.6	0.0	5.1	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	57.5	29.9	20.3	0.0	12.6	7.3
LnGrp LOS	E	C	C		B	A
Approach Vol, veh/h	474		326	A		387
Approach Delay, s/veh	50.7		20.3			11.2
Approach LOS	D		C			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	17.3	45.0		28.6		62.3
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	10.2	13.8		20.9		4.1
Green Ext Time (p_c), s	0.5	1.9		0.3		0.5
Intersection Summary						
HCM 6th Ctrl Delay			29.5			
HCM 6th LOS			C			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

HCM 6th Signalized Intersection Summary

1: SR 19 & CR 48

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	434	319	72	353	304	84
Future Volume (veh/h)	434	319	72	353	304	84
Initial Q (Qb), veh	0	0	0	0	0	0
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	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	447	210	74	0	313	87
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	405	327	729		767	1107
Arrive On Green	0.24	0.24	0.41	0.00	0.13	0.61
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	447	210	74	0	313	87
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	22.7	13.1	2.4	0.0	9.5	1.8
Cycle Q Clear(g_c), s	22.7	13.1	2.4	0.0	9.5	1.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	405	327	729		767	1107
V/C Ratio(X)	1.10	0.64	0.10		0.41	0.08
Avail Cap(c_a), veh/h	405	327	729		880	1107
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	31.8	16.9	0.0	11.2	7.4
Incr Delay (d2), s/veh	76.1	4.3	0.3	0.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	25.4	7.8	1.8	0.0	5.8	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	111.6	36.1	17.1	0.0	11.5	7.6
LnGrp LOS	F	D	B		B	A
Approach Vol, veh/h	657		74	A		400
Approach Delay, s/veh	87.5		17.1			10.7
Approach LOS	F		B			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	18.6	45.0		30.0		63.6
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	11.5	4.4		24.7		3.8
Green Ext Time (p_c), s	0.6	0.4		0.0		0.4
Intersection Summary						
HCM 6th Ctrl Delay			55.7			
HCM 6th LOS			E			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

HCM 6th TWSC
2: SR 19 & W Central Ave/E Central Ave

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	35	3	10	11	1	15	12	377	24	4	428	7
Future Vol, veh/h	35	3	10	11	1	15	12	377	24	4	428	7
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	36	3	10	11	1	15	12	389	25	4	441	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	887	891	445	885	882	402	448	0	0	414	0	0
Stage 1	453	453	-	426	426	-	-	-	-	-	-	-
Stage 2	434	438	-	459	456	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.83	6.22	7.12	6.52	6.22	4.48	-	-	4.52	-	-
Critical Hdwy Stg 1	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.297	3.318	3.518	4.018	3.318	2.542	-	-	2.578	-	-
Pot Cap-1 Maneuver	254	251	613	266	285	648	946	-	-	960	-	-
Stage 1	568	521	-	606	586	-	-	-	-	-	-	-
Stage 2	581	529	-	582	568	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	243	245	613	255	278	648	946	-	-	960	-	-
Mov Cap-2 Maneuver	243	245	-	255	278	-	-	-	-	-	-	-
Stage 1	558	518	-	596	576	-	-	-	-	-	-	-
Stage 2	556	520	-	565	565	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	20.7		15.1		0.3		0.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	946	-	-	278	386	960	-	-
HCM Lane V/C Ratio	0.013	-	-	0.178	0.072	0.004	-	-
HCM Control Delay (s)	8.9	0	-	20.7	15.1	8.8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.2	0	-	-

HCM 6th TWSC

2: SR 19 & W Central Ave/E Central Ave

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	32	12	13	17	3	14	16	363	21	16	432	40
Future Vol, veh/h	32	12	13	17	3	14	16	363	21	16	432	40
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	33	12	13	18	3	14	16	374	22	16	445	41

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	924	926	466	927	935	385	486	0	0	396	0	0
Stage 1	498	498	-	417	417	-	-	-	-	-	-	-
Stage 2	426	428	-	510	518	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.83	6.22	7.12	6.52	6.22	4.48	-	-	4.52	-	-
Critical Hdwy Stg 1	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.297	3.318	3.518	4.018	3.318	2.542	-	-	2.578	-	-
Pot Cap-1 Maneuver	240	239	597	249	265	663	914	-	-	975	-	-
Stage 1	536	496	-	613	591	-	-	-	-	-	-	-
Stage 2	587	535	-	546	533	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	225	228	597	225	253	663	914	-	-	975	-	-
Mov Cap-2 Maneuver	225	228	-	225	253	-	-	-	-	-	-	-
Stage 1	524	485	-	599	577	-	-	-	-	-	-	-
Stage 2	558	523	-	508	521	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	22.6		17.9		0.4		0.3	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	914	-	-	263	313	975	-	-
HCM Lane V/C Ratio	0.018	-	-	0.223	0.112	0.017	-	-
HCM Control Delay (s)	9	0	-	22.6	17.9	8.8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.4	0.1	-	-

HCM 6th TWSC
3: S Florida Ave & W Central Ave

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	37	12	1	19	1	4	0	3	0	0	0
Future Vol, veh/h	1	37	12	1	19	1	4	0	3	0	0	0
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	80	80	80	80	80	80	80	80	80	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	46	15	1	24	1	5	0	4	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	25	0	0	61	0	0	83	83	54	85	90	25
Stage 1	-	-	-	-	-	-	56	56	-	27	27	-
Stage 2	-	-	-	-	-	-	27	27	-	58	63	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1589	-	-	1542	-	-	904	807	1013	901	800	1051
Stage 1	-	-	-	-	-	-	956	848	-	990	873	-
Stage 2	-	-	-	-	-	-	990	873	-	954	842	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1589	-	-	1542	-	-	902	805	1013	896	798	1051
Mov Cap-2 Maneuver	-	-	-	-	-	-	902	805	-	896	798	-
Stage 1	-	-	-	-	-	-	955	847	-	989	872	-
Stage 2	-	-	-	-	-	-	989	872	-	950	841	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.3			8.8			0		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	946	1589	-	-	1542	-	-	-
HCM Lane V/C Ratio	0.009	0.001	-	-	0.001	-	-	-
HCM Control Delay (s)	8.8	7.3	0	-	7.3	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

HCM 6th TWSC

3: S Florida Ave & W Central Ave

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	29	5	17	25	5	5	1	20	1	0	0
Future Vol, veh/h	0	29	5	17	25	5	5	1	20	1	0	0
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	80	80	80	80	80	80	80	80	80	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	36	6	21	31	6	6	1	25	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	37	0	0	42	0	0	115	118	39	128	118	34
Stage 1	-	-	-	-	-	-	39	39	-	76	76	-
Stage 2	-	-	-	-	-	-	76	79	-	52	42	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1574	-	-	1567	-	-	862	772	1033	845	772	1039
Stage 1	-	-	-	-	-	-	976	862	-	933	832	-
Stage 2	-	-	-	-	-	-	933	829	-	961	860	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1574	-	-	1567	-	-	853	761	1033	815	761	1039
Mov Cap-2 Maneuver	-	-	-	-	-	-	853	761	-	815	761	-
Stage 1	-	-	-	-	-	-	976	862	-	933	820	-
Stage 2	-	-	-	-	-	-	920	817	-	936	860	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.7			8.8			9.4		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	980	1574	-	-	1567	-	-	815
HCM Lane V/C Ratio	0.033	-	-	-	0.014	-	-	0.002
HCM Control Delay (s)	8.8	0	-	-	7.3	0	-	9.4
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

HCM 6th TWSC

4: SR 19 & Revels Rd

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	5	5	0	4	3	324	13	3	435	0
Future Vol, veh/h	2	0	5	5	0	4	3	324	13	3	435	0
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	2	2	2	2	2	2	2	8	12	2	10	2
Mvmt Flow	2	0	6	6	0	4	3	360	14	3	483	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	864	869	483	865	862	367	483	0	0	374	0	0
Stage 1	489	489	-	373	373	-	-	-	-	-	-	-
Stage 2	375	380	-	492	489	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	274	290	584	274	293	678	1080	-	-	1184	-	0
Stage 1	561	549	-	648	618	-	-	-	-	-	-	0
Stage 2	646	614	-	558	549	-	-	-	-	-	-	0
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	271	288	584	270	291	678	1080	-	-	1184	-	-
Mov Cap-2 Maneuver	271	288	-	270	291	-	-	-	-	-	-	-
Stage 1	559	547	-	645	616	-	-	-	-	-	-	-
Stage 2	639	612	-	551	547	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.3		15		0.1		0.1	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT
Capacity (veh/h)	1080	-	-	439	369	1184	-
HCM Lane V/C Ratio	0.003	-	-	0.018	0.027	0.003	-
HCM Control Delay (s)	8.3	-	-	13.3	15	8	0
HCM Lane LOS	A	-	-	B	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

HCM 6th TWSC

4: SR 19 & Revels Rd

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↔			↕	
Traffic Vol, veh/h	3	1	4	8	0	3	1	372	12	7	343	0
Future Vol, veh/h	3	1	4	8	0	3	1	372	12	7	343	0
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	2	2	2	2	2	2	2	8	12	2	10	2
Mvmt Flow	3	1	4	9	0	3	1	413	13	8	381	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	820	825	381	822	819	420	381	0	0	426	0	0
Stage 1	397	397	-	422	422	-	-	-	-	-	-	-
Stage 2	423	428	-	400	397	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	294	308	666	293	310	633	1177	-	-	1133	-	0
Stage 1	629	603	-	609	588	-	-	-	-	-	-	0
Stage 2	609	585	-	626	603	-	-	-	-	-	-	0
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	290	305	666	288	307	633	1177	-	-	1133	-	-
Mov Cap-2 Maneuver	290	305	-	288	307	-	-	-	-	-	-	-
Stage 1	628	598	-	608	587	-	-	-	-	-	-	-
Stage 2	605	584	-	615	598	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	14		16.1		0		0.2	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT
Capacity (veh/h)	1177	-	-	408	338	1133	-
HCM Lane V/C Ratio	0.001	-	-	0.022	0.036	0.007	-
HCM Control Delay (s)	8.1	-	-	14	16.1	8.2	0
HCM Lane LOS	A	-	-	B	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

HCM 6th TWSC

5: SR 19 & CR 455

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	43	394	111	70	492
Future Vol, veh/h	65	43	394	111	70	492
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	0	-	590	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	68	45	410	116	73	513

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1069	410	0	0	526	0
Stage 1	410	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Critical Hdwy	6.78	6.35	-	-	4.19	-
Critical Hdwy Stg 1	5.78	-	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-	-
Follow-up Hdwy	3.842	3.435	-	-	2.281	-
Pot Cap-1 Maneuver	210	614	-	-	1006	-
Stage 1	599	-	-	-	-	-
Stage 2	453	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	189	614	-	-	1006	-
Mov Cap-2 Maneuver	189	-	-	-	-	-
Stage 1	599	-	-	-	-	-
Stage 2	407	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.1	0	1.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	189	614	1006
HCM Lane V/C Ratio	-	-	0.358	0.073	0.072
HCM Control Delay (s)	-	-	34.3	11.3	8.9
HCM Lane LOS	-	-	D	B	A
HCM 95th %tile Q(veh)	-	-	1.5	0.2	0.2

HCM 6th TWSC
5: SR 19 & CR 455

Intersection						
Int Delay, s/veh	3.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	83	55	476	92	50	433
Future Vol, veh/h	83	55	476	92	50	433
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	0	-	590	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	86	57	496	96	52	451

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1051	496	0	0	592
Stage 1	496	-	-	-	-
Stage 2	555	-	-	-	-
Critical Hdwy	6.78	6.35	-	-	4.19
Critical Hdwy Stg 1	5.78	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-
Follow-up Hdwy	3.842	3.435	-	-	2.281
Pot Cap-1 Maneuver	215	548	-	-	950
Stage 1	544	-	-	-	-
Stage 2	509	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	199	548	-	-	950
Mov Cap-2 Maneuver	199	-	-	-	-
Stage 1	544	-	-	-	-
Stage 2	472	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.7	0	0.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	199	548	950
HCM Lane V/C Ratio	-	-	0.434	0.105	0.055
HCM Control Delay (s)	-	-	36.3	12.3	9
HCM Lane LOS	-	-	E	B	A
HCM 95th %tile Q(veh)	-	-	2	0.3	0.2

Appendix F
ITE Trip Generation Sheets

Single-Family Detached Housing (210)

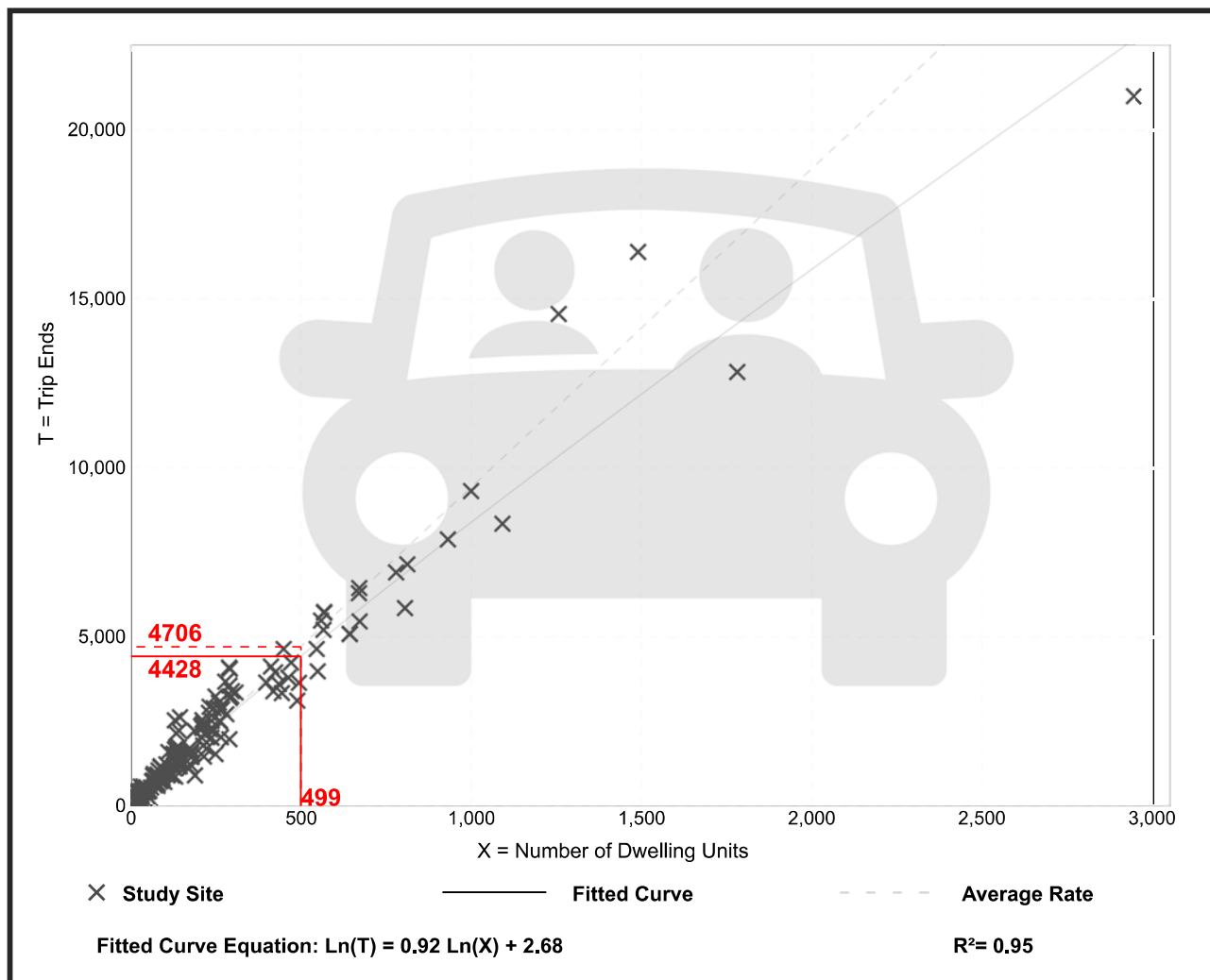
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 174
Avg. Num. of Dwelling Units: 246
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.43	4.45 - 22.61	2.13

Data Plot and Equation



Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

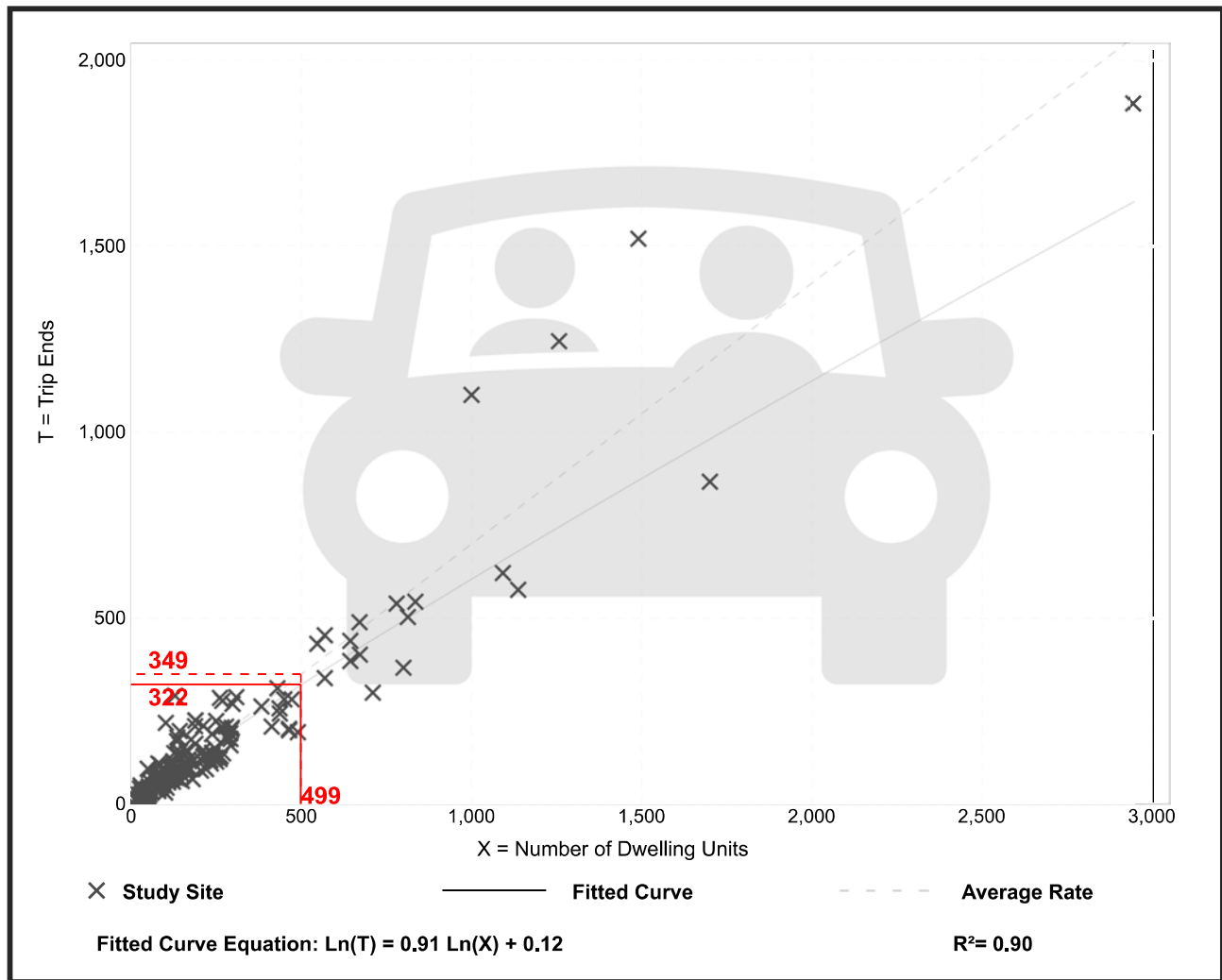
Setting/Location: General Urban/Suburban

Number of Studies: 192
 Avg. Num. of Dwelling Units: 226
 Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

Data Plot and Equation



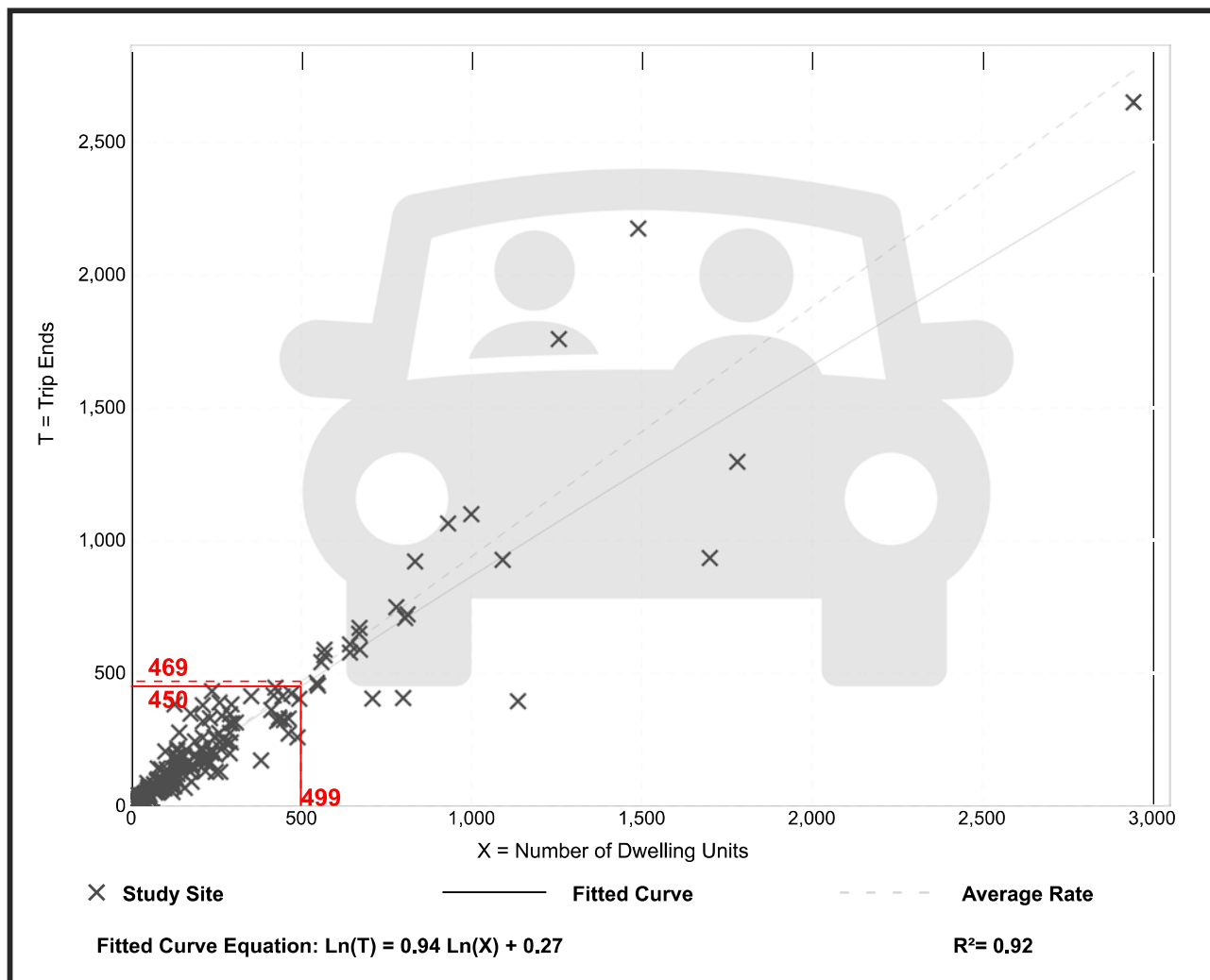
Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 208
 Avg. Num. of Dwelling Units: 248
 Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

Data Plot and Equation



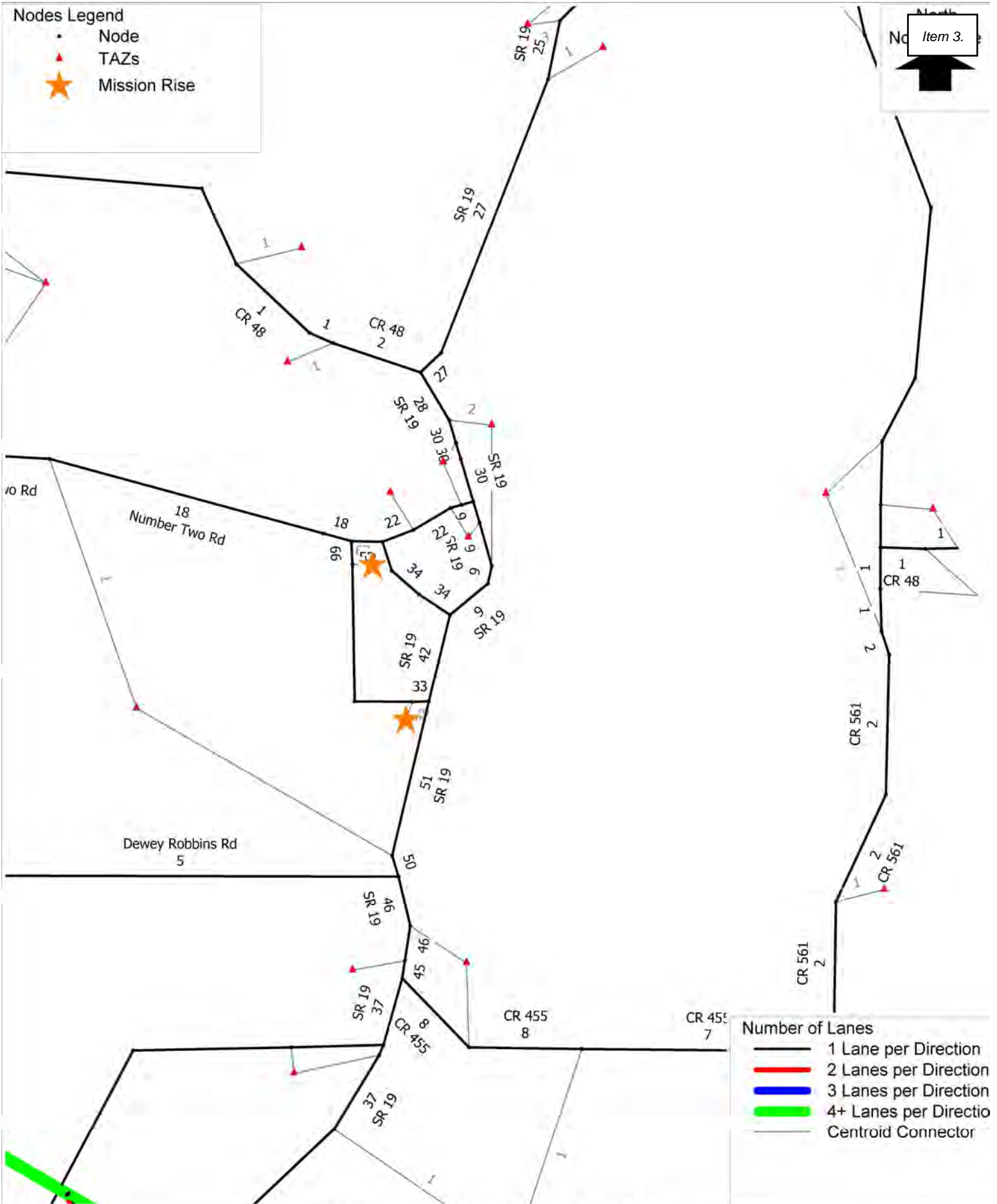
Appendix G
CFRPM Model Output

Nodes Legend

- Node
- ▲ TAZs
- ★ Mission Rise

North

Item 3.



Number of Lanes

- 1 Lane per Direction
- 2 Lanes per Direction
- 3 Lanes per Direction
- 4+ Lanes per Direction
- Centroid Connector

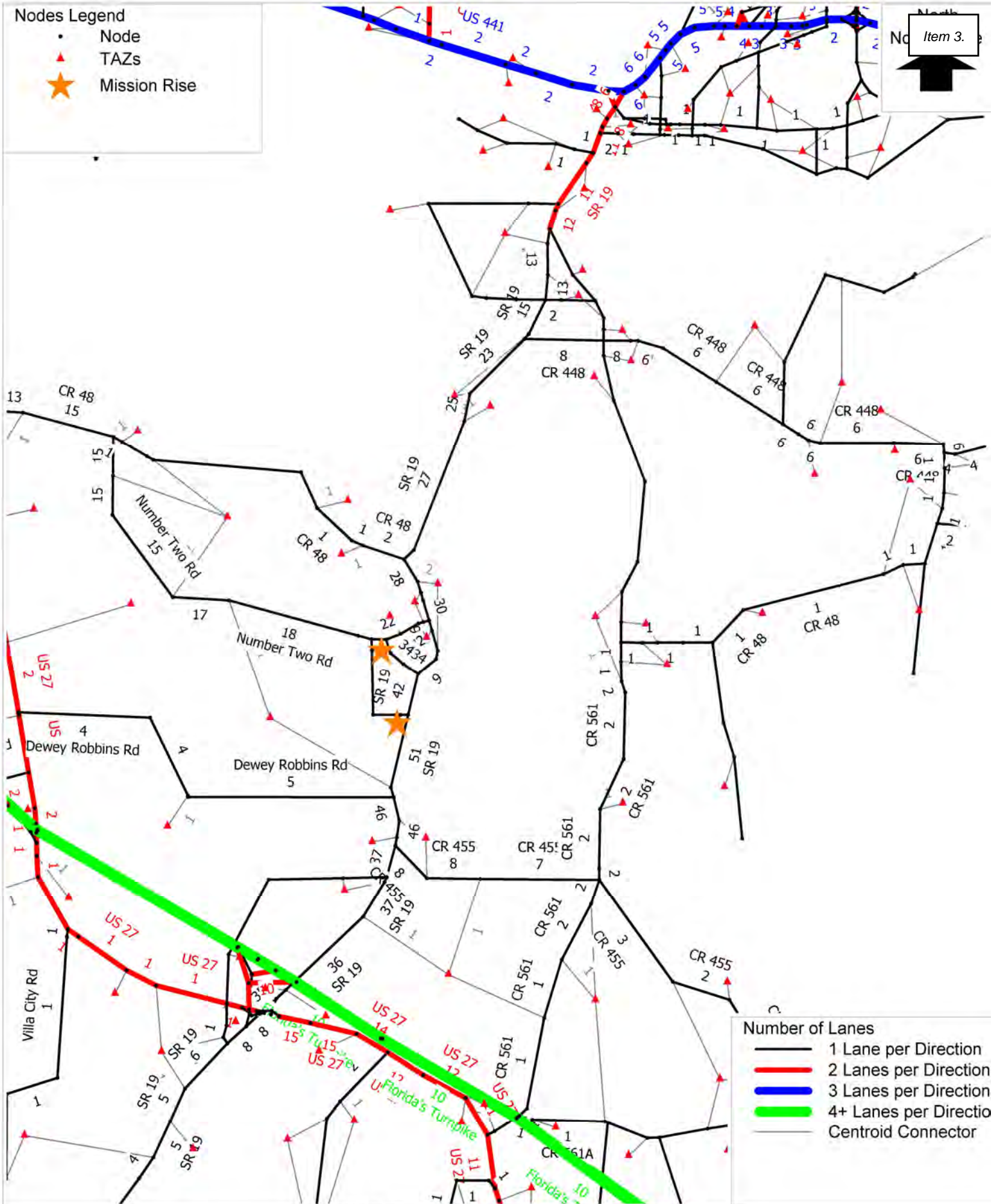
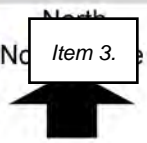
23017 Mission Rise - Osceola County, FL TAZ 7676, 7677

Project Distribution

C:\FSUTMS\D5\CFRPM7\Base\CF_2030\P23017\OUTPUT\HWYLOAD_SL_AllDay_A30.NET

Nodes Legend

- Node
- ▲ TAZs
- ★ Mission Rise



- Number of Lanes
- 1 Lane per Direction
 - 2 Lanes per Direction
 - 3 Lanes per Direction
 - 4+ Lanes per Direction
 - Centroid Connector

23017 Mission Rise - Osceola County, FL TAZ 7676, 7677






Project Distribution

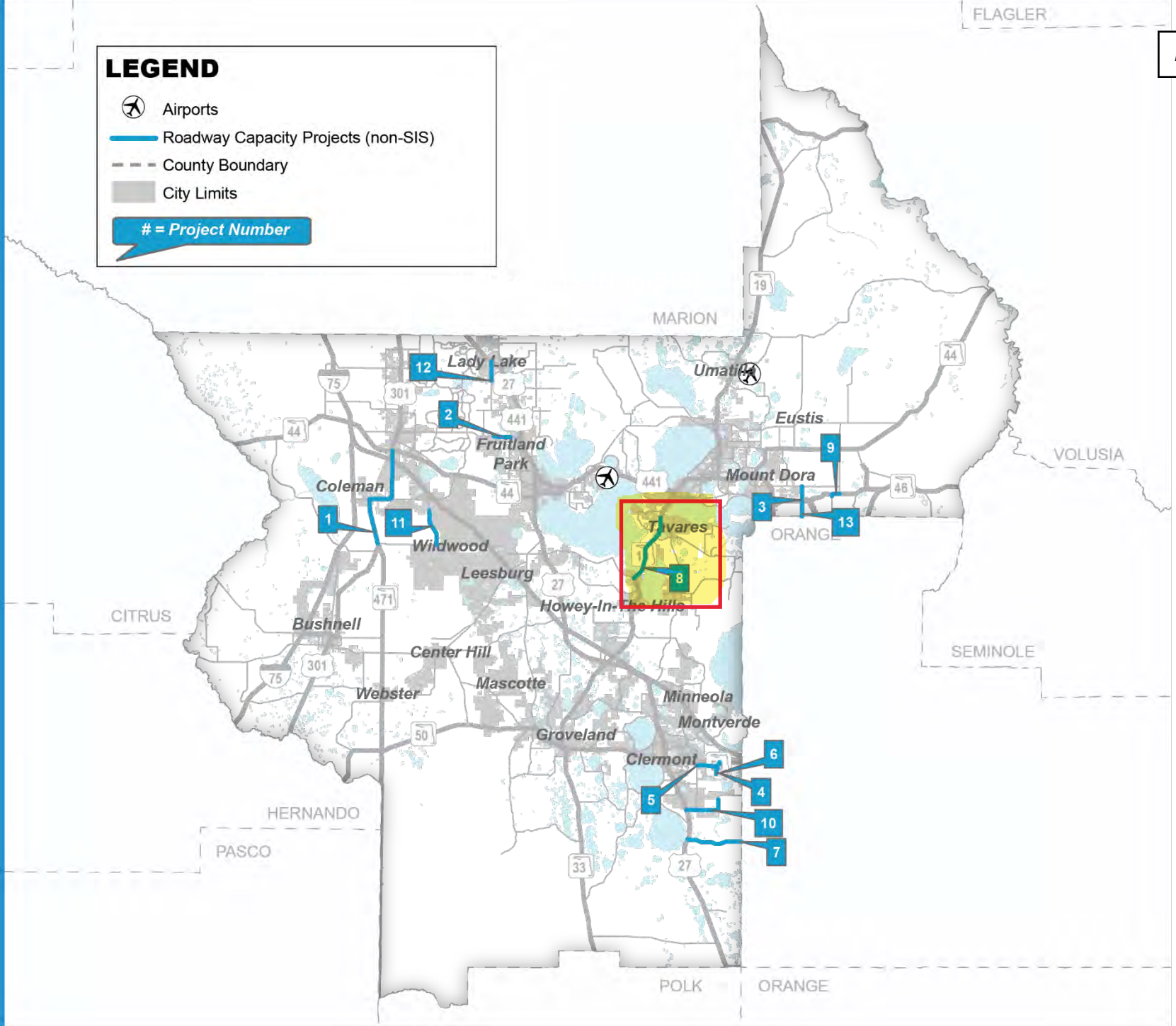
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Appendix H
LSMPO TIP and LSMPO LOPP

ROADWAY CAPACITY PROJECTS (NON-SIS)

LEGEND

-  Airports
-  Roadway Capacity Projects (non-SIS)
-  County Boundary
-  City Limits
-  # = Project Number



Item 3.

7

Project Description: WELLNESS WAY FROM US-27 TO THE LAKE/ORANGE COUNTY LINE

FM#

Funding

Local and State

4487331

Source(s):

Work Description: NEW ROAD CONSTRUCTION

LRTP Page:

PG. 4-12

Phase	<2023	2023	2024	2025	2026	2027	>2027	Amount Funded
PDE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PE	\$ -	\$ -	\$ 3,000,000	\$ -	\$ -	\$ -	\$ -	\$ 3,000,000
ENV	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ROW	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
LAR	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
RRU	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CST	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ -	\$ -	\$ 3,000,000	\$ -	\$ -	\$ -	\$ -	\$ 3,000,000

Responsible Agency: RESPONSIBLE AGENCY NOT AVAILABLE

County: LAKE

Total Project Cost: \$ 3,000,000

8

Project Description: SR 19 FROM CR 48 TO CR 561

FM#

Funding

State and Federal

2383191

Source(s):

Work Description: ADD LANES & RECONSTRUCT

LRTP Page:

PG. 4-12

Phase	<2023	2023	2024	2025	2026	2027	>2027	Amount Funded
PDE	\$ 1,161,015	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,161,015
PE	\$ 4,141,718	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,141,718
ENV	\$ 492,196	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 692,196
ROW	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
LAR	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
RRU	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CST	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 5,794,929	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,994,929

Responsible Agency: FDOT

County: LAKE

Total Project Cost: \$ 5,994,929



2022 List of Priority Projects

Lake~Sumter Metropolitan Planning Organization

Adopted June 22, 2022

Table 3 – Roadway Capacity (Non-SIS) Project Priorities

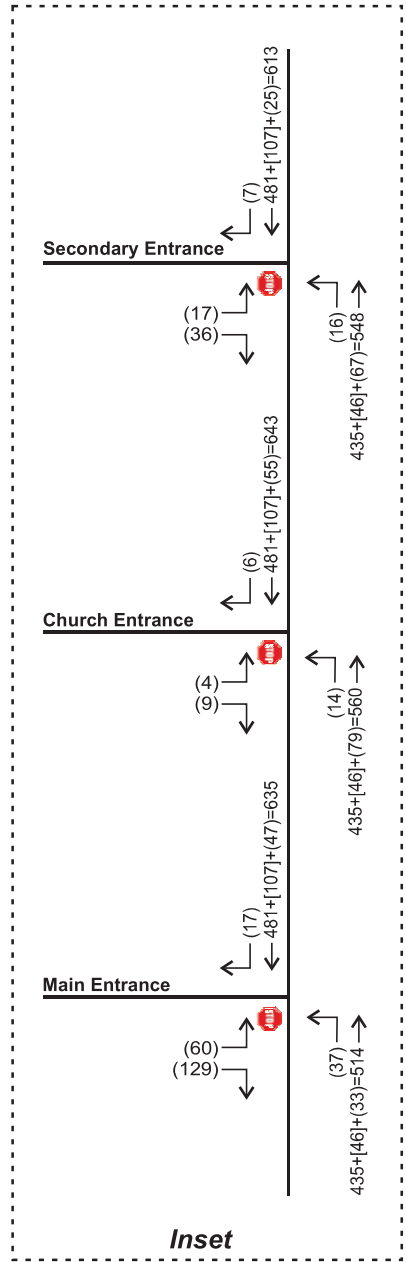
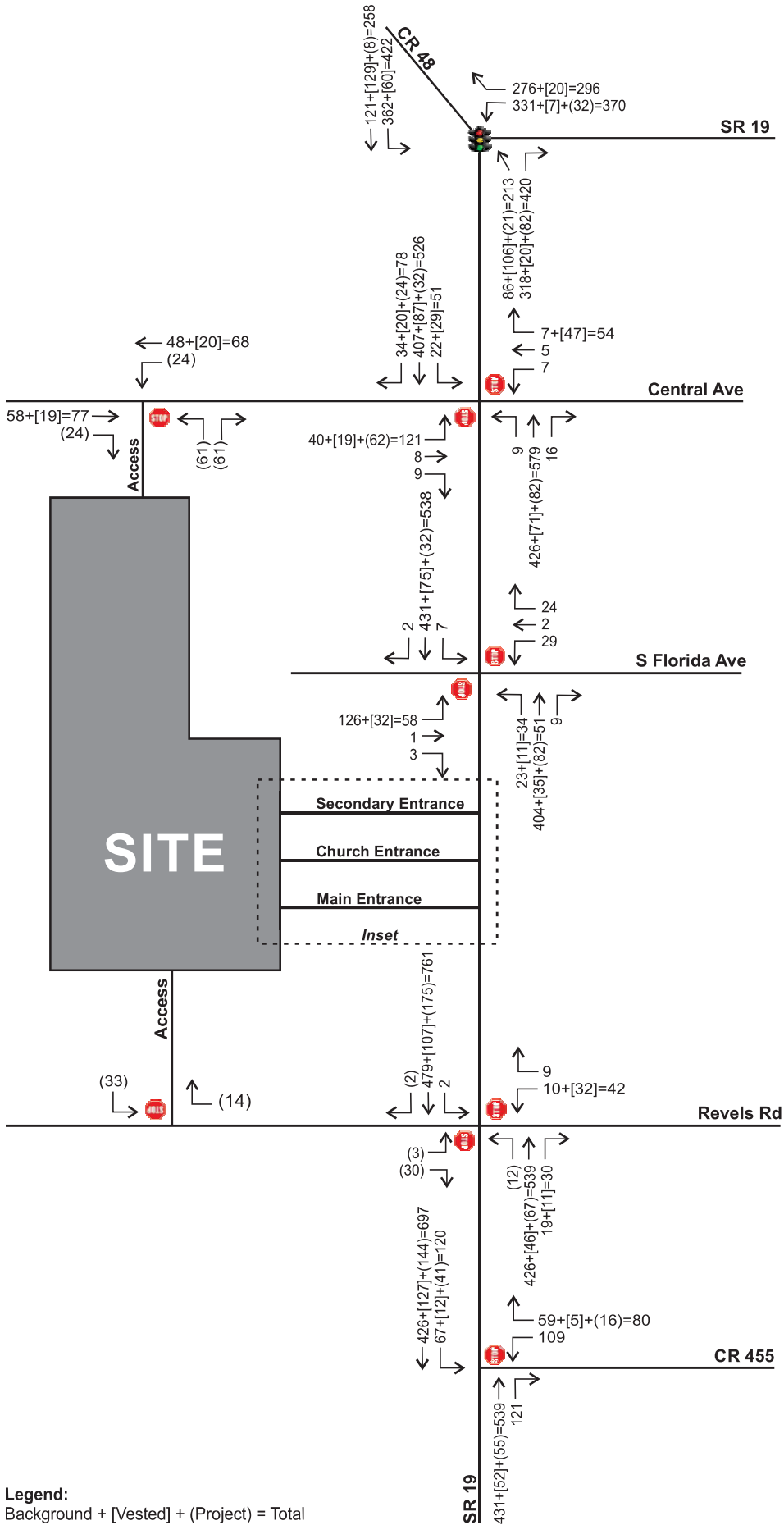
Capacity Rank	Sponsor/ Location	FM #	Project Name	From	To	Description	Performance Measure(s)	Proposed Phase	Proposed Phase FY	Proposed Phase Cost	Programmed Phase(s)	Programmed Phase FY	CMP Congested Corridors 2021 Analysis (for informational purposes)
1	FDOT/ Sumter County	430132-1	SR 35 (US 301)	SR 44	CR 470	Road Widening	System Performance	ROW	2026/27	\$27,000,000	Design	2022/23 2025/26	Extremely Congested (2021)
2	FDOT/ Lake County	409870-1	SR 44 (CR44B)	US 441	SR44	Road Widening	System Performance; Safety	CST	2024/25	\$23,701,500	ROW		Extremely Congested (2021)
3	Sumter County	447931-1	Marsh Bend Trail (CR 501)	Corbin Trail	Central Parkway	Roadway Improvements	System Performance	CST	2023/24	\$1,275,400	CST	2022/23	Operating at Acceptable Level of Service
4	FDOT/ Lake County	238394-3	SR 500 (US 441)	Perkins Street	SR 44	Road Widening	System Performance	CST	2023/24	\$13,794,537			Congested (2026)
5	FDOT/ Lake County	429356-1	SR 500 (US 441)	SR 44	N of SR 46	Road Widening	System Performance	CST	2023/24	\$22,233,040	ROW	2021/22	Not Congested
6	Lake County/ Lady Lake	439665-1	Rolling Acres Road	West Lady Lake Ave.	Griffin Ave	Road Widening	System Performance	Design	2026/27	\$2,000,000	PD&E	2025/26	Extremely Congested (2026)
7	Lake County	441710-1	Round Lake Road	Wolfbranch Rd	North of SR 44	New Roadway/ Alignment	System Performance	CST	2024/25	\$30,000,000	Design		Operating at Acceptable Level of Service
8	Lake County	441779-1	CR 455 (Hartle Rd)	Lost Lake Rd.	Hartwood Marsh Rd.	Roadway Extension/ Widening	System Performance	CST	2024/25	\$19,800,000	ROW	2022/23	New Roadway, Not on CMP Network
9	Lake County	-	CR 455 (Hartle Rd)	Hartwood Marsh Rd	CFX Lake-Orange Connector	Road Extension	System Performance	Design	2023/24	\$3,000,000	PDE		New Roadway, Not on CMP Network

Capacity Rank	Sponsor/ Location	FM #	Project Name	From	To	Description	Performance Measure(s)	Proposed Phase	Proposed Phase FY	Proposed Phase Cost	Programmed Phase(s)	Programmed Phase FY	CMP Congested Corridors 2021 Analysis (for informational purposes)
10	Lake County	-	Citrus Grove Phase II	West of Scrub Jay Lane	Grassy Lake Rd	New Alignment/Widening	System Performance	CST	2024/25	\$10,000,000	ROW		New Roadway, Not on CMP Network
11	Lake County	-	Citrus Grove Phase V	Turnpike	Blackstill Lake Dr	New Roadway/Alignment	System Performance	CST	2024/25	\$5,000,000	Design		New Roadway, Not on CMP Network
12	Lake County	441393-1	CR 437 Realignment	Oak Tree Dr	SR 46	New Alignment/Widening	System Performance	CST	2024/25	\$4,000,000	Design		New Roadway, Not on CMP Network
13	Lake County	-	Hartwood Marsh	Regency Hills Dr	Innovation Lane	Road Widening	System Performance	Design	2023/24	\$750,000	PDE		Approaching Congestion
14	Lake County	-	CR 455 Paved Shoulder	CR 561	CR 561A	Paved Shoulder	System Performance	Design	2023/24	\$700,000			Operating at Acceptable Level of Service
15	FDOT/Lake County	-	CR 470/CR 48	Meggison Road at The Villages	US 27	Road Widening	System Performance	Design	2023/24	\$4,000,000			Congested (2026)
16	Lake County/ Mount Dora	-	Vista Ridge Drive/Wolf Branch Innovation Boulevard	Niles Rd	Round Lake Road	New Roadway	System Performance	Design	2023/24	\$1,000,000	Study		New Roadway, Not on CMP Network
17	Lake County	-	CR 561A	CR 561	CR 455	Realignment	System Performance; Safety	PDE	2023/24	\$750,000	Study		Operating at Acceptable Level of Service
18	FDOT/ Lake County	-	SR 44	Orange Ave	CR 46A	Road Widening	System Performance	PDE	2023/24	\$TBD			Congested (2021)
19	FDOT	-	SR 19	SR 50	CR 455	Road Widening	System Performance	PDE	2023/24	\$TBD			Congested (2021)

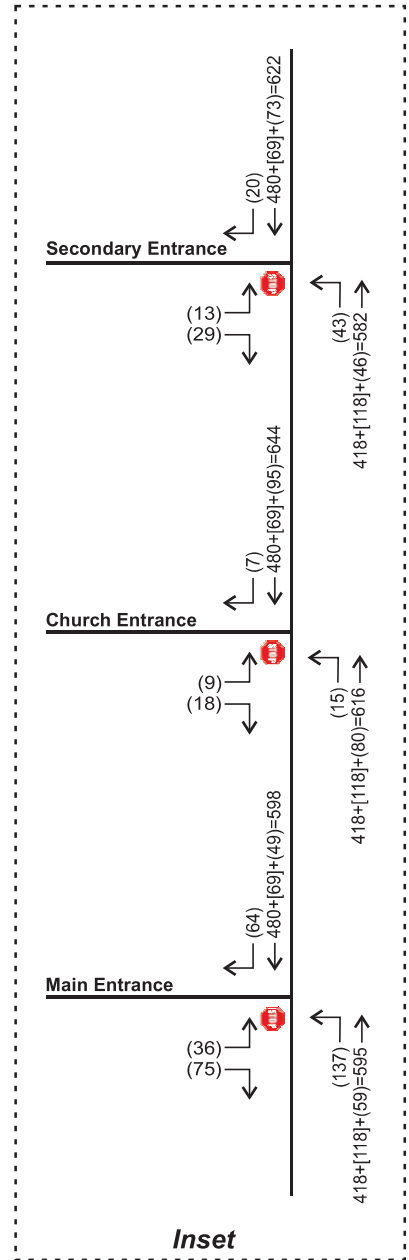
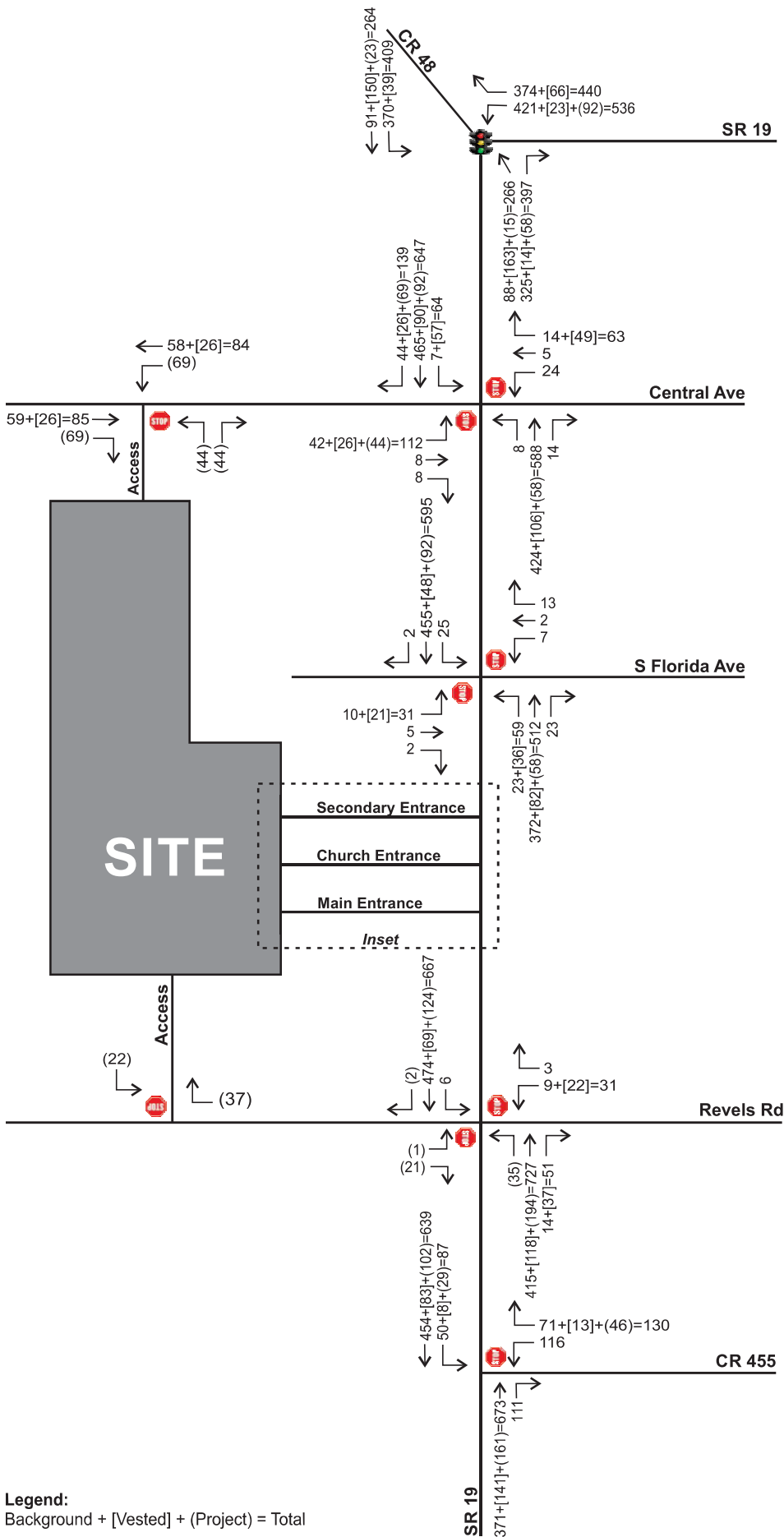
Capacity Rank	Sponsor/ Location	FM #	Project Name	From	To	Description	Performance Measure(s)	Proposed Phase	Proposed Phase FY	Proposed Phase Cost	Programmed Phase(s)	Programmed Phase FY	CMP Congested Corridors 2021 Analysis (for informational purposes)
20	Lake County	-	Woodlea Road	SR 19	End	Road Widening	System Performance	Design Update/ ROW	2023/24	\$3,000,000			Operating at Acceptable Level of Service
21	FDOT/ Lake County	238319-1	SR 19	Howey Bridge	CR 561	Road Widening	System Performance	CST	2023/24	\$35,000,000			Extremely Congested (2021)
22	Lake County	-	Hancock Road	Hartwood Marsh Rd	Wellness Way	New Road	System Performance	CST	2025/26	\$20,000,000			New Roadway, Not on CMP Network
23	Lake County	-	SR 46A	SR 44	SR 46	Road Widening	System Performance	CST	2023/24	\$TBD	Design		Congested (2021)

Top 20 Project

Appendix I
Vested Trips Data

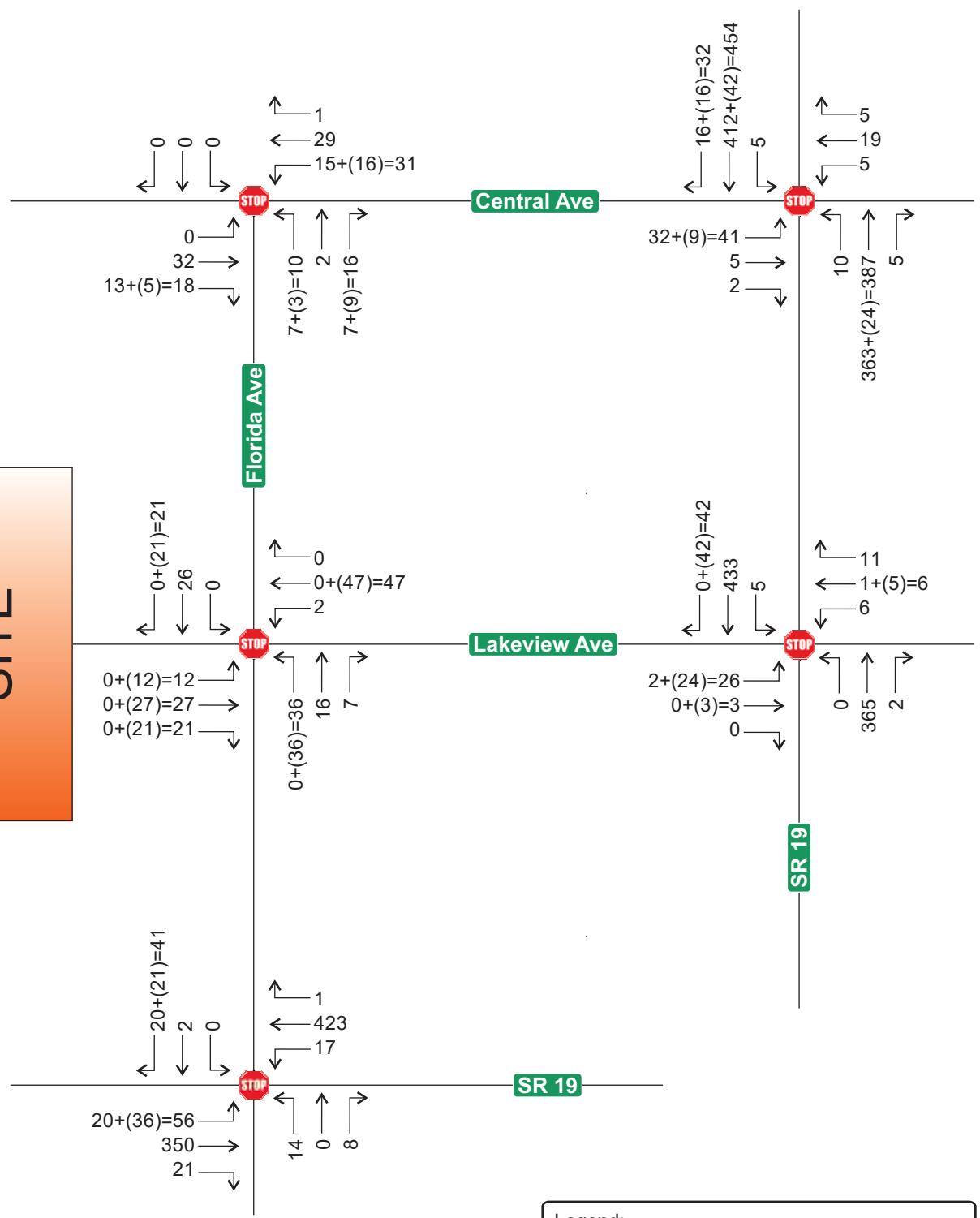


Legend:
 Background + [Vested] + (Project) = Total



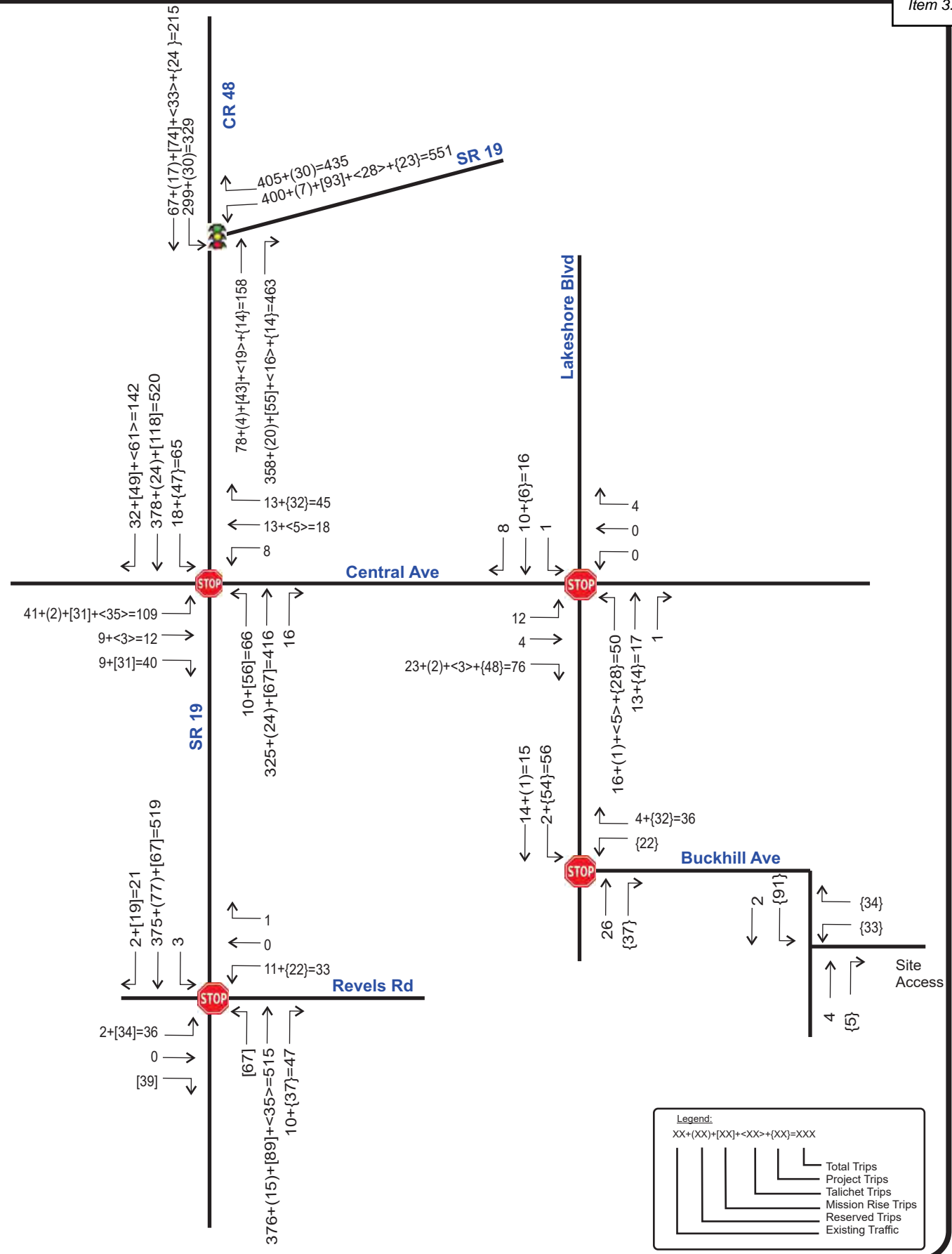
Legend:
Background + [Vested] + (Project) = Total

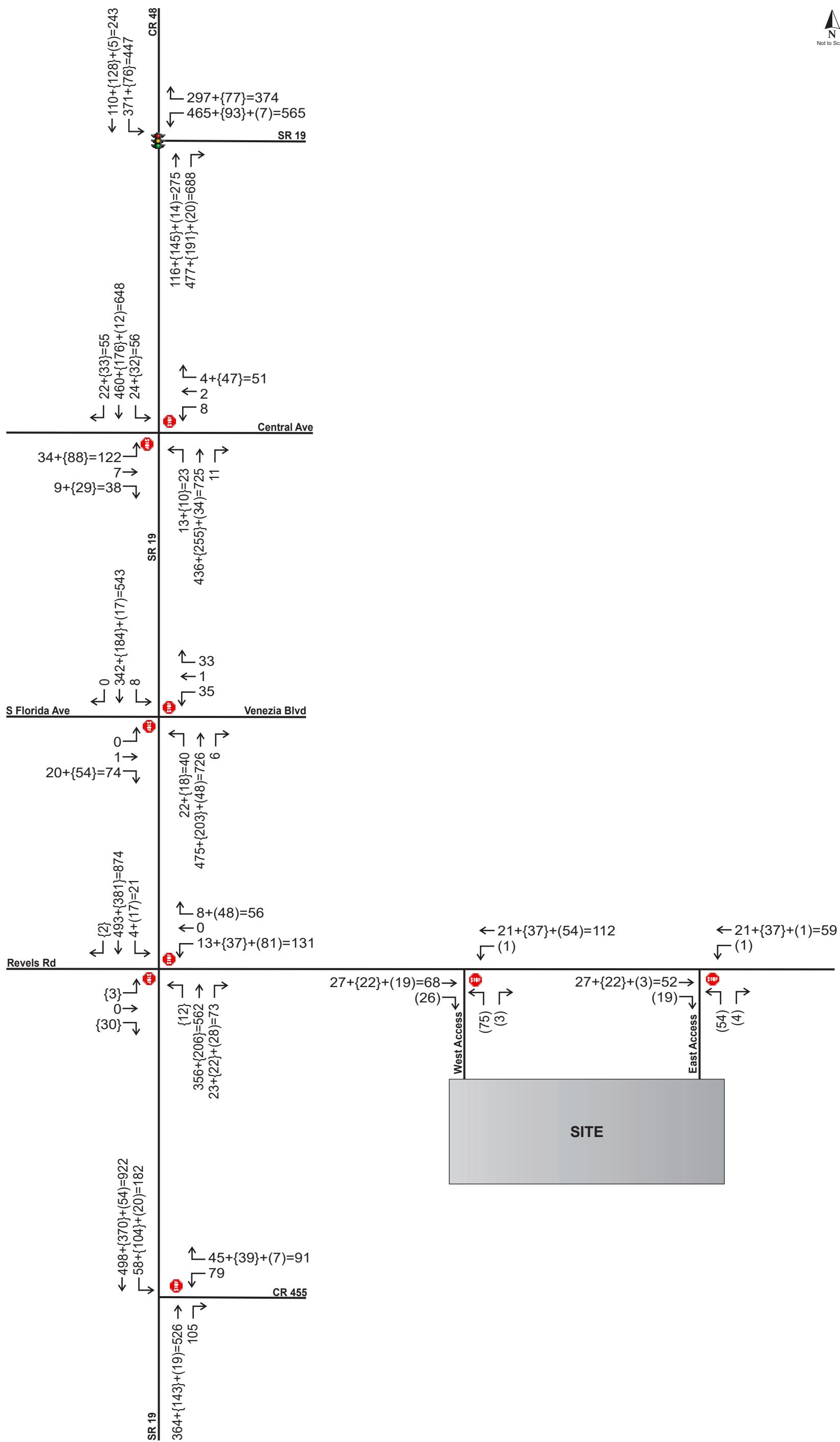
SITE



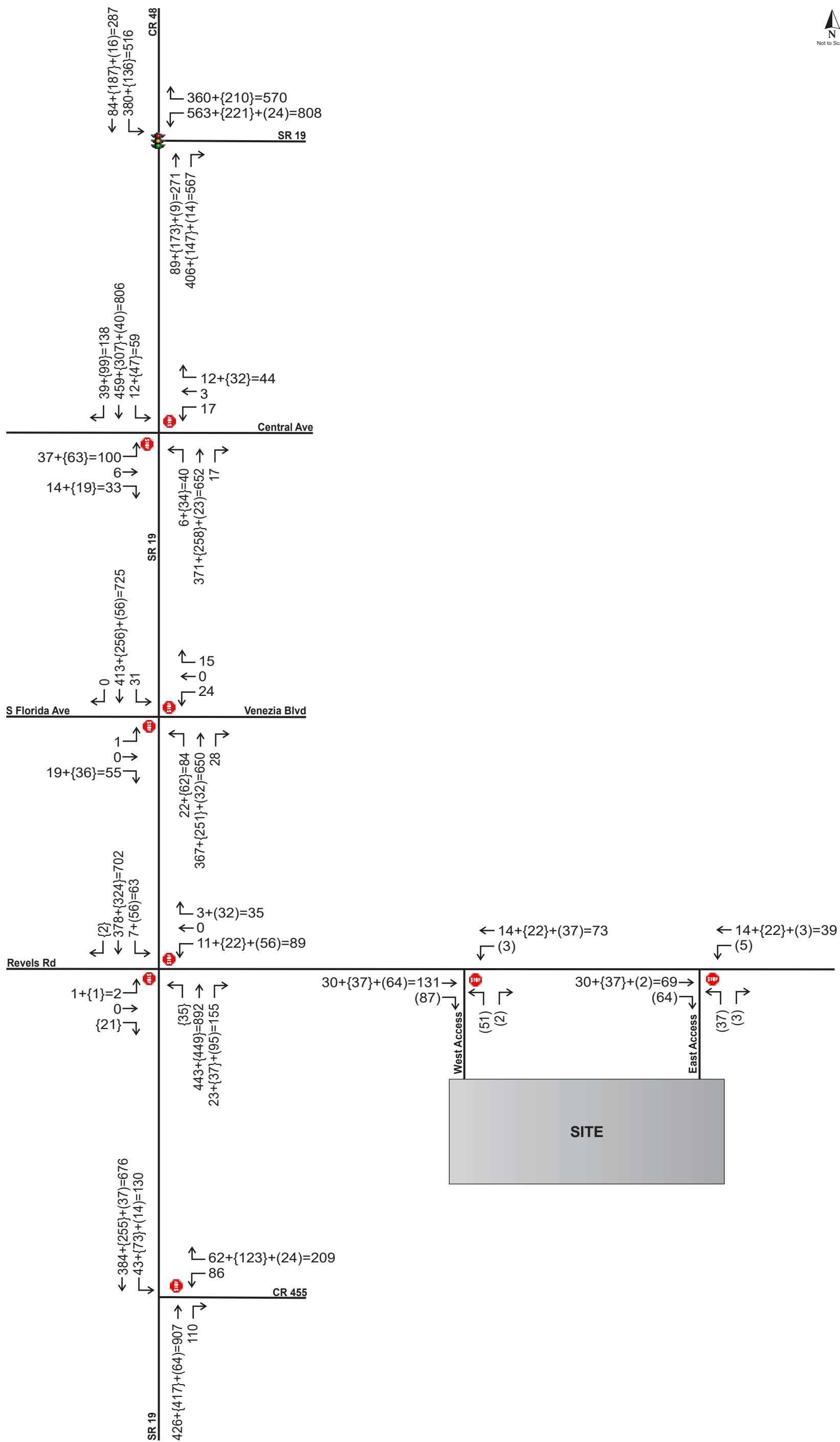
Legend:
 XX+(XX)=XXX
 ——— Total Traffic
 ——— Project Trips
 ——— Background Traffic

*Schematic drawing. Not to scale.
 ** Any +/- 1 project trip discrepancy is due to rounding





Legend:
Background + {Committed} + (Project) = Total



Legend:
Background + {Committed} + (Project) = Total

Table 1
Trip Generation Calculations – Phase 1 (2026)

ITE Code	Land Use	Size	Daily		AM Peak Hour			PM Peak Hour				
			Rate	Trips	Rate	Total	Enter	Exit	Rate	Total	Enter	Exit
210	Single-Family Detached	184 DU	9.61	1,768	0.71	131	34	97	0.96	177	112	65
215	Single-Family Attached	146 DU	7.27	1,061	0.48	70	22	48	0.57	83	47	36
Total Trip Generation (Phase 1)				2,829		201	56	145		260	159	101

Source: ITE Trip Generation Manual, 11th Edition

ITE equations were used as R² were greater than 0.75 and with more than 20 studies

Phase 1 of the proposed development is projected to generate 2,829 new daily trips of which 201 trips occur during the AM peak hour, and 260 trips occur during the PM peak hour.

Table 2
Trip Generation Calculations – Phase 1 and Phase 2 (2030)

ITE Code	Land Use	Size	Daily		AM Peak Hour			PM Peak Hour				
			Rate	Trips	Rate	Total	Enter	Exit	Rate	Total	Enter	Exit
210	Single-Family Detached	358 DU	9.11	3,261	0.66	236	61	175	0.92	329	207	122
215	Single-Family Attached	292 DU	7.45	2,175	0.50	146	45	101	0.59	172	98	74
Total Trip Generation Buildout (Phase 1 + Phase 2)				5,436		382	106	276		501	305	196

Source: ITE Trip Generation Manual, 11th Edition

ITE equations were used as R² were greater than 0.75 and with more than 20 studies

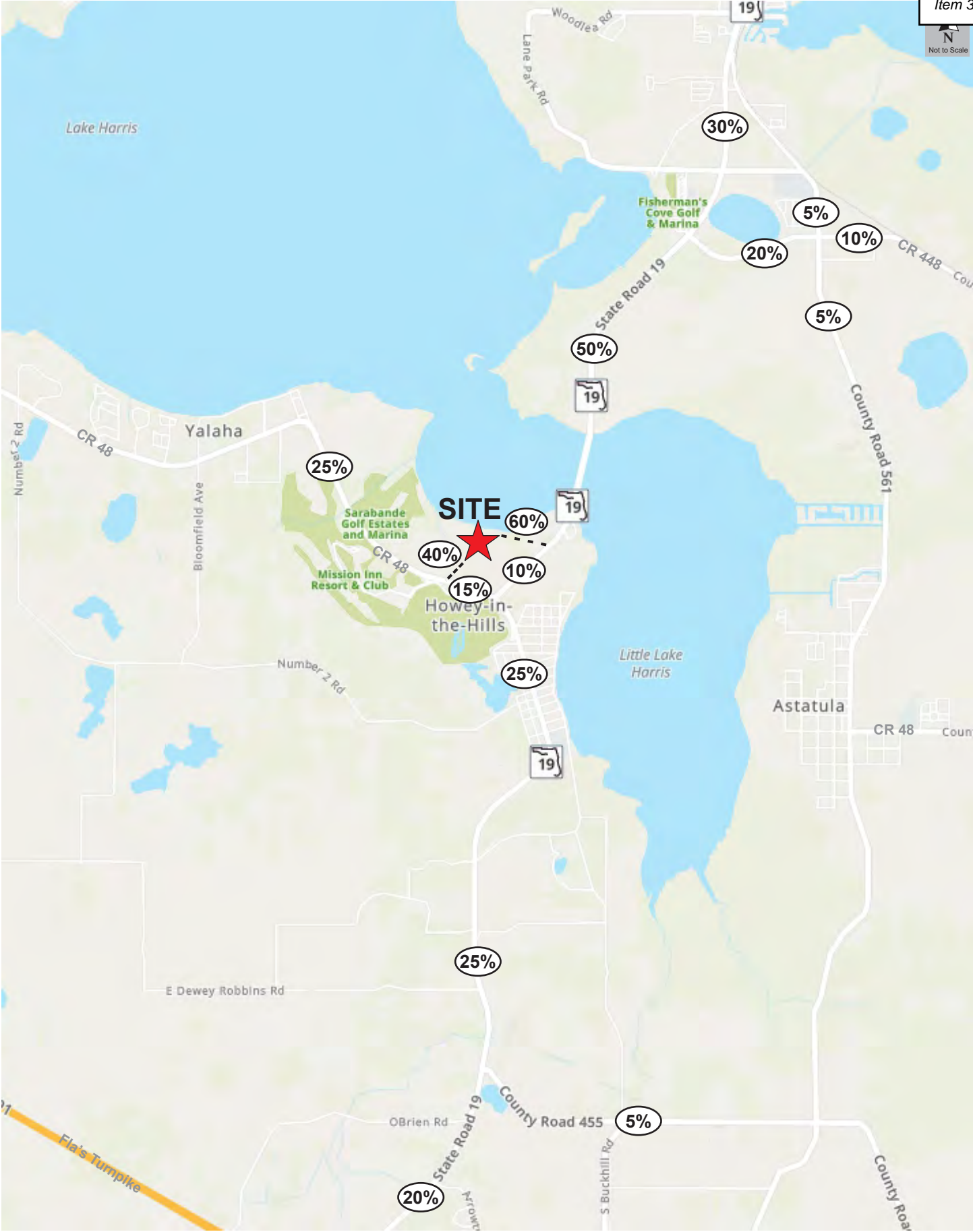
The proposed development at project buildout is projected to generate 5,436 new daily trips of which 382 trips occur during the AM peak hour, and 501 trips occur during the PM peak hour.

Trip Distribution

A trip distribution pattern was estimated using the *Central Florida Regional Planning Model, version 7 (CFRPM V7)*. The model distribution was adjusted based on local knowledge, professional engineering judgement, and the location of the development with respect to the study area attractions and activity centers to reflect prevailing travel patterns in the vicinity of the site and the surrounding transportation network. The raw model plots are provided in the **Attachments**, and the adjusted trip distribution is shown in **Figure 2**.

Study Area

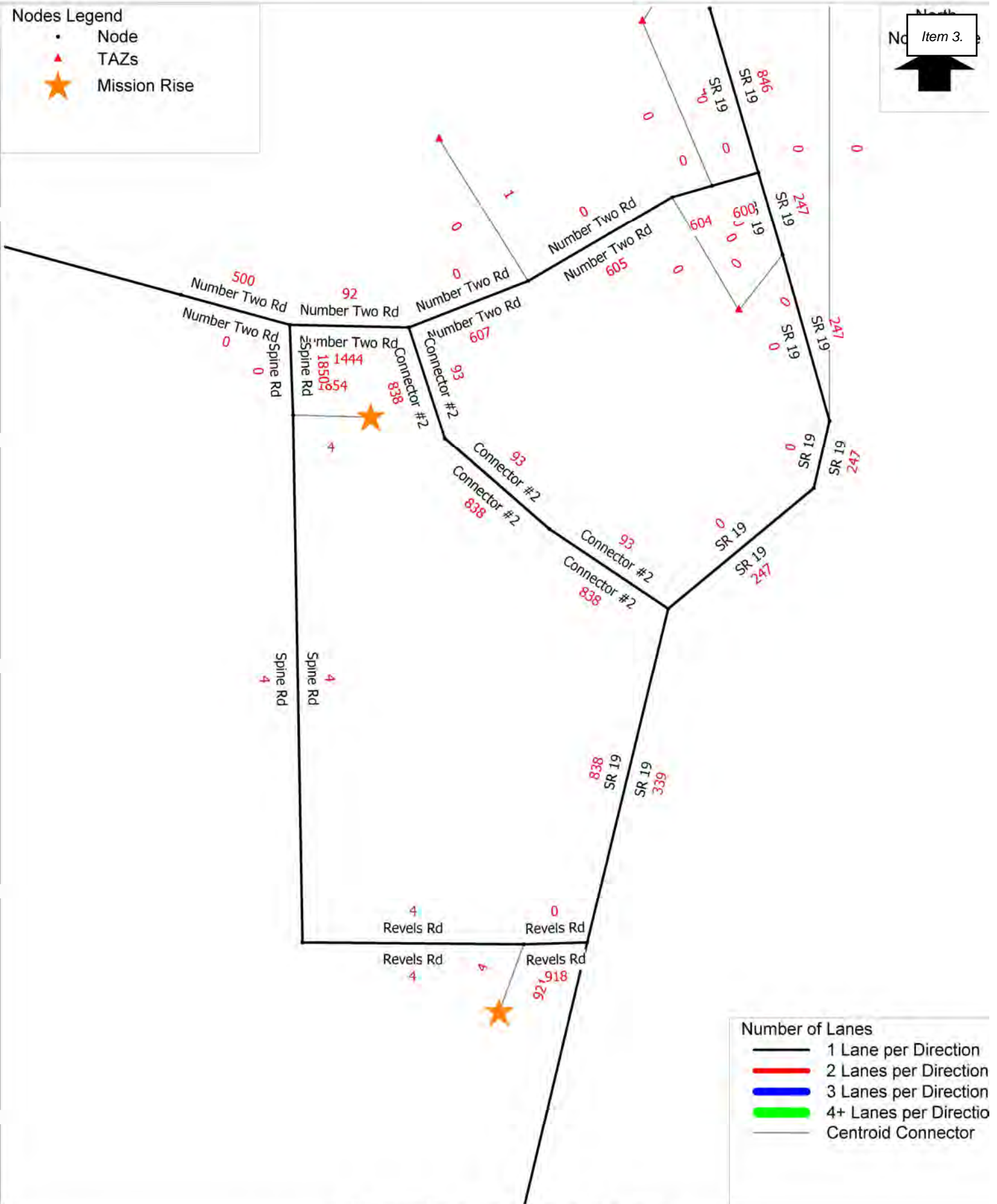
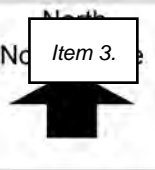
In accordance with the LSMPO requirements for a Tier 2 TIA methodology and the Town of Howey-In-The-Hills Land Development Code, the study area will encompass roadway segments and intersections within a 1-mile radius at minimum. The study will also include segments and intersections within a 4.55-mile radius, (½ the trip length for residential land use), where the project's peak hour trips consume five percent (5%) or more of a roadway's two-way peak hour generalized service volume, based on the adopted LOS and committed number of lanes. The total trip length was obtained from the *Lake County Transportation Impact Fee Schedule Table 9-1* (dated 12/21/2001), included in the **Attachments**. The roadway segments identified by the significance test will be analyzed in the Tier 2 TIA. Excerpts from the *2020 Lake County Congestion Management Plan (CMP) Database* are included in the **Attachments**. The study area significance analysis is summarized in **Table 3**.



Appendix J
AADT Model Plot

Nodes Legend

- Node
- ▲ TAZs
- ★ Mission Rise

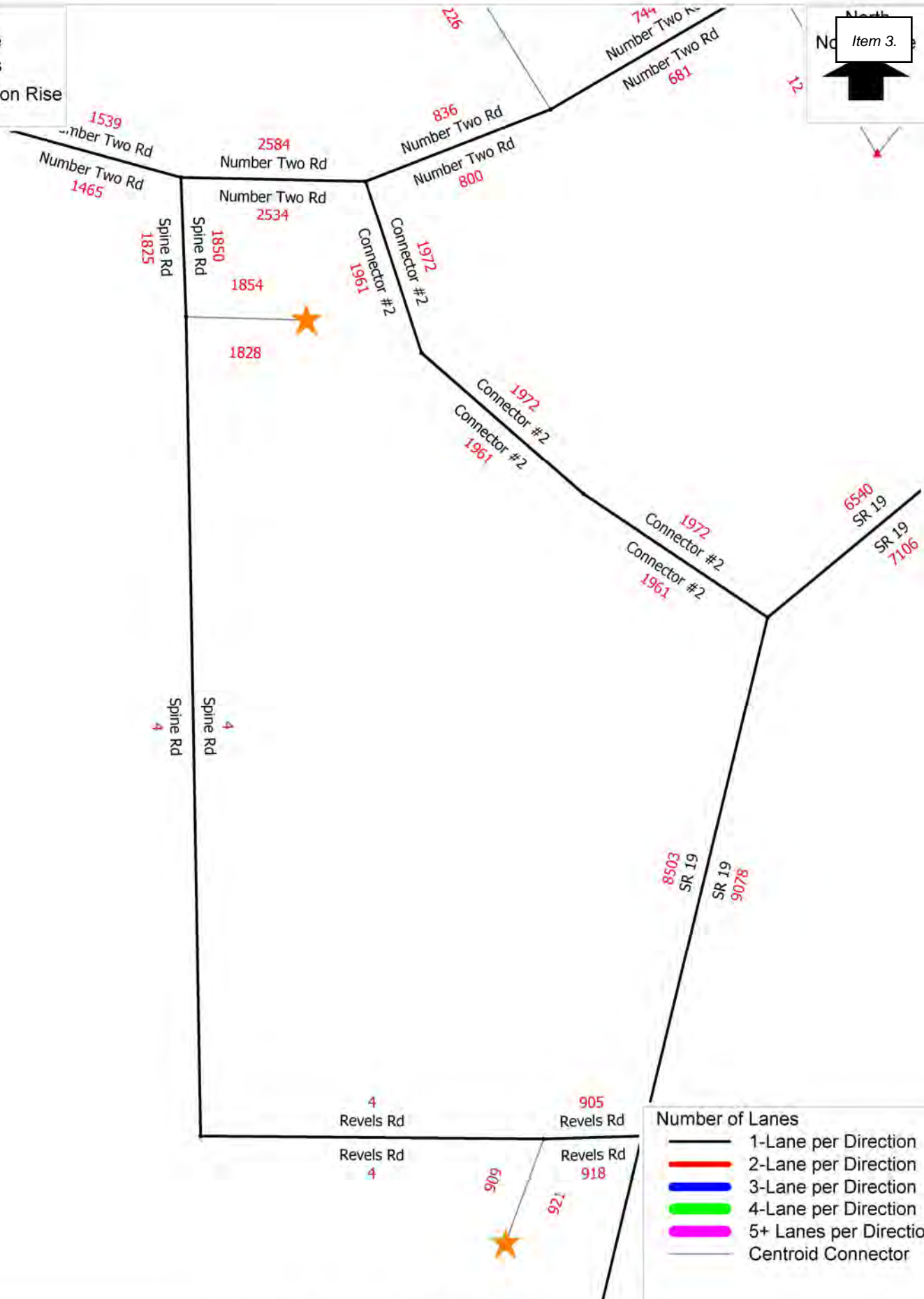
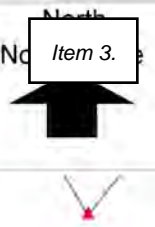


23017 Mission Rise - Lake County, FL TAZ 7676, 7677
 Future AADT

C:\FSUTMS\D5\CFRPM7\Base\CF_2030\P23017\OUTPUT\HWYLOAD_SL_AllDay_A30.NET

Nodes Legend

- Node
- ▲ TAZs
- ★ Mission Rise



Number of Lanes













- 1-Lane per Direction
- 2-Lane per Direction
- 3-Lane per Direction
- 4-Lane per Direction
- 5+ Lanes per Direction
- - - Centroid Connector

23017.1 Mission Rise - Lake County, FL TAZ 7676, 7677
 Future AADT
 C:\FSUTMS\D5\CFRPM7

Appendix K
HCM Worksheets - Projected Conditions

HCM 6th Signalized Intersection Summary

1: SR 19 & CR 48













						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	522	334	455	740	413	180
Future Volume (veh/h)	522	334	455	740	413	180
Initial Q (Qb), veh	0	0	0	0	0	0
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	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	538	205	469	0	426	186
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	386	312	695		502	1139
Arrive On Green	0.23	0.23	0.39	0.00	0.17	0.63
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	538	205	469	0	426	186
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	22.7	13.5	21.5	0.0	14.2	4.2
Cycle Q Clear(g_c), s	22.7	13.5	21.5	0.0	14.2	4.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	386	312	695		502	1139
V/C Ratio(X)	1.39	0.66	0.67		0.85	0.16
Avail Cap(c_a), veh/h	386	312	695		535	1139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	34.2	24.5	0.0	16.9	7.5
Incr Delay (d2), s/veh	192.0	5.0	5.2	0.0	11.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	44.9	8.2	14.6	0.0	10.5	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	229.7	39.1	29.7	0.0	28.5	7.8
LnGrp LOS	F	D	C		C	A
Approach Vol, veh/h	743		469	A		612
Approach Delay, s/veh	177.1		29.7			22.2
Approach LOS	F		C			C
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.0	45.0		30.0		68.0
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	16.2	23.5		24.7		6.2
Green Ext Time (p_c), s	0.4	2.5		0.0		1.0
Intersection Summary						
HCM 6th Ctrl Delay			87.2			
HCM 6th LOS			F			

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

1: SR 19 & CR 48

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	751	483	164	588	451	194
Future Volume (veh/h)	751	483	164	588	451	194
Initial Q (Qb), veh	0	0	0	0	0	0
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	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	774	359	169	0	465	200
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	380	307	685		737	1149
Arrive On Green	0.23	0.23	0.39	0.00	0.18	0.63
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	774	359	169	0	465	200
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	22.7	22.7	6.5	0.0	16.0	4.5
Cycle Q Clear(g_c), s	22.7	22.7	6.5	0.0	16.0	4.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	380	307	685		737	1149
V/C Ratio(X)	2.04	1.17	0.25		0.63	0.17
Avail Cap(c_a), veh/h	380	307	685		744	1149
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	38.4	38.4	20.7	0.0	12.3	7.5
Incr Delay (d2), s/veh	475.1	105.6	0.9	0.0	1.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	92.9	24.6	4.9	0.0	9.5	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	513.5	144.1	21.5	0.0	14.0	7.8
LnGrp LOS	F	F	C		B	A
Approach Vol, veh/h	1133		169	A		665
Approach Delay, s/veh	396.4		21.5			12.1
Approach LOS	F		C			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	24.6	45.0		30.0		69.6
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	18.0	8.5		24.7		6.5
Green Ext Time (p_c), s	0.1	0.9		0.0		1.1
Intersection Summary						
HCM 6th Ctrl Delay			234.3			
HCM 6th LOS			F			

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th TWSC
2: SR 19 & W Central Ave

Intersection												
Int Delay, s/veh	70.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	144	4	12	13	1	65	14	672	29	37	663	49
Future Vol, veh/h	144	4	12	13	1	65	14	672	29	37	663	49
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	148	4	12	13	1	67	14	693	30	38	684	51

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1556	1537	710	1530	1547	708	735	0	0	723	0	0
Stage 1	786	786	-	736	736	-	-	-	-	-	-	-
Stage 2	770	751	-	794	811	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.83	6.22	7.12	6.52	6.22	4.48	-	-	4.52	-	-
Critical Hdwy Stg 1	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.297	3.318	3.518	4.018	3.318	2.542	-	-	2.578	-	-
Pot Cap-1 Maneuver	~ 87	99	434	96	114	435	727	-	-	722	-	-
Stage 1	371	362	-	411	425	-	-	-	-	-	-	-
Stage 2	379	376	-	381	393	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 66	87	434	82	100	435	727	-	-	722	-	-
Mov Cap-2 Maneuver	~ 66	87	-	82	100	-	-	-	-	-	-	-
Stage 1	359	329	-	398	411	-	-	-	-	-	-	-
Stage 2	310	364	-	333	358	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	729.8	26.5	0.2	0.5
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	727	-	-	71	248	722	-	-
HCM Lane V/C Ratio	0.02	-	-	2.323	0.328	0.053	-	-
HCM Control Delay (s)	10.1	0	-	729.8	26.5	10.3	0	-
HCM Lane LOS	B	A	-	F	D	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	15.7	1.4	0.2	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
2: SR 19 & W Central Ave

Intersection												
Int Delay, s/veh	83.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	108	14	16	20	4	49	19	642	25	66	784	162
Future Vol, veh/h	108	14	16	20	4	49	19	642	25	66	784	162
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	111	14	16	21	4	51	20	662	26	68	808	167

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1771	1756	892	1758	1826	675	975	0	0	688	0	0
Stage 1	1028	1028	-	715	715	-	-	-	-	-	-	-
Stage 2	743	728	-	1043	1111	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.83	6.22	7.12	6.52	6.22	4.48	-	-	4.52	-	-
Critical Hdwy Stg 1	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.297	3.318	3.518	4.018	3.318	2.542	-	-	2.578	-	-
Pot Cap-1 Maneuver	~ 61	72	341	66	77	454	582	-	-	746	-	-
Stage 1	271	275	-	422	434	-	-	-	-	-	-	-
Stage 2	392	386	-	277	285	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 41	54	341	41	58	454	582	-	-	746	-	-
Mov Cap-2 Maneuver	~ 41	54	-	41	58	-	-	-	-	-	-	-
Stage 1	256	218	-	398	410	-	-	-	-	-	-	-
Stage 2	326	364	-	195	226	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, \$	1096.5		89.7		0.3		0.7	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	582	-	-	47	110	746	-	-
HCM Lane V/C Ratio	0.034	-	-	3.027	0.684	0.091	-	-
HCM Control Delay (s)	11.4	0		\$ 1096.5	89.7	10.3	0	-
HCM Lane LOS	B	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	15.4	3.6	0.3	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
 3: S Florida Ave & W Central Ave

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	68	17	10	31	1	10	0	20	0	0	0
Future Vol, veh/h	1	68	17	10	31	1	10	0	20	0	0	0
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	80	80	80	80	80	80	80	80	80	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	85	21	13	39	1	13	0	25	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	40	0	0	106	0	0	164	164	96	176	174	40
Stage 1	-	-	-	-	-	-	98	98	-	66	66	-
Stage 2	-	-	-	-	-	-	66	66	-	110	108	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1570	-	-	1485	-	-	801	729	960	786	719	1031
Stage 1	-	-	-	-	-	-	908	814	-	945	840	-
Stage 2	-	-	-	-	-	-	945	840	-	895	806	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1570	-	-	1485	-	-	795	722	960	760	712	1031
Mov Cap-2 Maneuver	-	-	-	-	-	-	795	722	-	760	712	-
Stage 1	-	-	-	-	-	-	907	813	-	944	832	-
Stage 2	-	-	-	-	-	-	936	832	-	871	805	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			1.8			9.2			0		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	898	1570	-	-	1485	-	-	-
HCM Lane V/C Ratio	0.042	0.001	-	-	0.008	-	-	-
HCM Control Delay (s)	9.2	7.3	0	-	7.4	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

HCM 6th TWSC

3: S Florida Ave & W Central Ave

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	0	52	11	36	59	6	9	1	33	1	0	0
Future Vol, veh/h	0	52	11	36	59	6	9	1	33	1	0	0
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	80	80	80	80	80	80	80	80	80	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	65	14	45	74	8	11	1	41	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	82	0	0	79	0	0	240	244	72	261	247	78
Stage 1	-	-	-	-	-	-	72	72	-	168	168	-
Stage 2	-	-	-	-	-	-	168	172	-	93	79	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1515	-	-	1519	-	-	714	658	990	692	655	983
Stage 1	-	-	-	-	-	-	938	835	-	834	759	-
Stage 2	-	-	-	-	-	-	834	756	-	914	829	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1515	-	-	1519	-	-	697	638	990	646	635	983
Mov Cap-2 Maneuver	-	-	-	-	-	-	697	638	-	646	635	-
Stage 1	-	-	-	-	-	-	938	835	-	834	735	-
Stage 2	-	-	-	-	-	-	808	733	-	875	829	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.7			9.3			10.6		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	899	1515	-	-	1519	-	-	646
HCM Lane V/C Ratio	0.06	-	-	-	0.03	-	-	0.002
HCM Control Delay (s)	9.3	0	-	-	7.4	0	-	10.6
HCM Lane LOS	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0

HCM 6th TWSC
4: SR 19 & Revels Rd/Revels Rd

Intersection												
Int Delay, s/veh	128											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↕		↖	↗			↖	↗
Traffic Vol, veh/h	41	0	120	124	0	53	44	490	66	21	790	14
Future Vol, veh/h	41	0	120	124	0	53	44	490	66	21	790	14
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	0	-	-	-	430	-	-	-	-	405
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, %	2	2	2	2	2	2	2	8	12	2	10	2
Mvmt Flow	46	0	133	138	0	59	49	544	73	23	878	16

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1632	1639	878	1678	1619	581	894	0	0	617	0	0
Stage 1	924	924	-	679	679	-	-	-	-	-	-	-
Stage 2	708	715	-	999	940	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	81	100	347	~ 75	103	514	759	-	-	963	-	-
Stage 1	323	348	-	441	451	-	-	-	-	-	-	-
Stage 2	426	434	-	293	342	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	66	89	347	~ 42	92	514	759	-	-	963	-	-
Mov Cap-2 Maneuver	66	89	-	~ 42	92	-	-	-	-	-	-	-
Stage 1	302	331	-	412	422	-	-	-	-	-	-	-
Stage 2	353	406	-	172	326	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	51.2	\$ 1224.7	0.7	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	759	-	-	66	347	58	963	-	-
HCM Lane V/C Ratio	0.064	-	-	0.69	0.384	3.391	0.024	-	-
HCM Control Delay (s)	10.1	-	-	137.5	21.	\$ 1224.7	8.8	0	-
HCM Lane LOS	B	-	-	F	C	F	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	3	1.8	20.9	0.1	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
4: SR 19 & Revels Rd/Revels Rd

Intersection												
Int Delay, s/veh	127.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↕		↖	↗			↖	↗
Traffic Vol, veh/h	30	1	83	88	0	36	135	744	146	64	602	45
Future Vol, veh/h	30	1	83	88	0	36	135	744	146	64	602	45
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	0	-	-	-	430	-	-	-	-	405
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, %	2	2	2	2	2	2	2	8	12	2	10	2
Mvmt Flow	33	1	92	98	0	40	150	827	162	71	669	50

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	2039	2100	669	2091	2069	908	719	0	0	989	0	0
Stage 1	811	811	-	1208	1208	-	-	-	-	-	-	-
Stage 2	1228	1289	-	883	861	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	42	52	458	~38	54	334	882	-	-	699	-	-
Stage 1	373	393	-	224	256	-	-	-	-	-	-	-
Stage 2	218	234	-	340	372	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~28	36	458	~22	37	334	882	-	-	699	-	-
Mov Cap-2 Maneuver	~28	36	-	~22	37	-	-	-	-	-	-	-
Stage 1	310	326	-	186	212	-	-	-	-	-	-	-
Stage 2	159	194	-	224	308	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	135.1	\$ 1882.8	1.3	1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	882	-	-	28	458	30	699	-	-
HCM Lane V/C Ratio	0.17	-	-	1.23	0.201	4.593	0.102	-	-
HCM Control Delay (s)	9.9	-	-	\$ 457.1	14.8	\$ 1882.8	10.7	0	-
HCM Lane LOS	A	-	-	F	B	F	B	A	-
HCM 95th %tile Q(veh)	0.6	-	-	4	0.7	16.6	0.3	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC

5: SR 19 & CR 455

Intersection						
Int Delay, s/veh	48.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	78	88	596	133	183	927
Future Vol, veh/h	78	88	596	133	183	927
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	0	-	590	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	81	92	621	139	191	966

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1969	621	0	0	760
Stage 1	621	-	-	-	-
Stage 2	1348	-	-	-	-
Critical Hdwy	6.78	6.35	-	-	4.19
Critical Hdwy Stg 1	5.78	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-
Follow-up Hdwy	3.842	3.435	-	-	2.281
Pot Cap-1 Maneuver	~ 55	465	-	-	821
Stage 1	473	-	-	-	-
Stage 2	203	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	~ 27	465	-	-	821
Mov Cap-2 Maneuver	~ 27	-	-	-	-
Stage 1	473	-	-	-	-
Stage 2	101	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	576.7	0	1.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	27	465	821	-
HCM Lane V/C Ratio	-	-	3.009	0.197	0.232	-
HCM Control Delay (s)	-	\$	1210.8	14.6	10.7	0
HCM Lane LOS	-	-	F	B	B	A
HCM 95th %tile Q(veh)	-	-	9.9	0.7	0.9	-

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 6th TWSC

5: SR 19 & CR 455

Intersection						
Int Delay, s/veh	68.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	100	179	956	110	130	756
Future Vol, veh/h	100	179	956	110	130	756
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	0	-	590	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	104	186	996	115	135	788

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	2054	996	0	0	1111	0
Stage 1	996	-	-	-	-	-
Stage 2	1058	-	-	-	-	-
Critical Hdwy	6.78	6.35	-	-	4.19	-
Critical Hdwy Stg 1	5.78	-	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-	-
Follow-up Hdwy	3.842	3.435	-	-	2.281	-
Pot Cap-1 Maneuver	~ 48	280	-	-	603	-
Stage 1	307	-	-	-	-	-
Stage 2	286	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	~ 29	280	-	-	603	-
Mov Cap-2 Maneuver	~ 29	-	-	-	-	-
Stage 1	307	-	-	-	-	-
Stage 2	172	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	544.7	0	1.9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	29	280	603	-
HCM Lane V/C Ratio	-	-	3.592	0.666	0.225	-
HCM Control Delay (s)	-	\$	1447.7	40.2	12.7	0
HCM Lane LOS	-	-	F	E	B	A
HCM 95th %tile Q(veh)	-	-	12.5	4.4	0.9	-

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 6th TWSC

6: Spine Road & Interconnect Road

Intersection						
Int Delay, s/veh	3.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	33	71	0	44	42
Future Vol, veh/h	0	33	71	0	44	42
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	36	77	0	48	46




Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	219	77	0	0	77
Stage 1	77	-	-	-	-
Stage 2	142	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	769	984	-	-	1522
Stage 1	946	-	-	-	-
Stage 2	885	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	744	984	-	-	1522
Mov Cap-2 Maneuver	744	-	-	-	-
Stage 1	946	-	-	-	-
Stage 2	857	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	3.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	984	1522
HCM Lane V/C Ratio	-	-	0.036	0.031
HCM Control Delay (s)	-	-	8.8	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1

HCM 6th TWSC

6: Spine Road & Interconnect Road

Intersection						
Int Delay, s/veh	3.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	48	60	0	42	80
Future Vol, veh/h	0	48	60	0	42	80
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	52	65	0	46	87

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	244	65	0	0	65	0
Stage 1	65	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	744	999	-	-	1537	-
Stage 1	958	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	721	999	-	-	1537	-
Mov Cap-2 Maneuver	721	-	-	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	826	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	2.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	999	1537
HCM Lane V/C Ratio	-	-	0.052	0.03
HCM Control Delay (s)	-	-	8.8	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

HCM 6th TWSC

7: Spine Road & Number 2 Road

Intersection						
Int Delay, s/veh	5.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Vol, veh/h	62	26	46	33	52	78
Future Vol, veh/h	62	26	46	33	52	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	420	655	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	28	50	36	57	85
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	95	0	203	67
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	136	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1499	-	786	997
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1499	-	760	997
Mov Cap-2 Maneuver	-	-	-	-	760	-
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	861	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	4.4	9.8			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	886	-	-	1499	-	
HCM Lane V/C Ratio	0.159	-	-	0.033	-	
HCM Control Delay (s)	9.8	-	-	7.5	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-	

HCM 6th TWSC

7: Spine Road & Number 2 Road

Intersection						
Int Delay, s/veh	5.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Vol, veh/h	46	59	87	39	41	64
Future Vol, veh/h	46	59	87	39	41	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	420	655	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	64	95	42	45	70
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	114	0	282	50
Stage 1	-	-	-	-	50	-
Stage 2	-	-	-	-	232	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1475	-	708	1018
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1475	-	663	1018
Mov Cap-2 Maneuver	-	-	-	-	663	-
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	755	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	5.3	9.9			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	842	-	-	1475	-	
HCM Lane V/C Ratio	0.136	-	-	0.064	-	
HCM Control Delay (s)	9.9	-	-	7.6	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-	

HCM 6th TWSC

8: Revels Road & Spine Road

Intersection						
Int Delay, s/veh	7.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	108	6	5	142	9
Future Vol, veh/h	10	108	6	5	142	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	117	7	5	154	10

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	328	10	0	0	12	0
Stage 1	10	-	-	-	-	-
Stage 2	318	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	666	1071	-	-	1607	-
Stage 1	1013	-	-	-	-	-
Stage 2	738	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	602	1071	-	-	1607	-
Mov Cap-2 Maneuver	602	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	667	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1005	1607
HCM Lane V/C Ratio	-	-	0.128	0.096
HCM Control Delay (s)	-	-	9.1	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.3

HCM 6th TWSC

8: Revels Road & Spine Road

Intersection						
Int Delay, s/veh	7.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	163	9	12	134	5
Future Vol, veh/h	10	163	9	12	134	5
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	177	10	13	146	5

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	314	17	0	0	23
Stage 1	17	-	-	-	-
Stage 2	297	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	679	1062	-	-	1592
Stage 1	1006	-	-	-	-
Stage 2	754	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	617	1062	-	-	1592
Mov Cap-2 Maneuver	617	-	-	-	-
Stage 1	1006	-	-	-	-
Stage 2	685	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	7.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1019	1592
HCM Lane V/C Ratio	-	-	0.185	0.091
HCM Control Delay (s)	-	-	9.3	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.3

HCM 6th TWSC

9: Orange Blossom Road & Revels Road

Intersection						
Int Delay, s/veh	7.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	7	0	0	4	12	7
Future Vol, veh/h	7	0	0	4	12	7
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	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	0	0	4	13	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	4	0	-	0	18
Stage 1	-	-	-	-	2
Stage 2	-	-	-	-	16
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1618	-	-	-	1000
Stage 1	-	-	-	-	1021
Stage 2	-	-	-	-	1007
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1618	-	-	-	995
Mov Cap-2 Maneuver	-	-	-	-	995
Stage 1	-	-	-	-	1016
Stage 2	-	-	-	-	1007

Approach	EB	WB	SB
HCM Control Delay, s	7.2	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1618	-	-	-	1025
HCM Lane V/C Ratio	0.005	-	-	-	0.02
HCM Control Delay (s)	7.2	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

HCM 6th TWSC

9: Orange Blossom Road & Revels Road

Intersection						
Int Delay, s/veh	5.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	7	0	0	13	8	7
Future Vol, veh/h	7	0	0	13	8	7
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	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	0	0	14	9	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	14	0	-	0	23
Stage 1	-	-	-	-	7
Stage 2	-	-	-	-	16
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1604	-	-	-	993
Stage 1	-	-	-	-	1016
Stage 2	-	-	-	-	1007
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1604	-	-	-	988
Mov Cap-2 Maneuver	-	-	-	-	988
Stage 1	-	-	-	-	1011
Stage 2	-	-	-	-	1007

Approach	EB	WB	SB
HCM Control Delay, s	7.3	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1604	-	-	-	1027
HCM Lane V/C Ratio	0.005	-	-	-	0.016
HCM Control Delay (s)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Appendix L
Intersection Volume Projections

Intersection Volumes

Period	Tgen	Enter	Exit	SF	AGR	Years	Legend
AM Peak		81	241	1.06	2.00%	10	Backg'd + {Vested} + (Project) =

Intersection= SR 19 & CR 48 1																		
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	0	1.06	0	1.20		0						0			0	0	
	T	0	1.06	0	1.20		0						0			0	0	
	R	0	1.06	0	1.20		0						0			0	0	
WB	L	326	1.06	346	1.20		415	32	14		36	7	89	23%		18	522	415 + {89} + (18) = 522
	T	0	1.06	0	1.20		0						0			0	0	
	R	216	1.06	229	1.20		275				59		59			0	334	275 + {59} = 334
NB	L	0	1.06	0	1.20		0						0			0	0	
	T	298	1.06	316	1.20		379	21	24		12	14	71		2%	5	455	379 + {71} + (5) = 455
	R	429	1.06	455	1.20		546	82	23		14	20	139		23%	55	740	546 + {139} + (55) = 740
SB	L	261	1.06	277	1.20		332				81		81			0	413	332 + {81} = 413
	T	92	1.06	98	1.20		118	8	14		33	5	60	2%		2	180	118 + {60} + (2) = 180
	R	0	1.06	0	1.20		0						0			0	0	

Intersection= SR 19 & Central Ave 2																		
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	33	1.06	35	1.20		42	62		16			78		10%	24	144	42 + {78} + (24) = 144
	T	3	1.06	3	1.20		4						0			0	4	4
	R	9	1.06	10	1.20		12						0			0	12	12
WB	L	10	1.06	11	1.20		13						0			0	13	13
	T	1	1.06	1	1.20		1						0			0	1	1
	R	14	1.06	15	1.20		18		47				47			0	65	18 + {47} = 65
NB	L	11	1.06	12	1.20		14						0			0	14	14
	T	356	1.06	377	1.20		452	82		42	26	34	184		15%	36	672	452 + {184} + (36) = 672
	R	23	1.06	24	1.20		29						0			0	29	29
SB	L	4	1.06	4	1.20		5		32				32			0	37	5 + {32} = 37
	T	404	1.06	428	1.20		514	32		24	69	12	137	15%		12	663	514 + {137} + (12) = 663
	R	7	1.06	7	1.20		8	24		9			33	10%		8	49	8 + {33} + (8) = 49

Intersection= Central Ave & S. Florida Ave 3																		
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	1	1.06	1	1.20		1						0			0	1	1
	T	35	1.06	37	1.20		44						0		10%	24	68	44 + (24) = 68
	R	11	1.06	12	1.20		14			3			3			0	17	14 + {3} = 17
WB	L	1	1.06	1	1.20		1			9			9			0	10	1 + {9} = 10
	T	18	1.06	19	1.20		23						0	10%		8	31	23 + (8) = 31
	R	1	1.06	1	1.20		1						0			0	1	1
NB	L	4	1.06	4	1.20		5			5			5			0	10	5 + {5} = 10
	T	0	1.06	0	1.20		0						0			0	0	0
	R	3	1.06	3	1.20		4			16			16			0	20	4 + {16} = 20
SB	L	0	1.06	0	1.20		0						0			0	0	0
	T	0	1.06	0	1.20		0						0			0	0	0
	R	0	1.06	0	1.20		0						0			0	0	0

Intersection= SR 19 & Revels Rd 4																		
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	2	1.06	2	1.20		2	3					3		15%	36	41	2 + {3} + (36) = 41
	T	0	1.06	0	1.20		0						0			0	0	0
	R	5	1.06	5	1.20		6	30					30		35%	84	120	6 + {30} + (84) = 120
WB	L	5	1.06	5	1.20		6		37			81	118			0	124	6 + {118} = 124
	T	0	1.06	0	1.20		0						0			0	0	0
	R	4	1.06	4	1.20		5					48	48			0	53	5 + {48} = 53
NB	L	3	1.06	3	1.20		4	12					12	35%		28	44	4 + {12} + (28) = 44
	T	306	1.06	324	1.20		389	67			26		93	10%		8	490	389 + {93} + (8) = 490
	R	12	1.06	13	1.20		16		22			28	50			0	66	16 + {50} = 66
SB	L	3	1.06	3	1.20		4					17	17			0	21	4 + {17} = 21
	T	410	1.06	435	1.20		522	175			69		244		10%	24	790	522 + {244} + (24) = 790
	R	0	1.06	0	1.20		0	2					2	15%		12	14	{2} + (12) = 14

Intersection= SR 19 & CR 455 5																		
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	0	1.00	0	1.20		0						0			0	0	0
	T	0	1.00	0	1.20		0						0			0	0	0
	R	0	1.00	0	1.20		0						0			0	0	0
WB	L	65	1.00	65	1.20		78						0			0	78	78
	T	0	1.00	0	1.20		0						0			0	0	0
	R	43	1.00	43	1.20		52	16			5	7	28	10%		8	88	52 + {28} + (8) = 88
NB	L	0	1.00	0	1.20		0						0			0	0	0
	T	394	1.00	394	1.20		473	55			21	19	95	35%		28	596	473 + {95} + (28) = 596
	R	111	1.00	111	1.20		133						0			0	133	133
SB	L	70	1.00	70	1.20		84	41			14	20	75		10%	24	183	84 + {75} + (24) = 183
	T	492	1.00	492	1.20		590	144			55	54	253		35%	84	927	590 + {253} + (84) = 927
	R	0	1.00	0	1.20		0						0			0	0	0

Intersection= Interconnect Rd & Spine Rd (Proposed) 6																			
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula	
	L						0										0	0	
EB	T						0										0	0	
	R						0										0	0	
	L						0										0	0	
WB	T						0										0	0	
	R						25							10%			8	33	25 + (8) = 33
	L						0										0	0	
NB	T						20										51	71	20 + (51) = 71
	R						0										0	0	
	L						20										24	44	20 + (24) = 44
SB	T						25								10%		16	41	25 + (16) = 41
	R						0										0	0	

Intersection= Number 2 Rd & Spine Road / North Access 7																			
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula	
	L						0										0	0	
EB	T						59							3			0	62	59 + (3) = 62
	R						15							15%			11	26	15 + (11) = 26
	L						30							20%			16	46	30 + (16) = 46
WB	T						28						5				0	33	28 + (5) = 33
	R						0										0	0	
	L						15								15%		37	52	15 + (37) = 52
NB	T						0										0	0	
	R						30								20%		48	78	30 + (48) = 78
	L						0										0	0	
SB	T						0										0	0	
	R						0										0	0	

Intersection= Revels Rd & Spine Rd / Proposed 8																			
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula	
	L						0										0	0	
EB	T						0										0	0	
	R						0										0	0	
	L						3									3%	7	10	3 + (7) = 10
WB	T						0										0	0	
	R						62							25%			46	108	62 + (46) = 108
	L						0										0	0	
NB	T						4								2%		2	6	4 + (2) = 6
	R						3								3%		2	5	3 + (2) = 5
	L						74								25%		68	142	74 + (68) = 142
SB	T						4								2%		5	9	4 + (5) = 9
	R						0										0	0	

Intersection= Revels Rd & Orange Blossom Rd / South Access 9																			
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula	
	L						7										0	7	7
EB	T						0										0	0	
	R						0										0	0	
	L						0										0	0	
WB	T						0										0	0	
	R						0							5%			4	4	(4)
	L						0										0	0	
NB	T						0										0	0	
	R						0										0	0	
	L						0								5%		12	12	(12)
SB	T						0										0	0	
	R						7										0	7	7

Intersection Volumes

Period	Tgen	Enter	Exit	SF	AGR	Years	Legend
PM Peak		284	167	1.06	2.00%	10	Backg'd + {Vested} + (Project) =

Intersection= SR 19 & CR 48 1																		
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	0	1.06	0	1.20		0						0			0	0	
	T	0	1.06	0	1.20		0						0			0	0	
	R	0	1.06	0	1.20		0						0			0	0	
WB	L	409	1.06	434	1.20		521	92	23		25	24	164	23%		66	751	521 + {164} + (66) = 751
	T	0	1.06	0	1.20		0						0			0	0	
	R	301	1.06	319	1.20		383				100		100			0	483	383 + {100} = 483
NB	L	0	1.06	0	1.20		0						0			0	0	
	T	68	1.06	72	1.20		86	15	14		37	9	75		2%	3	164	86 + {75} + (3) = 164
	R	333	1.06	353	1.20		424	58	14		39	14	125		23%	39	588	424 + {125} + (39) = 588
SB	L	287	1.06	304	1.20		365				86		86			0	451	365 + {86} = 451
	T	79	1.06	84	1.20		101	23	24		24	16	87	2%		6	194	101 + {87} + (6) = 194
	R	0	1.06	0	1.20		0						0			0	0	

Intersection= SR 19 & Central Ave 2																		
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	30	1.06	32	1.20		38	44		9			53		10%	17	108	38 + {53} + (17) = 108
	T	11	1.06	12	1.20		14						0			0	14	14
	R	12	1.06	13	1.20		16						0			0	16	16
WB	L	16	1.06	17	1.20		20						0			0	20	20
	T	3	1.06	3	1.20		4						0			0	4	4
	R	13	1.06	14	1.20		17		32				32			0	49	17 + {32} = 49
NB	L	15	1.06	16	1.20		19						0			0	19	19
	T	342	1.06	363	1.20		436	58		24	76	23	181		15%	25	642	436 + {181} + (25) = 642
	R	20	1.06	21	1.20		25						0			0	25	25
SB	L	15	1.06	16	1.20		19		47				47			0	66	19 + {47} = 66
	T	408	1.06	432	1.20		518	92		42	49	40	223	15%		43	784	518 + {223} + (43) = 784
	R	38	1.06	40	1.20		48	69		16			85	10%		29	162	48 + {85} + (29) = 162

Intersection= Central Ave & S. Florida Ave 3																		
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	0	1.06	0	1.20		0						0			0	0	
	T	27	1.06	29	1.20		35						0		10%	17	52	35 + (17) = 52
	R	5	1.06	5	1.20		6			5			5			0	11	6 + {5} = 11
WB	L	16	1.06	17	1.20		20			16			16			0	36	20 + {16} = 36
	T	24	1.06	25	1.20		30						0	10%		29	59	30 + (29) = 59
	R	5	1.06	5	1.20		6						0			0	6	6
NB	L	5	1.06	5	1.20		6			3			3			0	9	6 + {3} = 9
	T	1	1.06	1	1.20		1						0			0	1	1
	R	19	1.06	20	1.20		24			9			9			0	33	24 + {9} = 33
SB	L	1	1.06	1	1.20		1						0			0	1	1
	T	0	1.06	0	1.20		0						0			0	0	
	R	0	1.06	0	1.20		0						0			0	0	

Intersection= SR 19 & Revels Rd 4																		
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	3	1.06	3	1.20		4	1					1		15%	25	30	4 + {1} + (25) = 30
	T	1	1.06	1	1.20		1						0			0	1	1
	R	4	1.06	4	1.20		5	21					21		35%	57	83	5 + {21} + (57) = 83
WB	L	8	1.06	8	1.20		10		22			56	78			0	88	10 + {78} = 88
	T	0	1.06	0	1.20		0						0			0	0	
	R	3	1.06	3	1.20		4					32	32			0	36	4 + {32} = 36
NB	L	1	1.06	1	1.20		1	35					35	35%		99	135	1 + {35} + (99) = 135
	T	351	1.06	372	1.20		446	194			76		270	10%		28	744	446 + {270} + (28) = 744
	R	11	1.06	12	1.20		14		37			95	132			0	146	14 + {132} = 146
SB	L	7	1.06	7	1.20		8					56	56			0	64	8 + {56} = 64
	T	324	1.06	343	1.20		412	124			49		173		10%	17	602	412 + {173} + (17) = 602
	R	0	1.06	0	1.20		0	2					2	15%		43	45	{2} + (43) = 45

Intersection= SR 19 & CR 455 5																		
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	0	1.00	0	1.20		0						0			0	0	
	T	0	1.00	0	1.20		0						0			0	0	
	R	0	1.00	0	1.20		0						0			0	0	
WB	L	83	1.00	83	1.20		100						0			0	100	100
	T	0	1.00	0	1.20		0						0			0	0	
	R	55	1.00	55	1.20		66	46			15	24	85	10%		28	179	66 + {85} + (28) = 179
NB	L	0	1.00	0	1.20		0						0			0	0	
	T	476	1.00	476	1.20		571	161			61	64	286	35%		99	956	571 + {286} + (99) = 956
	R	92	1.00	92	1.20		110						0			0	110	110
SB	L	50	1.00	50	1.20		60	29			10	14	53		10%	17	130	60 + {53} + (17) = 130
	T	433	1.00	433	1.20		520	102			39	37	178		35%	58	756	520 + {178} + (58) = 756
	R	0	1.00	0	1.20		0						0			0	0	

Intersection= Interconnect Rd & Spine Rd (Proposed) 6																			
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula	
EB	L						0										0	0	
	T						0										0	0	
	R						0										0	0	
WB	L						0										0	0	
	T						0										0	0	
	R						20							10%			28	48	20 + (28) = 48
NB	L						0										0	0	
	T						25										36	61	25 + (36) = 61
	R						0										0	0	
SB	L						25										17	42	25 + (17) = 42
	T						20								10%		61	81	20 + (61) = 81
	R						0										0	0	

Intersection= Number 2 Rd & Spine Road / North Access 7																			
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula	
EB	L						0										0	0	
	T						41										5	46	41 + (5) = 46
	R						15							15%			44	59	15 + (44) = 59
WB	L						30							20%			57	87	30 + (57) = 87
	T						36									3	0	39	36 + (3) = 39
	R						0										0	0	
NB	L						15										26	41	15 + (26) = 41
	T						0								15%		0	0	
	R						30								20%		34	64	30 + (34) = 64
SB	L						0										0	0	
	T						0										0	0	
	R						0										0	0	













Intersection= Revels Rd & Spine Rd / Proposed 8																			
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula	
EB	L						0										0	0	
	T						0										0	0	
	R						0										0	0	
WB	L						4										6	10	4 + (6) = 10
	T						0										0	0	
	R						74							25%			89	163	74 + (89) = 163
NB	L						0										0	0	
	T						3										6	9	3 + (6) = 9
	R						4										8	12	4 + (8) = 12
SB	L						62										72	134	62 + (72) = 134
	T						3										2	5	3 + (2) = 5
	R						0										0	0	

Intersection= Revels Rd & Orange Blossom Rd / South Access 9																			
Approach	Mvmt	Raw	SF	Adjusted	GR	Redirect	Adj Bg'd	The Reserve	Whisp. Hills	Talichet	Lake Hills	Watermark	Vested	%Proj Ent	%Proj Ext	Project	Total	Formula	
EB	L						7										0	7	7
	T						0										0	0	
	R						0										0	0	
WB	L						0										0	0	
	T						0										0	0	
	R						0										13	13	(13)
NB	L						0										0	0	
	T						0										0	0	
	R						0										0	0	
SB	L						0										8	8	(8)
	T						0										0	0	
	R						7										0	7	7

Appendix M
Background Conditions / Buildout Conditions with Mitigation

HCM 6th Signalized Intersection Summary

1: SR 19 & CR 48













						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	504	334	450	685	413	178
Future Volume (veh/h)	504	334	450	685	413	178
Initial Q (Qb), veh	0	0	0	0	0	0
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	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	520	203	464	0	426	184
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	386	312	695		506	1139
Arrive On Green	0.23	0.23	0.39	0.00	0.17	0.63
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	520	203	464	0	426	184
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	22.7	13.4	21.2	0.0	14.2	4.1
Cycle Q Clear(g_c), s	22.7	13.4	21.2	0.0	14.2	4.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	386	312	695		506	1139
V/C Ratio(X)	1.35	0.65	0.67		0.84	0.16
Avail Cap(c_a), veh/h	386	312	695		539	1139
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	37.7	34.1	24.4	0.0	16.8	7.5
Incr Delay (d2), s/veh	172.2	4.7	5.0	0.0	11.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	41.4	8.1	14.4	0.0	10.4	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	209.9	38.8	29.5	0.0	27.8	7.8
LnGrp LOS	F	D	C		C	A
Approach Vol, veh/h	723		464	A		610
Approach Delay, s/veh	161.9		29.5			21.8
Approach LOS	F		C			C
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.0	45.0		30.0		68.0
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	16.2	23.2		24.7		6.1
Green Ext Time (p_c), s	0.4	2.5		0.0		1.0
Intersection Summary						
HCM 6th Ctrl Delay			80.1			
HCM 6th LOS			F			

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

1: SR 19 & CR 48

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	685	483	161	549	451	188
Future Volume (veh/h)	685	483	161	549	451	188
Initial Q (Qb), veh	0	0	0	0	0	0
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	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	706	302	166	0	465	194
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	380	307	685		740	1149
Arrive On Green	0.23	0.23	0.39	0.00	0.18	0.63
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	706	302	166	0	465	194
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	22.7	22.2	6.3	0.0	16.0	4.4
Cycle Q Clear(g_c), s	22.7	22.2	6.3	0.0	16.0	4.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	380	307	685		740	1149
V/C Ratio(X)	1.86	0.98	0.24		0.63	0.17
Avail Cap(c_a), veh/h	380	307	685		747	1149
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	38.4	38.3	20.6	0.0	12.3	7.4
Incr Delay (d2), s/veh	395.5	46.9	0.8	0.0	1.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	79.4	16.3	4.8	0.0	9.5	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	433.9	85.1	21.5	0.0	13.9	7.8
LnGrp LOS	F	F	C		B	A
Approach Vol, veh/h	1008		166	A		659
Approach Delay, s/veh	329.4		21.5			12.1
Approach LOS	F		C			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	24.6	45.0		30.0		69.6
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	18.5	38.6		22.7		38.6
Max Q Clear Time (g_c+I1), s	18.0	8.3		24.7		6.4
Green Ext Time (p_c), s	0.1	0.9		0.0		1.1
Intersection Summary						
HCM 6th Ctrl Delay			187.5			
HCM 6th LOS			F			

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th TWSC

2: SR 19 & W Central Ave/E Central Ave

Intersection												
Int Delay, s/veh	41.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	120	4	12	13	1	65	14	636	29	37	651	41
Future Vol, veh/h	120	4	12	13	1	65	14	636	29	37	651	41
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	124	4	12	13	1	67	14	656	30	38	671	42

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1501	1482	692	1475	1488	671	713	0	0	686	0	0
Stage 1	768	768	-	699	699	-	-	-	-	-	-	-
Stage 2	733	714	-	776	789	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.83	6.22	7.12	6.52	6.22	4.48	-	-	4.52	-	-
Critical Hdwy Stg 1	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.297	3.318	3.518	4.018	3.318	2.542	-	-	2.578	-	-
Pot Cap-1 Maneuver	~ 95	107	444	104	124	456	742	-	-	747	-	-
Stage 1	380	369	-	430	442	-	-	-	-	-	-	-
Stage 2	397	392	-	390	402	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 74	95	444	89	110	456	742	-	-	747	-	-
Mov Cap-2 Maneuver	~ 74	95	-	89	110	-	-	-	-	-	-	-
Stage 1	368	338	-	417	428	-	-	-	-	-	-	-
Stage 2	327	380	-	343	368	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	472.6		24.5		0.2		0.5	
HCM LOS	F		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	742	-	-	80	265	747	-	-
HCM Lane V/C Ratio	0.019	-	-	1.753	0.307	0.051	-	-
HCM Control Delay (s)	9.9	0	-	472.6	24.5	10.1	0	-
HCM Lane LOS	A	A	-	F	C	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	11.9	1.3	0.2	-	-

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 6th TWSC

2: SR 19 & W Central Ave/E Central Ave

Intersection												
Int Delay, s/veh	50.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	91	14	16	20	4	49	19	617	25	66	741	133
Future Vol, veh/h	91	14	16	20	4	49	19	617	25	66	741	133
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	12	33	2	2	2	2	38	10	2	42	2	11
Mvmt Flow	94	14	16	21	4	51	20	636	26	68	764	137

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1686	1671	833	1673	1726	649	901	0	0	662	0	0
Stage 1	969	969	-	689	689	-	-	-	-	-	-	-
Stage 2	717	702	-	984	1037	-	-	-	-	-	-	-
Critical Hdwy	7.22	6.83	6.22	7.12	6.52	6.22	4.48	-	-	4.52	-	-
Critical Hdwy Stg 1	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.22	5.83	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.608	4.297	3.318	3.518	4.018	3.318	2.542	-	-	2.578	-	-
Pot Cap-1 Maneuver	~ 70	81	369	76	89	470	624	-	-	764	-	-
Stage 1	292	294	-	436	446	-	-	-	-	-	-	-
Stage 2	405	397	-	299	308	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 49	63	369	50	69	470	624	-	-	764	-	-
Mov Cap-2 Maneuver	~ 49	63	-	50	69	-	-	-	-	-	-	-
Stage 1	277	240	-	414	423	-	-	-	-	-	-	-
Stage 2	340	377	-	219	251	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	701.2		65.2		0.3		0.7	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	624	-	-	57	130	764	-	-
HCM Lane V/C Ratio	0.031	-	-	2.188	0.579	0.089	-	-
HCM Control Delay (s)	11	0	-	\$ 701.2	65.2	10.2	0	-
HCM Lane LOS	B	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	12.3	2.9	0.3	-	-

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 6th TWSC

3: S Florida Ave & W Central Ave

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	44	17	10	23	1	10	0	20	0	0	0
Future Vol, veh/h	1	44	17	10	23	1	10	0	20	0	0	0
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	80	80	80	80	80	80	80	80	80	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	55	21	13	29	1	13	0	25	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	30	0	0	76	0	0	124	124	66	136	134	30
Stage 1	-	-	-	-	-	-	68	68	-	56	56	-
Stage 2	-	-	-	-	-	-	56	56	-	80	78	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1583	-	-	1523	-	-	850	766	998	835	757	1044
Stage 1	-	-	-	-	-	-	942	838	-	956	848	-
Stage 2	-	-	-	-	-	-	956	848	-	929	830	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1583	-	-	1523	-	-	843	758	998	808	749	1044
Mov Cap-2 Maneuver	-	-	-	-	-	-	843	758	-	808	749	-
Stage 1	-	-	-	-	-	-	941	837	-	955	840	-
Stage 2	-	-	-	-	-	-	947	840	-	905	829	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			2.2			9			0		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	940	1583	-	-	1523	-	-	-
HCM Lane V/C Ratio	0.04	0.001	-	-	0.008	-	-	-
HCM Control Delay (s)	9	7.3	0	-	7.4	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

HCM 6th TWSC

3: S Florida Ave & W Central Ave

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	0	35	11	36	30	6	9	1	33	1	0	0
Future Vol, veh/h	0	35	11	36	30	6	9	1	33	1	0	0
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	80	80	80	80	80	80	80	80	80	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	44	14	45	38	8	11	1	41	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	46	0	0	58	0	0	183	187	51	204	190	42
Stage 1	-	-	-	-	-	-	51	51	-	132	132	-
Stage 2	-	-	-	-	-	-	132	136	-	72	58	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1562	-	-	1546	-	-	778	708	1017	754	705	1029
Stage 1	-	-	-	-	-	-	962	852	-	871	787	-
Stage 2	-	-	-	-	-	-	871	784	-	938	847	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1562	-	-	1546	-	-	760	687	1017	706	684	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	760	687	-	706	684	-
Stage 1	-	-	-	-	-	-	962	852	-	871	763	-
Stage 2	-	-	-	-	-	-	845	760	-	899	847	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.7			9.1			10.1		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	940	1562	-	-	1546	-	-	706
HCM Lane V/C Ratio	0.057	-	-	-	0.029	-	-	0.002
HCM Control Delay (s)	9.1	0	-	-	7.4	0	-	10.1
HCM Lane LOS	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0

HCM 6th TWSC
4: SR 19 & Revels Rd

Intersection												
Int Delay, s/veh	54.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↔			↕	
Traffic Vol, veh/h	5	0	36	124	0	53	16	482	66	21	766	2
Future Vol, veh/h	5	0	36	124	0	53	16	482	66	21	766	2
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	2	2	2	2	2	2	2	8	12	2	10	2
Mvmt Flow	6	0	40	138	0	59	18	536	73	23	851	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1536	1543	852	1527	1508	573	853	0	0	609	0	0
Stage 1	898	898	-	609	609	-	-	-	-	-	-	-
Stage 2	638	645	-	918	899	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	95	115	359	~96	121	519	786	-	-	970	-	-
Stage 1	334	358	-	482	485	-	-	-	-	-	-	-
Stage 2	465	467	-	326	358	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	79	106	359	~80	112	519	786	-	-	970	-	-
Mov Cap-2 Maneuver	79	106	-	~80	112	-	-	-	-	-	-	-
Stage 1	322	342	-	465	468	-	-	-	-	-	-	-
Stage 2	398	451	-	277	342	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.5	\$ 478.9	0.3	0.2
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	786	-	-	251 107	970	-	-
HCM Lane V/C Ratio	0.023	-	-	0.181 1.838	0.024	-	-
HCM Control Delay (s)	9.7	-	-	22.5\$ 478.9	8.8	0	-
HCM Lane LOS	A	-	-	C F	A A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6 15.9	0.1	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC

4: SR 19 & Revels Rd

Intersection												
Int Delay, s/veh	48.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↔			↕	
Traffic Vol, veh/h	5	1	26	88	0	36	36	716	146	64	585	2
Future Vol, veh/h	5	1	26	88	0	36	36	716	146	64	585	2
Conflicting Peds, #/hr	0	0	0	0	0	0	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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	2	2	2	2	2	2	2	8	12	2	10	2
Mvmt Flow	6	1	29	98	0	40	40	796	162	71	650	2

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1770	1831	651	1765	1751	877	652	0	0	958	0	0
Stage 1	793	793	-	957	957	-	-	-	-	-	-	-
Stage 2	977	1038	-	808	794	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	65	76	469	~ 65	86	348	935	-	-	718	-	-
Stage 1	382	400	-	310	336	-	-	-	-	-	-	-
Stage 2	302	308	-	375	400	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	47	58	469	~ 49	66	348	935	-	-	718	-	-
Mov Cap-2 Maneuver	47	58	-	~ 49	66	-	-	-	-	-	-	-
Stage 1	346	338	-	281	304	-	-	-	-	-	-	-
Stage 2	242	279	-	296	338	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30	\$ 653.3	0.4	1
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	935	-	-	179	65	718	-	-
HCM Lane V/C Ratio	0.043	-	-	0.199	2.12	0.099	-	-
HCM Control Delay (s)	9	-	-	30	\$ 653.3	10.6	0	-
HCM Lane LOS	A	-	-	D	F	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	13.1	0.3	-	-

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 6th TWSC

5: SR 19 & CR 455

Intersection						
Int Delay, s/veh	26.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	78	80	568	133	159	843
Future Vol, veh/h	78	80	568	133	159	843
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	0	-	590	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	81	83	592	139	166	878

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1802	592	0	0	731
Stage 1	592	-	-	-	-
Stage 2	1210	-	-	-	-
Critical Hdwy	6.78	6.35	-	-	4.19
Critical Hdwy Stg 1	5.78	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-
Follow-up Hdwy	3.842	3.435	-	-	2.281
Pot Cap-1 Maneuver	~ 71	483	-	-	842
Stage 1	489	-	-	-	-
Stage 2	239	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	~ 44	483	-	-	842
Mov Cap-2 Maneuver	~ 44	-	-	-	-
Stage 1	489	-	-	-	-
Stage 2	147	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	303.4	0	1.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	44	483	842	-
HCM Lane V/C Ratio	-	-	1.847	0.173	0.197	-
HCM Control Delay (s)	-	-	\$ 600.2	14	10.3	0
HCM Lane LOS	-	-	F	B	B	A
HCM 95th %tile Q(veh)	-	-	8.3	0.6	0.7	-

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 6th TWSC

5: SR 19 & CR 455

Intersection						
Int Delay, s/veh	40.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	100	151	857	110	113	698
Future Vol, veh/h	100	151	857	110	113	698
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	0	-	590	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	38	15	8	22	9	5
Mvmt Flow	104	157	893	115	118	727

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1856	893	0	0	1008
Stage 1	893	-	-	-	-
Stage 2	963	-	-	-	-
Critical Hdwy	6.78	6.35	-	-	4.19
Critical Hdwy Stg 1	5.78	-	-	-	-
Critical Hdwy Stg 2	5.78	-	-	-	-
Follow-up Hdwy	3.842	3.435	-	-	2.281
Pot Cap-1 Maneuver	~ 65	322	-	-	661
Stage 1	347	-	-	-	-
Stage 2	320	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	~ 46	322	-	-	661
Mov Cap-2 Maneuver	~ 46	-	-	-	-
Stage 1	347	-	-	-	-
Stage 2	224	-	-	-	-













Approach	WB	NB	SB
HCM Control Delay, s	322.1	0	1.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	46	322	661	-
HCM Lane V/C Ratio	-	-	2.264	0.488	0.178	-
HCM Control Delay (s)	-	-	\$ 768.6	26.4	11.6	0
HCM Lane LOS	-	-	F	D	B	A
HCM 95th %tile Q(veh)	-	-	10.9	2.5	0.6	-

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 6th Signalized Intersection Summary

1: SR 19 & CR 48

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	522	334	454	740	413	180
Future Volume (veh/h)	522	334	454	740	413	180
Initial Q (Qb), veh	0	0	0	0	0	0
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	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	538	205	468	0	426	186
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	548	442	485		430	991
Arrive On Green	0.33	0.33	0.27	0.00	0.21	0.55
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	538	205	468	0	426	186
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	35.2	13.3	28.8	0.0	23.1	5.7
Cycle Q Clear(g_c), s	35.2	13.3	28.8	0.0	23.1	5.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	548	442	485		430	991
V/C Ratio(X)	0.98	0.46	0.96		0.99	0.19
Avail Cap(c_a), veh/h	548	442	485		430	991
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	36.6	29.3	39.4	0.0	31.2	12.6
Incr Delay (d2), s/veh	33.9	0.8	33.0	0.0	40.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	25.7	7.5	23.3	0.0	22.6	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	70.5	30.0	72.4	0.0	72.0	13.0
LnGrp LOS	E	C	E		E	B
Approach Vol, veh/h	743		468	A		612
Approach Delay, s/veh	59.4		72.4			54.1
Approach LOS	E		E			D
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	30.0	36.6		43.4		66.6
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	23.5	30.2		36.1		60.2
Max Q Clear Time (g_c+I1), s	25.1	30.8		37.2		7.7
Green Ext Time (p_c), s	0.0	0.0		0.0		1.1
Intersection Summary						
HCM 6th Ctrl Delay			60.9			
HCM 6th LOS			E			

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.













HCM 6th Roundabout

1: SR 19 & CR 48

Intersection						
Intersection Delay, s/veh	17.7					
Intersection LOS	C					
Approach	WB		NB		SB	
Entry Lanes	2		2		2	
Conflicting Circle Lanes	1		1		1	
Adj Approach Flow, veh/h	882		1231		612	
Demand Flow Rate, veh/h	1008		1319		670	
Vehicles Circulating, veh/h	510		473		592	
Vehicles Exiting, veh/h	1282		789		926	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	14.2		23.0		11.9	
Approach LOS	B		C		B	
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	LT	R	L	TR
Assumed Moves	L	TR	LT	R	L	TR
RT Channelized						
Lane Util	0.587	0.413	0.387	0.613	0.706	0.294
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544
Entry Flow, veh/h	592	416	510	809	473	197
Cap Entry Lane, veh/h	893	893	923	923	829	829
Entry HV Adj Factor	0.909	0.827	0.917	0.943	0.901	0.943
Flow Entry, veh/h	538	344	468	763	426	186
Cap Entry, veh/h	811	738	847	871	746	782
V/C Ratio	0.663	0.466	0.552	0.876	0.571	0.238
Control Delay, s/veh	16.0	11.4	12.1	29.7	13.9	7.2
LOS	C	B	B	D	B	A
95th %tile Queue, veh	5	2	3	11	4	1

HCM 6th Signalized Intersection Summary

1: SR 19 & CR 48

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	751	483	164	587	451	194
Future Volume (veh/h)	751	483	164	587	451	194
Initial Q (Qb), veh	0	0	0	0	0	0
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	1752	1589	1767	1811	1737	1811
Adj Flow Rate, veh/h	774	359	169	0	465	200
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	21	9	6	11	6
Cap, veh/h	777	627	259		467	743
Arrive On Green	0.47	0.47	0.15	0.00	0.20	0.41
Sat Flow, veh/h	1668	1346	1767	1535	1654	1811
Grp Volume(v), veh/h	774	359	169	0	465	200
Grp Sat Flow(s),veh/h/ln	1668	1346	1767	1535	1654	1811
Q Serve(g_s), s	50.9	21.4	9.9	0.0	22.5	8.1
Cycle Q Clear(g_c), s	50.9	21.4	9.9	0.0	22.5	8.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	777	627	259		467	743
V/C Ratio(X)	1.00	0.57	0.65		1.00	0.27
Avail Cap(c_a), veh/h	777	627	259		467	743
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	29.3	21.4	44.3	0.0	33.2	21.5
Incr Delay (d2), s/veh	31.4	1.3	12.2	0.0	40.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	33.4	10.6	8.9	0.0	12.2	6.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	60.7	22.7	56.5	0.0	73.6	22.4
LnGrp LOS	E	C	E		E	C
Approach Vol, veh/h	1133		169	A		665
Approach Delay, s/veh	48.7		56.5			58.2
Approach LOS	D		E			E
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	29.0	22.5		58.5		51.5
Change Period (Y+Rc), s	6.5	6.4		7.3		6.4
Max Green Setting (Gmax), s	22.5	16.1		51.2		45.1
Max Q Clear Time (g_c+I1), s	24.5	11.9		52.9		10.1
Green Ext Time (p_c), s	0.0	0.3		0.0		1.1
Intersection Summary						
HCM 6th Ctrl Delay			52.6			
HCM 6th LOS			D			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

HCM 6th Roundabout

1: SR 19 & CR 48

Intersection						
Intersection Delay, s/veh	16.1					
Intersection LOS	C					
Approach	WB		NB		SB	
Entry Lanes	2		2		2	
Conflicting Circle Lanes	1		1		1	
Adj Approach Flow, veh/h	1272		774		665	
Demand Flow Rate, veh/h	1454		825		728	
Vehicles Circulating, veh/h	184		516		851	
Vehicles Exiting, veh/h	1157		1063		787	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	12.6		15.7		23.4	
Approach LOS	B		C		C	
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	LT	R	L	TR
Assumed Moves	L	TR	LT	R	L	TR
RT Channelized						
Lane Util	0.585	0.415	0.223	0.777	0.709	0.291
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544
Entry Flow, veh/h	851	603	184	641	516	212
Cap Entry Lane, veh/h	1201	1201	888	888	655	655
Entry HV Adj Factor	0.910	0.826	0.917	0.944	0.901	0.943
Flow Entry, veh/h	774	498	169	605	465	200
Cap Entry, veh/h	1092	992	815	838	590	618
V/C Ratio	0.708	0.502	0.207	0.722	0.788	0.324
Control Delay, s/veh	14.4	9.7	6.6	18.2	29.0	10.2
LOS	B	A	A	C	D	B
95th %tile Queue, veh	6	3	1	6	8	1

HCM 6th Signalized Intersection Summary

2: SR 19 & W Central Ave






















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	144	4	12	13	1	65	14	672	29	37	663	49
Future Volume (veh/h)	144	4	12	13	1	65	14	672	29	37	663	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1722	1411	1870	1870	1870	1870	1337	1752	1870	1278	1870	1737
Adj Flow Rate, veh/h	148	4	12	13	1	67	14	693	30	38	684	51
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, %	12	33	2	2	2	2	38	10	2	42	2	11
Cap, veh/h	310	10	15	105	29	252	78	1054	45	101	1041	75
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	965	56	81	128	159	1375	11	1642	70	43	1623	118
Grp Volume(v), veh/h	164	0	0	81	0	0	737	0	0	773	0	0
Grp Sat Flow(s),veh/h/ln	1102	0	0	1663	0	0	1722	0	0	1783	0	0
Q Serve(g_s), s	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.2	0.0	0.0	2.2	0.0	0.0	13.5	0.0	0.0	13.2	0.0	0.0
Prop In Lane	0.90		0.07	0.16		0.83	0.02		0.04	0.05		0.07
Lane Grp Cap(c), veh/h	335	0	0	386	0	0	1177	0	0	1218	0	0
V/C Ratio(X)	0.49	0.00	0.00	0.21	0.00	0.00	0.63	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	506	0	0	645	0	0	1177	0	0	1218	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(l)	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	19.9	0.0	0.0	18.1	0.0	0.0	5.7	0.0	0.0	5.7	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.3	0.0	0.0	2.5	0.0	0.0	2.5	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(95%),veh/ln	3.2	0.0	0.0	1.4	0.0	0.0	6.1	0.0	0.0	6.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	0.0	0.0	18.3	0.0	0.0	8.2	0.0	0.0	8.2	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		164			81			737			773	
Approach Delay, s/veh		21.0			18.3			8.2			8.2	
Approach LOS		C			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		37.5		13.9		37.5		13.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		33.0		18.0		33.0		18.0				
Max Q Clear Time (g_c+I1), s		15.5		9.2		15.2		4.2				
Green Ext Time (p_c), s		5.0		0.5		5.4		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				9.9								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary 2: SR 19 & W Central Ave






















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	108	14	16	20	4	49	19	642	25	66	784	161
Future Volume (veh/h)	108	14	16	20	4	49	19	642	25	66	784	161
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1722	1411	1870	1870	1870	1870	1337	1752	1870	1278	1870	1737
Adj Flow Rate, veh/h	111	14	16	21	4	51	20	662	26	68	808	166
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, %	12	33	2	2	2	2	38	10	2	42	2	11
Cap, veh/h	338	28	21	191	43	187	124	917	35	154	784	155
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.56	0.56	0.56	0.56	0.56	0.56
Sat Flow, veh/h	839	169	129	296	258	1130	18	1650	64	64	1410	279
Grp Volume(v), veh/h	141	0	0	76	0	0	708	0	0	1042	0	0
Grp Sat Flow(s),veh/h/ln	136	0	0	1684	0	0	1731	0	0	1753	0	0
Q Serve(g_s), s	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.1	0.0	0.0
Cycle Q Clear(g_c), s	3.7	0.0	0.0	1.3	0.0	0.0	9.9	0.0	0.0	18.0	0.0	0.0
Prop In Lane	0.79		0.11	0.28		0.67	0.03		0.04	0.07		0.16
Lane Grp Cap(c), veh/h	387	0	0	421	0	0	1077	0	0	1094	0	0
V/C Ratio(X)	0.36	0.00	0.00	0.18	0.00	0.00	0.66	0.00	0.00	0.95	0.00	0.00
Avail Cap(c_a), veh/h	803	0	0	1020	0	0	1077	0	0	1094	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(l)	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	12.7	0.0	0.0	11.8	0.0	0.0	5.4	0.0	0.0	7.6	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.2	0.0	0.0	1.5	0.0	0.0	17.1	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(95%),veh/ln	1.4	0.0	0.0	0.7	0.0	0.0	2.7	0.0	0.0	11.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.3	0.0	0.0	12.0	0.0	0.0	6.8	0.0	0.0	24.7	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	C	A	A
Approach Vol, veh/h		141			76			708			1042	
Approach Delay, s/veh		13.3			12.0			6.8			24.7	
Approach LOS		B			B			A			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.5		9.9		22.5		9.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		11.9		5.7		20.0		3.3				
Green Ext Time (p_c), s		2.5		0.6		0.0		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				16.9								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary 4: SR 19 & Revels Rd/Revels Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	0	120	124	0	53	44	490	66	21	790	14
Future Volume (veh/h)	41	0	120	124	0	53	44	490	66	21	790	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1870	1870	1870	1870	1781	1722	1870	1752	1870
Adj Flow Rate, veh/h	46	0	133	138	0	59	49	544	73	23	878	16
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	8	12	2	10	2
Cap, veh/h	377	0	210	0	0	210	342	980	131	104	1093	1010
Arrive On Green	0.13	0.00	0.13	0.00	0.00	0.13	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	1455	0	1585	0	0	1585	622	1538	206	16	1716	1585
Grp Volume(v), veh/h	46	0	133	0	0	59	49	0	617	901	0	16
Grp Sat Flow(s),veh/h/ln	1455	0	1585	0	0	1585	622	0	1744	1731	0	1585
Q Serve(g_s), s	0.0	0.0	3.1	0.0	0.0	1.3	2.5	0.0	7.8	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.9	0.0	3.1	0.0	0.0	1.3	17.5	0.0	7.8	15.0	0.0	0.1
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.12	0.03		1.00
Lane Grp Cap(c), veh/h	377	0	210	0	0	210	342	0	1111	1197	0	1010
V/C Ratio(X)	0.12	0.00	0.63	0.00	0.00	0.28	0.14	0.00	0.56	0.75	0.00	0.02
Avail Cap(c_a), veh/h	819	0	731	0	0	731	630	0	1921	1984	0	1745
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(l)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.1	0.0	16.0	0.0	0.0	15.3	11.8	0.0	4.0	5.3	0.0	2.6
Incr Delay (d2), s/veh	0.1	0.0	3.1	0.0	0.0	0.7	0.2	0.0	0.4	1.0	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(95%),veh/ln	0.6	0.0	2.0	0.0	0.0	0.8	0.5	0.0	1.7	3.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.2	0.0	19.2	0.0	0.0	16.0	12.0	0.0	4.4	6.3	0.0	2.6
LnGrp LOS	B	A	B	A	A	B	B	A	A	A	A	A
Approach Vol, veh/h		179			59			666				917
Approach Delay, s/veh		18.2			16.0			5.0				6.2
Approach LOS		B			B			A				A
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		29.4	0.0	9.7		29.4		9.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s		43.0	5.0	18.0		43.0		18.0				
Max Q Clear Time (g_c+I1), s		19.5	0.0	5.1		17.0		3.3				
Green Ext Time (p_c), s		4.8	0.0	0.5		7.9		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			7.3									
HCM 6th LOS			A									

HCM 6th Signalized Intersection Summary 4: SR 19 & Revels Rd/Revels Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1	83	88	0	36	135	744	146	64	602	45
Future Volume (veh/h)	30	1	83	88	0	36	135	744	146	64	602	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1870	1870	1870	1870	1781	1722	1870	1752	1870
Adj Flow Rate, veh/h	33	1	92	98	0	40	150	827	162	71	669	50
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	8	12	2	10	2
Cap, veh/h	244	6	140	0	0	140	388	1102	216	126	1006	1207
Arrive On Green	0.09	0.09	0.09	0.00	0.00	0.09	0.76	0.76	0.76	0.76	0.76	0.76
Sat Flow, veh/h	1422	65	1585	0	0	1585	733	1447	283	80	1321	1585
Grp Volume(v), veh/h	34	0	92	0	0	40	150	0	989	740	0	50
Grp Sat Flow(s),veh/h/ln	1486	0	1585	0	0	1585	733	0	1730	1401	0	1585
Q Serve(g_s), s	0.0	0.0	3.4	0.0	0.0	1.4	9.8	0.0	19.1	4.7	0.0	0.5
Cycle Q Clear(g_c), s	1.1	0.0	3.4	0.0	0.0	1.4	33.6	0.0	19.1	24.0	0.0	0.5
Prop In Lane	0.97		1.00	0.00		1.00	1.00		0.16	0.10		1.00
Lane Grp Cap(c), veh/h	249	0	140	0	0	140	388	0	1318	1133	0	1207
V/C Ratio(X)	0.14	0.00	0.66	0.00	0.00	0.29	0.39	0.00	0.75	0.65	0.00	0.04
Avail Cap(c_a), veh/h	542	0	476	0	0	476	600	0	1818	1548	0	1666
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(l)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.4	0.0	26.5	0.0	0.0	25.6	15.2	0.0	4.0	3.3	0.0	1.8
Incr Delay (d2), s/veh	0.2	0.0	5.2	0.0	0.0	1.1	0.6	0.0	1.2	0.6	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(95%),veh/ln	0.8	0.0	2.5	0.0	0.0	1.0	2.7	0.0	4.3	2.3	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.6	0.0	31.6	0.0	0.0	26.7	15.8	0.0	5.1	3.9	0.0	1.8
LnGrp LOS	C	A	C	A	A	C	B	A	A	A	A	A
Approach Vol, veh/h		126			40			1139			790	
Approach Delay, s/veh		30.0			26.7			6.5			3.8	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		50.5	0.0	9.8		50.5		9.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s		63.0	5.0	18.0		63.0		18.0				
Max Q Clear Time (g_c+I1), s		35.6	0.0	5.4		26.0		3.4				
Green Ext Time (p_c), s		10.8	0.0	0.3		7.2		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			7.3									
HCM 6th LOS			A									

HCM 6th Signalized Intersection Summary

5: SR 19 & CR 455



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	78	88	596	133	183	927
Future Volume (veh/h)	78	88	596	133	183	927
Initial Q (Qb), veh	0	0	0	0	0	0
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	1337	1678	1781	1574	1767	1826
Adj Flow Rate, veh/h	81	92	621	139	191	966
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	38	15	8	22	9	5
Cap, veh/h	101	113	1527	1143	214	983
Arrive On Green	0.08	0.08	0.86	0.86	0.86	0.86
Sat Flow, veh/h	1273	1422	1781	1334	216	1146
Grp Volume(v), veh/h	81	92	621	139	1157	0
Grp Sat Flow(s),veh/h/ln	1273	1422	1781	1334	1362	0
Q Serve(g_s), s	8.9	9.1	10.9	2.4	105.7	0.0
Cycle Q Clear(g_c), s	8.9	9.1	10.9	2.4	116.6	0.0
Prop In Lane	1.00	1.00		1.00	0.17	
Lane Grp Cap(c), veh/h	101	113	1527	1143	1197	0
V/C Ratio(X)	0.80	0.81	0.41	0.12	0.97	0.00
Avail Cap(c_a), veh/h	161	180	1540	1153	1208	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	64.4	64.4	2.2	1.6	12.5	0.0
Incr Delay (d2), s/veh	13.6	13.9	0.2	0.0	18.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/lr	5.9	6.7	4.5	0.8	40.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	78.0	78.4	2.4	1.7	30.8	0.0
LnGrp LOS	E	E	A	A	C	A
Approach Vol, veh/h	173		760			1157
Approach Delay, s/veh	78.2		2.3			30.8
Approach LOS	E		A			C
Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		126.5			126.5	15.8
Change Period (Y+Rc), s		4.5			4.5	4.5
Max Green Setting (Gmax), s		123.0			123.0	18.0
Max Q Clear Time (g_c+I1), s		12.9			118.6	11.1
Green Ext Time (p_c), s		5.3			3.4	0.3
Intersection Summary						
HCM 6th Ctrl Delay			24.3			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary

5: SR 19 & CR 455



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	100	179	956	110	130	756
Future Volume (veh/h)	100	179	956	110	130	756
Initial Q (Qb), veh	0	0	0	0	0	0
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	1337	1678	1781	1574	1767	1826
Adj Flow Rate, veh/h	104	186	996	115	135	788
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	38	15	8	22	9	5
Cap, veh/h	153	171	1461	1094	141	755
Arrive On Green	0.12	0.12	0.82	0.82	0.82	0.82
Sat Flow, veh/h	1273	1422	1781	1334	138	921
Grp Volume(v), veh/h	104	186	996	115	923	0
Grp Sat Flow(s),veh/h/ln	1273	1422	1781	1334	1059	0
Q Serve(g_s), s	11.7	18.0	34.2	2.5	88.8	0.0
Cycle Q Clear(g_c), s	11.7	18.0	34.2	2.5	123.0	0.0
Prop In Lane	1.00	1.00		1.00	0.15	
Lane Grp Cap(c), veh/h	153	171	1461	1094	896	0
V/C Ratio(X)	0.68	1.09	0.68	0.11	1.03	0.00
Avail Cap(c_a), veh/h	153	171	1461	1094	896	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	63.2	66.0	5.5	2.7	24.2	0.0
Incr Delay (d2), s/veh	11.6	95.0	1.3	0.0	38.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.7	17.1	15.7	1.1	52.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	74.9	161.0	6.8	2.7	62.3	0.0
LnGrp LOS	E	F	A	A	F	A
Approach Vol, veh/h	290		1111			923
Approach Delay, s/veh	130.1		6.4			62.3
Approach LOS	F		A			E
Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		127.5			127.5	22.5
Change Period (Y+Rc), s		4.5			4.5	4.5
Max Green Setting (Gmax), s		123.0			123.0	18.0
Max Q Clear Time (g_c+I1), s		36.2			125.0	20.0
Green Ext Time (p_c), s		11.8			0.0	0.0
Intersection Summary						
HCM 6th Ctrl Delay			44.1			
HCM 6th LOS			D			

Appendix N
Lake County Land Development Code (LDC)

2. Turn Lanes

Turn lanes consist of left-turn lanes and right-turn lanes (deceleration lanes). Turn lanes shall be installed on the road which is being accessed at the proposed entrance(s) to the development, as deemed necessary by the County Manager or Designee. The County Manager or Designee may also require turn lanes at adjacent or nearby intersections in lieu of, or in addition to, turn lanes at the development entrances.

Conditions which are to be considered in determining the need for turn lanes include the following:

- a) If the property accessing the road is projected to generate 500 or more vehicle trips per day, or 50 or more vehicle trips in any hour;
- b) If a traffic analysis indicates that turn lanes would be necessary to maintain capacity on fronting roads and/or on adjacent or nearby intersections.
- c) If entrances are proposed at locations where grade, topography, site distance, traffic, or other unusual conditions indicate that turn lanes would be needed for traffic safety. The need for turn lanes to accommodate right turn movements and left turn movements shall be based upon anticipated traffic distribution and projected turning movement volumes among other considerations, including traffic safety.

C. Traffic Analysis

1. Transportation Concurrency Management System

Transportation Concurrency Management System is administered by the Lake-Sumter Metropolitan Planning Organization (LSMPO). All information regarding traffic study could be found on LSPMO website www.lakesumtermpo.com/concurrency/index.aspx

D. Road Classification

1. Arterial Roads

An arterial road is a route providing service which is relatively continuous and of relatively high traffic volume, long average trip length, high operating speed and of high mobility importance.

Arterial roads are grouped into the following sub-categories:

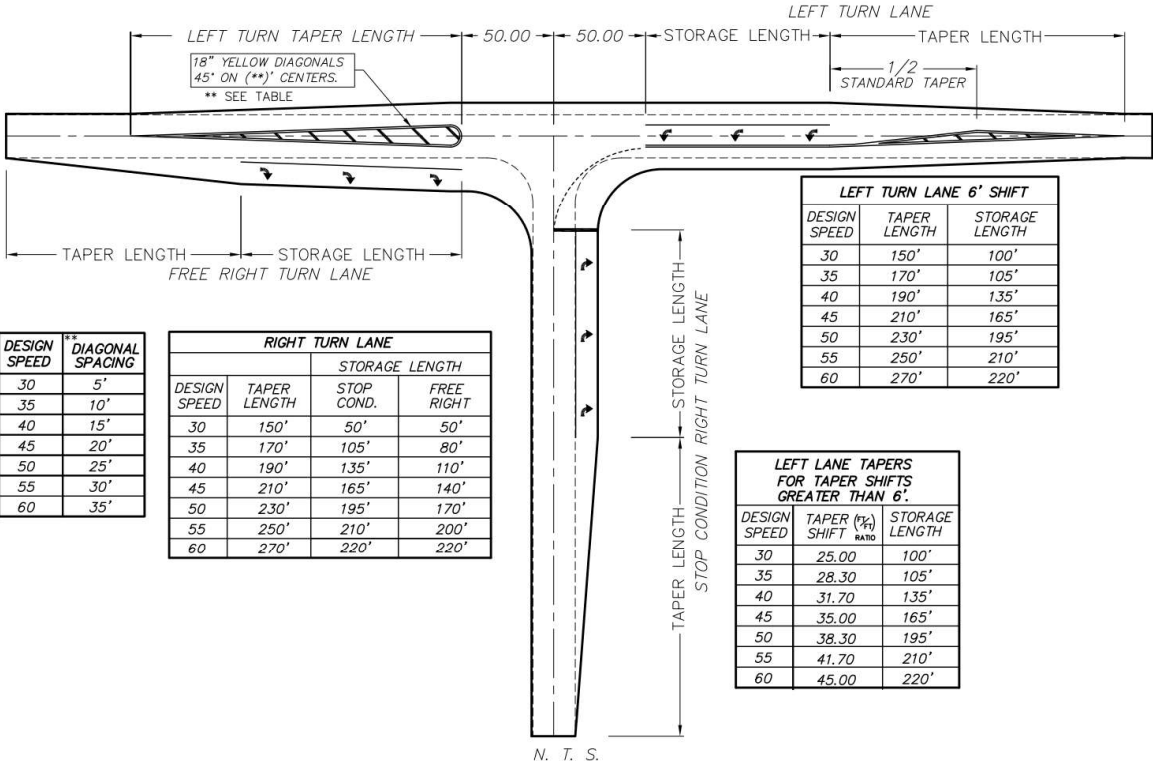
- a) Principal Arterial
- b) Minor Arterial

The classification of roads as arterials shall be based upon criteria established by the Florida Department of Transportation utilizing their most recent, adopted functional classification system.

2. Collector Roads

A collector road is a route providing services which is of relatively moderate traffic volume, moderate trip length and moderate operating speed. Collector roads collect and distribute the traffic between local roads and arterial roads and serves as a linkage between land access and mobility needs.

LAKE COUNTY STANDARD TURN LANES



DESIGN SPEED	** DIAGONAL SPACING
30	5'
35	10'
40	15'
45	20'
50	25'
55	30'
60	35'

RIGHT TURN LANE			
DESIGN SPEED	TAPER LENGTH	STORAGE LENGTH	
		STOP COND.	FREE RIGHT
30	150'	50'	50'
35	170'	105'	80'
40	190'	135'	110'
45	210'	165'	140'
50	230'	195'	170'
55	250'	210'	200'
60	270'	220'	220'

LEFT TURN LANE 6' SHIFT		
DESIGN SPEED	TAPER LENGTH	STORAGE LENGTH
30	150'	100'
35	170'	105'
40	190'	135'
45	210'	165'
50	230'	195'
55	250'	210'
60	270'	220'

LEFT LANE TAPERS FOR TAPER SHIFTS GREATER THAN 6'		
DESIGN SPEED	TAPER SHIFT (1/2) RATIO	STORAGE LENGTH
30	25.00	100'
35	28.30	105'
40	31.70	135'
45	35.00	165'
50	38.30	195'
55	41.70	210'
60	45.00	220'

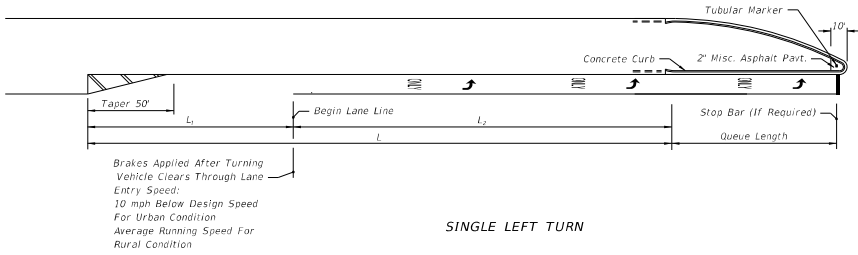
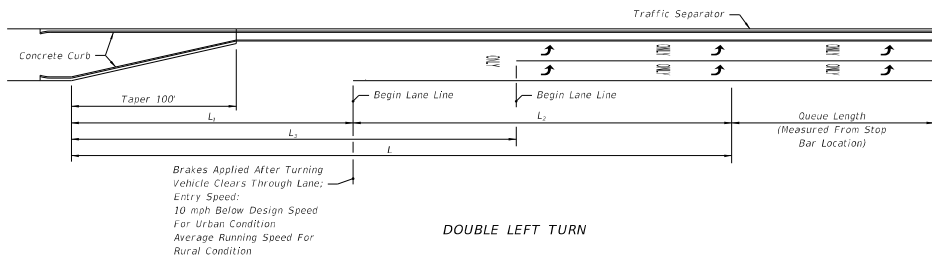
Typical Details

0: _CAD STANDARDS\DWG\Turn LanesR1.dwg (02/06/2007)

THIS SHOULD BE USED AS A GUIDE LINE ONLY. ALL DESIGNS SHALL BE SUBMITTED FOR REVIEW.

Appendix O
FDOT Design Manual Exhibit 212-1

MEDIAN TURN LANES MINIMUM DECELERATION LENGTHS



		MEDIAN TURN LANES						
		URBAN CONDITIONS				RURAL CONDITIONS		
Design Speed (mph)	Entry Speed (mph)	Clearance Distance L ₁ (ft.)	Brake To Stop Distance L ₂ (ft.)	Total Decel. Distance L (ft.)	Clearance Distance L ₁ (ft.)	Brake To Stop Distance L ₂ (ft.)	Total Decel. Distance L (ft.)	
35	25	70	75	145	110	—	—	
40	30	80	75	155	120	—	—	
45	35	85	100	185	135	—	—	
50	40/44	105	135	240	160	185	290	
55	48	125	—	—	225	350	195	
60	52	145	—	—	260	405	230	
65	55	170	—	—	290	460	270	

NOT TO SCALE

EXHIBIT 212-1
01/01/2022

Appendix B
Preliminary Development Plan

Appendix C
Lake County CMP Database and 2023 FDOT Q/LOS

Appendix D
Turning Movement Counts and Seasonal Factor Data

Appendix E
HCM Analysis Worksheets - Existing Conditions

Appendix F
ITE Trip Generation Sheets

Appendix G
CFRPM Model Output

Appendix H
LSMPO TIP and LSMPO LOPP

Appendix I
Vested Trips Data

Appendix J
AADT Model Plot

Appendix K
HCM Worksheets - Projected Conditions

Appendix L
Intersection Volume Projections

Appendix M
Background Conditions / Buildout Conditions with Mitigation

Appendix N
Lake County Land Development Code (LDC)

Appendix O
FDOT Design Manual Exhibit 212-1



September 28, 2023

Thomas A. Harowski, AICP
 Town of Howey-in-the-Hills
 101 N. Palm Ave., P.O. Box 128,
 Howey-In-The-Hills, Florida 34737

RE: Mission Rise PUD

Dear: Mr. Harowski

Enclosed please find responses to Staff's comments below in bold. The following items are resubmitted in response to Staff's comments:

1. Revised Conceptual Land Use Plan
2. Revised Development Agreement
3. Revised Traffic Impact Analysis

PLANNING REVIEW COMMENTS:
CONCEPT PLAN:

1. The project still fails to meet the 15% non-residential land area requirements of the Village Mixed Use land use classification. The stormwater areas allocated to the non-residential use calculation are in fact engineering elements of other land uses. The civic land use, the amenity centers and the park areas can count toward the non-residential land use as proposed. Staff is willing to include the major trail area that falls outside the central collector road right-of-way (so long as this area is not already counted as park area).

RESPONSE: Please see page 4 of the Conceptual Land Use Plan, which provides distinct details of the non-residential land area proposed within the development. Stormwater areas have been excluded from the calculation. An additional park area is proposed in the southern part of Phase 2.

2. The proposed recreational facilities have been better detailed, but the "regional" park still fails to meet the definition included in the comprehensive plan. Perhaps revising the name to a neighborhood facility is more appropriate given that the park is unlikely to draw significant interest from residents outside the neighborhood.

RESPONSE: The "regional" park has been renamed to "neighborhood" parks. In turn, the previous "neighborhood parks" have been renamed to "mini" parks. The mini parks are planned as recreational space for the use of the residents of the community. The neighborhood parks are intended to serve the larger community and facilitate access and use of the multiuse trail system.

3. The area in the center designated as regional park is a bonafide park area. The highlighted areas in Phase 3 and at the south end of Phase 2 are just open space and should not be

counted as park area.

RESPONSE: The proposed park areas have been detailed, in terms of the proposed features/amenities on page 3 of the Conceptual Land Use Plan.

4. The applicant has elected to retain stormwater retention areas within the central core area which staff recommended for tree preservation and green space. As noted in our comments last time, the retention ponds are part of the residential land use and should be located there. Be advised this item will be a comment in the staff report.

RESPONSE: Acknowledged.

5. The park area developments have been detailed but outside of the amenity centers are essentially passive designs. As an additional item, the applicant could consider including some court activities as part of the overall program. We renew our suggestions for repurposing the small residential development at the southeast corner of Phase 2 as a central community facility.

RESPONSE: Active recreational amenities may be provided in the park area in the southern part of Phase 2. The planned facilities/amenities and design of the park areas are intended to be further detailed at the subdivision/site plan process.

6. The applicant needs to address how the double-frontage lots located in Phase 2 and Phase 3 will be addressed. These lots have access from a parallel street so that the rear yards of these properties will front on the central collector road. Perhaps some sort of buffer such as a landscaped berm or wall is appropriate.

RESPONSE: The double-frontage lots will have a 10' landscaped buffer along the Collector Road to protect views from this roadway.

7. For the 55-foot-wide lots where no alley access is proposed, what design options are suggested to reduce the impact of a garage-dominate streetscape.

RESPONSE: In accordance with LDC Section 4.06.02.A.3., at least 25% of the lots in the development will have to provide recessed garages. Further, side-loaded garages are encouraged, as stated in the proposed Development Agreement.

8. The unit totals provided for the phase allocations do not add correctly on the table provided.

RESPONSE: The unit totals have been revised on the Phase Development Table. Please see page 2 of the Conceptual Land Use Plan.

9. The note to the table needs to be removed. Movement of units between phases will be considered a major amendment of the development agreement. As an alternative the applicant could propose language in the development agreement allowing for a specific level of shifting units between phases for Town Council consideration.

RESPONSE: Acknowledged. The note has been removed and language related to movement of units between phases will be added to the Development Agreement.

10. At the last DRC meeting the applicant was requested to provide a timing proposal for construction of the central collector road. The agreement needs to include a proposed timing.

RESPONSE: Please see the revised Development Agreement.

11. Map 2 seems to be unclear. Phase lines are similar to the symbols for pathways, parking, non-residential areas etc. Perhaps the information can be divided into more maps that will present a clearer summary.

RESPONSE: Please see page 2 of the Conceptual Land Use Plan where the phase line type has been updated for better readability.

PUD/DEVELOPMENT AGREEMENT:

1. On page two the development agreement states the project is 592 units while the concept plan has 499. These documents need to be in agreement.

RESPONSE: Please see the revised Development Agreement.

2. On page three the minimum lot width at the building line needs to be 75 feet for the 75 x 120 lot size.

RESPONSE: Please see the revised Development Agreement.

3. On page three the wetland buffer needs to reflect the town requirements in Sec. 3.02.03C as well as the water management district and DEP requirements. The Town's requirements vary in some respects from the state requirements.

RESPONSE: Please see the revised Development Agreement.

4. On page four, the language setting the timing for the Town to ask for utility upgrades is still not satisfactory. The proposed 270 days from approval of the plan is still not what we need. The timing should be triggered by the application for final subdivision approval for the phase of the project proposed. The final subdivision approval gives authorization to construct subdivision improvements. The Town should be required to make its needs and commitments at this point. If final subdivision approval is sought by phase, then the Town's opportunity to seek utility line upgrades should attach to each phase.

RESPONSE: Please see the revised Development Agreement.

5. On page 6, the Town is not requiring all roads to be public. The applicant has the choice to use gated access for the project or for sub-areas within the project. While the collector road should remain with full public access, the applicant may wish to revise the proposed language to preserve the option for gated areas.

RESPONSE: Please see the revised Development Agreement.

6. On page eleven, the termination language related to sewer service acquisition should be modified to include other options than the CLCDD.

RESPONSE: Please see the revised Development Agreement.

TRAFFIC IMPACT ASSESSMENT:

1. Defer to the Town engineer comments

RESPONSE: Acknowledged.

**ENGINEERING REVIEW COMMENTS:
TRAFFIC STUDY:**

1. The conceptual land use plan states the maximum number of lots is 499. The traffic study and the development agreement states 592 lots. All three need to be the same.

RESPONSE: The Traffic Impact Analysis and Development Agreement have been revised to state a maximum of 499 units.

2. The methodology states that Lake Hills & Watermark are to be included in the background traffic projection. The submitted study left these developments out.

RESPONSE: Please see the revised Traffic Impact Analysis.

3. For the future condition intersection analysis for SR 19 & Revels Rd. include right & left turn lanes on SR 19 and a right turn lane on revels.

RESPONSE: Please see the revised Traffic Impact Analysis.

4. For the future condition intersection analysis for the Spine Rd. and Number 2 Rd., include right & left turn lanes on Number 2 Rd.

RESPONSE: Please see the revised Traffic Impact Analysis.

5. Per the MPO TIS Guidelines the study needs to include a section for Mitigation Strategies. This needs to address the road segments and intersections with deficiencies. For unsignalized intersections, side streets with deficient delays need to be evaluated for mitigation. Also, the narrow width of Number 2 Road needs to be addressed in this section. While capacity is not an issue, operational safety is.

RESPONSE: Please see the revised Traffic Impact Analysis.

6. There is no proposed widening of SR 19 at Central Avenue as stated in the study.

RESPONSE: Please see the revised Traffic Impact Analysis.

7. Based on Lake County's requirement for turn lane widening on Number 2 Road (all on the south side) the length of tapers will need to be twice the standard length.

RESPONSE: Please see the revised Traffic Impact Analysis.

CONCEPT PLAN:

1. The main N-S spine road and realigned Revels Road should not have driveway connections or on-street parking. They should have full pedestrian accommodation including the multi-use trail and raised crosswalks/speed tables at key points along its length connecting the trail and sidewalks to amenity, open space, and park areas.

RESPONSE: On-street parking/driveway connections along the Collector Road have been removed from the plan. All lots abutting the Collector Road will have access from another local street or alley.

2. The curb & gutter for the neighborhood roads should 2' wide Type F or Drop Curb.

RESPONSE: Please see page 6 of the Conceptual Land Use Plan, where the curb and gutter has been updated to 2' width.

Development Agreement

1. Section 1. (f) Wetlands: Wetland impacts and buffering shall also be subject to the Town's land development regulations as well as the St Johns River Water Management District.

RESPONSE: Please see the revised Development Agreement.

2. Section 1. (j) Transportation, Streets and Sidewalks: Revels Road and the Spine Road must have a minimum 90-foot right-of-way, 2' curb and gutter, and a minimum 32-foot-wide pavement with 12-foot travel lanes and 4' curb lanes.

RESPONSE: Please see the revised Development Agreement.

Thank you in advance for your consideration of the above information. If you require further information, please do not hesitate to contact me at 607.216.2390 or rlopes@rviplanning.com

Sincerely,

RVi Planning + Landscape Architecture

Rhea Lopes, AICP
Project Manager

Enclosures

cc: Alexis Crespo, RVi Planning + Landscape Architecture
Jason Humm, ASF TAP FL I LLC
Jonathan Huels, Lowndes Law Group

**MISSION RISE
PUD REZONE
PROJECT NARRATIVE, COMPREHENSIVE PLAN & REZONE CRITERIA COMPLIANCE
Revised July 2023**

I. PROJECT OVERVIEW

On behalf of the Property Owner, ASF TAP FL I, LLC. (“Applicant”), enclosed please find a Rezone Application to amend the Planned Unit Development (“PUD”) zoning of the Mission Rise Property (“Property”). The Property consists of 243+/- acres including 4 parcels, PIDs: 02-21-25-0002-000-04800; 34-20-25-0004-000-01003; 34-20-25-0001-000-00100; 27-20-25-0004-000-01200. It is generally located south of Number Two Road, west of SR 19, and east of Silverwood Lane in the southwestern portion of the Town of Howey-in-the-Hills (see Aerial Map, included in the application materials).

The Property is designated as Village Mixed Use (VMU) and Conservation (CON) based on the Town of Howey-in-the-Hills Future Land Use Map. In 2005, the Property was rezoned to PUD per Ordinance 2005-357, with a binding conceptual development plan allowing for development of 400 dwelling units. The Developer’s Agreement related to the Rezone was approved in 2007 and expired 10 years later in February 2017. The Property is currently vacant, consisting of pasturelands and wetlands. The Property can be accessed from Number 2 Road and Revels Road.

The purpose of this petition is to rezone the Property from PUD to PUD with a new Conceptual Land Use Plan and Developer’s Agreement, to allow for a maximum of **499 dwelling units**, along with supportive amenities and infrastructure. A multi-use trail and parks system as well as a trailhead site is also included as the non-residential use within the PUD.

II. SURROUNDING USES

While a majority of land surrounding the Property is predominantly vacant currently, many properties are entitled for development.

The surrounding lands to the north, south, and west of the Property consist of vacant agricultural lands, groves, or pastures along with a few dispersed single-family residential dwellings. The Reserve (Hillside Grove) PUD was approved to the east in November 2021 (Ordinance 2021-010), allowing for 284 single-family homes, 291-single-family cluster homes, and 153 townhouse units, along with up to 300,000 square feet of commercial uses and 100,000 square feet of institutional uses. Lands to the east of SR 19, known as the Simpson Parcels, was also rezoned to PUD as the Watermark PUD (Ordinance 2022-016). The PUD was approved for 275 single-family dwelling units. Table 1 below provides a comprehensive inventory of the surrounding land use pattern.

TABLE 1: INVENTORY OF SURROUNDING USES

	Future Land Use	Zoning	Existing Land Use
North	Village Mixed Use (VMU), Conservation	AR (Lake County), PUD (The Reserve, Ordinance 2021-010)	ROW (Number 2 Road) Agriculture/Pasture

	(CON), Urban Low Density (Lake County)		
South	Rural Transition (Lake County)	A (Lake County)	Single-family residential
East	Village Mixed Use (VMU), Conservation (CON), Medium Density Residential (MDR)	PUD (The Reserve, Ordinance 2021-010 & Watermark PUD, Ordinance 2022-016), LI	Future Residential (The Reserve (Lennar) PUD/Agriculture (Orange Grove)/Pasture
West	Village Mixed Use (VMU), Conservation (CON)	AG, A (Lake County), R-3 (Lake County)	Agriculture/Pasture/Single-family/Manufactured Home

Based on the development of the adjacent Reserve PUD and Watermark PUD, the surrounding area will be transitioning into denser residential or mixed-use neighborhoods.

III. HISTORY

Following annexation into the Town limits in 2005, the Property was rezoned to PUD per Ordinance 2005-037. The conceptual development plan, approved by the Town Council, authorizes the development of 400 single-family residential units. The Mission Rise Developer’s Agreement was approved in February 2007, to establish mutually agreed upon terms regarding the development of the Property. This agreement expired 10 years following the effective date. In 2018, Hanover Properties attempted to secure zoning entitlements through a PUD rezone for 629 single-family residential units with associated amenities and infrastructure on the Property. However, this rezone request was denied by the Town Council.

IV. REZONE REQUEST

The Applicant is requesting to rezone the Property from PUD to PUD with a new Binding Development Plan and Developer’s Agreement, to allow for a maximum of 499 dwelling units, along with supportive amenities and infrastructure. A regional multi-use trail and park system and a civic tract is planned as the non-residential component of this PUD, consistent with the requirements of the VMU future land use district.

The proposed density of 499 dwelling units is within the limitations of the base density permitted per the Town’s Comprehensive Plan. The proposed density calculations are as follows:

$$\text{Net Land Area} = \text{Total acreage} - \text{Waterbodies acreage}^1 - \text{Required open space}^2 - \text{Remaining Wetlands acreage}^3$$

¹ Only pre-existing water bodies are to be included in the calculation.

² 25% of gross land area has to be reserved as open space. Per Policy 1.2.2 of the Future Land Use Element of the Town’s Comprehensive Plan, no more than 50% of the open space requirement can be met with wetlands. Landscaped buffers and stormwater facilities may be counted towards open space if designed in a park-like setting with pedestrian facilities and free-form ponds. Up to

10% of open space may be impervious.

³ Wetlands not counted towards the open space requirement.

Net Land Area = 243.3 – 0 – 60.8 – 29.4
= 153.1 acres

Total Yield = 153.1 x 4
= **612 dwelling units**

Max. Potential Units per FLU = 612 dwelling units.

Max. Units Requested = 499 dwelling units.

Only single-family detached residential units are proposed within the PUD, including a mix of 75-foot-wide and 55-foot-wide lots. The smaller lots are strategically located in the interior of the Property, with larger lots proposed along the boundaries. Compatibility with the adjacent properties will be addressed via sensitive site design that addresses the placement of buffers, open space/preserve areas, and proposed residential development tracts. The proposed density and lot sizes is consistent with the recent approval for the Reserve PUD to the immediate east.

Access to the project will be via Number 2 and Revels Road, as shown on the proposed Conceptual Land Use Plan. The N-S spine roadway (Connector #1) passing through the Property, connecting Number Two Road and SR 19 through Revels Road, will be designed as a two-lane Collector roadway with a 90’ right-of-way. This roadway will traverse through the proposed development providing interconnectivity. Additional future potential access points connecting to the Reserve PUD to the east and to the west are also proposed. A full access point is proposed to the south, connecting to Orange Blossom Road.

Connector #1 is designed with a continuous multimodal trail of min. 12’ that will provide for pedestrian and bicycle connectivity across the project. The multimodal trail will be designed to capture natural viewsheds along the preserved wetlands, serving as an amenity for the project’s residents as well as the Town as a whole. Additional pedestrian paths are planned along stormwater ponds throughout the development forming a system of parks adjacent to the N-S Spine Roadway. The system of multi-use trails and parks are designed to take advantage of the natural features of the site.

Over 25% of open space is provided within the project, consistent with the requirements of the Comprehensive Plan. On-site wetlands have been preserved along with upland buffers to the greatest extent possible, with minimal planned impacts.

V. INFRASTRUCTURE

Transportation:

Traffic & Mobility Consultants have prepared a Transportation Impact Analysis for this project, which is included in the application materials. Please see the report for additional details on the impacts of the proposed development.

Utilities:

Potable water will be provided through the Town’s public water supply system. Sanitary sewer service will be secured through the Mission Inn Wastewater Treatment Plant, which is operated by the Central Lakes Community Development District (CDD). The Applicant is working with the Town and CDD to establish

available capacity to serve the project.

Fire and EMS:

Fire and EMS services will be provided by the Lake County Fire District.

Schools:

Lake County School District has reviewed this project (application reviewed for 592 dwelling units, as initially proposed) and provided an Adequate Public Facilities Determination Letter.

VI. ENVIRONMENTAL

An Environmental Assessment for the Property was prepared by Bio-Tech Consulting Inc., which contains information related to soils, land use types, listed and protected flora and fauna species, wetland delineation, and other environmental constraints.

Only 0.3 +/- acres of impacts to the 60.1 +/- acres of on-site wetlands is proposed, as reflected on the proposed Conceptual Land Use Plan. Consistent with Section 3.02.03 of the Land Development Code (LDC), no development is proposed within 25' of a wetland and no building or impervious surface area with the exception of stormwater ponds is planned within 50' of a wetland.

Any impacts to protected/listed species or wetlands will be permitted in accordance with relevant State and Federal guidelines as further described in the Environmental Assessment. Required buffers are maintained from the identified bald eagle's nest.

The project is in the X, A and AE flood zones. The proposed development is designed to have a majority of development, outside of areas prone to flooding per FEMA.

VII. STORMWATER MANAGEMENT

The project will provide adequate stormwater management facilities to ensure water quality and attenuation in accordance with all applicable local, state and federal regulations. It is understood that the Applicant will obtain an Environmental Resource Permit (ERP) from the St. John's River Water Management District (SJRWMD) and any required Section 404 permits from the Florida Department of Environmental Protection (FDEP) prior to construction.

Stormwater runoff from the developed portions of the project will be conveyed to stormwater management ponds. Approximately 26.8 +/- acres of the Property are planned as stormwater ponds. The ponds will treat and attenuate the stormwater runoff in accordance with SJRWMD and Town's requirements prior to discharging off site. Stormwater will be detained within the ponds where chemical and physical processes within the ponds will improve water quality. The ponds will attenuate the project's runoff rate by holding back water, reducing the discharge rate.

Information related to proposed impervious surfaces will not be available until detailed design, which will be provided during at later stages of the Town's permitting process. Management of stormwater run-off, considering changes in existing and proposed impervious surfaces, will comply with SJRWMD and the Town of Howey-in-the-Hills requirements.

VIII. FUTURE LAND USE/COMPREHENSIVE PLAN COMPLIANCE

The proposed amendment is consistent with the Goals, Objectives and Policies of the Howey-in-the-Hills County Comprehensive Plan as follows:

Policy 1.1.1: Land Use Designations, Village Mixed Use (VMU)

- *Minimum of 25 acres to apply for this land use. Maximum density of 4 dwelling units per acre, which may be increased to 6 dwelling units per acre if the development includes 20% usable public open space (no wetlands).*

RESPONSE: The Property is 243 +/- acres in size, meeting the minimum threshold to be developed under the VMU future land use designation. The PUD is proposed for a maximum of 499 dwelling units, that is under the maximum base density of 4 dwelling units per acre, as demonstrated by the calculations included earlier in this narrative.

- *Residential areas shall comprise a minimum of 70% of the net land area and a maximum of 85% of the net land area.*
- *Commercial/non-residential areas shall comprise a minimum of 15% of the net land area and a maximum of 30% of the net land area. This includes community facilities and schools.*

RESPONSE: 15.2 % of the net land area or 23.2 acres is planned as non-residential areas within the project. This includes a mix of community recreational areas and the system of multi-use trails and parks, with trailhead site. The remainder of the net land area is proposed for residential uses.

- *For developments with more than 100 acres, 5% of the non-residential land shall be dedicated for public/civic buildings.*

RESPONSE: A 1.2 +/- acre site (5% of non-residential area) along SR 19 is designated as a civil tract which is planned to be developed with a trailhead to support the proposed trail and park system.

- *Commercial/non-residential may be 2 stories with 50% coverage as long as parking and other support facilities (stormwater) are met. The maximum building height is 35 feet.*

RESPONSE: The project will comply with this requirement.

- *Public recreational uses must occupy a minimum of 10% of the useable open space (no wetlands).*

RESPONSE: Over 10% of usable open space or 6.8 +/- acres is planned as public recreation areas.

- *A minimum of 25% open space is required.*

RESPONSE: 28.5% or 69.4 +/- acres is planned as open space within the project. Please note that any areas accredited towards non-residential area requirements are not included in this open space calculation.

- *The maximum building size is 30,000 sq. ft.; unless a special exception is granted to the developer*

by the Town Council.

RESPONSE: The project will comply with the maximum building size requirement of 30,000 SF. No special exception is being requested.

Policy 1.1.2: Village Mixed Use – Primarily intended to create sustainability and maintain the unique charm of the Town, including the provisions of reducing the dependability on the automobile, protecting more open land, and providing quality of life by allowing people to live, work, socialize, and recreate in close proximity. Elementary, middle, and high schools are also permitted in this category.

RESPONSE: The project meets the required mix of residential and non-residential areas for the VMU future land use designation. Non-residential areas are planned as the multi-use trail and park system that will be compatible with the residential development and maximize the natural features of the site. Special emphasis has been paid to multimodal connectivity across the project, especially connecting to the non-residential areas, consistent with the intent of this category.

Policy 1.3.1: Limiting Development in Wetland Areas. The Town shall limit development within all wetland areas to land uses supporting conservation facilities and water-related passive recreation activities, as defined in the Recreation and Open Space Element. Wetlands shall be identified on the Future Land Use Map Series as Conservation lands. No development shall be permitted in wetlands except for conservation or passive recreation uses as defined within policies cited herein.

RESPONSE: On-site wetlands are preserved to the greatest extent feasible with only 0.3 +/- acres of impacts proposed. This impact area is to accommodate the north-south Connector #1, consistent with the Town's 2035 Future Transportation Map.

Policy 1.11.2 Use of Cluster Developments. To promote the conservation of permeable surface area and maintain the Town's rural character, cluster developments shall be promoted by the Town during the development review process. Developers of Mixed Use/Planned Unit Developments and residential subdivisions shall be encouraged to cluster development in order to preserve open space.

RESPONSE: As seen on the proposed Conceptual Land Use Plan, the development is clustered consistent with this policy to allow for maximum preservation of on-site natural wetlands and native habitat. Approximately 25% of the site is wetland habitat, almost all of which is proposed to be preserved along with required upland buffers. 28.5% of open space has been provided within the project, only including 50% of on-site wetlands within the open space calculation. Thus, the development will help conserve permeable surface area and maintain the Town's rural character.

Based on the above analysis, the proposed rezone petition is in substantial compliance with the Goals, Objectives and Policies of the Town's Comprehensive Plan.

IX. REZONING CRITERIA COMPLIANCE

1. Is the rezoning request consistent with the Town's comprehensive plan?

Yes, the rezoning request is consistent with the Town's Comprehensive Plan, as further detailed in Section VIII above.

2. Describe any changes in circumstances of conditions affecting the property and the surrounding area that support a change in the current zoning.

The Property is currently zoned PUD. This request does not seek to change the zoning designation of the subject property. Instead, it seeks approval of a new Conceptual Land Use Plan and Developer's Agreement for the Property, as the prior Conceptual Land Use Plan and Developer's Agreement expired in February 2017.

The proposed density is consistent with the maximum permitted per the underlying future land use of VMU. The proposed development will meet all requirements of the VMU category. Further, at current, development in the surrounding including the Reserve PUD and Watermark PUD is supportive of the requested density. The proposed lot sizes within the project are consistent with the lot sizes approved in the Reserve PUD that is immediately to the east of the Property. It uses clustering principles to allow for wetland preservation and open space enhancement to maximize the natural features of the Property.

Overall, the proposed rezoning will be consistent with the underlying future land use and mimics the nature of development seen in the surrounding area.

3. Will the proposed rezoning have any negative effects on adjacent properties?

No, the proposed rezoning will not have a negative effect on adjacent properties. The site has been sensitively designed such that preserved wetlands, stormwater ponds, and open space form a natural buffer adjacent to a majority of the Property's boundaries. Where residential use is proposed adjacent to single-family development to the west, larger 75'-wide-lots are planned. Smaller lots are strategically located in the interior of the Property and adjacent to the Reserve PUD, where similar lot sizes are approved. In terms of connectivity, the Conceptual Land Use Plan depicts the north-south Connector #1. This 90' ROW will connect Number Two Road to SR 19, improving connectivity in the area. Thus, the proposed development will not have any negative effects on adjacent properties and instead serve as a continuation of the existing development pattern with enhanced connectivity.

4. Will the proposed rezoning have any impacts upon natural resources?

No, the proposed rezoning will not have any impacts upon natural resources. Please see the attached Environmental Assessment by Bio-Tech Consulting Inc. which provides detailed information of natural resources on site.

On-site wetlands have been preserved to the greatest extent feasible, along with upland buffers as required by the Town's Comprehensive Plan. Any impacts to listed species and their habitat will be permitted through relevant State and Federal agencies. Required buffers have been maintained from the identified bald eagle's nest on site, in accordance with the U.S Fish and Wildlife Service's management plans.

5. Will the proposed rezoning have any impacts upon adjacent properties?

The proposed rezoning is a continuance of development seen in the adjacent area in recent years with approval of the Reserve PUD and Watermark PUD. Consistent with the intent of

PUDs, the proposed Conceptual Land Use Plan proposes a clustered development with greater extent of environmental protection, open space, and public recreational areas. The proposed development meets all requirements of the VMU future land use designation, as described in Section VIII of this narrative. Further, the project will help interconnectivity within the area through the inclusion of the north-south Connector #1. This roadway is to be designed as a two-lane roadway with dedicated continuous min. 12' multimodal trail to ensure both vehicular and pedestrian connectivity from Number Two Road down to Revels Road and SR 19.

6. Will the rezoning create any impacts on services including schools, transportation, utilities, stormwater management and solid waste disposal?

- **Schools - An Adequate School Facilities Determination Letter has been provided by the Lake County School District.**
- **Transportation –Transportation & Mobility Consultants, Inc. has prepared a Traffic Impact Analysis based on a methodology approved by the Town.**
- **Utilities – Potable water will be provided through the Town’s public water supply system; the Town has indicated adequate capacity to serve the project. Sanitary sewer service will be secured through the Mission Inn Wastewater Treatment Plant, which is operated by the Central Lakes Community Development District (CDD). The Applicant is working with the CDD to establish available capacity to serve the project.**
- **Stormwater Management – Please see Section VII of this narrative. Stormwater systems will be designed to manage stormwater on-site and receive applicable permits from the SJRWMD and the Town, prior to construction.**
- **Solid Waste – Solid waste service will be provided through the Town.**

7. Are there any mistakes in the assignment of the current zoning classification?

No, the proposed rezoning is not to change the current zoning classification of PUD, but instead to seek approval of a new Conceptual Land Use Plan and Developer’s Agreement for the Mission Rise Property.

X. CONCLUSION

The proposed petition seeks approval of a new Conceptual Land Use Plan and Developer’s Agreement for the Mission Rise site. The proposed development will continue to meet all requirements of the VMU future land use designation, be consistent with the requirements of the LDC and uphold the Goals, Objectives and Policies of the Town of Howey-in-the-Hills’ Comprehensive Plan. For these reasons, the Applicant respectfully requests approval of rezoning and reserves the right to modify this application through the review process.



MISSION RISE PUD REZONE

Town of Howey-in-the-Hills Town Council
January 22, 2024

- ❖ Jason Humm, ASF TAP FL I LLC
- ❖ Jonathan Huels, Lowndes
- ❖ Mike Ripley, Land Advisors
- ❖ Jacqueline St. Juste, Atwell
- ❖ Charlotte Davidson, Traffic Mobility Consultants
- ❖ Mark Ausley, Bio-Tech Consulting
- ❖ Jack Caldwell, Alexis Crespo & Rhea Lopes, RVi Planning + Landscape Architecture

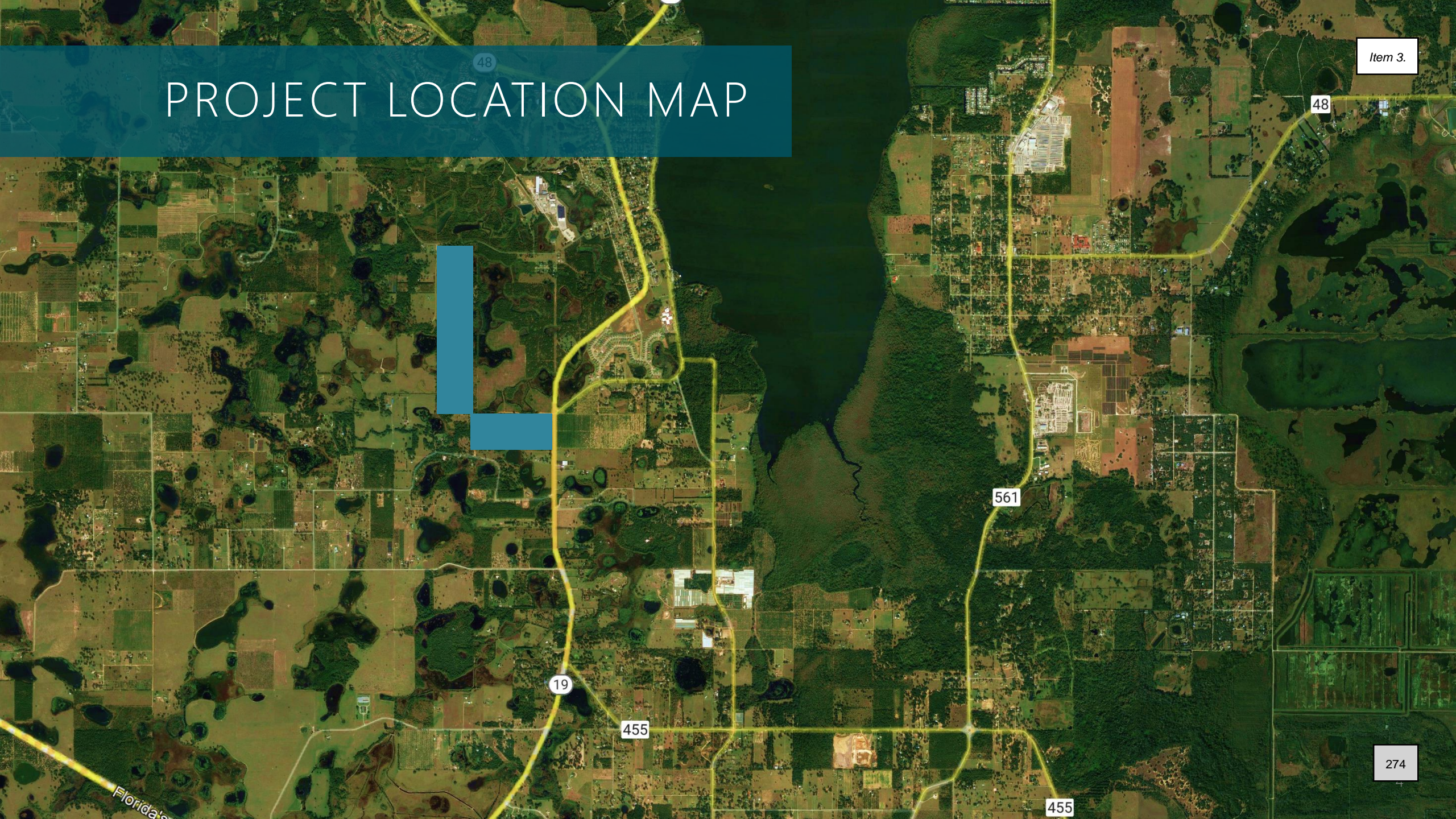
PROJECT TEAM

MISSION RISE PUD

REQUEST SUMMARY

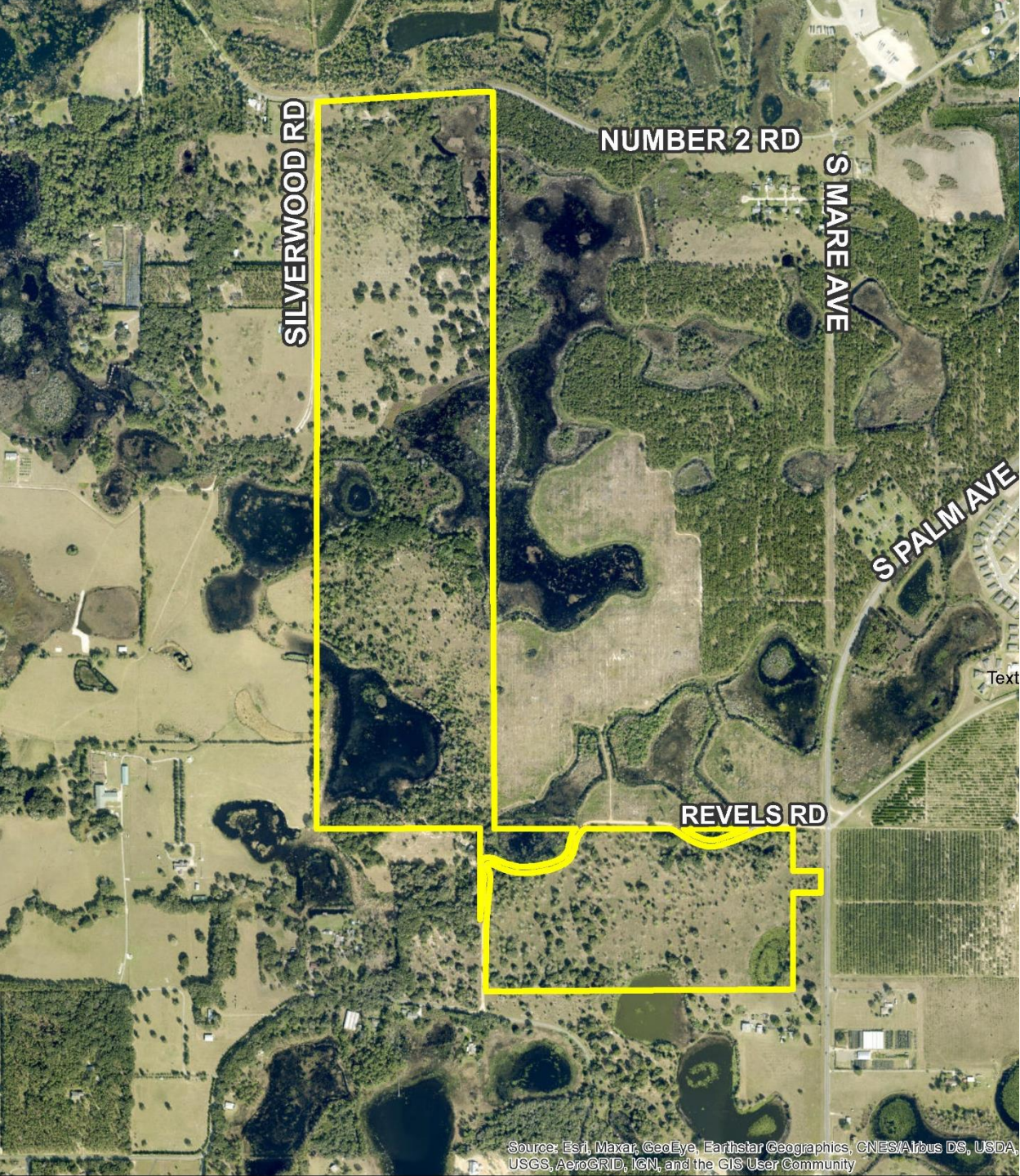
Rezone 243 acres from PUD to PUD to allow for a maximum of 499 single-family dwelling units, public and private recreational amenities, 90+/- acres of combined open space and wetland preservation areas, and substantial public benefits via binding Developers Agreement

PROJECT LOCATION MAP



Item 3.

274



SITE OVERVIEW

- 243+/- acres
- Accessed from S.R. 19 and Number 2 Road
- Currently vacant
- FLU: Village Mixed Use (VMU)
- Existing Zoning: Planned Unit Development (PUD)
 - Ordinance 2005-357 – 400 DUs
 - Developer’s Agreement Expired in 2017

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

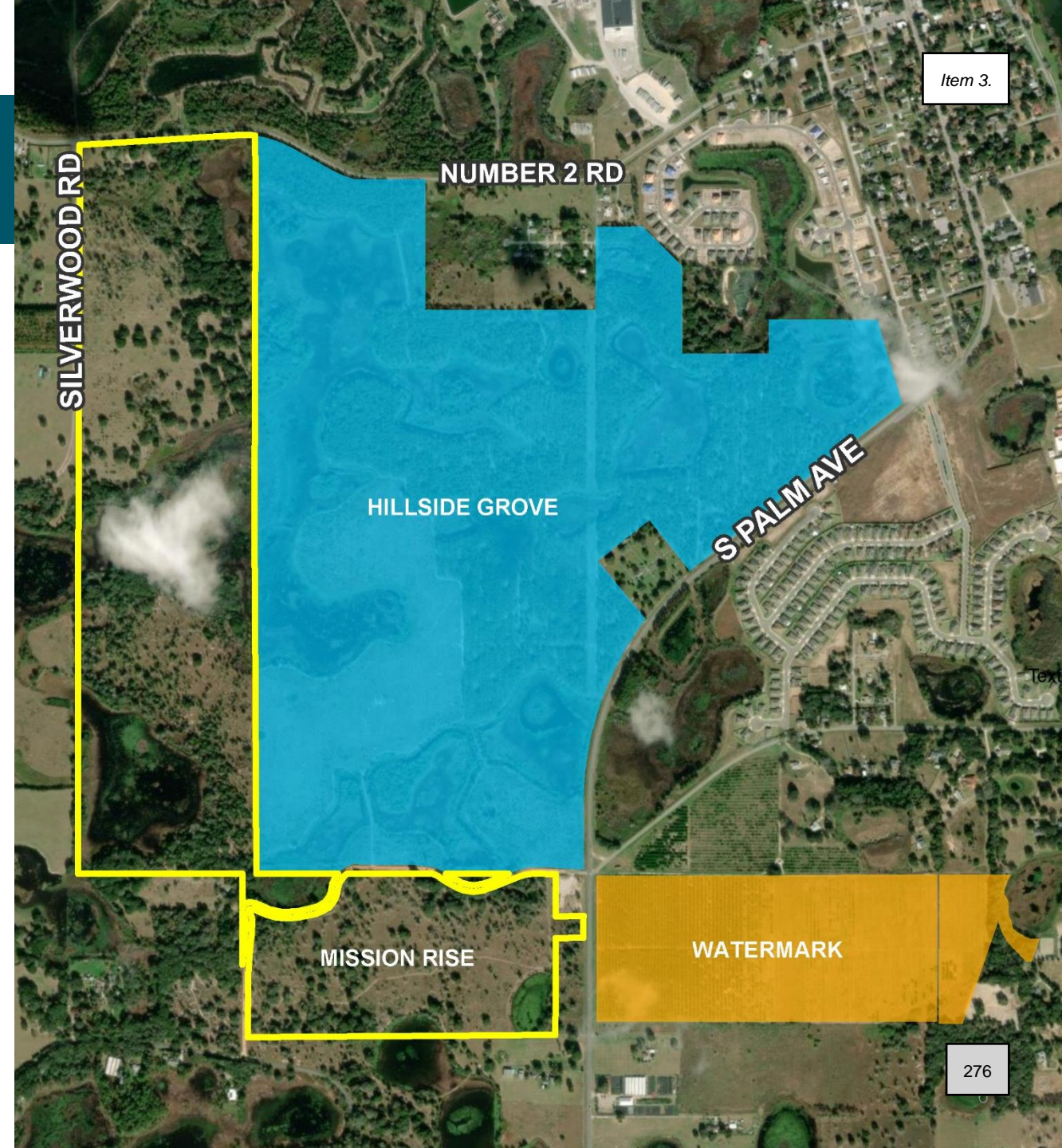
SURROUNDING PUDS

Hillside Grove (The Reserve)

- FLU: Village Mixed Use (VMU)
- Zoning: Planned Unit Development (PUD)
- Entitlements:
 - 740 SFD Residential
 - 105,716 SF Office/Storage
 - 300,000 SF Retail/Office
 - 100,000 SF Institutional
- Lot Sizes
 - 50 x 80
 - 27 x 115
 - 50 x 115

Watermark (Simpsons Parcel)

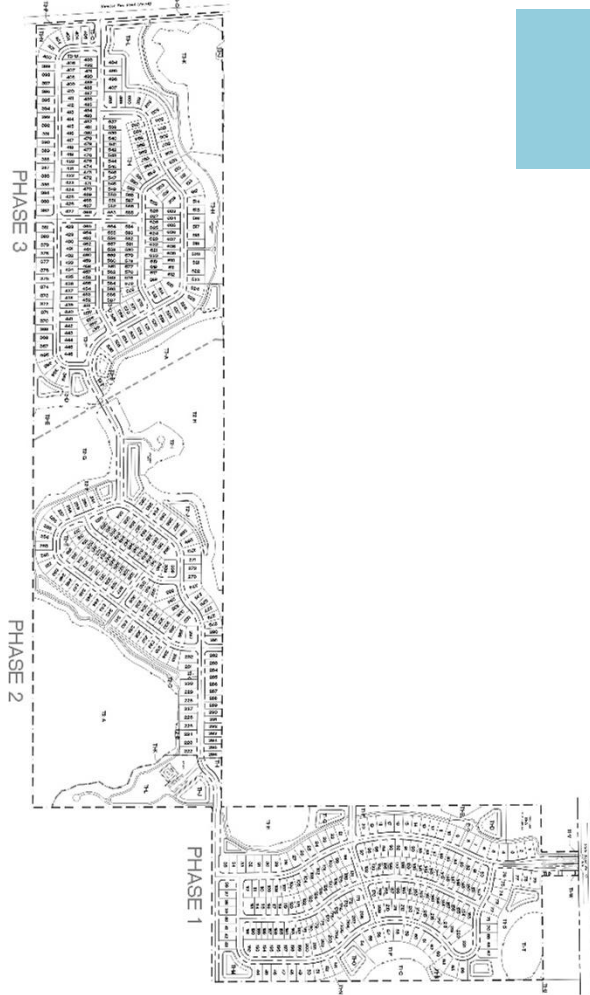
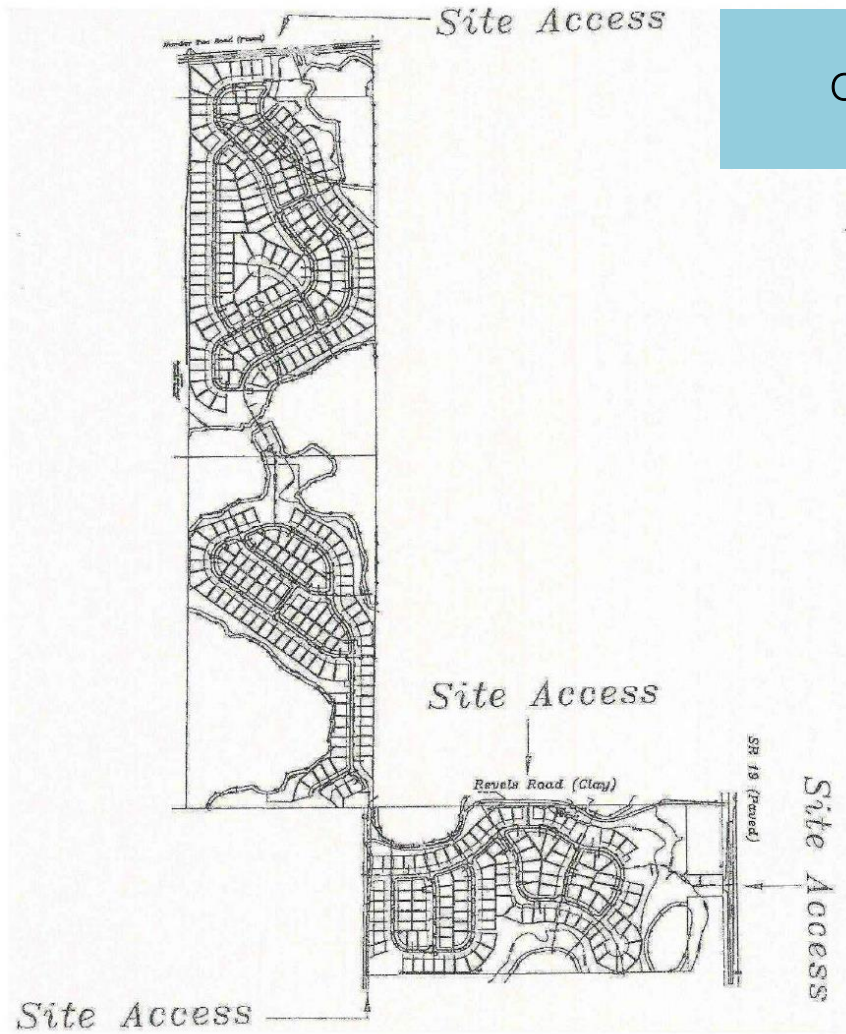
- FLU: Medium Density Residential (MDR)
- Zoning: Planned Unit Development (PUD)
- Entitlements:
 - 225 SFD Residential
- Lot Sizes
 - 70 x 120
 - 80 x 120

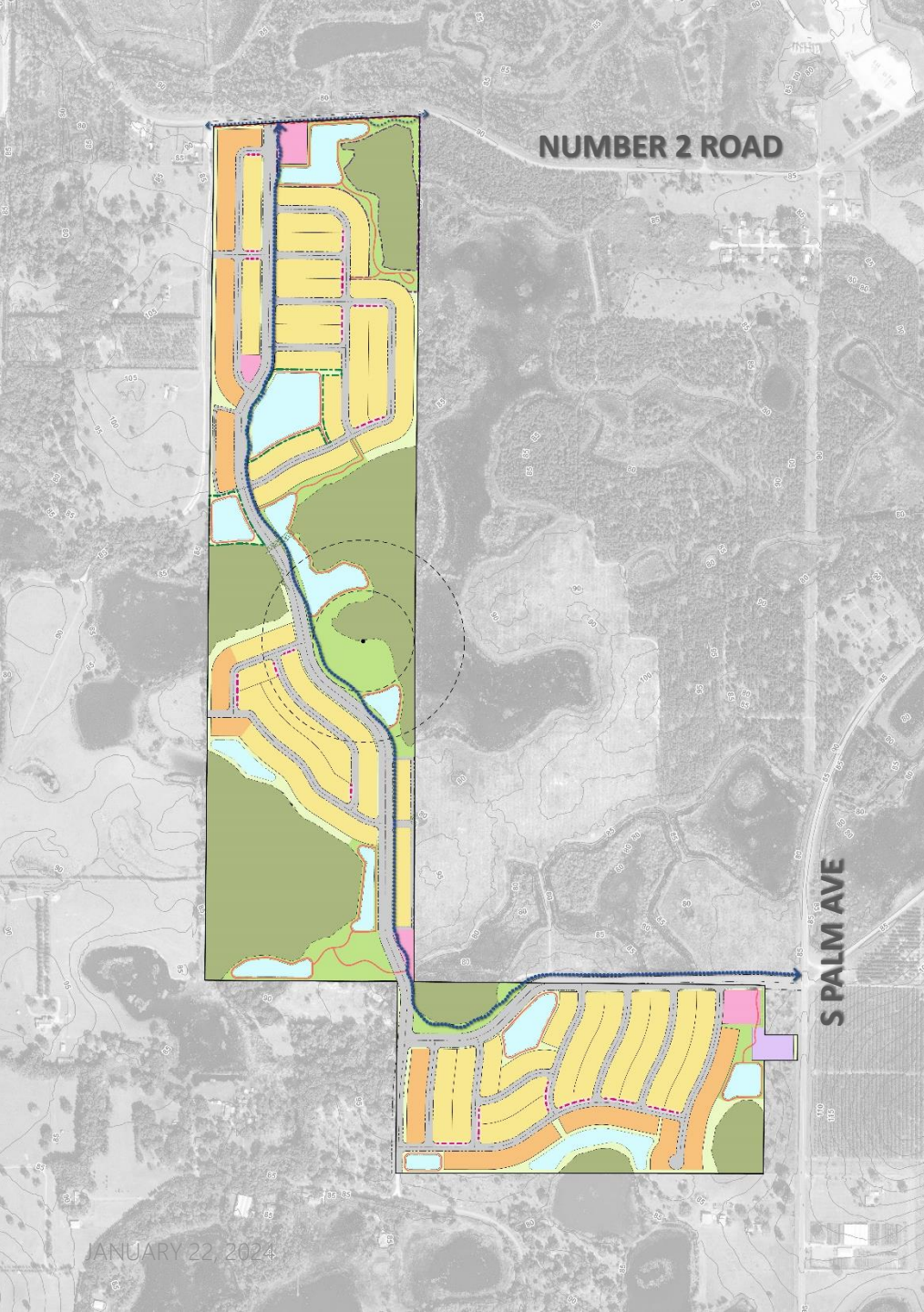


PREVIOUS APPROVALS

2005 Zoning Ordinance 2005-037
400 SFD LOTS

2019 Zoning (Not Approved)
629 SFD LOTS





REQUEST SUMMARY

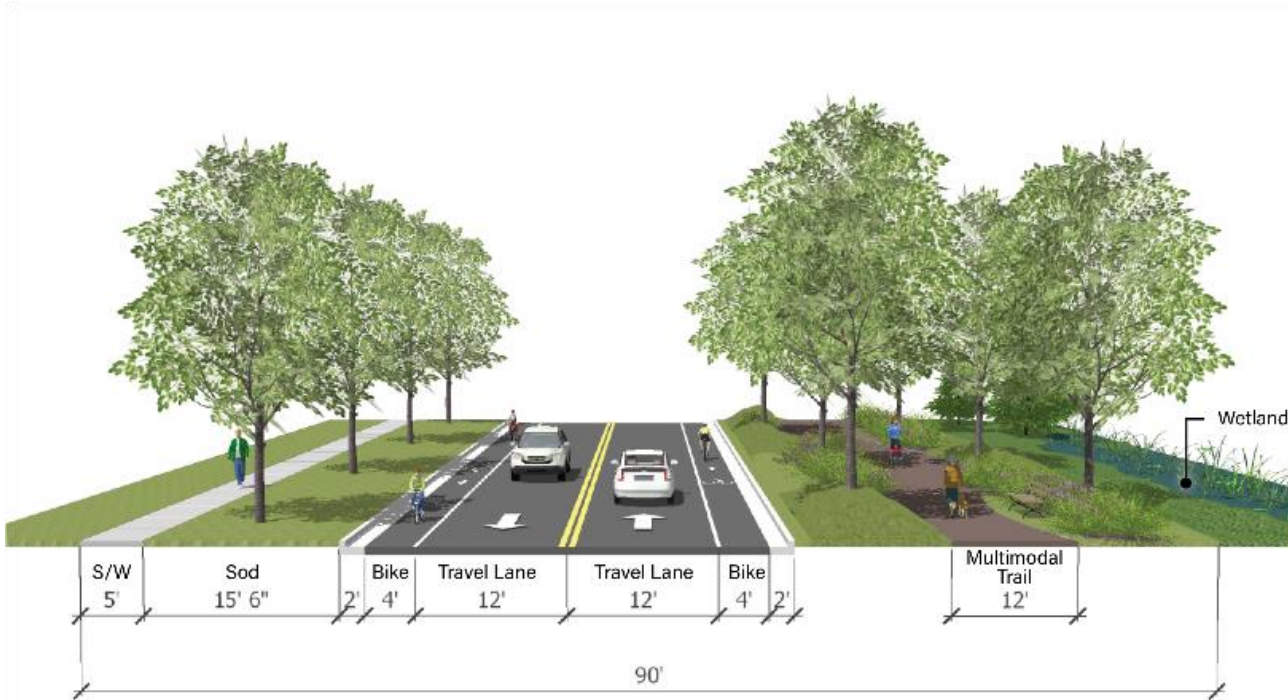
- Rezone to PUD with Binding Conceptual Land Use Plan & Developer’s Agreement
- **Residential Program**
 - Maximum of 499 DU
 - Net Density: 3.3 DU/NA (Net Acreage: 153 AC)
- **Non-Residential Program**
 - Regional Multi-use Trail with Trail Head & 2 Public Parks
- **Project Highlights**
 - Open Space: 69.4 AC (28.5%)
 - 99% Wetland Preservation (±60.1 AC) & Eagle’s Nest Buffer
 - On-site Amenities
 - 90’ Wide Collector Roadway
 - Intersection Improvements at SR 19 & Revels Road

COLLECTOR ROAD

- Required per the Comprehensive Plan

SPINE ROAD

90' ROW WITH BIKE LANE & 12' MULTIMODAL TRAIL



NON-RESIDENTIAL PROGRAM

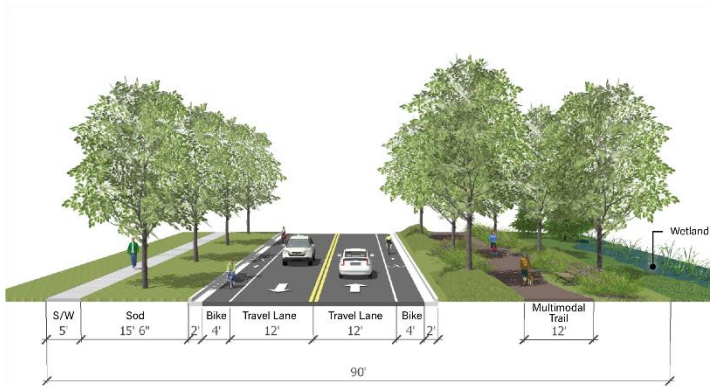
- Site not suitable for commercial uses
 - Lack of frontage on major roadway
 - Shape of the property
 - Proximity to larger residential lots
- Multimodal Trail & Park System
- Trailhead along S.R. 19



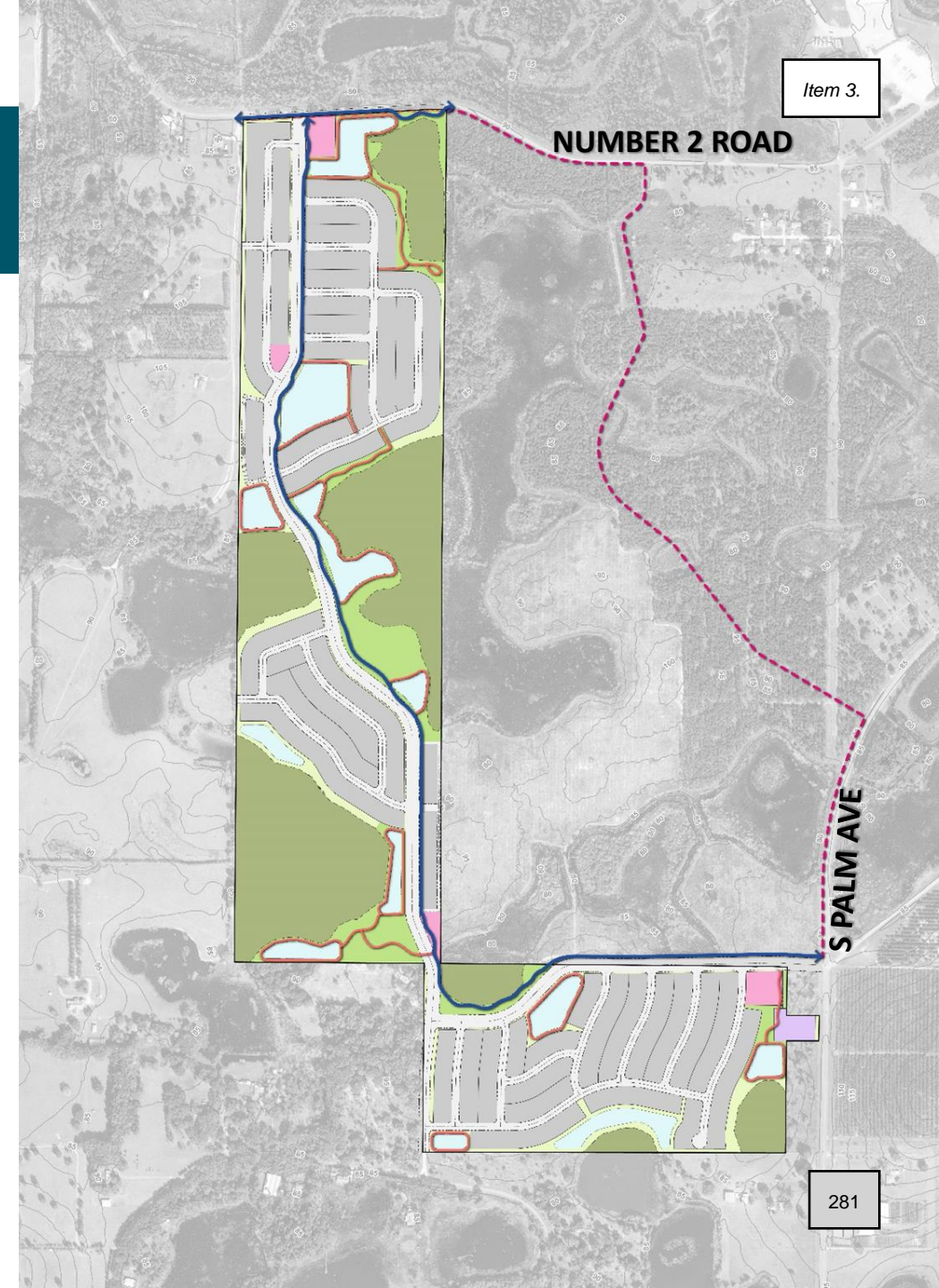
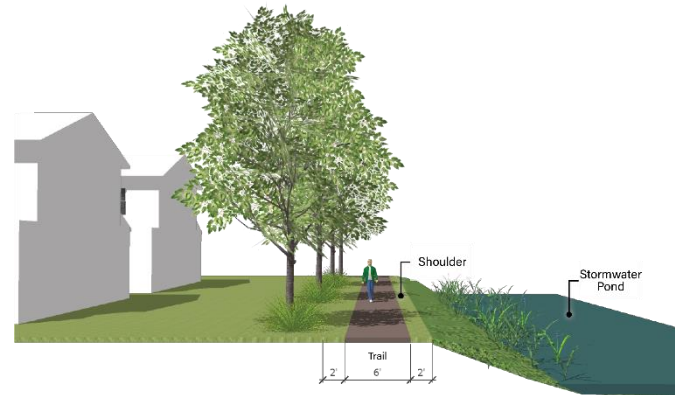
MULTI-USE TRAIL & PARKS SYSTEM

- Min. 12' wide
- Located near the Collector Roadway
- Viewsheds along Preserved Wetlands, Ponds
- Pedestrian Trails along Ponds

SPINE ROAD
90' ROW WITH BIKE LANE & 12' MULTIMODAL TRAIL

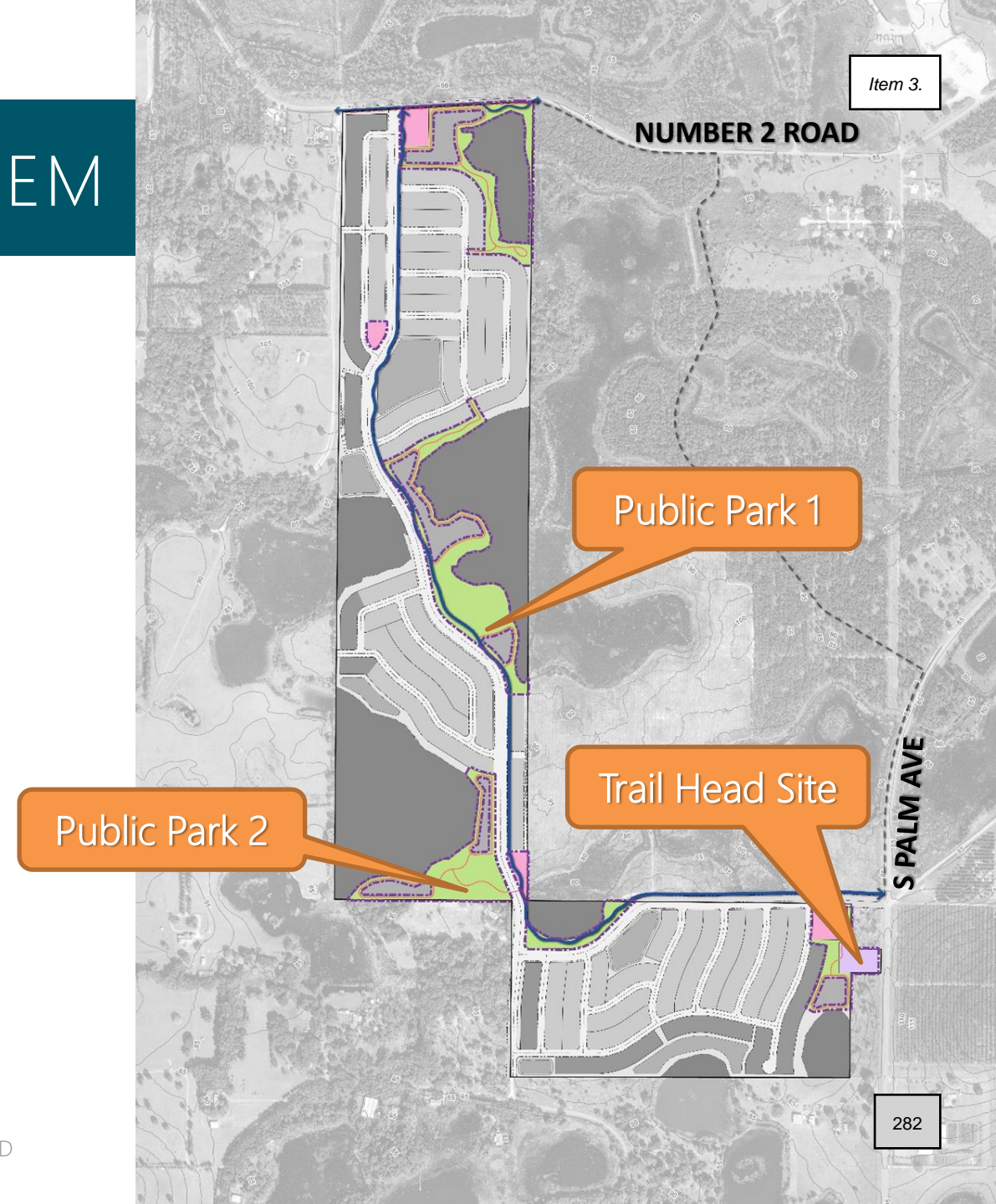


PEDESTRIAN PATH
6' TRAIL



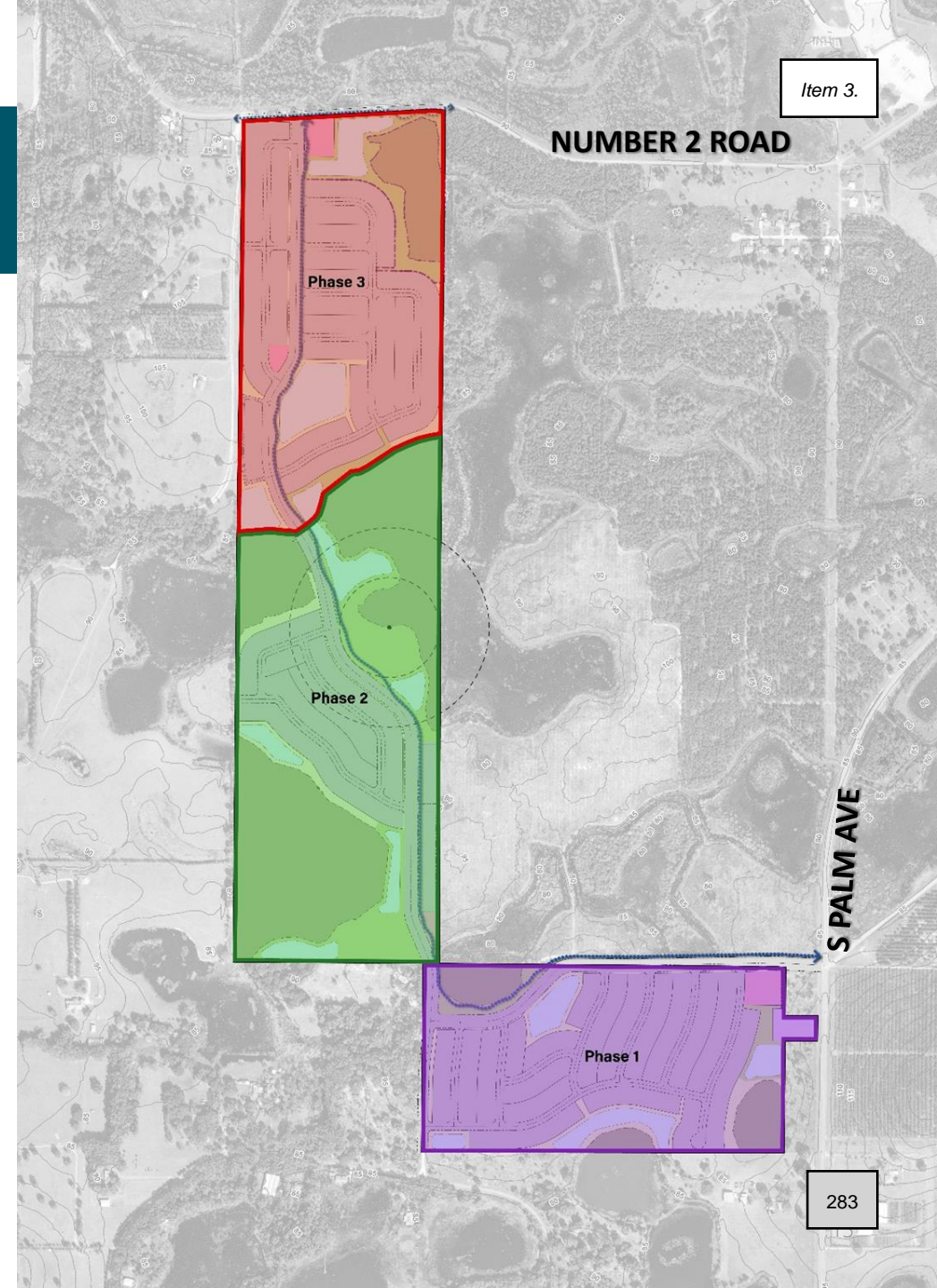
MULTI-USE TRAIL & PARKS SYSTEM

- Programmed Park Space
 - Trails
 - Benches
 - Picnic Tables
- Amenitized Trail head Site at S.R. 19 with Phase 1 of Project
 - Parking
 - Restrooms
 - Bike Maintenance Station
 - Cooling Station
 - Water Station
 - Benches
 - Picnic Tables



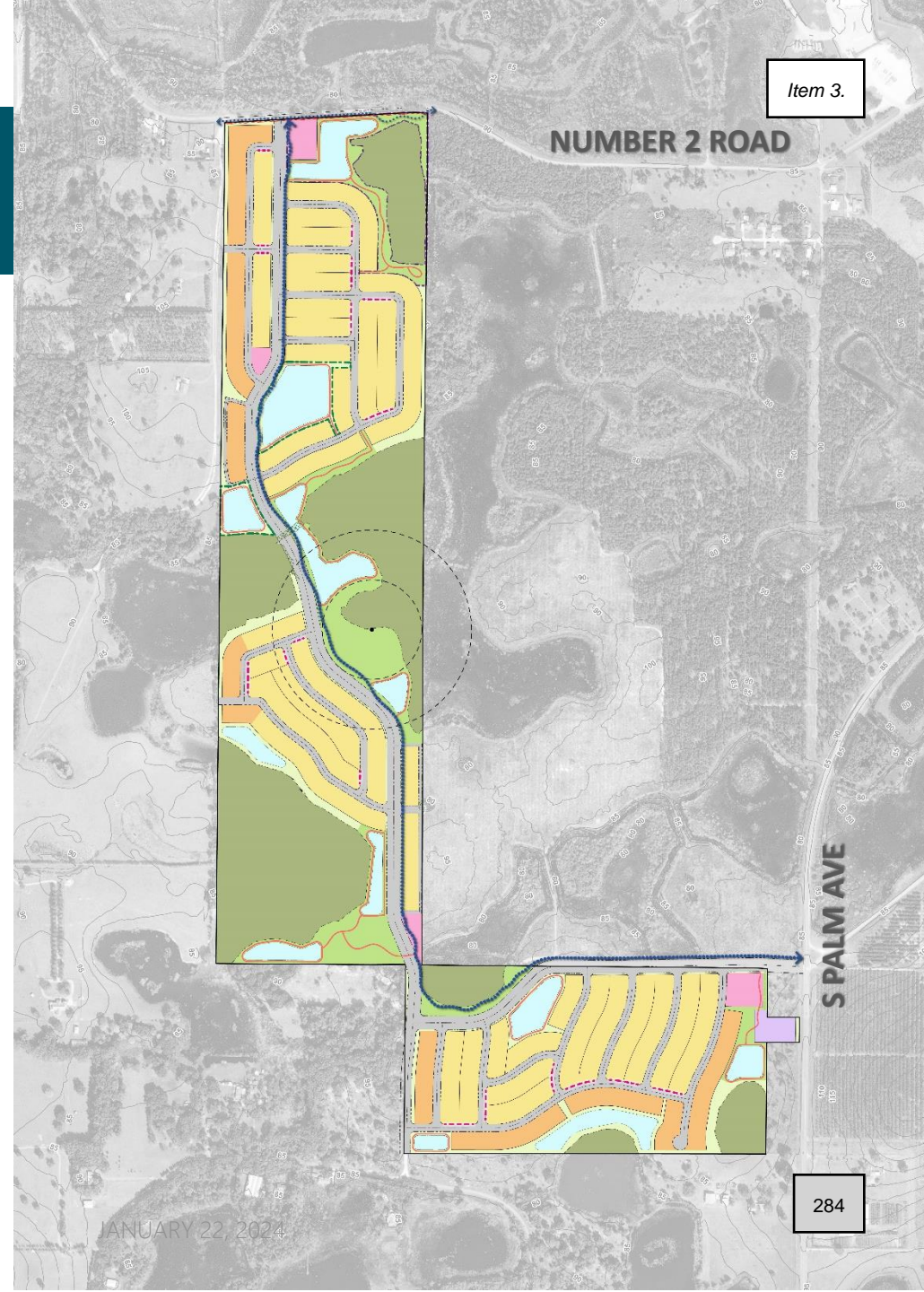
RESIDENTIAL PROGRAM

- 499 DU (Maximum 611 permitted per FLU)
- All Single-Family Detached Lots
- 3 Phases of Development
- Access from S.R. 19 & Number 2 Road
- Connectivity across Property through Spine Road (Collector Road per the Comprehensive Plan)
- Realignment of Revels Road
- Gated Access to Orange Blossom Road as directed by Town/County



PROPOSED LOT DESIGN

- 75'-wide Lots along all the Perimeters
- 55'-wide Lots only internal to the Development



DESIGNED FOR COMPATIBILITY

- Design Standards to Preserve Views from the Collector Road:
 - Limited units on Collector Road with Alley Access
 - 10' Landscaped Buffer along Collector Road for Double-Frontage Lots
- Design Standards to prevent Monotony (DA):
 - Requirements for a variety of materials
 - Block-face restrictions
 - Specific Standards will be finalized at Subdivision Plans Stage



DESIGN WITH NATURE

- Development Footprint: 50% of the site
- 99% Wetlands Preservation
- 1% Wetland Impact for Collector Roadway Crossing
- Multi-use trail and park spaces located around preserved wetlands & vegetated areas
- Tree Preservation per LDC
- 330' no-development buffer around eagle's nest



INFRASTRUCTURE

- Development Agreement to address all infrastructure needs of the Project
- Traffic
 - Project includes 90' ROW Collector Road – to be constructed by the Developer in Phases
 - Commitment for intersection improvement at Revels Road & S.R. 19
- Stormwater
 - Master Stormwater System (Public & Private Components)
- Utilities
 - Potable Water – Town of Howey-in-the-Hills
 - Wastewater – Mission Inn CDD or other options
- Publicly Accessible Multiuse trail & Parks



CONSISTENCY WITH THE COMPREHENSIVE PLAN

- VMU District – Increased Density with Enhanced Requirements for Open Space, Non-Residential Areas, Civic Space

Detail	VMU Requirement	Proposal
Residential Areas	85% NLA (max.) = 130.1 AC	84.5% NLA = 129.3 AC
Non-Residential Areas	15% NLA (min.) = 22.97 AC	15.2% NLA = 23.2 AC
Open Space	25% GA (min.) = 60.8 AC	28.5% GA = 69.4 AC
Public Recreational Area	10% of usable open space (min.) = 3.9 AC	17.4% of usable open space = 6.8 AC
Public/Civic Space	5% of non-residential land (min.) = 1.14 AC	5.7% of non-residential land = 1.3 AC

- Policy 1.11.2:** Use of Cluster Developments. To promote the conservation of permeable surface area and maintain the Town’s rural character, *cluster developments shall be promoted by the Town* during the development review process. Developers of Mixed Use/Planned Unit Developments and residential subdivisions shall be encouraged to cluster development in order to preserve open space.
- 90’ Collector Roadway – per 2035 Future Transportation Map

- CONSISTENT with the Comprehensive Plan & LDC
- Additional measures for COMPATIBILITY with adjacent properties
- ENVIRONMENTALLY-SENSITIVE site design
- SUBSTANTIAL PUBLIC BENEFITS via roadway improvements, public parks & multi-use trail system

CONCLUSION

MISSION RISE PUD

THANK YOU!

QUESTIONS?

Planned Transportation Improvements

1

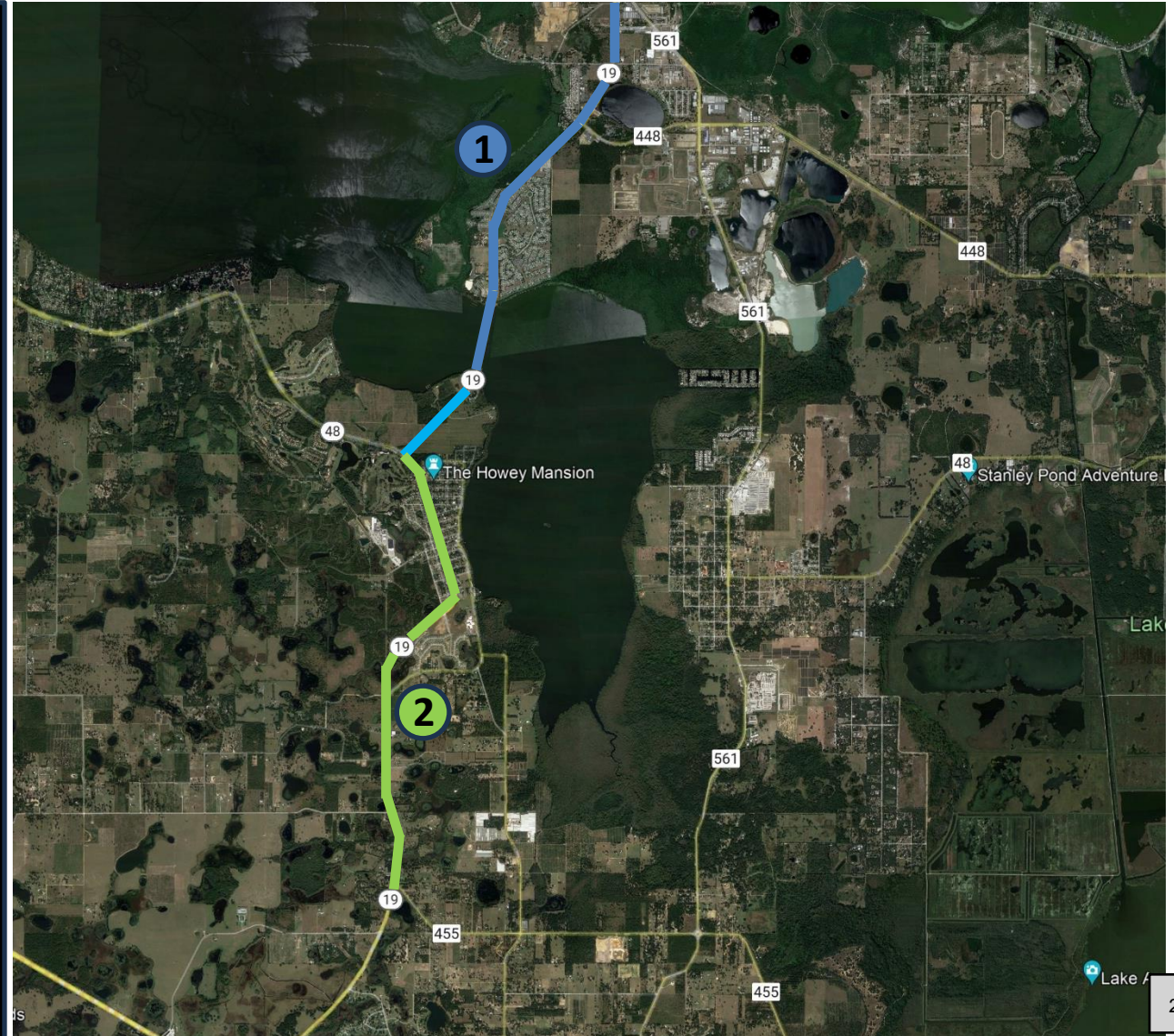
SR 19 from CR 48 to CR 561
Widen to 4 Lanes

*Environmental, PD&E,
Preliminary Engineering*

2

SR 19 from CR 48 to CR 455
Widen to 4 Lanes

*Partially Funded
Per Lake-Sumter MPO TIP*



BENEFITS OF CLUSTERING

- Reduced Development Footprint; Greater Open Space
- Lesser Landscaped Areas; Greater Natural Vegetation Preserve
- Smaller Lawns; Lower Irrigation Costs
- Community Gathering Space



WASTEWATER OPTIONS FOR HOWEY IN THE HILLS



Jan. 22, 2024 Town Council Meeting

POSSIBLE OPTIONS

Town of Howey-owned

- \$12M steel 850kGPD plant
- Steel construction
- Can be done in 2 phases

Privately-owned Plant (CDD)

- Existing Capacity: 870k GPD
- Town needs another 435k GPD now
- Town needs 870kGPD additional
- Steel construction
- No reclaim available
- Increments of 435kGPD required

Regional Plant (Groveland)

- \$15.45M estimate for 450k GPD available currently (based on Mascotte contract)
- Town needs 850kGPD additional
- Concrete construction in Groveland
- No reclaim available

Multiple Package Plants (Dev.)

- Paid by developers
- Turned over to town to operate (?)
- Several small plants, totaling 700kGPD
- Does not include solution for original Howey (~150kGPD)
- No reclaim possible

ESTIMATED CONSTRUCTION COSTS

	TOWN	GROVELAND	PRIVATE	PACKAGE
COST OF TREATMENT PLANT/CAPACITY RESERVATION	\$12M for steel plant (850kGPD)*	\$15.45M for 850kGPD**	\$13.92M for 870k GPD (3,480 ERUs)	\$0 (developer-paid)
COST OF SEWAGE COLLECTION SYSTEM	\$0 (developer-paid)	\$1.8M for 2 lift stations, \$4M for pipeline)	\$0 (developer-paid)	\$0 (developer-paid)
COST OF RECLAIM DISTRIBUTION SYSTEM	\$800k for surface water pump station	Not available	Not available	Not possible
LAND ACQUISITION	\$50k	TBD (Need lift stations and surface water treatment plant)	\$0	\$0 (developer-paid)
TOTAL COST OF PLANT CAPACITY	\$12.85M for 850kGPD	\$21.25M (850k GPD) plus land acq. costs	\$13.92M for 870kGPD	\$0
* based on DAVCO estimate				
**based on Mascotte Agreement				

ESTIMATED OPERATING COSTS

	TOWN	GROVELAND	PRIVATE	PACKAGE
COST OF ANNUAL OPERATIONS AND MAINTENANCE (STAFFING - IN HOUSE OR CONTRACT)	\$2.33M	TBD	\$1.4M (for treatment serv.)	TBD
<u>DEBT SERVICE INTEREST RATES</u>				
<i>State Revolving Fund (SRF) 20-year interest rate</i>	0.56%	0.56%	Not available	Not applicable
<i>Municipal 20-year interest rate</i>	3.78%	3.78%	Not available	Not applicable
<i>Private sector 20-year interest rate (BBB)</i>	5.92%	5.92%	5.92%	Not applicable

ESTIMATED REVENUES

	TOWN	GROVELAND	PRIVATE	PACKAGE
CURRENT ANNUAL CUSTOMER RATE (\$600 PER HOME)	\$2,827,200	\$2,827,200	\$2,827,200	\$2,827,200
WASTEWATER IMPROVEMENT FEE (\$120 ANNUAL [PROPOSED, and not for existing developments w/ ww])	\$428,880	\$428,880	\$428,880	\$428,880
IMPACT FEES (DEVELOPERS) (based on 3,606 homes)	\$12.85M	\$21.25M	\$15.42M	(incl. w/ purchase)
(IMPACT FEE PER HOME)	\$3,564	\$5,894	\$4,275	(incl. w/ purchase)
GRANTS (FEDERAL, STATE, AND COUNTY)	TBD	TBD	None	None
DEBT ISSUANCE (SRF, MUNICIPAL BONDS, BANK LOANS)	TBD	TBD	TBD	None

OTHER FACTORS

	TOWN	GROVELAND	PRIVATE	PACKAGE
DEGREE OF TOWN MANAGEMENT CONTROL	Total	Partial	Minimal	Total
CONSTRUCTION TIMELINE	2-3 years	1-2 years	2 years	2-3 years
<u>MAXIMUM AVAILABLE CAPACITY</u>	850kGPD	850kGPD	870kGPD	700kGPD*
<i>PHASE 1 (1ST 400-450K CAPACITY)</i>	425kGPD	425kGPD	435kGPD	TBD
<i>PHASE 2 (2ND 400-450K CAPACITY)</i>	425kGPD	425kGPD	435kGPD	TBD
REAL ESTATE REQUIREMENTS	14.5 acres	TBD	26 acres	TBD
RECLAIMED (ALTERNATE) WATER AVAILABILITY	Surface water treatment	Not available	Not available	Not possible

*Does not include original Howey

ANTICIPATED RESIDENTIAL DEMAND

<u>Year</u>	<u>Homes</u>		
2016	625		
2017	665		
2018	705		
2019	745		
2020	785		
2021	797		
2022	803		
2023	884		
2024	1024		
2025	2169		
2026	3181		
2027	4113		
2028	4312	4712 Homes x 250 GPD	1,178,000 GPD
2029	4312	Comm./Inst. 916,000 sq.ft.	48,900 GPD
2030	4447	TOTAL REQUIRED CAPACITY	1,226,900 GPD
2031	4582	minus existing capacity	386,500 GPD
2032	4712	TOTAL ADDITIONAL CAPACITY REQUIRED	840,400 GPD

NEXT STEPS

- Council consensus on Wastewater Alternatives
- Prepare Facilities Master Plan
- Prepare study for Impact Fee generation
- Prepare study for Operations & Maintenance/Debt Service revenue requirements
- Prepare study for alternative water for irrigation (surface/reclaim)
- Implement Impact Fee/revenue requirement components
- [Design/Construction contingent on Council consensus]