If you would like to address City Council, please place your name on the sign-up sheet located at the back of the City Council Chambers. You will be recognized to speak during the "audience participation" portion of the agenda

AGENDA

City Council Regular Meeting
October 05, 2020 - 7:00 PM

An informational packet containing all agenda material is available for public inspection on our website at www.evanscolorado.gov The agenda is posted on the bulletin board adjacent to the Council Chambers.

OPTIONAL VIRTUAL MEETING PARTICIPATION

Please click on this URL to join virtually: https://us02web.zoom.us/j/88955185670
Or join by phone: 1-669-900-9128
Webinar ID: 889 5518 5670

1. CALL TO ORDER

2. PLEDGE

3. ROLL CALL

Mayor:	Brian Rudy
Mayor Pro-Tem:	Mark Clark
Council:	Laura Speer
	Alicia Johnson
	Fred Neal
	Amanda Castle
	Tammy Mortenson

4. PROCLAMATION

   A. National Planning Month Proclamation

5. AUDIENCE PARTICIPATION

The City Council welcomes you here and thanks you for your time and concerns. If you wish to address the City Council, this is the time set on the agenda for you to do so. When you are recognized, please step to the podium, state your name and address then address City Council. Depending on the number of speakers on any given topic, your comments may be limited to two (2) minutes. The City Council may not respond to your comments this evening, rather they may take your comments and suggestions under advisement and your questions may be directed to the appropriate staff person for follow-up. Thank you!

6. APPROVAL OF AGENDA

7. CONSENT AGENDA

The consent agenda is reserved for matters which are considered to be routine and uncontroversial. Any item may be removed from the consent agenda and placed on the regular agenda at the request of the Mayor or a City Council member.

A. Approval of the September 15, 2020 City Council Meeting Minutes

B. Approval of the September 23, 2020 Special City Council Meeting Minutes

C. Consideration of Ordinance Number 727-20 An Ordinance Repealing and Replacing Chapter 18, Section 18.07.120 Plat Modifications, Replats, Vacations and Lot Line Adjustments (2nd Reading)

8. NEW BUSINESS

A. Resolution No. 31-2020 – Appointment of the Evans City Clerk

B. Consideration of Ordinance 735-20 and Loan Agreement with Colorado Water Resources & Power Development Authority (CWRPDA) for Storm Drainage Fund Improvements (Emergency Ordinance)

C. Consideration of Approval of the Development Agreement for the Peakview [Solstice] Development

D. Consideration of Water Efficiency Plan

E. Consideration of Resolution No. 32-2020 to Approve and Authorize Execution of an Agreement to Sell NISP Units to the Fort Collins-Loveland Water District

F. Consideration of a Memorandum of Understanding Between the City of Evans and the Colorado Department of Public Safety, Division of Fire Prevention and Control to Allow the City Building Official (SAFEBuilt) to Inspect School Buildings

G. Public Hearing: Consideration of Ordinance Number 731-20 to Update the Official Zoning Map for the City of Evans Pursuant to Zoning Changes that Occurred in 2020 (1st Reading)

H. Consideration of Award of Bid for the 2020 Pavement Marking Project

I. An Ordinance Amending Title 3, Chapter 3.04, Subsection 3.04.500.O Of The Evans Municipal Code To Allow The City Manager To Designate A Hearing Officer To Determine License Revocation (1st Reading)

9. REPORTS

A. City Manager

B. City Attorney

10. AUDIENCE PARTICIPATION (general comments)

Please review the Audience Participation section listed at the beginning of the agenda for procedures on addressing City Council.

11. EXECUTIVE SESSION

A. To receive legal advice from the City Attorney regarding law enforcement and licensing of hotels under C.R.S. Section 24-6-402(4)(b).

B. To receive legal advice regarding specific legal questions pertaining to the resolution of litigation under C.R.S. Sections 24-6-402(4)(b) and (4)(e)(1).

12. ADJOURNMENT

CITY OF EVANS – MISSION STATEMENT

"To deliver sustainable, citizen-driven services for the health, safety, and welfare of the community."

It is the policy of the City of Evans that all programs and activities shall be accessible to, and usable by, persons with disabilities. Persons needing assistance shall contact the Safety & Risk Management Manager at the City of Evans. Please provide three to five business day's advance notice so we can adequately meet your needs.

City of Evans, Colorado

PROCLAMATION

Declaring and Recognizing October, 2020 as National Planning Month in the City of Evans, Colorado

WHEREAS, change is constant and affects all cities, towns, suburbs, counties, boroughs, townships, rural areas, and other places; and

WHEREAS, community planning and planners can help manage this change in a way that provides better choices for how people work, live, and play live; and

WHEREAS, community planning provides an opportunity for all residents to be equally involved in making choices that determine the shared-vision of their neighborhoods; and

WHEREAS, the full benefits of planning requires public officials and citizens who understand, support, and demand excellence in planning and plan implementation; and

WHEREAS, the month of October is designated as National Community Planning Month throughout the United States of America and its territories, and

WHEREAS, The American Planning Association and its professional institute, the American Institute of Certified Planners, endorse National Community Planning Month as an opportunity to highlight the contributions sound planning and plan implementation make to the quality of our neighborhoods and environment; and

WHEREAS, the celebration of National Community Planning Month gives us the opportunity to publicly recognize the participation and dedication of the members of the City's Planning Commissions, citizen planners, and contributions made by professional community and regional planners who have contributed their time and expertise to the improvement of the City of Evans and extend our heartfelt thanks for the continued commitment to public service by these professionals;

NOW, THEREFORE, I, Brian Rudy, Mayor of the City of Evans, do hereby proclaim October, 2020 as Community Planning Month in the City of Evans in conjunction with the celebration of National Community Planning Month.

IN WITNESS WHEREOF, I have hereunto set my hand and caused to be affixed the official seal of the City of Evans, Colorado, this 5th day of October, 2020.

_____ _____

Julie Roeder, City Clerk Mayor Brian Rudy

CITY COUNCIL AGENDA REPORT

DATE: October 5, 2020

AGENDA ITEM: 7.A

SUBJECT: Approval of the September 15, 2020 City Council Meeting Minutes

PRESENTED BY: Julie Roeder, Interim City Clerk

AGENDA ITEM DESCRIPTION:
Approval of minutes

FINANCIAL SUMMARY:
N/A

RECOMMENDATION:
N/A

SUGGESTED MOTIONS:
"I move to approve the minutes as presented."

ATTACHMENTS:
- September 15, 2020 City Council Meeting Minutes

MINUTES

City Council Regular Meeting
September 15, 2020 - 7:00 PM

1. CALL TO ORDER

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

2. PLEDGE

3. ROLL CALL

Mayor:	Brian Rudy
Mayor Pro-Tem:	Mark Clark
Council:	Laura Speer
	Alicia Johnson
	Fred Neal
	Amanda Castle
	Tammy Mortenson

4. PROCLAMATION

A. Hispanic Heritage Month Proclamation

Mayor Rudy turned the meeting over to Council Member Johnson.

Council Member Johnson stated that this was both a monumental and historic day. With the help of the Mayor, Council and Staff she was honored to announce the first Hispanic Heritage Month Proclamation. As an Evans City Council Member, she is helping to recognize the achievements and contributions of the Hispanic community.

Mayor Rudy read the Proclamation aloud and proclaims September 15th through October 15th as Hispanic Heritage Month in the City of Evans. He then asked Council Member Johnson to present the Proclamation.

Council Member Johnson presented the Proclamation to Stacy Suniga, President of the Latino Coalition of Weld County.

Mrs. Suniga thanked the City of Evans for the Proclamation.

5. AUDIENCE PARTICIPATION

Nancy Crithfield with Wreaths Across America thanked Council for their participation and presented them with pins. Chris Garcia longtime resident expressed his favor of the Hispanic Heritage Month Proclamation, and informed residents the need to complete the Census.

Draft

6. APPROVAL OF AGENDA

Jim Becklenberg, City Manager advised Council that staff requests to move agenda item 9A to be presented before agenda item 8A.

Mayor Rudy accepted the amendment.

Mayor Pro-Tem Clark made the motion, seconded by Council Member Johnson to approve the agenda as amended. The motion passed with all voting in favor thereof.

7. CONSENT AGENDA

A. Approval of the September 1, 2020 City Council Minutes

B. Consideration of Amendment to the Intergovernmental Agreement for Conduct of the Community Development Block Grant Program in Weld County Between the County of Weld and the City of Evans

Mayor Pro-Tern Clark made the motion. seconded by Council Member Castle to approve the agenda. The motion passed with all voting in favor thereof.

9. NEW BUSINESS

A. Consideration of an Intergovernmental Agreement with Weld County District 6 Concerning Land Dedication or Payments-In-Lieu for School Purposes

Mr. Becklenberg provided background information on the Intergovernmental Agreement with Weld County School District 6 and advised Council that as Evans continues to grow that this IGA will allow for District 6 to plan and construct the schools that will be needed in the future.

Dr. Pilch, Superintendent for District 6, advised Council that District 6 has identified the need for additional schools within Greeley and Evans and that this ten-year plan will significantly benefit District 6 and specifically Evans.

Council Member Johnson stated that she was a part of the Design Advisory Group and it made her realize the need for additional schools in District 6.

Council Member Speer and Council Member Neal expressed their support of this IGA.

Council Member Castle commended the leadership of District 6 for creating a district we can be proud of.

Mayor Rudy thanked Dr. Pilch for working on the relationship between the City of Evans and School District 6 and for including us in this project.

Council Member Castle made the motion, seconded by Council Member Johnson to approve the Intergovernmental Agreement with Weld County School District 6 and authorize the Mayor's signature on the Agreement. The motion passed with all voting in favor thereof.

8. OLD BUSINESS

A. Public Hearing: Consideration of Ordinance Number 727-20 An Ordinance Repealing and Replacing Chapter 18, Section 18.07.120 Plat Modifications, Replats, Vacations and Lot Line Adjustments to Clarify Application Material Requirements, Criteria for Approval and Processing Standards in the City of Evans

Draft

Mayor Rudy opened the Public Hearing at 7:29.

Mr. Becklenberg gave an overview of Ordinance Number 727-20 and turned the meeting over to Community Development Director, Anne B. Johnson.

Mrs. Johnson informed Council that this is the first reading of the proposed repeal and replacement of Section 18.07.120 of the City's Code, and that the main goal is to create a transparent process and eliminate redundancies. She then gave an overview of the specific sections and the proposed changes.

Mayor Rudy asked if there was anyone in the audience who wished to speak for this item; no one came forward.

Mayor Rudy asked if there was anyone in the audience who wished to speak opposing this item; no one came forward.

Mayor Rudy closed the public hearing at 7:35 p.m.

Council Member Speer made the motion, seconded by Mayor Pro-Tem Clark to approve Ordinance 727-20. The motion passed with all voting in favor thereof.

9. NEW BUSINESS

B. Consideration of Approval of the Development Agreement for the Extraction T-Bone Oil and Gas Facility

Mr. Becklenberg provided an overview of the project and turned the meeting over to Community Development Director, Anne B. Johnson.

Mrs. Johnson provided Council with background information and the status of the development agreement.

Council Member Speer asked why the City is requiring Extraction to put in new sidewalks and landscaping on 37th and 47th, an area in which we intend to expand and add a roundabout, just to turn around and have it all torn out.

Mrs. Johnson clarified that Extraction has dedicated an additional right of way and that any improvements will be outside of that right of way and made in concert with the improvement plans for 37th and 47th.

Council Member Neal asked how Extraction's current bankruptcy will affect this agreement.

City Attorney, Scott Krobadvised Council that the issue was addressed during the negotiations, and that their attorney advised that we do not need the bankruptcy court's approval.

Council Member Castle asked for clarification on how the access to the right in and right out will be impacted during the main construction and how that will happen simultaneously.

Mrs. Johnson advised that they completed a study on the road condition approaching the facility and it will be a right in and right out only for the construction vehicles. Because the intent is to be pipeline fed, the impact really will

Draft

be during construction, but after that there should be very few trucks.

Council Member Castle asked if there were going to be any traffic flow concerns.

Mrs. Johnson advised that they do not know when they will begin construction, but that when they do know, they will be collaborating with City Engineer,Mark Oberschmidt, and his staff to ensure that this project is accommodating.

Mayor Pro-Tem Clark made the motion, seconded by Council Member Castle to approve the Development Agreement for the Extraction T-Bone Oil and Gas facility and authorize the mayor to sign the Development Agreement. The motion passed with all voting in favor thereof.

C. Consideration of Resolution No. 28-2020 to Approve the City of Evans' Purchase of the Water Rights and Water System From Willowbrook Water Association, LLC, and Related Entities

Mr. Becklenberg advised Council that this project will ensure that residents of Willowbrook and Prairie View have similar infrastructure for non-potable irrigation as other subdivisions, and that Evans will be able to influence affordability and availability. He then passed the meeting over to Assistant City Manager, Randy Ready.

Mr. Ready provided Council with an overview of the project and the requested purchase price of $1.5 million.

Council Member Neal expressed his approval of this Resolution and believes that it will be a great investment for the City.

Mayor Pro-Tem Clark also believes that this will be a great investment for the City.

Mayor Pro-Tem Clark made the motion, seconded by Council Member Neal to approve Resolution No. 28-2020 as proposed. The motion passed with all voting in favor thereof.

D. Contribution to Weld County Business Recovery Program

Mr. Becklenberg provided an overview of the program and requested that Council consider a contribution of $75,000, which would then be reimbursed to the City through the CARES Act. He then passed the meeting over to Economic Development Manager, Allison Moeding.

Mrs. Moeding provided Council with the program requirements and the types of businesses that will qualify for this program.

Mayor Rudy asked if a business has already received a PPP loan would this negate them.

Mrs. Moeding advised that this does not negate the business so long as they do not use the funds for the same thing.

Mayor Rudy asked why $75,000 specifically.

Mr. Becklenberg advised Mayor Rudy that the City is simply being cautious and in the event that we have looked at the numbers and decided to raise the amount, we would be able to do so later on down the road.

Council Member Neal asked if staff would be notifying businesses of this new program.

Draft

Mrs. Moeding advised that she will be putting together a call campaign along with advertising on social media and our website.

Council Member Johnson asked how receptive businesses were to any of the previous outreach programs for other grants being offered, to ensure that we are effectively reaching our businesses.

Mrs. Moeding advised that she is available to answer any questions to simplify the process.

Council Member Mortenson made the motion, seconded by Council Member Castle to approve the $75,000 contribution to the Weld County Business Recovery Program and approve a preliminary budget amendment to the General Fund in the amount of $75,000 to be transferred from other General Fund accounts where savings is anticipated. The motion passed with all voting in favor thereof.

E. Consideration of Award of Contract for Master Plan Update

Mr. Becklenberg provided Council with background information and passed the meeting over to Community Development Director, Anne B. Johnson.

Mrs. Johnson advised Council that this project sets the stage for Evans and how Evans is going to grow over the next ten years. She then advised Council that a mandatory pre application meeting was held, and of the eight firms that attended, three were selected to interview. References were contacted,and we reviewed previous projects they had been involved in. We then reached out to those communities to ensure that they were on budget, on schedule, and to confirm there were minimal change orders. Because of the process and Ayres qualifications, Staff recommends awarding the contract to Ayres and Associates.

Council Member Speer asked how involved both Staff and Council will be with this project, because she fears that we will be hiring someone, like we have in the past, to do a master plan and some of the items in the plan might not be so feasible to the community.

Mrs. Johnson advised that Staff would be very involved in this project. As well, members of City Council are on the Steering Committee and they will be involved in the process.

Council Member Mortenson, took the opportunity to commend and thank Anne Best Johnson for her work on this project

Mayor Pro-Tem Clark made the motion, seconded by Council Member Johnson to award the Master Plan update contract to Ayres and Associates in an amount not to exceed $160,000 and authorize the Mayor to execute the contract. The motion passed with all voting in favor thereof.

10. REPORTS

A. City Manager

Mr. Becklenberg provided Council with an update on all current capital projects and completed projects.

Draft

B. City Attorney

City Attorney, Scott Krob, advised council that CML Attorney's Conference is coming up in October.

11. AUDIENCE PARTICIPATION

There was no audience participation

12. EXECUTIVE SESSION

A. Receiving Legal Advice from City Attorney Regarding Law Enforcement and Licensing of Hotels 24-6-402(4)(b)

Mayor Pro-Tem Clark made the motion, seconded by Council Member Neal to adjourn into executive session at 8:24 pm to receive legal advice from the city attorney regarding law enforcement and licensing of hotels 24-6-402(4)(b). The motion passed with all voting in favor thereof.

The meeting reconvened at 9:20 p.m.

Mr. Krob noted for the record that the executive session that Council concluded was within the scope of the statute and that he was present for the duration of the discussion, so the discussion is subject to the attorney client privilege.

13. ADJOURNMENT

The meeting was adjourned at 9:22 p.m.

Draft

CITY OF EVANS – MISSION STATEMENT

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CITY COUNCIL AGENDA REPORT

DATE:	October 5, 2020
AGENDA ITEM:	7.B
SUBJECT:	Approval of the September 23, 2020 Special City Council Meeting Minutes
PRESENTED BY:	Julie Roeder, Interim City Clerk

AGENDA ITEM DESCRIPTION:
Approval of minutes

FINANCIAL SUMMARY:
N/A

RECOMMENDATION:
N/A

SUGGESTED MOTIONS:
"I move to approve the minutes as presented"

ATTACHMENTS:
- September 23, 2020 Special City Council Meeting Minutes

MINUTES

City Council Special Meeting
September 23, 2020 - 6:00 PM

1. CALL TO ORDER
   Mayor Rudy called the meeting to order at 6:00 p.m.

2. PLEDGE

3. ROLL CALL

Mayor:	Brian Rudy
Mayor Pro-Tem:	Mark Clark
Council:	Laura Speer
	Alicia Johnson-ABSENT
	Fred Neal
	Amanda Castle-ABSENT
	Tammy Mortenson

4. APPROVAL OF AGENDA

Jim Becklenberg, City Manager, updated City Council about the power outages that impacted the community today, including the City's Evans Community Complex. Hopefully, this will not affect the City's live stream and Zoom broadcasting of tonight's meeting.

Mayor Pro-Tem Clark made the motion, seconded by Council Member Speer to approve the agenda as amended. The motion passed with all voting in favor thereof.

5. EXECUTIVE SESSION

Executive session pursuant to Section 24-6-402(4)(b), C.R.S., to confer with the City Attorney to receive advice regarding specific legal questions related to the Rodeway Inn business license revocation hearing.

Mayor Pro-Tem Clark made the motion, seconded by Council Member Mortenson to adjourn into executive session at 6:03 p.m. to confer with the City Attorney to receive advice regarding specific legal questions related to the Rodeway Inn business license revocation hearing. The motion passed with all voting in favor thereof.

DRAFT

The meeting reconvened at 6:21 p.m.

Mr. Krob noted for the record that the executive session that Council concluded was within the scope of the statute and that he was present for the duration of the discussion, so the discussion is subject to the attorney client privilege.

There was no action following the Executive Session.

6. NEW BUSINESS

A. Consideration of Resolution 29-2020 Appointing Judge Michael Stewart as City Manager for Exclusive Purpose of Conducting a Business License Revocation Hearing for the Rodeway Inn on September 28, 2020.

Mr. Becklenberg informed City Council that there will be an administrative hearing for the purpose of considering the revocation of the Rodeway Inn business license on Monday, September 28, 2020. The City of Evans municipal code requires that the City Manager act as the Hearing Officer, or an individual appointed by the City Council as City Manager can act in the capacity as Hearing Officer.

Scott Krob, City Attorney confirmed that the city code does require these hearings to be determined and heard by the City Manager. The code also indicates that the City Manager is either the City Manager, or someone appointed by the City Council to act as the City Manager. Since the City Manager has been involved with developing the background for what has led to this revocation, Scott Krob recommendation to appoint someone solely for the purpose of this hearing as acting City Manager. We have contacted Judge Stewart and he has indicated his willingness to do this. He is an appropriate person for this job.

Mayor Pro-Tem Clark made the motion, seconded by Council Member Neal to approve Resolution No. 29-2020 as proposed. The motion passed with all voting in favor thereof.

7. ADJOURNMENT

The meeting was adjourned at 6:24 p.m.

DRAFT

CITY OF EVANS – MISSION STATEMENT

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CITY COUNCIL AGENDA REPORT

DATE:	October 5, 2020
AGENDA ITEM:	7.C
SUBJECT:	Consideration of Ordinance Number 727-20 An Ordinance Repealing and Replacing Chapter 18, Section 18.07.120 Plat Modifications, Replats, Vacations and Lot Line Adjustments (2nd Reading)
PRESENTED BY:	James L. Becklenberg, City Manager Randy Ready, Asst. City Manager Anne Best Johnson, Community Development Director

AGENDA ITEM DESCRIPTION:

Plat modifications including replats, vacations of easements or rights-of-way and lot line adjustments are common land use applications in the City of Evans. In an effort to be more user-intuitive, to foster a transparent land use application process, and to provide Criteria for Approval, Staff has prepared the attached Ordinance for consideration to repeal and replace Section 18.07.120 of the Land Use Code, entitled "Plat Modifications, Minor Replats and Lot Line Adjustments." Staff has worked with the City Attorney's office to ensure concurrence and compliance with Colorado Revised Statutes.

Planning Commission reviewed the proposed code amendment on August 25, 2020 and sent its recommendation of approval to the City Council. Draft Planning Commission Minutes are attached for reference (Attachment 2). City Council heard the first reading of this ordinance on September 22, 2020 and voted unanimously in favor of the proposal.

Section 18.07.120 includes several different application types within the broad category of the Replat process. This lends to the confusion because they are not all to be processed the same way. Therefore, staff is recommending a reorganization of this Section in order to:

- Consolidate all applications that can be processed administratively to eliminate confusion and create a transparent process;
- Consolidate all applications that are to be processed with a City Council hearing to eliminate confusion and create a transparent process;
- More clearly communicate what the required application materials are;
- Include Criteria for Approval to communicate expectations to applicants and provide guidance to Staff and City Council on the approval process;
- Remove the need for an Ordinance since the Final Plat process only requires a Resolution. Currently, staff prepares both an Ordinance and a Resolution for each Replat. An Ordinance requires two public hearings before City Council whereas a Resolution requires one hearing before City Council. Requiring both an Ordinance and a Resolution creates redundancy and an inefficient use of City Council and interested community members' time.

Ordinance 727-20 as reviewed by Planning Commission is attached for your consideration (Attachment 1). A summary of the attached Ordinance can be found below:

- Section 18.07.120 A: Intent. No changes are proposed.
- Section 18.07.120.B: Pre-Application conference expectations and outcomes
- Section 18.07.120.C: Administrative process is defined. The types of applications are listed and the process is outlined
- Section 18.07.120.D: Processes requiring a land use hearing are listed and the process is defined [Final Plat process referenced]. No changes are proposed.
- Section 18.07.120.E: Provides a list of application submittal requirements
- Section 18.07.120.F: Provides Criteria for Approval. The current Code does not offer Criteria for Approval. The only Criteria for Approval of a Final Plat is found in Section 18.07.090.D as, "The only basis for rejection of a final plat shall be its nonconformance to adopted rules, regulations and ordinances currently in force and affecting the land and its development in the City, its lack of conformance with the approved preliminary plan, and changes required in the public interest." The proposed Criteria for Approval offer more substantive guidance to applicants, Staff and City Council for these types of applications and safeguard any easement holders, those who also benefit from rights-of-way, etc.
- Section 18.07.120.G: Provides direction on how the document is to be recorded. No changes are proposed.

The proposal is to repeal and replace the entire Section 18.07.120. The Ordinance will be Codified. Due to the major extent of reorganization, a Track Changes format would not have been a useful document. Therefore, proposed language is in red font below. All other language is existing in the current Land Use Code, but has just been reorganized.

1. Section 18.07.120 is repealed in its entirety and replaced as follows:

18.07.120 - Plat Modifications, Replats, Vacations and Lot Line Adjustments.

A. Intent. The intent of this Section is to provide a review process to make changes that are consistent with the applicable zone district requirements. This process may be used for the following:
    1. Corrections to a recorded plat;
    2. Adjustment or vacation of a lot line;
    3. Vacation of a plat without rights-of-way or easements;
    4. Vacation of a right-of-way, an easement or portion thereof; or
    5. Replats of previously platted lots not involving the creation of more than five (5) lots.

B. Preapplication conference. This stage of review is designed to provide the applicant with a means of understanding regulations, policies and procedures prior to formal submission of a proposal. The application process best suited for the application will be provided at the preapplication conference.
   1. The applicant should make an appointment with the Community Development Department to discuss the proposal being considered and follow the published preapplication conference procedures.
   2. The Community Development Department shall arrange for an informal meeting with a staff planner. The goal is to have constructive dialogue occur and for the applicant to receive some guidance on the request and this amendment process.
   3. Should the applicant decide to proceed further, formal submission of a complete application, based upon the recommendation of the Community Development Department, City regulations and the applicant's desires should then occur.
   4. If a formal application is not submitted within six (6) months of the preapplication conference, then the applicant must attend a new preapplication conference.
   5. The submittal process may vary according to the nature of the proposed amendment based on, but not limited to the following: degree of change, design, size, impact to public facilities, services, roads and overall impacts.

C. Administrative application process. The following applications may be processed administratively:

1. Corrections to approved and/or recorded plans and plats shall be considered as minor if the modifications or adjustments:
    a. Do not impact more than fifteen (15) percent of any element or portion within a proposed planned development including land use area boundaries, roadways, alignments, open space tracts, park sites and similar elements (this does not apply to the number of lots or units).
    b. Do not require the movement or shifting of any structure, building, roadway or other improvement to the site, by more than fifteen (15) feet.
    c. Is a minor change needed in the location, siting, or character of buildings, structures, alignment of streets, easements or setbacks.
    d. A replat of a lot or tract; an adjustment to, or vacation of a lot line; vacation of a plat (without rights-of-way or easements); a minor reconfiguration of an easement; or a replat of a lot or tract resulting in a total of no more than five (5) lots.
    e. Is required due to unanticipated reasons which were not known at the time of the original final approval by the Planning Commission or Council.
    f. Does not violate the strict application of this Title.
    g. Shall not cause any lot or structure on a lot to be out of conformance with any Municipal Code requirement; for example, lot sizes and setbacks.
    h. Shall not change any drainage easements or rights-of-way reserved for drainage, unless supported by complete engineering data to be provided by the applicant for review by the Director of Public Works and/or their designee.
    i. This process shall not change any street locations and street rights-of-way.

2. The administrative process is outlined below:
    a. An application is submitted to the City Community Development Department.
    b. The City has ten (10) days to review application materials to determine if the application is complete.
    c. An internal review process is conducted.
    d. External referral agencies are contacted and their input is solicited as applicable.
    e. Staff shall issue a staff report with or without Conditions of Approval and Development Standards for the application.
    f. The applicant shall address Conditions of Approval and resubmit materials, if needed.
    g. The Community Development Director may then approve or deny the request.
    h. A map illustrating the change shall be recorded with the Weld County Clerk and Recorder. Staff will coordinate recording.
    i. Should the request be denied, the applicant has the option to either:
        i. Withdraw the request fully;
        ii. Modify the request and resubmit for review; or
        iii. Appeal the administrative decision by written request to the Planning Commission.

D. A Major Replat, Plat Modification, or Lot Line Adjustment Application will be reviewed through the public hearing process. If an application is determined to be a Major Application during the Preapplication conference or after an application has been submitted, the Major Application process will follow the Final Plat process as defined in this Chapter.
   1. Applications that may be processed through this method shall include the following:
      a. A significant change in the use or character of the development or elements contained therein;
      b. An increase in overall coverage of structures;
      c. An increase in the intensity of the uses;
      d. A modification in overall traffic circulation;
      e. A modification in the method of providing adequate water and sewer service;
      f. A reduction in the approved percentage of required open space or landscaping;
      g. A change to the Neighborhood Development Plan;
      h. A replat of a lot or tract resulting in more than five additional (5) lots;
      i. A change to approved building elevations or other design elements of a structure; and
      j. Vacation of a platted or unplatted easement or right-of-way including the following:
         i. Vacation of a public right-of-way or easement that is NOT constructed; and
         ii. Vacation of a public right-of-way or easement that was constructed;
      k. An amendment to a plat which includes a redesign of streets, blocks, lots and easements.

E. Application submittal requirements. The following requirements shall be provided to the City by the applicant for either an Administrative application or a Major application to be considered complete. The following application materials are in addition to the Final Plat application requirements found in this Title:
   1. Application form provided by the City;
   2. Application fee(s);
   3. Application Narrative describing the project, the reason for the project and how the application meets the Criteria for Approval;
   4. Title Work from a title company and an ALTA Survey showing all who hold a legal interested in the affected property;
   5. The submittal may include letters of comment from any referral agencies, departments, and/or Homeowners Associations, where appropriate;
   6. A plat (map) shall be submitted to the Community Development Department and shall contain the following information in addition to the Final Plat mapping requirements found in this Chapter of the Municipal Code:
      a. Subdivision name, in a format similar to the following: "[subdivision name], replat [A], being a replat of lot [lot number], Block [block number], [prior subdivision name], Section, Township, Range, City of Evans, County of Weld, 6th P.M., State of Colorado.";
      b. Total area of the lot line adjustment and area of each lot, tract, and outlot;

c. Certification forms in the format of Section 18.06.090 C;
d. Dimensions (i.e., length, curve) of all property lines;
e. Existing and proposed easements and their purpose;
f. Lot and block numbers, and tract and outlot letters;
g. Scale (graphic and written), north arrow and date of preparation;
h. "Amendment History" section outlining previous approval dates of final plats and the changes being proposed;
i. The easement holders shall sign the plat or provide written evidence of approval of the application. Evidence of approval shall be recorded; and
j. A Plat Correction Certificate shall be prepared by the Applicant, which identifies the error or omission, the specific plat to be corrected and the reception number of the plat, and the necessary corrective action in accordance with the form provided by the Community Development Department, approved by the City Attorney.
k. Other information deemed necessary by the Community Development Director.

F. Criteria for Approval. Applicants are required to meet the following Criteria for Approval. Staff and City Council, as applicable, shall find that the application proposal complies with all of the following standards, as applicable:
1. The proposal is consistent with the goals and policies of the Evans Comprehensive Plan.
2. The application complies with this Title and all other applicable engineering and design regulations and standards.
3. The applicant has provided sufficient evidence all affected easement holders will not be negatively impacted.
4. The resulting application cannot block or remove an access to an adjacent lot unless an alternative access is provided.
5. The resulting property will be served by public water, public sanitary sewage disposal, public non-potable water system, and tied into the City's stormwater management system, as applicable.
6. The application does not cause a nonconformity.
7. The application is compatible with adjoining lots and the surrounding area.
8. Will not cause the following:
    a. Soil erosion or a reduction in the capacity of the land to hold water so that a dangerous or unhealthy condition may result;
    b. Cause unreasonable street or highway congestion or unsafe conditions with respect to the use of steets or highways, existing or proposed.
    c. Cause unreasonable burden on the ability of a school district to provide educational services;
    d. Cause unreasonable burden on the ability to provide water, sewage, fire, police, hospital, solid waste disposal and other services;
    e. Have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites or rare and irreplaceable natural areas;
    f. Have an undue adverse effect on wildlife and their habitat, and open space.

G. Recordation. The applicant is responsible to provide the requested plat or map and supporting documents, as necessary in a form requested by City Staff within the time period provided. The Replat and applicable materials shall be recorded by City Staff with the Weld County Clerk and Recorder.

FINANCIAL SUMMARY:

There are no financial implications to the proposed Code language change. There is a potential positive financial implication for the community when the City has a Land Use Code that is clear and easy for both the applicant and staff to follow. Clear expectations, a transparent land use process, and Criteria for Approval are beneficial attributes in a Land Use Code.

RECOMMENDATION:

Staff recommends approval of Ordinance 727-20.

SUGGESTED MOTIONS:

"I move to approve Ordinance 727-20 on second reading as proposed to repeal and replace Chapter 18, Section 18.07.120 Plat Modifications, Replats, Vacations and Lot Line Adjustments."

"I move to deny Ordinance No.727-20 as proposed for the reasons stated."

ATTACHMENTS:

- Ordinance 727-20
- Planning Commission Draft Minutes

CITY OF EVANS, COLORADO

ORDINANCE NO. 727-20

AN ORDINANCE REPEALING AND REPLACING CHAPTER 18.07.120 OF THE EVANS MUNICIPAL CODE TO CLARIFY INTENT, PROVIDE CRITERIA FOR APPROVAL AND PROVIDE TRANSPARENT APPLICATION PROCESSING STANDARDS FOR PLAT MODIFICATIONS, REPLATS, VACATIONS AND LOT LINE ADJUSTMENTS IN THE CITY OF EVANS

WHEREAS, the City Council of the City of Evans, Colorado, pursuant to Colorado statute and the Evans City Charter, is vested with the authority of administering the affairs of the City of Evans, Colorado; and

WHEREAS, Title 18 of the Evans Municipal Code addresses Land Development and in particular, Section 18.07.120 addresses plat modifications, replats, vacations and lot line adjustments; and

WHEREAS, the Planning Commission has recommended a repeal and replacement of Section 18.07.120 to clarify intent, provide criteria for approval, and provide transparent application processing standards.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF EVANS, COLORADO AS FOLLOWS:

1. Section 18.07.120 is repealed in its entirety and replaced as follows:

18.07.120 - Plat Modifications, Replats, Vacations and Lot Line Adjustments.

A. Intent. The intent of this Section is to provide a review process to make changes that are consistent with the applicable zone district requirements. This process may be used for the following:
   1. Corrections to a recorded plat;
   2. Adjustment or vacation of a lot line;
   3. Vacation of a plat without rights-of-way or easements;
   4. Vacation of a right-of-way, an easement or portion thereof; or
   5. Replats of previously platted lots not involving the creation of more than five (5) lots.

B. Preapplication conference. This stage of review is designed to provide the applicant with a means of understanding regulations, policies and procedures prior to formal submission of a proposal. The application process best suited for the application will be provided at the preapplication conference.
   1. The applicant should make an appointment with the Community Development Department to discuss the proposal being considered and follow the published preapplication conference procedures.
   2. The Community Development Department shall arrange for an informal meeting with a staff planner. The goal is to have constructive dialogue occur and for the applicant to receive some guidance on the request and this amendment process.
   3. Should the applicant decide to proceed further, formal submission of a complete application, based upon the recommendation of the Community Development Department, City regulations and the applicant's desires should then occur.
   4. If a formal application is not submitted within six (6) months of the preapplication conference, then the applicant must attend a new preapplication conference.
   5. The submittal process may vary according to the nature of the proposed amendment based on, but not limited to the following: degree of change, design, size, impact to public facilities, services, roads and overall impacts.

C. Administrative application process. The following applications may be processed administratively:
   1. Corrections to approved and/or recorded plans and plats shall be considered as minor if the modifications or adjustments:
      a. Do not impact more than fifteen (15) percent of any element or portion within a proposed planned development including land use area boundaries, roadways, alignments, open space tracts, park sites and similar elements (this does not apply to the number of lots or units).
      b. Do not require the movement or shifting of any structure, building, roadway or other improvement to the site, by more than fifteen (15) feet.
      c. Is a minor change needed in the location, siting, or character of buildings, structures, alignment of streets, easements or setbacks.
      d. A replat of a lot or tract; an adjustment to, or vacation of a lot line; vacation of a plat (without rights-of-way or easements); a minor reconfiguration of an easement; or a replat of a lot or tract resulting in a total of no more than five (5) lots.

e. Is required due to unanticipated reasons which were not known at the time of the original final approval by the Planning Commission or Council.
f. Does not violate the strict application of this Title.
g. Shall not cause any lot or structure on a lot to be out of conformance with any Municipal Code requirement; for example, lot sizes and setbacks.
h. Shall not change any drainage easements or rights-of-way reserved for drainage, unless supported by complete engineering data to be provided by the applicant for review by the Director of Public Works and/or their designee.
i. This process shall not change any street locations and street rights-of-way.

2. The administrative process is outlined below:
    a. An application is submitted to the City Community Development Department.
    b. The City has ten (10) days to review application materials to determine if the application is complete.
    c. An internal review process is conducted.
    d. External referral agencies are contacted and their input is solicited as applicable.
    e. Staff shall issue a staff report with or without Conditions of Approval and Development Standards for the application.
    f. The applicant shall address Conditions of Approval and resubmit materials, if needed.
    g. The Community Development Director may then approve or deny the request.
    h. A map illustrating the change shall be recorded with the Weld County Clerk and Recorder. Staff will coordinate recording.
    i. Should the request be denied, the applicant has the option to either:
        i. Withdraw the request fully;
        ii. Modify the request and resubmit for review; or
        iii. Appeal the administrative decision by written request to the Planning Commission.

D. A Major Replat, Plat Modification, or Lot Line Adjustment Application will be reviewed through the public hearing process. If an application is determined to be a Major Application during the Preapplication conference or after an application has been submitted, the Major Application process will follow the Final Plat process as defined in this Chapter.
   1. Applications that may be processed through this method shall include the following:
      a. A significant change in the use or character of the development or elements contained therein;
      b. An increase in overall coverage of structures;
      c. An increase in the intensity of the uses;
      d. A modification in overall traffic circulation;
      e. A modification in the method of providing adequate water and sewer service;
      f. A reduction in the approved percentage of required open space or landscaping;
      g. A change to the Neighborhood Development Plan;
      h. A replat of a lot or tract resulting in more than five additional (5) lots;
      i. A change to approved building elevations or other design elements of a structure; and
      j. Vacation of a platted or unplatted easement or right-of-way including the following:
         i. Vacation of a public right-of-way or easement that is NOT constructed; and
         ii. Vacation of a public right-of-way or easement that was constructed;
      k. An amendment to a plat which includes a redesign of streets, blocks, lots and easements.

E. Application submittal requirements. The following requirements shall be provided to the City by the applicant for either an Administrative application or a Major application to be considered complete. The following application materials are in addition to the Final Plat application requirements found in this Title:
   1. Application form provided by the City;
   2. Application fee(s);
   3. Application Narrative describing the project, the reason for the project and how the application meets the Criteria for Approval;
   4. Title Work from a title company and an ALTA Survey showing all who hold a legal interested in the affected property;
   5. The submittal may include letters of comment from any referral agencies, departments, and/or Homeowners Associations, where appropriate;
   6. A plat (map) shall be submitted to the Community Development Department and shall contain the following information in addition to the Final Plat mapping requirements found in this Chapter of the Municipal Code:
      a. Subdivision name, in a format similar to the following: "[subdivision name], replat [A], being a replat of lot [lot number], Block [block number], [prior subdivision name], Section, Township, Range, City of Evans, County of Weld, 6th P.M., State of Colorado.";

b. Total area of the lot line adjustment and area of each lot, tract, and outlot;
c. Certification forms in the format of Section 18.06.090 C;
d. Dimensions (i.e., length, curve) of all property lines;
e. Existing and proposed easements and their purpose;
f. Lot and block numbers, and tract and outlot letters;
g. Scale (graphic and written), north arrow and date of preparation;
h. "Amendment History" section outlining previous approval dates of final plats and the changes being proposed;
i. The easement holders shall sign the plat or provide written evidence of approval of the application. Evidence of approval shall be recorded; and
j. A Plat Correction Certificate shall be prepared by the Applicant, which identifies the error or omission, the specific plat to be corrected and the reception number of the plat, and the necessary corrective action in accordance with the form provided by the Community Development Department, approved by the City Attorney.
k. Other information deemed necessary by the Community Development Director.

F. Criteria for Approval. Applicants are required to meet the following Criteria for Approval. Staff and City Council, as applicable, shall find that the application proposal complies with all of the following standards, as applicable:
1. The proposal is consistent with the goals and policies of the Evans Comprehensive Plan.
2. The application complies with this Title and all other applicable engineering and design regulations and standards.
3. The applicant has provided sufficient evidence all affected easement holders will not be negatively impacted.
4. The resulting application cannot block or remove an access to an adjacent lot unless an alternative access is provided.
5. The resulting property will be served by public water, public sanitary sewage disposal, public non-potable water system, and tied into the City's stormwater management system, as applicable.
6. The application does not cause a nonconformity.
7. The application is compatible with adjoining lots and the surrounding area.
8. Will not cause the following:
    a. Soil erosion or a reduction in the capacity of the land to hold water so that a dangerous or unhealthy condition may result;
    b. Cause unreasonable street or highway congestion or unsafe conditions with respect to the use of steets or highways, existing or proposed.
    c. Cause unreasonable burden on the ability of a school district to provide educational services;
    d. Cause unreasonable burden on the ability to provide water, sewage, fire, police, hospital, solid waste disposal and other services;
    e. Have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites or rare and irreplaceable natural areas;
    f. Have an undue adverse effect on wildlife and their habitat, and open space.

G. Recordation. The applicant is responsible to provide the requested plat or map and supporting documents, as necessary in a form requested by City Staff within the time period provided. The Replat and applicable materials shall be recorded by City Staff with the Weld County Clerk and Recorder.

2. Severability. If any article, section, paragraph, sentence, clause, or phrase of this Ordinance is held to be unconstitutional or invalid for any reason such decision shall not affect the validity or constitutionality of the remaining portions of this Ordinance. The City Council hereby declares that it would have passed this ordinance and each part or parts thereof irrespective of the fact that any one part or parts be declared unconstitutional or invalid.

3. Repeal. Existing ordinances or parts of ordinances covering the same matters embraced in this ordinance are hereby repealed and all ordinances or parts of ordinances inconsistent with the provisions of this ordinance are hereby repealed except that this repeal shall not affect or prevent the prosecution or punishment of any person for any act done or committed in violation of any ordinance hereby repealed prior to the effective date of this ordinance.

INTRODUCED AND PASSED AT A REGULAR MEETING OF THE CITY COUNCIL OF THE CITY OF EVANS ON THIS 22nd DAY OF SEPTEMBER, 2020.

ATTEST: **CITY OF EVANS, COLORADO**

_____ BY: _____

Julie Roeder, City Clerk Brian Rudy, Mayor

PASSED AND ADOPTED ON A SECOND READING THIS 5th DAY OF OCTOBER, 2020.

ATTEST: **CITY OF EVANS, COLORADO**

_____ BY: _____

Julie Roeder, City Clerk Brian Rudy, Mayor

AGENDA

Planning Commission Regular Meeting

Tuesday, August 25, 2020, at 6:00 pm

Evans Community Complex, City Council Chambers, 1100 37th Street

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REGULAR MEETING

1. **CALL TO ORDER: -- 06:01 pm**

2. **ROLL CALL: -- 06:01 pm**

Chairman:	Billy Castillo – not present
Vice-Chairman:	
Commissioners:	Lyle Achziger – present (acting chair)
	Mark LeClere – present
	Kalen Myers – present
	Robert S. Phillips, III – present

3. **APPROVAL OF THE AGENDA: -- 06:02 pm**

   A. **Motion/Vote: Motion to approve agenda/second. Passes unanimously.

4. **APPROVAL OF THE MINUTES: -- 06:02 pm**

   A. 07/28/2020 ****Motion/Vote: Motion to approve minutes/second. Passes unanimously.**

5. **PUBLIC HEARING: -- 06:02 pm**

   5.A Consideration of Ordinance No. 727-20

   Ordinance No. 727-20 presents modifications to Municipal Code Section 18.07.120 designed to clarify process and intent, and streamline processing requirements for replats, vacations of easements or rights-or-way, and lot line adjustments.
   Anne Best Johnson for City of Evans

06:03 pm: Staff reviews proposed repeal and replacement of Code section 18.07.120. Current Code does not provide process and application requirements that are streamlined and consistent and valid criteria for approval. Reviews examples of process steps that need to be cleaned up. See .pptx and attached draft Ordinance No. 727-20 for details.

Question: Can you state the difference between a vacation and vacating.
Answer: Vacating something is removing something that was platted. Processing this is called a vacation.

No members of the public present.

Public hearing closed – **06:12 pm**

Comment: Any time you can streamline and clean up the Code I think it is helpful. It can get a little muddied over time, so cleaning it up is always a good thing.

Comment: Appreciate Planner Best Johnson's presentation style.

DRAFT

Question: When you make a change like this, are the City attorneys involved?
Answer: Yes. Anytime we make a change to our Code our attorneys review our drafts to make sure there is no conflict between our Code and State statute.

Comment: Agree with earlier comment. Any time we can consolidate and clarify the Code for better process and more consistency, it's a good thing.

****I move that the Planning Commission forward a recommendation of approval to the City Council to repeal Section 18.07.120 in its entirety and replace it with the proposed language presented in Ordinance No. 727-20./Second. Passes unanimously.**

6. **AGENDA ITEMS: -- 06:17 pm**

6.A Planning Commission Officer Election

Anne Best Johnson for City of Evans

Time to elect a chair and a vice-chair. Requirements that are outlined in the Code. Whoever holds these positions will serve for both Planning Commission the Zoning Board of Appeals.

Staff tries to meet with Chair by phone before each meeting so that they can prepare for procedural obligations. In the event the Chair cannot attend, the Vice-Chair fills in.

Billy Castillo, Lyle Achziger, and Robert S. Phillips, III, interested in serving. LeClere and Myers not interested.

Comment: One of the things that this Commission has lacked is energy. I think we need to bring that back. Applicants are coming to us and wanting to invest in our City. We should be welcoming to them and I haven't seen any of that.

Comment: I was on the Commission before and I have missed being able to keep my finger on what's happening in the City. I've chaired the committee before, but I can always ask questions and be involved that way. I'm here for the work process. You have to be willing to think and ask questions. Give the applicants and the members of the public a chance to express themselves.

Phillips opts to remove name.

Nomination: Lyle Achziger for Chair

Nomination: Billy Castillo for Chair

****Vote for Chair: Three in favor of Achziger, one for Castillo.**

Comment: In the past, Planning Commission has had a problem with attendance. One of our developers approached PC Achziger and expressed that if he didn't already have millions of dollars invested in his property, he would never choose to invest in Evans.

Nomination: Billy Castillo for Vice-Chair

Nomination: Kalen Myers for Vice-Chair

****Vote for Vice-Chair: Two in favor of Myers, one in favor of Castillo. Myers is Vice-Chair.**

7. **ADJOURNMENT: -- 06:29 pm**
   ****Motion/Vote: Motion to adjourn/Second. Passes unanimously.**

Work session on next section of the Code in September. May have public hearings – we will see how development applications go.

DRAFT

CITY COUNCIL AGENDA REPORT

DATE: October 5, 2020

AGENDA ITEM: 9.A

SUBJECT: Resolution No. 31-2020 – Appointment of the Evans City Clerk

PRESENTED BY: James L. Becklenberg, City Manager
Julie Roeder, Administrative Services Director/Interim City Clerk

AGENDA ITEM DESCRIPTION:
Section 4.7(a) of the Evans City Charter provides for the City's Manager's appointment of the City Clerk, "with the approval by a majority vote of all members of the City Council." Accordingly, staff is asking the City Council to consider Resolution No. 31-2020 to ratify the appointment of Julie Kamka as the Evans City Clerk.

Following the resignation of the previous City Clerk, staff conducted an open competitive recruitment process and Julie Kamka was selected. Julie has 21 years of local government experience. Julie began her local government career in 1999 working in the Building Department for the Village of Buffalo Grove, Illinois. She became a certified Permit Technician through the International Code Council. Julie also served as Deputy Village Clerk with the Village of Buffalo Grove for approximately seven years. She achieved her Registered Municipal Clerk certification in November 2017 through Municipal Clerks of Illinois and her Certified Municipal Clerk certification in December 2017 through the International Institute of Municipal Clerks. Julie brings knowledge and experience in electronic agenda management, preparing meeting minutes for boards and commissions, interpreting, complying and drafting statutes, ordinances and regulations, liquor licensing, elections, public records requests, and electronic records management, including Laserfiche.

FINANCIAL SUMMARY:
N/A

RECOMMENDATION:
Staff recommends adoption of Resolution No. 31-2020 to ratify the appointment of Julie Kamka as the Evans City Clerk.

SUGGESTED MOTIONS:
"I move to adopt Resolution No. 31-2020"

"I move to deny the adoption of Resolution No. 31-2020"

ATTACHMENTS:
- Attached Resolution

THE CITY OF EVANS, COLORADO
RESOLUTION NO. 31-2020

A RESOLUTION APPOINTING THE EVANS CITY CLERK

WHEREAS, pursuant to Section 4.7 (a) of the City Charter the City Council shall approve the appointment of the City Clerk, and

WHEREAS, the City Manager is recommending the City Council appoint Julie Kamka as the Evans City Clerk.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF EVANS, COLORADO:

The Evans City Council appoint Julie Kamka as City Clerk effective October 5, 2020.

PASSED AND ADOPTED, SIGNED AND APPROVED THIS 5TH DAY OF OCTOBER, 2020.

ATTEST: THE CITY OF EVANS, COLORADO:

_____ _____

City Clerk Brian Rudy, Mayor

CITY COUNCIL AGENDA REPORT

DATE:	October 5, 2020
AGENDA ITEM:	9.B
SUBJECT:	Consideration of Ordinance 735-20 and Loan Agreement with Colorado Water Resources & Power Development Authority (CWRPDA) for Storm Drainage Fund Improvements
PRESENTED BY:	James L. Becklenberg, City Manager Jacque Troudt, CPA, Finance Director Drew Lyman, Assistant City Attorney

AGENDA ITEM DESCRIPTION:

In 2018, the City formed the infrastructure solutions task force for the purpose of assessing the City's road and storm drainage needs as well as examining financing options for capital improvements. After months of deliberation, the task force recommended that City Council consider issuing debt funded by a storm drainage fee increase to finance the necessary capital improvements. The rate increase became effective January 1, 2019 and was established at a level sufficient to repay debt to complete the highest priority storm drainage projects.

On February 4, 2020, City Council approved design contracts for Phase 1 of the East Side Storm drainage improvements, which was the first step in completing specific projects.

Staff began working on design plans for the drainage improvements and identified financing options for the City. At this time, an opportunity exists for the City to receive a low interest loan from the Colorado Water Resources and Power Authority (CWRPDA) to pay for construction of the storm drainage infrastructure projects located at the Heritage Inn/ 35th Street across Highway 85 and Highway 85 improvements at 31st Street. The 2019 rate increase is sufficient to service the loan and no additional rate increases are recommended at this time to repay the debt.

After conferring with the City's outside bond counsel, Staff recommends that City Council adopt an ordinance to ensure that the Code expressly authorizes entering into the loan agreement. Based on the City's stated desire to make the needed capital improvements a high priority, the ordinance should be adopted on an emergency basis to "lock-in" funding at attractive loan terms.

CWRPDA anticipates selling bonds on October 29, 2020, and funds will be available to the City in November 2020. The City will then be able to draw down proceeds in a reimbursement process as funds are used.

FINANCIAL SUMMARY:

The recommended rate increase began January 1, 2019 and was estimated to pay for the debt service payments for roughly one-third of the highest priority storm drainage capital projects.

The rate increase has been used to fund design work on the East Side Storm Drainage projects, and the loan is still needed to fund the construction of these main projects. The City applied for a loan with the Colorado Water Resources and Power Development Authority (CWRPDA) in late 2019, and recently the CWRPDA Board of Director's approved Evans' loan in the amount of $8,600,000 plus issuance costs, a principal amount not to exceed $9,600,000. The City now has an opportunity to enter into an agreement with CWRPDA to accept the loan funds, with a 20-year repayment at an interest rate of 70% of the market rate, not to exceed 3.5%, on the Authority's 2020 Series B State Revolving Funds Revenue Bonds.

The City will experience savings in participating in the CWRPDA loan. The interest rate to be secured is anticipated to be much lower than if the City would secure bank financing individually, as the City does not have a bond rating, and the Storm Drainage Enterprise Fund has had relatively small amounts of historical activity and cash flow. Also, by only having to repay 70% of the final interest rate secured, the City will recognize savings in the total cost of the project.

The current storm drainage service fee is sufficient to make estimated debt service payments, with only inflationary increases anticipated to occur for 2021 rates. After the two major storm drainage projects are completed, City Council should consider further rate increases to fund additional capital projects.

RECOMMENDATION:

The interest rate offered on CWRPDA loan instrument is well below rates the City could secure with a single debt issuance. The City also accepted similar debt structure to construct the current Wastewater Treatment Plant, which was a successful process for the City. Staff recommends City Council approval of the attached loan agreement and associated Ordinance to issue the debt. The City's bond counsel has recommended the ordinance be approved as an emergency ordinance to ensure that the City Code provides for the legal authority to enter into the associated loan agreement.

SUGGESTED MOTIONS:

I move to approve Ordinance 735-20 upon first reading and approve the City's loan agreement with the Colorado Water Resources and Power Development Authority for Storm Drainage capital improvements.

I move to deny Ordinance 735-20 and associated City's loan agreement with the Colorado Water Resources and Power Development Authority for Storm Drainage capital improvements.

ATTACHMENTS:

A- Draft Loan Agreement between Colorado Water Resources and Power Development Authority and the City of Evans

B- Ordinance 735-20

CITY OF EVANS, COLORADO

ORDINANCE NO. 735-20

AN EMERGENCY ORDINANCE APPROVING A LOAN FROM THE COLORADO WATER RESOURCES AND POWER DEVELOPMENT AUTHORITY IN THE PRINCIPAL AMOUNT NOT TO EXCEED $9,600,000; AUTHORIZING THE FORM AND EXECUTION OF THE LOAN AGREEMENT AND A GOVERNMENTAL AGENCY BOND TO EVIDENCE SUCH LOAN; AUTHORIZING THE CONSTRUCTION OF A PROJECT; PRESCRIBING OTHER DETAILS IN CONNECTION THEREWITH; RATIFYING ACTION PREVIOUSLY TAKEN CONCERNING THE REFERENCED LOAN AND PROJECT; AND DECLARING AN EMERGENCY

WHEREAS, the City of Evans (the "City"), in the County of Weld and State of Colorado, is a duly organized and existing home rule municipality of the State of Colorado (the "State") created and operating under the Constitution and the laws of the State and the Home Rule Charter of the City (the "Charter"); and

WHEREAS, the members of the City Council of the City (the "Council") have been duly elected, chosen, and qualified; and

WHEREAS, pursuant to Section 37-45.1-103, C.R.S., the City owns and operates its municipal storm water drainage system (the "System") as a government-owned business; and

WHEREAS, the Council has determined that the System constitutes an enterprise (the "Enterprise") pursuant to Article X, Section 20 of the Colorado Constitution; and

WHEREAS, the Council is the governing body of the Enterprise; and

WHEREAS, the Council has heretofore determined that the interest of the City and the public interest and necessity demand and require the construction of two projects designed to mitigate severe localized flooding and exercise best management practices that reduce the discharge of pollutants from the System, including new storm sewer conveyance infrastructures and outfall structures, and replacement, upsizing, and various appurtenant improvements of the System (the "Project"); and

WHEREAS, the Council has determined that in order to finance the Project, it is necessary and advisable and in the best interests of the City to enter into a loan agreement (the "Loan Agreement") with the Colorado Water Resources and Power Development Authority ("CWRPDA"), a body corporate and political subdivision of the State, pursuant to which CWRPDA shall loan the City an amount of not to exceed $9,600,000 (the "Loan") for such purposes; and

WHEREAS, the CWRPDA will obtain money to fund the Loan to the City through the issuance of its bonds (the "CWRDPA Bonds"); and

WHEREAS, the repayment obligations under the Loan Agreement shall be evidenced by a governmental agency bond (the "Bond") to be issued by the City to CWRPDA, and which Bond shall be payable only from revenue of the System; and

WHEREAS, under Section 10.5 of the Charter, the City is authorized to issue revenue bonds payable solely from the net revenues of the System; and

WHEREAS, Article X, Section 20 of the Colorado Constitution ("TABOR") requires an election to incur any multiple fiscal year obligation unless such obligation is incurred by an enterprise; and

WHEREAS, under TABOR, an enterprise is a government-owned business authorized to issue its own revenue bonds and receiving under 10% of annual revenue in grants from all Colorado state and local governments combined; and

WHEREAS, in 2019, the Enterprise received grants for the System from all State and local governments combined which were less than 10% of the annual revenue of the System; and

WHEREAS, pursuant to TABOR and the Charter, the Bond, and the Loan Agreement (collectively, the "Financing Documents") may be approved by the Council without an election; and

WHEREAS, the Bond and the Loan Agreement shall be revenue obligations of the City, payable from the Net Revenues (as defined in the Loan Agreement) of the System (the "Pledged Property"); and

WHEREAS, except to secure the Loan and the Bond, the City has not pledged nor hypothecated the Pledged Property derived or to be derived from the operation of the System, or any part thereof, to the payment of any bonds or for any other purpose, with the result that the Pledged Property may now be pledged lawfully and irrevocably to the payment of the Bond; and

WHEREAS, there have been presented to the Council the forms of the Financing Documents; and

WHEREAS, the Council desires to approve the forms of the Financing Documents and authorize the execution thereof.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF EVANS, COLORADO:

Section 1. Determinations. The Council hereby finds and determines that the System constitutes an enterprise under all applicable State laws. The adoption of this Ordinance does not adversely impact the enterprise status of the System prior to the date hereof.

Section 2. Approvals, Authorizations, and Amendments. The forms of the Financing Documents presented at this meeting are incorporated herein by reference and are hereby approved. The City shall enter into and perform its obligations under the Financing Documents in the forms of such documents, with such changes as are not inconsistent herewith and as are hereafter approved by the Mayor of the City (the "Mayor"), the City Manager of the City (the "City Manager") or the Finance Director of the City (the "Finance Director"). The Mayor and City Clerk of the City (the "City Clerk") are hereby authorized and directed to execute the Financing Documents and to affix the seal of the City thereto, and further to execute and authenticate such other documents or certificates as are deemed necessary or desirable in

connection therewith. The Financing Documents shall be executed in substantially the forms approved at this meeting.

The execution of any instrument or certificate or other document in connection with the matters referred to herein, whether executed manually or by electronic signature in accordance with Title 24, Article 71.3, C.R.S., by the Mayor, the City Manager, the Finance Director, the City Clerk, or by other appropriate officers of the City, shall be conclusive evidence of the approval by the City of such instrument.

Section 3. Election to Apply the Supplemental Act. Section 11-57-204 of the Supplemental Public Securities Act, constituting Title 11, Article 57, Part 2, C.R.S. (the "Supplemental Act") provides that a public entity, including the City, may elect in an act of issuance to apply all or any of the provisions of the Supplemental Act. The City hereby elects to apply all of the provisions of the Supplemental Act to the Financing Documents.

Section 4. Delegation.

(a) Pursuant to Section 11-57-205 of the Supplemental Act, the City hereby delegates to the Mayor, the City Manager, and the Finance Director the independent authority to make the following determinations relating to and contained in the Financing Documents, subject to the restrictions contained in paragraph (b) of this Section 4:

i) The interest rate on the Loan;

ii) The principal amount of the Loan;

iii) The amount of principal of the Loan maturing in any given year and the final maturity of the Loan;

iv) The dates on which the principal of and interest on the Loan are paid; and

v) The existence and amount of reserve funds for the Loan, if any.

(b) The delegation in paragraph (a) of this Section 4 shall be subject to the following parameters and restrictions:

(i) the net effective interest rate on the Loan shall not exceed 3.5%;

(ii) the principal amount of the Loan shall not exceed $9,600,000; and

(iii) the final maturity of the Loan shall not be later than December 31, 2046.

Section 2) Conclusive Recital. Pursuant to Section 11-57-210 of the Supplemental Act, the Bond and the Loan Agreement shall contain a recital that the Bond is issued pursuant to certain provisions of the Supplemental Act. Such recital shall be conclusive evidence of the validity and the regularity of the issuance of the Bond after its delivery for value.

Section 5. Ratification and Approval of Prior Actions. All actions heretofore taken by the officers of the City and members of the Council, not inconsistent with the provisions of this Ordinance, relating to the Financing Documents or the Project, or actions to be taken in respect thereof, are hereby ratified, approved, and confirmed.

Section 6. Pledge of Revenues. The Town hereby pledges irrevocably, but not necessarily exclusively, the Pledged Property to the payment of the Loan and the Bond. The creation, perfection, enforcement, and priority of the pledge of revenues to secure or pay the Financing Documents provided herein shall be governed by Section 11-57-208 of the Supplemental Act and this Ordinance. The amounts pledged to the payment of the Financing Documents shall immediately be subject to the lien of such pledge without any physical delivery, filing, or further act. The lien of such pledge shall have the priority described in the Loan Agreement. The lien of such pledge shall be valid, binding, and enforceable as against all persons having claims of any kind in tort, contract, or otherwise against the City irrespective of whether such persons have notice of such liens.

Section 7. Limitation of Actions. Pursuant to Section 11-57-212 of the Supplemental Act, no legal or equitable action brought with respect to any legislative acts or proceedings in connection with the Financing Documents shall be commenced more than thirty days after the approval of this Ordinance.

Section 8. Limited Obligation; Special Obligation. The Financing Documents are payable solely from the Pledged Property and the Financing Documents do not constitute a debt within the meaning of any constitutional, Charter or statutory limitation or provision.

No elected or appointed officers or agents of the City shall be subject to any pecuniary liability in connection with any agreement, covenant, or undertaking by the City, or by them, contained in any document executed in connection with the authorization, execution, and delivery of the Financing Documents or this Ordinance or with respect to any action taken or omitted to be taken in good faith with reference thereto.

Section 9. No Recourse against Officers and Agents. Pursuant to Section 11-57-209 of the Supplemental Act, if a member of the Council or any officer or agent of the City acts in good faith, no civil recourse shall be available against such member, officer, or agent for payment of the principal of or interest on the Bond. Such recourse shall not be available either directly or indirectly through the Council or the City, or otherwise, whether by virtue of any constitution, statute, rule of law, enforcement of penalty, or otherwise. By the acceptance of the Bond and as a part of the consideration of its sale or purchase, CWRPDA specifically waives any such recourse.

Section 10. Disposition and Investment of Loan Proceeds. The proceeds of the Loan shall be applied to pay the costs and expenses of acquiring, constructing, and equipping the Project, including costs related thereto and, to the extent permitted under federal tax laws, reimbursement to the City for capital expenditures heretofore incurred and paid from City funds in anticipation of the incurrence of long-term financing therefor, and all other costs and expenses incident thereto, including without limitation the costs of obtaining the Loan. Neither CWRPDA nor any subsequent owner(s) of the Loan Agreement shall be responsible for the application or disposal by the City or any of its officers of the funds derived from the Loan. If all the proceeds of the Loan are not required to pay such costs and expenses, any remaining amount shall be used for the purpose of paying the principal amount of the Loan and the interest thereon.

Section 11. City Representative. Pursuant to Exhibit B of the Loan Agreement, the Mayor, the City Manager, and the Finance Director are hereby designated as the Authorized Officers (as

defined in the Loan Agreement) for the purpose of performing any act or executing any document relating to the Loan, the City, the Bond, or the Loan Agreement. A copy of this Ordinance shall be furnished to CWRPDA as evidence of such designation.

Section 12. Estimated Life of Improvements. It is hereby determined that the estimated life of the Project to be financed with the proceeds of the Loan is not less than the final maturity of the Loan.

Section 13. Direction to Take Authorizing Action. The appropriate officers of the City and members of the Council are hereby authorized and directed to take all other actions necessary or appropriate to effectuate the provisions of this Ordinance, including but not limited to such certificates and affidavits as may reasonably be required by CWRPDA.

Section 14. CWRPDA's Official Statement. The appropriate officers and employees of the City are hereby authorized and directed to furnish and supply information concerning the City to CWRPDA for use in the preparation of an Official Statement to be used to market the CWRPDA Bonds.

Section 15. Electronic Signatures; Electronic Transactions. In the event the Mayor, the City Clerk, the City Manager, the Finance Director or other employee or official of the City that is authorized or directed to execute any agreement, document, certificate, instrument or other paper in accordance with this Ordinance (collectively, the "Authorized Documents") is not able to be physically present to manually sign any such Authorized Document, such individual or individuals are hereby authorized to execute Authorized Documents electronically via facsimile or email signature. Any electronic signature so affixed to any Authorized Document shall carry the full legal force and effect of any original, handwritten signature. This provision is made pursuant to Article 71.3 of Title 24, C.R.S., also known as the Uniform Electronic Transactions Act. It is hereby determined that the transactions described herein may be conducted and related documents may be stored by electronic means. Copies, telecopies, facsimiles, electronic files and other reproductions of original executed documents shall be deemed to be authentic and valid counterparts of such original documents for all purposes, including the filing of any claim, action or suit in the appropriate court of law.

Section 16. Severability. If any section, paragraph, clause, or provision of this Ordinance shall for any reason be held to be invalid or unenforceable, the invalidity or unenforceability of such section, paragraph, clause, or provision shall not affect any of the remaining provisions of this Ordinance, the intent being that the same are severable.

Section 17. Repealed. All orders, resolutions, bylaws, ordinances, or regulations of the City, or parts thereof, inconsistent with this Ordinance are hereby repealed to the extent only of such inconsistency.

Section 18. Ordinance Irrepealable. After the Bond is issued, this Ordinance shall constitute an irrevocable contract between the City and CWRPDA and shall be and remain irrepealable until the Bond and the interest thereon shall have been fully paid, satisfied, and discharged. No provisions of any constitution, statute, charter, ordinance, resolution, or other measure enacted

after the issuance of the Bond shall in any manner be construed as impairing the obligations of the City to keep and perform the covenants contained in this Ordinance.

Section 19. Declaration of Emergency. In order to effect the Project while favorable market conditions exist, it is hereby declared that an emergency exists and that this Ordinance is immediately necessary for the preservation of the public peace, health, safety, and financial well-being of the City. This Ordinance is hereby declared, pursuant to Section 7.15 of the Charter, to be exempt from referendum.

Section 20. Effective Date, Recording, Authentication, and Publication. In accordance with Section 7.6 of the Charter, this Ordinance shall be in full force and effect immediately upon adoption by the affirmative votes of at least five members of the Council. A true copy of this Ordinance shall be numbered and recorded in the official records of the City, shall be authenticated by the signatures of the Mayor and the City Clerk, and shall be published and posted as required by the Charter and the adoption, posting, and publication shall be authenticated by the signature of the Mayor and the City Clerk, and by the Certificate of Publication.

INTRODUCED, PASSED, AND ADOPTED AS AN EMERGENCY ORDINANCE AT A REGULAR MEETING OF THE CITY COUNCIL OF THE CITY OF EVANS ON THIS 5TH DAY OF OCTOBER 2020.

ATTEST: CITY OF EVANS, COLORADO

_____ BY: _____

Julie Kamka, City Clerk Brian Rudy, Mayor

WATER POLLUTION CONTROL REVOLVING FUND

LOAN AGREEMENT

BETWEEN

COLORADO WATER RESOURCES AND

POWER DEVELOPMENT AUTHORITY

AND

CITY OF EVANS, COLORADO, ACTING BY AND THROUGH ITS STORM DRAINAGE ENTERPRISE

DATED AS OF NOVEMBER 1, 2020

THIS LOAN AGREEMENT, made and entered into as of November 1, 2020, by and between **COLORADO WATER RESOURCES AND POWER DEVELOPMENT AUTHORITY** (the "Authority"), a body corporate and political subdivision of the State of Colorado, and **CITY OF EVANS, COLORADO, ACTING BY AND THROUGH ITS STORM DRAINAGE ENTERPRISE** (the "Governmental Agency");

WITNESSETH THAT:

WHEREAS, the United States of America, pursuant to the federal Water Quality Act of 1987 (the "Water Quality Act"), as amended, requires each state, as a condition to the receipt of certain funds, to establish water pollution control revolving fund to be administered by an instrumentality of the state before the state may receive capitalization grants to finance the costs of infrastructure needed to achieve or maintain compliance with federal water pollution control requirements for such projects;

WHEREAS, the Authority was created to initiate, acquire, construct, maintain, repair and operate or cause to be operated water management projects which include wastewater treatment facilities and to issue its bonds to pay the cost of such projects;

WHEREAS, Section 37-95-107.6 of the Colorado Revised Statutes has created a water pollution control revolving fund to be administered by the Authority which will enable the State of Colorado to comply with the provisions of the Water Quality Act, as amended;

WHEREAS, the Authority has determined to issue its bonds and to loan the proceeds of such bonds to public entities in Colorado to finance the costs of wastewater treatment facilities, and to use moneys on deposit in the Water Pollution Control Revolving Fund to assist such public entities in connection with the financing of such facilities;

WHEREAS, the Authority, in accordance with the Act and the Bond Resolution (as such terms are hereinafter defined), will issue its bonds for the purpose of making loans from the proceeds thereof to public entities, including the Governmental Agency, to finance all or any portion of the cost of wastewater treatment facilities;

WHEREAS, the Governmental Agency has made timely application to the Authority for a loan to finance all or any portion of the cost of storm water drainage facilities;

WHEREAS, the General Assembly of the State of Colorado has approved a project eligibility list which includes the storm water drainage facilities proposed to be financed hereunder;

WHEREAS, the Authority has approved the Governmental Agency's application for a loan from available proceeds of the bonds of the Authority in an amount not to exceed the amount of the loan commitment set forth in paragraph (3) of Exhibit B hereto to finance all or any portion of the cost of the storm water drainage facilities of the Governmental Agency;

WHEREAS, the Governmental Agency will issue its bond to the Authority to evidence said loan from the Authority;

NOW, THEREFORE, for and in consideration of the award of the loan by the Authority and of the mutual covenants herein, the Authority and the Governmental Agency each agree to perform their respective obligations under this Loan Agreement in accordance with the conditions, covenants and procedures set forth herein and attached hereto as a part hereof, as follows:

ARTICLE I.

DEFINITIONS

SECTION 1.01 Definitions. The following terms as used in this Loan Agreement shall, unless the context clearly requires otherwise, have the following meanings:

"Act" means the "Colorado Water Resources and Power Development Authority Act," being Section 37-95-101 et. seq. of the Colorado Revised Statutes, as the same may from time to time be amended and supplemented.

"Administrative Fee" means the fee payable pursuant to subsection (b) of Section 3.03 hereof which is calculated on the basis of an annual fee of eight tenths of one percent (0.8%) of the initial principal amount of the Loan, or such lesser amount, if any, as the Authority may approve from time to time.

"Allocable Investment Income" means the interest earnings or accrual thereof on the Project Loan Subaccount which are to be credited to the Loan Repayments in accordance with subsection (c) of Section 3.03.

"Allocable Percentage" means the percentage allocated to the Governmental Agency under the definition of "Allocable Share" contained in Section 1.01 of the Bond Resolution.

"Annual Information" means the information specified in Section 2.03 in this Loan Agreement.

"Authority" means the Colorado Water Resources and Power Development Authority, a body corporate and political subdivision of the State of Colorado with corporate succession duly created and validly existing under and by virtue of the Act.

"Authority Bonds" means bonds authorized by the Bond Resolution, together with any refunding bonds authenticated and delivered pursuant to the Bond Resolution, in each case in order to provide the source of funding of the Loan, including the particular Project Loan Subaccount from which the amounts loaned to the Governmental Agency pursuant to this Loan Agreement are taken.

"Authorized Officer" means, in the case of the Governmental Agency, the person whose name is set forth in Exhibit B hereto or such other person or persons authorized pursuant to a resolution or ordinance of the governing body of the Governmental Agency to act as an Authorized Officer of the Governmental Agency to perform any act or execute any document relating to the Loan, the Governmental Agency Bond or this Loan Agreement whose name is furnished in writing to the Authority.

"Bond Resolution" means the State Revolving Fund 2020 Series B Revenue Bond Resolution, as adopted by the Authority on October 2, 2020, authorizing the issuance of the Authority Bonds, and all further amendments and supplements thereto adopted in accordance with the provisions thereof.

"Code" means the "Internal Revenue Code of 1986," as the same may from time to time be amended and supplemented, including any regulations promulgated thereunder and any administrative or judicial interpretations thereof.

"Cost" means those costs that are eligible to be funded from draws under the Federal Capitalization Agreement and are reasonable, necessary and allocable to the Project and are permitted by GAAP to be costs of the Project. Cost shall also include Costs of Issuance (as defined in the Bond Resolution).

"Event of Default" means any occurrence or event specified in Section 5.01 hereof.

"Federal Capitalization Agreement" means the instrument or agreement established or entered into by the United States of America Environmental Protection Agency with the Authority to make capitalization grant payments pursuant to the federal Water Pollution Control Act, as amended (33 U.S.C. § 1251 et. seq.)

"Fiscal Year" means the fiscal year of the Governmental Agency.

"GAAP" means generally accepted accounting principles as in effect from time to time in the United States.

"Governmental Agency" means the public entity that is a party to and is described in the first paragraph of this Loan Agreement, and its successors and assigns.

"Governmental Agency Bond" means the bond executed and delivered by the Governmental Agency to the Authority to evidence the Loan, dated the date of the Loan Closing, the form of which is attached hereto as Exhibit D and made a part hereof.

"Governmental Agencies" means the Governmental Agency and any other governmental agencies permitted by the Act that have entered into Loan Agreements with the Authority pursuant to which the Authority will make Loans to such Governmental Agencies from moneys on deposit in the Project Account financed with the proceeds of the Authority Bonds.

"Holder" means any holder of Authority Bonds as defined under the Bond Resolution and, for the purposes of Section 2.03 of this Loan Agreement, shall also mean any beneficial owner of Authority Bonds within the meaning of Rule 13-d under the Securities Exchange Act of 1934, as amended.

"Loan" means the loan made by the Authority to the Governmental Agency to finance or refinance all or any portion of the Cost of the Project pursuant to this Loan Agreement. For all purposes of this Loan Agreement, the principal amount of the Loan at any time shall be equal to the amount of the loan commitment set forth in paragraph (3) of Exhibit B attached hereto and made a part of this Loan Agreement (which loan commitment amount equals the sum of (i) the amount actually

deposited in the Project Loan Subaccount from the proceeds of the Authority Bonds, moneys of the Authority and moneys drawn by the Authority pursuant to the Federal Capitalization Agreement, (ii) the Governmental Agency's Allocable Percentage of the Costs of Issuance, original issue discount and underwriter's discount for all Authority Bonds issued in connection with the making of the Loan and the deposit to the 2020 Series B Matching Account, and (iii) capitalized interest during the Project construction period to be paid with the proceeds of Authority Bonds), less any portion of such principal amount as has been repaid by the Governmental Agency under this Loan Agreement.

"Loan Agreement" means this Loan Agreement, including the Exhibits attached hereto, as it may be supplemented, modified or amended from time to time in accordance with the terms hereof and of the Bond Resolution.

"Loan Agreements" means this Loan Agreement and any other loan agreements entered into between the Authority and one or more of the Governmental Agencies pursuant to which the Authority will make Loans to such Governmental Agencies from moneys on deposit in the Project Account financed with the proceeds of certain of the Authority Bonds and funds of the Authority.

"Loan Closing" means the date upon which the Authority shall issue and deliver the initial Authority Bonds.

"Loan Repayments" means the payments payable by the Governmental Agency pursuant to Section 3.03 of this Loan Agreement, including payments payable under the Governmental Agency Bond.

"Loan Servicer" means the Loan Servicer for the Loans, duly appointed and designated as such pursuant to the Loan Servicing Agreement, dated as of the dated date of the Authority Bonds, between the Authority and the Loan Servicer, and its successors as Loan Servicer under the Loan Servicing Agreement.

"Loans" means the Loan and loans made by the Authority to other Governmental Agencies under the Loan Agreements.

"Loan Term" means the defined term set forth in paragraph (4) of Exhibit B attached hereto and made a part hereof.

"MSRB" means the Municipal Securities Rulemaking Board established in accordance with the provisions of Section 15B(b)(1) of the Securities Exchange Act of 1934.

"Net Revenue" means the defined term of this Loan Agreement set forth in paragraph (3) of Exhibit A attached hereto and made a part hereof.

"Pledged Property" means the defined term set forth in paragraph (3) of Exhibit A attached hereto and made a part hereof.

"Prime Rate" means the prevailing commercial interest rate announced by the Trustee from time to time as its prime lending rate.

"Project" means the storm drainage system project of the Governmental Agency described in paragraph (1) of Exhibit A attached hereto and made a part hereof, all or any portion of the Cost of which is financed or refinanced by the Authority through the making of the Loan under this Loan Agreement.

"Project Account" means the 2020 Series B Project Account created under the Bond Resolution.

"Project Loan Subaccount" means the 2020 Series B Project Loan Subaccount established on behalf of the Governmental Agency in the Project Account in accordance with the Bond Resolution.

"Revenue" means the defined term of this Loan Agreement set forth in paragraph (3) of Exhibit A attached hereto and made a part hereof.

"Rule 15c2-12" means Rule 15c2-12 under the Securities Exchange Act of 1934, as amended through the date of adoption of the Bond Resolution, together with all interpretive guidances or other official interpretations and explanations thereof that are promulgated by the SEC.

"SEC" means the United States Securities and Exchange Commission.

"2020 Series B Matching Account" means the 2020 Series B Matching Account created under the Bond Resolution.

"System" means the storm drainage system of the Governmental Agency, including the Project, described in paragraph (2) of Exhibit A attached hereto and made a part hereof for which the Governmental Agency is making the borrowing under this Loan Agreement, as such System may be modified or expanded from time to time.

"Trustee" means the Trustee appointed by the Authority pursuant to the Bond Resolution and its successor or successors and any other corporation which may at any time be substituted in its place as Trustee pursuant to the Bond Resolution.

Terms not otherwise defined in this Section 1.01 or in Exhibits A and B hereto shall have the meanings ascribed to them in the Bond Resolution.

Except where the context otherwise requires, words importing the singular number shall include the plural number and vice versa, and words importing persons shall include firms, associations, corporations, agencies and districts. Words importing one gender shall include the other gender.

ARTICLE II.

REPRESENTATIONS AND COVENANTS OF GOVERNMENTAL AGENCY

SECTION 2.01 Representations of Governmental Agency. The Governmental Agency represents for the benefit of the Authority and the holders of the Authority Bonds as follows:

(a) Organization and Authority.

(i) The Governmental Agency is a governmental agency as defined in the Act and as described in the first paragraph of this Loan Agreement.

(ii) The System is comprised of certain properties and facilities for the collection, treatment, transmission, and disposition of sewage or storm, flood, or surface drainage waters, which facilities are combined, operated, and maintained as a single public utility and income-producing project.

(iii) The portion of the System comprised of certain properties and facilities for the treatment, transmission, distribution, storage, and provision of water has at least fifteen service connections or regularly serves at least twenty-five individuals.

(iv) The Governmental Agency has full legal right and authority and all necessary licenses and permits required as of the date hereof to own, operate and maintain the System, to carry on its activities relating thereto, to execute and deliver this Loan Agreement, to execute, issue and deliver the Governmental Agency Bond, to undertake the Project (other than licenses, permits, and approvals relating to the construction and acquisition of the Project which the Governmental Agency expects to receive in the ordinary course of business), and to carry out and consummate all transactions contemplated by this Loan Agreement. The Project is on the water pollution project eligibility list approved by the General Assembly of the State of Colorado pursuant to the Act and is a project which the Governmental Agency may undertake pursuant to Colorado law and for which the Governmental Agency is authorized by law to borrow money.

(v) The proceedings of the Governmental Agency's governing body and voters, if a referendum is necessary, approving this Loan Agreement and the Governmental Agency Bond and authorizing their execution, issuance and delivery on behalf of the Governmental Agency, and authorizing the Governmental Agency to undertake the Project have been duly and lawfully adopted in accordance with the laws of Colorado and such proceedings were duly approved and published, if necessary, in accordance with applicable Colorado law, at a meeting or meetings which were duly called pursuant to necessary public notice and held in accordance with applicable Colorado law, and at which quorums were present and acting throughout.

(vi) This Loan Agreement and the Governmental Agency Bond, when delivered at the Loan Closing, will have been, duly authorized, executed and delivered by an Authorized Officer of the Governmental Agency; and, assuming that the Authority has all the requisite power and authority to authorize, execute and deliver, and has duly authorized, executed and delivered, this Loan Agreement, this Loan Agreement constitutes, and the Governmental Agency Bond when delivered to the Authority will constitute, the legal,

valid and binding obligations of the Governmental Agency in accordance with their respective terms, and the information contained under "Description of the Loan" on Exhibit B attached hereto and made a part hereof is true and accurate in all material respects.

(b) Full Disclosure.

There is no fact that the Governmental Agency has not disclosed to the Authority in writing on the Governmental Agency's application for the Loan or otherwise that materially adversely affects the properties, activities or condition (financial or otherwise) of the Governmental Agency or the System, or the ability of the Governmental Agency to make all Loan Repayments and otherwise observe and perform its duties, covenants, obligations and agreements under this Loan Agreement and the Governmental Agency Bond.

(c) Pending Litigation.

There are no proceedings pending, or, to the knowledge of the Governmental Agency threatened, against or affecting the Governmental Agency, in any court or before any governmental authority or arbitration board or tribunal that, if adversely determined, would materially adversely affect the properties, activities or condition (financial or otherwise) of the Governmental Agency or the System, or the ability of the Governmental Agency to make all Loan Repayments and otherwise observe and perform its duties, covenants, obligations and agreements under this Loan Agreement and the Governmental Agency Bond, that have not been disclosed in writing to the Authority in the Governmental Agency's application for the Loan or otherwise to the Authority.

(d) Compliance with Existing Laws and Agreements.

The authorization, execution and delivery of this Loan Agreement and the Governmental Agency Bond by the Governmental Agency, the observation and performance by the Governmental Agency of its duties, covenants, obligations and agreements thereunder and the consummation of the transactions provided for in this Loan Agreement and the Governmental Agency Bond, the compliance by the Governmental Agency with the provisions of this Loan Agreement and the Governmental Agency Bond and the undertaking and completion of the Project will not result in any breach of any of the terms, conditions or provisions of, or constitute a default under, or result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Governmental Agency pursuant to any existing resolution, trust agreement, indenture, mortgage, deed of trust, loan agreement or other instrument (other than the lien and charge of (i) this Loan Agreement and the Governmental Agency Bond and (ii) any resolution or indenture which authorized outstanding debt obligations of the Governmental Agency that are at parity with, or superior to, the Governmental Agency Bond as to lien on, and source and security for, payment thereon from the Pledged Property) to which the Governmental Agency is a party or by which the Governmental Agency, the System or any of its property or assets may be bound, nor will such action result in any violation of the provisions of the charter or other document pursuant to which the Governmental Agency was established or

any laws, ordinances, resolutions, governmental rules, regulations or court orders to which the Governmental Agency, the System or its properties or operations is subject.

(e) No Defaults.

No event has occurred and no condition exists that, upon authorization, execution and delivery of this Loan Agreement and the Governmental Agency Bond or receipt of the amount of the Loan, would constitute an Event of Default hereunder. The Governmental Agency is not in violation of, and has not received notice of any claimed violation of, any term of any agreement or other instrument to which it is a party or by which it, the System or its property may be bound, which violation would materially adversely affect the properties, activities, prospects or condition (financial or otherwise) of the Governmental Agency or the System or the ability of the Governmental Agency to make all Loan Repayments or otherwise observe and perform its duties, covenants, obligations and agreements under this Loan Agreement and the Governmental Agency Bond.

(f) Governmental Consent.

The Governmental Agency has obtained all permits and approvals required to date by any governmental body or officer (and reasonably expects to receive all permits required in the future by any governmental body or officer) for the making, observance and performance by the Governmental Agency of its duties, covenants, obligations and agreements under this Loan Agreement and the Governmental Agency Bond or for the undertaking of the Project and the financing or refinancing thereof; and the Governmental Agency has complied with all applicable provisions of law requiring any notification, declaration, filing or registration with any governmental body or officer in connection with the making, observance and performance by the Governmental Agency of its duties, covenants, obligations and agreements under this Loan Agreement and the Governmental Agency Bond or with the undertaking or completion of the Project and the financing or refinancing thereof. Other than those relating to the construction and acquisition of the Project, which the Governmental Agency expects to receive in the ordinary course of business, no consent, approval or authorization of, or filing, registration or qualification with, any governmental body or officer that has not been obtained (or that is not reasonably expected to be obtained) is required on the part of the Governmental Agency as a condition to the authorization, execution and delivery of this Loan Agreement and the Governmental Agency Bond, the undertaking or completion of the Project or the consummation of any transaction herein contemplated.

(g) Compliance with Law.

The Governmental Agency (i) is in compliance with all laws, ordinances, resolutions, governmental rules and regulations to which it is subject, the failure to comply with which would materially adversely affect the ability of the Governmental Agency to conduct its activities or undertake or complete the Project or the condition (financial or otherwise) of the Governmental Agency or the System; and (ii) has obtained all licenses, permits, franchises or other governmental authorizations presently necessary for the ownership of its property or for the conduct of its activities which, if not obtained, would materially

adversely affect the ability of the Governmental Agency to conduct its activities or undertake the Project or the condition (financial or otherwise) of the Governmental Agency or the System (other than licenses, permits, franchises or other governmental authorizations relating to the construction and acquisition of the Project which the Governmental Agency expects to receive in the ordinary course of business).

(h) Use of Proceeds.

The Governmental Agency will apply the proceeds of the Loan from the Authority (i) to finance or refinance all or any portion of the Cost of the Project; and (ii) where applicable, to reimburse the Governmental Agency for all or any portion of the Cost of the Project, which portion was paid or incurred in anticipation of reimbursement by the Authority.

SECTION 2.02 Particular Covenants of the Governmental Agency.

(a) Repayment Pledge.

The Governmental Agency irrevocably pledges and grants a lien on the Pledged Property for the punctual payment of the Loan Repayments.

(b) Performance Under Loan Agreement.

The Governmental Agency covenants and agrees (i) to maintain the System in good repair and operating condition; (ii) to cooperate with the Authority in the observance and performance of the respective duties, covenants, obligations and agreements of such Governmental Agency and the Authority under this Loan Agreement; and (iii) to comply with the covenants described in the Exhibits to this Loan Agreement.

(c) Completion of Project and Provision of Moneys Therefor.

The Governmental Agency covenants and agrees (i) to exercise its best efforts in accordance with prudent storm drainage utility practice to complete the Project and to so accomplish such completion on or before the estimated Project Completion Date set forth in Exhibit B hereto and made a part hereof; and (ii) to the extent legally available, to provide from the Revenue all moneys, in excess of the total amount of Loan proceeds it receives under the Loan, required to complete the Project.

(d) Disposition of the System.

Except for the disposal of any portion of the System which the Governmental Agency determines is no longer necessary for the operation of the System, during the Loan Term, the Governmental Agency shall not sell, lease, abandon or otherwise dispose of all or substantially all of the System, or any other component of the System which provides revenues to provide for the payment of this Loan Agreement or the Governmental Agency Bond except on ninety (90) days' prior written notice to the Authority and, in any event, shall not so sell, lease, abandon or otherwise dispose of the same unless the following conditions are met: (i) the Governmental Agency shall assign this Loan Agreement in accordance with Section 4.02 hereof and its rights and interests hereunder to the purchaser

or lessee of the System and such purchaser or lessee shall assume all duties, covenants, obligations and agreements of the Governmental Agency under this Loan Agreement; and (ii) the Authority shall by appropriate action determine, in its sole discretion, that such sale, lease, abandonment or other disposition will not adversely affect the Authority's ability to meet its duties, covenants, obligations and agreements under the Bond Resolution, and will not adversely affect the value of this Loan Agreement as security for the payment of Authority Bonds and interest thereon, adversely affect the eligibility of interest on Authority Bonds then outstanding for exclusion from gross income for purposes of Federal income taxation or adversely affect any agreement entered into by the Authority or the State with, or condition of any grant received by the Authority or the State from, the United States of America, which is related to the Federal Capitalization Agreement or any capitalization grant received by the Authority or the State under the federal Water Pollution Control Act, as amended (33 U.S.C. § 1251 et seq.)

(e) Exclusion of Interest from Federal Gross Income and Compliance with Code.

(i) The Governmental Agency covenants and agrees that it shall not take or permit any action or fail to take any action which action or omission would result in the loss of the exclusion of the interest on any Authority Bonds (assuming solely for this purpose that the proceeds of the Authority Bonds loaned to the Governmental Agency represent all of the proceeds of the Authority Bonds) from gross income for federal income tax purposes pursuant to Section 103(a) of the Code.

(ii) The Governmental Agency covenants and agrees that it shall not take or permit any action or fail to take any action, which action or omission would cause the Authority Bonds (assuming solely for this purpose that the proceeds of the Authority Bonds loaned to the Governmental Agency represent all of the proceeds of the Authority Bonds) to be "private activity bonds" within the meaning of section 141(a) of the Code. Accordingly, unless the Governmental Agency receives the prior written approval of the Authority, and subject to the conditions of Section 2.02(d)(ii), the Governmental Agency shall neither (A) permit in excess of 10 percent of either (1) the proceeds (as such term is used in Section 141 of the Code) of the Authority Bonds loaned to the Governmental Agency or (2) the Project financed (or refinanced) with the proceeds of the Authority Bonds loaned to the Governmental Agency, to be used directly or indirectly in any manner that would constitute "private business use" within the meaning of Section 141(b)(6) of the Code, nor (B) use directly or indirectly any of the proceeds of the Authority Bonds loaned to the Governmental Agency to make or finance loans to persons other than governmental units (as such term is used in section 141(c) of the Code); provided further, that more than one half of the private business use permitted by clause (A) shall be neither (1) disproportionate related business use, nor (2) private business use not related to the government use of such proceeds of the Authority Bonds, as those terms are used in Section 141(b)(3) of the Code.

(iii) The Governmental Agency covenants and agrees that it shall not directly or indirectly use or permit the use of any proceeds of the Authority Bonds (or amounts treated as replaced with such proceeds) or any other funds, or take or permit any action or fail to take any action, which use, action or omission would cause the Authority Bonds (assuming solely for this purpose that the proceeds of the Authority Bonds in the hands of the Governmental Agency represent all of the proceeds of the Authority Bonds) to be "arbitrage bonds" within the meaning of Section 148(a) of the Code.

(iv) The Governmental Agency covenants and agrees that it shall not use or permit the use of any portion of the proceeds of the Authority Bonds to retire any other obligations of the Governmental Agency or any other entity, unless the Governmental Agency obtains the written consent of the Authority, which consent may be given or withheld in the Authority's sole discretion.

(v) The Governmental Agency covenants and agrees to maintain records of its investments, if any, of proceeds of the Authority Bonds loaned to the Governmental Agency which are held by the Governmental Agency and earnings thereon, and will maintain records of expenditures of such proceeds. The Governmental Agency will pay to the Authority any earnings on proceeds of the Authority Bonds loaned to the Governmental Agency which are held by the Governmental Agency (including earnings on such earnings) which, in the opinion of the Authority, are required to be rebated to the United States Treasury Department. The Governmental Agency will provide copies of all records of its investment of such proceeds and of its expenditures to the Authority on a periodic basis upon request by the Authority and will furnish to the Authority, in writing, information regarding any facilities financed or refinanced therewith.

(vi) Notwithstanding anything herein to the contrary, as long as is necessary to maintain the exclusion of interest on the Authority Bonds from gross income for Federal income tax purposes, the covenants contained in this subsection (e) shall survive the payment of the Authority Bonds and the interest thereon, including any payment pursuant to Section 12.01 of the Bond Resolution or prepayment pursuant to Section 3.08 of this Loan Agreement, respectively.

(vii) The Governmental Agency shall not, pursuant to any arrangement formal or informal, purchase Authority Bonds in an amount related to the amount of the Loan.

(viii) The Governmental Agency hereby certifies and represents that it has complied with the requirements of Treasury Regulation Section 1.150-2 in its authorizing resolution or other official action with regard to proceeds of the Authority Bonds, if any, to be used to reimburse the Governmental Agency for expenses incurred by the Governmental Agency prior to the

issuance of the Authority Bonds. In the event that any of the proceeds of the Authority Bonds are to be used to pay debt service on any prior issue of the Governmental Agency, and any of the proceeds of such prior issue (or any obligations refinanced by such prior issue) were used to reimburse the Governmental Agency for expenditures incurred prior to the issuance of the prior issue (or refinanced obligations, as the case may be), the Governmental Agency hereby certifies and represents that the allocation of such proceeds to the reimbursed expenditure was a valid expenditure under the applicable law on reimbursement expenditures on the date of issue of the prior issue (or the refinanced obligations), as required by Federal Income Tax Regulation Section 1.150-2(g)(2).

(ix) By executing this Loan Agreement, the Governmental Agency hereby certifies, represents and agrees that:

(1) The proceeds of the Authority Bonds to be loaned to the Governmental Agency pursuant to this Loan Agreement do not, taking into account available earnings thereon, exceed the amount necessary to pay for the Cost of the Project.

(2) The Governmental Agency has entered into (or will enter into within six months from the date hereof) a binding commitment for the acquisition, construction or accomplishment of the Project, and will, within six months from the date of the Loan Closing, expend at least five percent of the proceeds of the Authority Bonds loaned to the Governmental Agency.

(3) The Governmental Agency reasonably expects that 85% of the proceeds of the Loan will be expended within three years from the date of delivery of the initial series of Authority Bonds. Work on the acquisition, construction or accomplishment of the Project will proceed with due diligence to completion.

(4) The total proceeds of the sale of all obligations issued to date for the Project do not exceed the total Cost of the Project, taking into account available earnings thereon.

(5) The Governmental Agency does not expect that the Project will be sold, leased or otherwise disposed of in whole or in part during the term of the Loan or of the Authority Bonds or for any portion of the term of the Loan or of the Authority Bonds. The Governmental Agency shall not sell, lease or otherwise dispose of the Project in whole or in part during the term of the Loan or of the Authority Bonds or for any portion of the term of the Loan or of the Authority Bonds unless the conditions of Section 2.02(d)(ii) have been satisfied.

(6) Any fund established, utilized or held by or on behalf of the Governmental Agency to pay debt service on the Loan will be used to achieve a proper matching of revenues and debt service and will be depleted at least annually except for a reasonable carryover amount not to exceed earnings on the fund for the immediately preceding year or 1/12 of the annual debt service on the Loan for the immediately preceding year.

(7) No portion of the amounts received from the Loan will be used as a substitute for other funds which were otherwise to be used as a source of financing for the Project and which have been or will be used to acquire, directly or indirectly, obligations producing a yield in excess of the yield on the Authority Bonds. The Governmental Agency does not expect to receive any amounts in the future that are intended to finance the portion of the Project being financed with proceeds of the Loan. No portion of the amounts received from the Loan will be used to finance working capital expenditures. The Loan has a weighted average maturity that does not exceed 120 percent of the average reasonably expected economic life of the capital projects financed or refinanced by the Loan.

(8) No portion of the proceeds of the Loan which are held by the Governmental Agency will be invested, directly or indirectly, in federally-insured deposits or accounts, or federally-guaranteed investments, other than amounts of unexpended Loan proceeds invested in the debt service fund, in any reasonably required reserve or replacement fund, or investments of unexpended Loan proceeds for any remaining initial temporary period (e.g., no later than three years after the date of the Loan Closing) until the proceeds are needed for the Project.

(9) No other obligations of the Governmental Agency (1) are reasonably expected to be paid out of substantially the same source of funds (or will have substantially the same claim to be paid out of substantially the same source of funds) as will be used to pay the Loan; and (2) are being sold at substantially the same time as the Loan (i.e., less than 15 days apart); and (3) were sold pursuant to the same plan of financing with the Loan.

(10) The Governmental Agency has neither received notice that its certifications as to expectations may not be relied upon with respect to its obligations nor has it been advised that any adverse action by the Commissioner of the Internal Revenue Service is contemplated.

(11) To the best of the knowledge and belief of the undersigned officer of the Governmental Agency, the facts and estimates set forth in this subsection of the Loan Agreement on which the Governmental

Agency's expectations as to the application of the proceeds of the Authority Bonds loaned to the Governmental Agency are based, are reasonable.

(12) None of the proceeds of the Authority Bonds loaned to the Governmental Agency which are held by the Governmental Agency will be invested in investments having a substantially guaranteed yield of four years or more.

(f) Operation and Maintenance of the System.

The Governmental Agency covenants and agrees that it shall, in accordance with prudent storm drainage utility practice, (i) at all times operate the properties of the System and any business in connection therewith in an efficient manner, (ii) maintain the System in good repair, working order and operating condition, (iii) from time to time make all necessary and proper repairs, renewals, replacements, additions, betterments and improvements with respect to the System so that at all times the business carried on in connection therewith shall be properly and advantageously conducted; provided, however, this covenant shall not be construed as requiring the Governmental Agency to expend any funds which are derived from sources other than the Revenue, and provided further that nothing herein shall be construed as preventing the Governmental Agency from doing so.

(g) Records; Accounts.

The Governmental Agency shall keep accurate records and accounts for the System (the "System Records"), separate and distinct from its other records and accounts (the "General Records"). Such System Records shall be maintained in accordance with GAAP and shall be audited annually by an independent accountant, which audit may be part of the annual audit of the General Records of the Governmental Agency. Such System Records and General Records shall be made available for inspection by the Authority at any reasonable time, and a copy of such annual audit(s) therefor, including all written comments and recommendations of such accountant, shall be furnished to the Authority within 210 days of the close of the fiscal year being so audited.

(h) Inspections; Information.

The Governmental Agency shall permit the Authority, and any party designated by the Authority, to examine, visit and inspect, at any and all reasonable times, the property, if any, constituting the Project, and to inspect and make copies of any accounts, books and records, including (without limitation) its records regarding receipts, disbursements, contracts, investments and any other matters relating thereto and to its financial standing, and shall supply such reports and information as the Authority may reasonably require in connection therewith.

(i) Insurance.

During the Loan Term, the Governmental Agency shall maintain or cause to be maintained, in force, insurance policies with responsible insurers or self-insurance programs providing

against risk of direct physical loss, damage or destruction of the System, at least to the extent that similar insurance is usually carried by utilities constructing, operating and maintaining utility system facilities of the nature of the System, including liability coverage, all to the extent available at reasonable cost. Nothing herein shall be deemed to preclude the Governmental Agency from asserting against any party, other than the Authority, a defense which may be available to the Governmental Agency, including, without limitation, a defense of sovereign immunity.

(j) Cost of Project.

The Governmental Agency certifies that the Cost of the Project, as listed in paragraph (2) of Exhibit B hereto and made a part hereof, is a reasonable and accurate estimation and upon direction of the Authority will supply the same with a certificate from its engineer stating that such Cost is a reasonable and accurate estimation, taking into account investment income to be realized during the course of the Project and other money that would, absent the Loan, have been used to pay the Cost of the Project.

(k) Notice of Material Adverse Change.

During the Loan Term, the Governmental Agency shall promptly notify the Authority of any material adverse change in the activities or condition (financial or otherwise) of the Governmental Agency relating to the System, or in the ability of the Governmental Agency to make all Loan Repayments and otherwise observe and perform its duties, covenants, obligations and agreements under this Loan Agreement and the Governmental Agency Bond from the Revenue. The Governmental Agency shall provide such financial information relating to the Governmental Agency as the Authority may require in connection with the issuance of Authority Bonds pursuant to the Bond Resolution.

(l) Reimbursement for Ineligible Costs.

The Governmental Agency shall promptly reimburse the Authority, solely from the Net Revenue, for the portion of the Loan which is determined to be a Cost of the Project which is not eligible for funding from draws under the Federal Capitalization Agreement. Such reimbursement shall be promptly repaid to the Authority upon written request of the Authority with interest on the amount to be reimbursed at the rate borne by the Authority Bonds from the date of the Loan. Any such reimbursement shall be applied by the Authority to reduce the Loan Repayments due pursuant to Section 3.03(a). Eligible costs are costs associated with the approved scope of work, the plans and specifications and any change of orders.

(m) Construction.

The Governmental Agency agrees to construct the Project pursuant to plans and specifications for the Project that have been approved by the State Department of Public Health and Environment, and shall not begin construction until such approval has been provided.

(n) Plan of Operation.

The Governmental Agency shall submit to the State Department of Public Health and Environment, with the construction plans and specifications, a preliminary plan of operation, which shall provide a concise, sequential description of an implementation schedule for those activities necessary to assure efficient and reliable start-up and continual operation of the Project. The Governmental Agency agrees to implement the approved plan of operation.

The Governmental Agency shall also submit a draft operation and maintenance manual prior to 50 percent of the Project being constructed. The final manual must be submitted prior to 90 percent of the Project being constructed.

In addition, one year after commencement of operation, the Governmental Agency shall submit to the State, certification of achievement of the applicable Project performance certification standards.

(o) Commencement of Construction.

Within twelve (12) months after the Loan Closing, the Governmental Agency shall initiate construction of the Project.

(p) Interest in Project Site.

As a condition of the Loan, and prior to beginning construction of the Project, the Governmental Agency will demonstrate to the satisfaction of the Authority that the Governmental Agency has or will have a fee simple or such other estate or interest in the site of the Project, including necessary easements and rights-of-way, as the Authority finds sufficient to assure undisturbed use and possession for the purpose of construction and operation of the Project for the estimated life of the Project.

(q) Archeological Artifacts.

In the event that archeological artifacts or historical sources are unearthed during construction excavation of the Project, the Governmental Agency shall stop or cause to be stopped, construction activities and will notify the State Historic Conservation Office and the Authority of such unearthing.

(r) No Lobbying.

No portion of the Loan may be used for lobbying or propaganda as prohibited by 18 U.S.C. § 1913 or Section 607(a) of Public Law 96-74.

(s) Federal Requirements Act.

The Governmental Agency covenants to meet the requirements or otherwise be treated under 204(d)(2) of the federal Water Pollution Act, as amended.

(t) Continuing Representations.

The representations of the Governmental Agency contained herein shall be true at the time of the execution of this Loan Agreement and at all times during the term of this Loan Agreement.

(u) Tax Compliance Questionnaire.

The Governmental Agency agrees to furnish to the Authority, no later than June 30 of each year, an executed copy of the Tax Compliance Questionnaire set forth in Exhibit G to this Loan Agreement.

(v) Additional Covenants and Requirements.

If necessary, in connection with the Authority's issuance of the Authority Bonds or the making of the Loan, additional covenants and requirements will be included on Exhibit F hereto and made a part hereof. The Governmental Agency agrees to observe and comply with each such additional covenant and requirement, if any, included on Exhibit F on the date of the Loan Closing.

SECTION 2.03 Obligation to Provide Continuing Disclosure.

(a) If the Governmental Agency is advised in writing by the Authority that the Governmental Agency is required to comply with the provisions of this Section 2.03, the Governmental Agency shall undertake, for the benefit of Holders of the Authority Bonds, to provide or cause to be provided through the Authority:

(i) to the MSRB no later than 210 days after the end of each Fiscal Year, commencing with the end of the first Fiscal Year following receipt of such advice from the Authority, the Annual Information relating to such Fiscal Year;

(ii) if not submitted as part of or with the Annual Information, to the MSRB audited financial statements of the Governmental Agency for such Fiscal Year when and if they become available; provided that if the Governmental Agency's audited financial statements are not available by the date set forth in (i) above, the Annual Information shall contain unaudited financial statements in a format similar to the Governmental Agency's audited financial statements prepared for its most recent Fiscal Year, and the audited financial statements shall be filed in the same manner as the Annual Information when and if they become available; and

(iii) to the MSRB, in a timely manner, notice of a failure to provide any Annual Information required by subsections (d), (e) and (f) of this Section 2.03.

(b) The obligations of the Governmental Agency pursuant to subsection (a) of this Section 2.03 may be terminated as to such Governmental Agency pursuant to subsection (k)

of this Section 2.03. Upon any such termination, the Governmental Agency shall provide notice of such termination to the MSRB.

(c) Nothing herein shall be deemed to prevent the Governmental Agency from disseminating or require the Governmental Agency to disseminate any other information in addition to that required hereby in the manner set forth herein or in any other manner. If the Governmental Agency disseminates any such additional information, the Governmental Agency shall have no obligation to update such information or include it in any future materials disseminated hereunder.

(d) The required Annual Information shall consist of the Governmental Agency's audited financial statements for the most recent Fiscal Year as provided in subsection (a)(2) of this Section 2.03, and such other information that the Authority may require in and to provide compliance with Rule 15(c)2-12.

(e) All or any portion of the Annual Information may be incorporated in the Annual Information by cross reference to any other documents which have been filed with the MSRB or the SEC.

(f) Annual Information for any Fiscal Year containing any modified operating data or financial information (as contemplated by subsection (j)(v) of this Section 2.03) for such Fiscal Year shall explain, in narrative form, the reasons for such modification and the effect of such modification on the Annual Information being provided for such Fiscal Year. If a change in accounting principles is included in any such modification, such Annual Information shall present a comparison between the financial statements or information prepared on the basis of the modified accounting principles and those prepared on the basis of the former accounting principles.

(g) The Governmental Agency's annual financial statements for each Fiscal Year shall be prepared in accordance with GAAP as in effect from time to time. Such financial statements shall be audited by an independent accounting firm.

(h) If the Governmental Agency shall fail to comply with any provision of this Section 2.03, then the Authority or any Holder of the Authority's Bonds may enforce, for the equal benefit and protection of all Holders similarly situated, by mandamus or other suit or proceeding at law or in equity, this Section 2.03 against the Governmental Agency and any of the officers, agents and employees of the Governmental Agency, and may compel the Governmental Agency or any such officers, agents or employees to perform and carry out their duties under this Section 2.03; provided that the sole and exclusive remedy for breach of this Section 2.03 shall be an action to compel specific performance of the obligations of the Governmental Agency hereunder and no person or entity shall be entitled to recover monetary damages hereunder under any circumstances, and, provided further, that any challenge to the adequacy of any information provided pursuant to subsection (a) of this Section 2.03 shall be brought only by the Authority or the Holders of 25% in aggregate principal amount of the Authority's Bonds at the time outstanding which are affected thereby. The failure of the Governmental Agency to comply with the provisions of this Section 2.03 shall not be deemed an Event of Default hereunder and the only remedies

available to the Holders or the Authority for such failure to comply are the remedies contained in this subsection (h).

(i) The provisions of this Section 2.03 are executed and delivered solely for the benefit of the Holders. No other person (other than the Authority) shall have any right to enforce the provisions of this Section 2.03 or any other rights under this Section 2.03.

(j) Without the consent of any Holders of Authority Bonds, the Authority and the Governmental Agency at any time and from time to time may enter into any amendments or changes to this Section 2.03 for any of the following purposes:

(i) to comply with or conform to Rule 15c2-12 or any amendments thereto (whether required or optional);

(ii) to add a dissemination agent for the information required to be provided hereby and to make any necessary or desirable provisions with respect thereto;

(iii) to evidence the succession of another person to the Governmental Agency and the assumption by any such successor of the covenants of the Governmental Agency under this Section 2.03;

(iv) to add to the covenants of the Governmental Agency for the benefit of the Holders, or to surrender any right or power conferred upon the Governmental Agency pursuant to this Section 2.03;

(v) to modify the contents, presentation and format of the Annual Information from time to time as a result of a change in circumstances that arises from a change in legal requirements, change in law, or change in the identity, nature or status of the Governmental Agency, or type of business conducted; provided that, (a) there is filed with the Trustee an opinion of counsel having expertise with respect to securities laws of the United States of America or expertise with respect to the issuance of indebtedness by states and political subdivisions thereof, that (i) this Section 2.03, as amended, would have complied with the requirements of Rule 15c2-12 at the time of the offering of the Authority Bonds, after taking into account any amendments or authoritative interpretations of the Rule 15c2-12, as well as any change in circumstances; and (ii) the amendment or change does not materially impair the interests of Holders, or (b) such change or amendment is approved by the vote or consent of Holders of a majority in outstanding principal amount of the Authority Bonds affected thereby at or prior to the time of such amendment or change.

(k) This Section 2.03 shall remain in full force and effect until the earlier of (i) the Authority provides notice to the MSRB that the Governmental Agency is no longer an "obligated person" within the meaning of Rule 15c2-12 or (ii) all principal, redemption premiums, if any, and interest on the Authority Bonds shall have been paid in full or the Authority Bonds shall have otherwise been paid in full or legally defeased pursuant to

Section 12.01 of the Bond Resolution. In the event of such payment or legal defeasance, the Authority shall promptly give written notice thereof to the Governmental Agency.

(l) Any notices to or filing with the MSRB shall be effected in an electronic format accompanied by identifying information prescribed by the MSRB.

ARTICLE III.

LOAN TO GOVERNMENTAL AGENCY; AMOUNTS PAYABLE; GENERAL AGREEMENTS

SECTION 3.01 The Loan. The Authority hereby agrees to loan and disburse to the Governmental Agency in accordance with Section 3.02 hereof, and the Governmental Agency agrees to borrow and accept from the Authority, the Loan in the principal amount equal to the loan commitment set forth in paragraph (3) of Exhibit B attached hereto and made a part hereof; provided, however, that (i) the Authority shall be under no obligation to make the Loan if the Governmental Agency does not deliver a Governmental Agency Bond to the Authority on the Loan Closing or an Event of Default has occurred and is continuing under the Bond Resolution or this Loan Agreement, and (ii) the proceeds of Authority Bonds shall be available for disbursement, as determined solely by the Authority, to finance the Cost of the Project. The Governmental Agency shall use the proceeds of the Loan strictly in accordance with Section 2.01(h) hereof, to finance the Cost of the Project.

SECTION 3.02 Disbursement of Loan Proceeds. Subject to the last paragraph of Exhibit F hereof, the Trustee, as the agent of the Authority, shall disburse the amounts on deposit in the Project Loan Subaccount to the Governmental Agency upon receipt of a requisition executed by an Authorized Officer thereof and approved by the Authority, and if deemed necessary by the Authority, approved by the Colorado Water Quality Control Division, in the form set forth in the Bond Resolution.

The Authority covenants to direct the Trustee to provide all periodic written reports (as required by the provisions of the Bond Resolution) of all moneys on deposit under the Bond Resolution and to furnish such reports to the Governmental Agency as soon as practicable after receipt by the Authority.

The Authority hereby agrees that in the event that moneys on deposit in the Project Loan Subaccount are lost due to the negligence or misconduct of the Trustee, the Authority on behalf of the Governmental Agency, shall, upon the written request of the Governmental Agency, pursue its remedies against the Trustee, including, but not limited to, equitable actions or actions for money damages.

If there are moneys on deposit in the Project Loan Subaccount upon completion of the Project, the Governmental Agency shall advise the Authority in writing that no further requisitions are to be submitted to the Authority for disbursement of moneys from the Project Loan Subaccount. Upon receipt of such written advice, the Authority shall file with the Trustee the Certificate required by Section 5.03 of the Bond Resolution and use such moneys to redeem, purchase or provide for the

payment of the Authority Bonds. The Authority shall credit ensuing Loan Repayments or portions thereof of the Governmental Agency chosen by the Authority as a result of the use of such moneys to purchase, redeem or pay Authority Bonds.

SECTION 3.03 Amounts Payable.

(a) The Governmental Agency shall repay by electronic means the principal of and interest on the Loan in accordance with the schedule set forth on Exhibit C attached hereto and made a part hereof, as the same may be amended or modified, pursuant to Section 6.04 hereof.

The Governmental Agency shall execute the Governmental Agency Bond to evidence the Loan and the obligations of the Governmental Agency under the Governmental Agency Bond shall be deemed to be amounts payable under this Section 3.03. Each portion of the Loan Repayment payable under this subsection (a), whether satisfied entirely through a direct payment by the Governmental Agency to the Loan Servicer or through a combination of a direct payment and the use of Allocable Investment Income as described in subsection (c) of this Section 3.03 to pay interest on the Authority Bonds (and to the extent moneys are available therefor, principal of the Authority Bonds), shall be deemed to be a credit against the corresponding obligation of the Governmental Agency under this subsection (a) and shall fulfill the Governmental Agency's obligation to pay such amount hereunder and under the Governmental Agency Bond. Each payment made to the Loan Servicer pursuant to this subsection shall be applied first to interest then due and payable on the Loan, then to the principal of the Loan.

(b) In addition to the amounts payable under subsection (a) of this Section 3.03, the Governmental Agency shall pay the Administrative Fee in the amounts and on the dates set forth in Exhibit C attached hereto and made a part hereof. Each payment made pursuant to this subsection (b) shall, for purposes of the Loan and the Governmental Agency Bond, be considered as interest on the principal amount thereof.

(c) The Governmental Agency shall receive as a credit against each of its semiannual interest payment obligations set forth on Exhibit C attached hereto and made a part hereof (and, as applicable under the Bond Resolution, its annual principal obligations to the extent moneys are available therefor), (i) the amount of capitalized interest available to be applied against such obligations, as footnoted on such Exhibit C, and (ii) the amount of Allocable Investment Income, if any, to be credited against such obligations, as set forth in each billing statement to be mailed by the Loan Servicer to the Governmental Agency approximately thirty (30) days prior to each Loan Repayment due date.

(d) In addition to the payments required by subsections (a) and (b) of this Section 3.03, the Governmental Agency shall pay a late charge for any payment that is received by the Loan Servicer later than the fifth (5th) day following its due date, in an amount equal to the greater of twelve percent (12%) per annum or the Prime Rate plus one half of one percent per annum on such late payment from its due date to when it is actually paid; provided, however, that the interest rate payable on the Loan including such late charge shall not be in excess of the maximum rate permitted by law as of the date hereof.

(e) The Governmental Agency acknowledges that payment of the Authority Bonds by the Authority, including payment from moneys drawn by the Trustee from the 2020 Series B Matching Account, other than from the investment income thereon, does not constitute payment of the amounts due under this Loan Agreement or the Governmental Agency Bond. If at any time the amounts on deposit in the 2020 Series B Matching Account shall be less than the requirement of such Account, as the result of any transfer of moneys from the 2020 Series B Matching Account to the Debt Service Fund as the result of failure by the Governmental Agency to make any Loan Repayments required hereunder, the Governmental Agency agrees to (i) replenish such moneys so transferred, and (ii) replenish any deficiency arising from losses incurred in making such transfer as the result of the liquidation by the Authority of investment securities acquired as an investment of moneys in the 2020 Series B Matching Account, by making payments to the Authority in equal monthly installments for the lesser of six (6) months or the remaining term of the Loan at an interest rate to be determined by the Authority necessary to make up any loss caused by such deficiency.

(f) Loan Repayments pursuant to this Section 3.03 shall be made by electronic means (either by bank wire transfer or by Automated Clearing House "ACH" transfer.)

SECTION 3.04 Unconditional Obligations. The obligation of the Governmental Agency to make the Loan Repayments and all other payments required hereunder and the obligation to perform and observe the other duties, covenants, obligations and agreements on its part contained herein is payable solely from the Net Revenue and shall be absolute and unconditional and shall not be abated, rebated, set-off, reduced, abrogated, terminated, waived, diminished, postponed or otherwise modified in any manner or to any extent whatsoever, while any payments under this Loan Agreement remain unpaid, regardless of any contingency, act of God, event or cause whatsoever, including (without limitation) any acts or circumstances that may constitute failure of consideration, eviction or constructive eviction, the taking by eminent domain or destruction of or damage to the Project or the System, commercial frustration of the purpose, any change in the laws of the United States of America or of the State of Colorado or any political subdivision of either or in the rules or regulations of any governmental authority, any failure of the Authority or the Trustee to perform and observe any agreement, whether express or implied, or any duty, liability or obligation arising out of or connected with the Project, this Loan Agreement or the Bond Resolution or any rights of set off, recoupment, abatement or counterclaim that the Governmental Agency might otherwise have against the Authority, the Trustee, the Loan Servicer or any other party or parties; provided, however, that payments hereunder shall not constitute a waiver of any such rights. The Governmental Agency shall not be obligated to make any payments required to be made by any other Governmental Agencies under separate Loan Agreements or the Bond Resolution.

SECTION 3.05 Loan Agreement to Survive Bond Resolution and Authority Bonds. The Governmental Agency acknowledges that its duties, covenants, obligations and agreements hereunder shall survive the discharge of the Bond Resolution and payment of the principal of, redemption premium, if any, and interest on the Authority Bonds. The Authority acknowledges that all duties, covenants, obligations and agreements of the Governmental Agency shall (except as and to the extent preserved in subsection (e)(vi) of Section 2.02 hereof) terminate upon the date of payment of all amounts payable to the Authority hereunder.

SECTION 3.06 Disclaimer of Warranties and Indemnification. The Governmental Agency acknowledges and agrees that (i) neither the Authority nor the Trustee makes any warranty or representation, either express or implied, as to the value, design, condition, merchantability or fitness for particular purpose or fitness for any use of the System or the Project or any portions thereof or any other warranty or representation with respect thereto; (ii) except as provided herein, in no event shall the Authority or the Trustee or their respective agents be liable or responsible for any direct, incidental, indirect, special or consequential damages in connection with or arising out of this Loan Agreement or the Project or the existence, furnishing, functioning or use of the System or the Project or any item or products or services provided for in this Loan Agreement; and (iii) to the extent authorized by law, the Governmental Agency shall indemnify, save and hold harmless the Authority against any and all claims, damages, liability and court awards including costs, expenses and attorney fees incurred as a result of any act or omission by the Governmental Agency, or its employees, agents or subcontractors pursuant to the terms of this Loan Agreement, provided however that the provisions of this clause (iii) are not intended to and shall not be construed as a waiver of any defense or limitation on damages provided for under and pursuant to the Colorado Governmental Immunity Act (Section 24-10-101, et seq., C.R.S.), or under the laws of the United States or other laws of the State of Colorado.

SECTION 3.07 Limited Recourse. No recourse shall be had for the payment of the principal of or interest on the Governmental Agency Bond or for any claim based thereon or upon any obligation, covenant or agreement contained in this Loan Agreement against any past, present or future officer, employee or agent of the Governmental Agency, or of any successor public corporation, as such, either directly or through the Governmental Agency or any successor public corporation, under any rule of law or equity, statute or constitution or by the enforcement of any assessment or penalty or otherwise, and all such liability of any such officers, employees or agents as such is hereby expressly waived and released as a condition of and consideration for the Governmental Agency's execution of this Loan Agreement and the issuance of the Governmental Agency Bond.

SECTION 3.08 Option to Prepay Loan Repayments. Subject in all instances to the prior written approval of the Authority and satisfaction of the requirements, if any, of the Bond Resolution relating to Loan prepayments, the Governmental Agency may prepay the principal portion of the Loan Repayments set forth in Exhibit C, in whole or in part (but if in part, in the amount of $100,000 or any integral multiple of $100,000), upon prior written notice not less than ninety (90) days in addition to the number of days advance notice to the Trustee required for any optional or special redemption of the Authority Bonds, to the Authority and the Trustee and upon payment by the Governmental Agency to the Trustee of the principal amount of the Loan Repayments to be prepaid, plus the interest to accrue on such amount to the date of the next succeeding optional redemption of the Authority Bonds allocable to such Loan Repayment to be prepaid; provided, however, that (i) if the Governmental Agency proposes to prepay in full the Loan Repayments set forth in Exhibit C, such prepayment shall be conditioned upon the simultaneous prepayment in full of all Administrative Fees due to and including the date of such redemption plus one year after the date of such redemption or (ii) if the Governmental Agency proposes to prepay any portion of the Loan Repayments set forth in Exhibit C, such prepayment shall be conditioned upon the simultaneous prepayment of such portion of the Administrative Fees due to and including the date of such redemption plus one year after the date of such redemption, as shall be determined by the Authority. In addition, if at the time of such prepayment, the

Authority Bonds may only be redeemed at the option of the Authority upon payment of a redemption premium, the Governmental Agency shall add to its prepayment an amount, as determined by the Authority, equal to such redemption premium allocable to such Authority Bonds to be redeemed as a result of the Governmental Agency's prepayment. Prepayments shall be applied first to accrued interest on the portion of the Loan to be prepaid and then to the payment of Administrative Fees and then to principal payments (including redemption premium, if any) on the Loan in inverse order of Loan Repayments.

The Governmental Agency, in the sole discretion of the Authority, and upon terms and conditions satisfactory to the Authority, may provide for the prepayment in full of the Loan Repayments by depositing with the Authority an amount which, when added to the investment income to be derived from such amount to be deposited with the Authority, shall provide for the full payment of all such Loan Repayments in the manner provided in this Section 3.08. Any amounts so deposited with the Authority shall be invested solely in direct obligations of the United States of America.

SECTION 3.09 Source of Payment of Governmental Agency's Obligations. The Authority and the Governmental Agency agree that the amounts payable by the Governmental Agency under this Loan Agreement, including, without limitation, the amounts payable by the Governmental Agency pursuant to Section 3.03, Section 3.06, Section 3.08 and Section 5.04 of this Loan Agreement are payable solely from the Net Revenue and are not payable from any other source whatsoever. Nothing herein shall be deemed to prevent the Governmental Agency from paying the amounts payable under this Loan Agreement from any other legally available source.

SECTION 3.10 Delivery of Documents. Concurrently with the execution and delivery of this Loan Agreement, the Governmental Agency will cause to be delivered to the Authority each of the following items:

(a) opinions of the Governmental Agency's counsel substantially in the form set forth in Exhibit E-1 and E-2 hereto (such opinion may be given by one or more counsel); provided, however, that the Authority may permit variances in such opinion from the form or substance of such Exhibit E if such variances are not to the material detriment of the interests of the holders of the Authority Bonds;

(b) executed counterparts of this Loan Agreement;

(c) copies of the ordinance of the governing body of the Governmental Agency authorizing the execution and delivery of this Loan Agreement and Governmental Agency Bond, certified by an Authorized Officer of the Governmental Agency; and

(d) such other certificates, documents, opinions and information as the Authority may require.

Concurrently with the delivery at the Loan Closing of this Loan Agreement, the Governmental Agency shall also deliver its Governmental Agency Bond to the Authority upon the receipt of a written certification of the Authority that the moneys to be deposited in the Project Loan Subaccount to fund the Loan shall be so deposited simultaneously with the delivery of the Governmental Agency Bond.

ARTICLE IV.

ASSIGNMENT

SECTION 4.01 Assignment and Transfer by Authority.

(a) The Governmental Agency expressly acknowledges that, other than Administrative Fees payable pursuant to subsection (b) of Section 3.03 and the right, title and interest of the Authority under Sections 3.06, 5.04 and 5.07, all right, title and interest of the Authority in, to and under this Loan Agreement and the Governmental Agency Bond has been assigned to the Trustee as security for the Authority Bonds, as applicable, as provided in the Bond Resolution, and that if any Event of Default shall occur, the Trustee, pursuant to the Bond Resolution, shall be entitled to act hereunder in the place and stead of the Authority. The Governmental Agency hereby acknowledges the requirements of the Bond Resolution applicable to the Authority Bonds and consents to such assignment and appointment.

The Authority shall retain the right to compel or otherwise enforce observance and performance by the Governmental Agency of its duties, covenants, obligations and agreements under subsection (b) of Section 3.03 to pay Administrative Fees and under Section 3.06 and Section 5.04.

(b) The Governmental Agency hereby approves and consents to any assignment or transfer of this Loan Agreement and the Governmental Agency Bond that the Authority deems to be necessary in connection with any refunding of the Authority Bonds or the issuance of additional bonds under the Bond Resolution or otherwise, in connection with the wastewater treatment pooled loan program of the Authority.

SECTION 4.02 Assignment by Governmental Agency. Neither this Loan Agreement nor the Governmental Agency Bond may be assigned by the Governmental Agency for any reason, unless the following conditions shall be satisfied: (i) the Authority and the Trustee shall have approved said assignment in writing; (ii) the assignee shall be a governmental unit within the meaning of Section 141(c) of the Code and the assignee shall have expressly assumed in writing the full and faithful observance and performance of the Governmental Agency's duties, covenants, agreements and obligations under the Loan Agreement; (iii) immediately after such assignment, the assignee shall not be in default in the performance or observance of any duties, covenants, obligations or agreements of the Governmental Agency under the Loan Agreement; (iv) the Authority shall have received an opinion of bond counsel to the effect that such assignment will not adversely affect the exclusion of interest on the Authority Bonds from gross income for purposes of federal income taxation under Section 103(a) of the Code; and (v) the Authority shall receive an opinion of counsel to the effect that such assignment will not violate the provisions of the Bond Resolution or any agreement entered into by the Authority with, or condition of any grant received by the Authority from, the United States of America relating to the Federal Capitalization Agreement or any capitalization grant received by the Authority or the State under the federal Water Pollution Control Act of 1996, as amended.

No assignment shall relieve the Governmental Agency from primary liability for any of its obligations under this Loan Agreement and in the event of such assignment, the Governmental

Agency shall continue to remain primarily liable for the performance and observance of its obligations to be performed and observed under this Loan Agreement.

ARTICLE V.

DEFAULTS AND REMEDIES

SECTION 5.01 Event of Default. If any of the following events occurs, it is hereby defined as and declared to be and to constitute an "Event of Default":

(a) failure by the Governmental Agency to pay, or cause to be paid, any Loan Repayment set forth in Schedule C, required to be paid hereunder when due, which failure shall continue for a period of ten (10) days;

(b) failure by the Governmental Agency to make, or cause to be made, any required payments of principal of, redemption premium, if any, and interest on any bonds, notes or other obligations of the Governmental Agency for borrowed money (other than the Loan and the Governmental Agency Bond), after giving effect to the applicable grace period, the payments of which are secured by the Pledged Property;

(c) failure by the Governmental Agency to pay, or cause to be paid, the Administrative Fee or any portion thereof when due or to observe and perform any duty, covenant, obligation or agreement on its part to be observed or performed under this Loan Agreement, other than as referred to in paragraph (a) of this Section 5.01 and other than a failure to comply with the provisions of Section 2.03 hereof, which failure shall continue for a period of thirty (30) days after written notice, specifying such failure and requesting that it be remedied, is given to the Governmental Agency by the Trustee, unless the Trustee shall agree in writing to an extension of such time prior to its expiration; provided, however, that if the failure stated in such notice is correctable but cannot be corrected within the applicable period the Trustee may not unreasonably withhold its consent to an extension of such time up to sixty (60) days from the delivery of the written notice referred to above if corrective action is instituted by the Governmental Agency within the applicable period and diligently pursued until the Event of Default is corrected; or

(d) a petition is filed by or against the Governmental Agency under any federal or state bankruptcy or insolvency law or other similar law in effect on the date of this Loan Agreement or thereafter enacted, unless in the case of any such petition filed against the Governmental Agency such petition shall be dismissed within thirty (30) days after such filing and such dismissal shall be final and not subject to appeal; or the Governmental Agency shall become insolvent or bankrupt or make an assignment for the benefit of its creditors; or a custodian (including, without limitation, a receiver, liquidator or trustee of the Governmental Agency or any of its property) shall be appointed by court order to take possession of the Governmental Agency or its property or assets if such order remains in effect or such possession continues for more than thirty (30) days.

SECTION 5.02 Notice of Default. The Governmental Agency shall give the Trustee and the Authority prompt telephonic notice of the occurrence of any Event of Default referred to in Section 5.01(d) hereof, and of the occurrence of any other event or condition that constitutes an Event of Default at such time as any senior administrative or financial officer of the Governmental Agency becomes aware of the existence thereof. Any telephonic notice pursuant to this Section 5.02 shall be confirmed in writing by the end of the next Business Day (as defined in the Bond Resolution).

SECTION 5.03 Remedies on Default. Whenever an Event of Default referred to in Section 5.01 hereof shall have occurred and be continuing, the Authority shall have the right to take or to direct the Trustee to take any action permitted or required pursuant to the Loan Agreement and to take whatever other action at law or in equity may appear necessary or desirable to collect the amounts then due and thereafter to become due hereunder or to enforce the performance and observance of any duty, covenant, obligation or agreement of the Governmental Agency hereunder, including, without limitation, to obtain ex parte the appointment of a receiver of the System.

SECTION 5.04 Attorney's Fees and Other Expenses. The Governmental Agency shall on demand pay to the Authority or the Trustee the reasonable fees and expenses of attorneys and other reasonable fees and expenses (including without limitation the reasonably allocated costs of in-house counsel and legal staff) incurred by either of them in the collection of Loan Repayments or any other sum due hereunder or in the enforcement of performance or observation of any other duties, covenants, obligations or agreements of the Governmental Agency.

SECTION 5.05 Application of Moneys. Any moneys collected by the Authority or the Trustee pursuant to Section 5.03 hereof shall be applied (a) first, to pay any attorney's fees or other fees and expenses owed by the Governmental Agency pursuant to Section 5.04 hereof, (b) second, to pay interest due and payable on the Loan, (c) third, to pay principal due and payable on the Loan, (d) fourth, to pay any other amounts due and payable under this Loan Agreement; and (e) fifth, to pay interest and principal on the Loan and other amounts payable hereunder as such amounts become due and payable.

SECTION 5.06 No Remedy Exclusive; Waiver; Notice. No remedy herein conferred upon or reserved to the Authority or the Trustee is intended to be exclusive and every such remedy shall be cumulative and shall be in addition to every other remedy given under this Loan Agreement or now or hereafter existing at law or in equity. No delay or omission to exercise any right, remedy or power accruing upon any Event of Default shall impair any such right, remedy or power or shall be construed to be a waiver thereof, but any such right, remedy or power may be exercised from time to time and as often as may be deemed expedient. In order to entitle the Authority or the Trustee to exercise any remedy reserved to it in this Article, it shall not be necessary to give any notice, other than such notice as may be required in this Article V.

SECTION 5.07 Retention of Authority's Rights. Notwithstanding any assignment or transfer of this Loan Agreement pursuant to the provisions hereof or of the Bond Resolution, or anything else to the contrary contained herein, the Authority shall have the right upon the occurrence of an Event of Default to take any action, including (without limitation)

bringing an action against the Governmental Agency at law or in equity, as the Authority may, in its discretion, deem necessary to enforce the obligations of the Governmental Agency to the Authority pursuant to Section 3.03, Section 3.06 and Section 5.04 hereof.

SECTION 5.08 Default by the Authority. In the event of any default by the Authority under any duty, covenant, agreement or obligation of this Loan Agreement, the Governmental Agency's remedy for such default shall be limited to injunction, special action, action for specific performance or any other available equitable remedy designed to enforce the performance or observance of any duty, covenant, obligation or agreement of the Authority hereunder as may be necessary or appropriate. The Authority shall on demand pay to the Governmental Agency the reasonable fees and expenses of attorneys and other reasonable expenses in the enforcement of such performance or observation.

ARTICLE VI.

MISCELLANEOUS

SECTION 6.01 Notices. All notices, certificates or other communications hereunder shall be sufficiently given and shall be deemed given when hand-delivered or mailed by registered or certified mail, postage prepaid, or sent by electronic means to the Governmental Agency at the address specified on Exhibit B attached hereto and made a part hereof and to the Authority, the Trustee and the Loan Servicer at the following addresses:

(a)	Authority:	Colorado Water Resources and Power Development Authority 1580 Logan Street, Suite 620 Denver, Colorado 80203 Attention: Executive Director
(b)	Trustee:	U.S. Bank National Association. Denver Tower 950 17th Street Denver, Colorado 80202 Attention: Corporate Trust Services
(c)	Loan Servicer:	U.S. Bank National Association. Denver Tower 950 17th Street Denver, Colorado 80202 Attention: Corporate Trust Services

Any of the foregoing parties may designate any further or different addresses to which subsequent notices, certificates or other communications shall be sent, by notice in writing given to others.

SECTION 6.02 Binding Effect. This Loan Agreement shall inure to the benefit of and shall be binding upon the Authority and the Governmental Agency and their respective successors and assigns.

SECTION 6.03 Severability. In the event any provision of this Loan Agreement shall be held illegal, invalid or unenforceable by any court of competent jurisdiction, such holding shall not invalidate, render unenforceable or otherwise affect any other provision hereof.

SECTION 6.04 Amendments, Supplements and Modifications. This Loan Agreement may not be amended, supplemented or modified without the prior written consent of the Authority and the Governmental Agency.

SECTION 6.05 Execution in Counterparts. This Loan Agreement may be executed in several counterparts, each of which shall be an original and all of which shall constitute but one and the same instrument.

SECTION 6.06 Applicable Law and Venue. This Loan Agreement shall be governed by and construed in accordance with the laws of the State of Colorado, including the Act. Venue for any action seeking to interpret or enforce the provisions of this Loan Agreement shall be in the Denver District Court.

SECTION 6.07 Consents and Approvals. Whenever the written consent or approval of the Authority shall be required under the provisions of this Loan Agreement, such consent or approval may only be given by the Authority unless otherwise provided by law or by rules, regulations or resolutions of the Authority or unless expressly delegated to the Trustee.

SECTION 6.08 Captions. The captions or headings in this Loan Agreement are for convenience only and shall not in any way define, limit or describe the scope or intent of any provisions or sections of this Loan Agreement.

SECTION 6.09 Compliance with Bond Resolution. The Governmental Agency covenants and agrees to take such action as the Authority shall reasonably request so as to enable the Authority to observe and comply with, all duties, covenants, obligations and agreements contained in the Bond Resolution insofar as such duties, covenants, obligations and agreements relate to the obligations of the Governmental Agency under this Loan Agreement.

SECTION 6.10 Further Assurances. The Governmental Agency shall, at the request of the Authority, authorize, execute, acknowledge and deliver such further resolutions, conveyances, transfers, assurances, financing statements and other instruments as may be necessary or desirable for better assuring, conveying, granting, assigning and confirming the rights and agreements granted or intended to be granted by this Loan Agreement and the Governmental Agency Bond.

SECTION 6.11 Recital. This Loan Agreement is authorized pursuant to and in accordance with the Constitution of the State of Colorado and all other laws of the State of Colorado thereunto enabling. Specifically, but not by way of limitation, this Loan Agreement is authorized by the Governmental Agency pursuant to the Home Rule Charter of the City, Title 31, Article 35, Part 4, C.R.S. Title 37, Article 45.1, C.R.S. and Title 11, Article 57, Part 2, C.R.S and

shall so recite in the Governmental Agency Bond. Such recitals shall conclusively impart full compliance with all provisions and limitations of such laws and shall be conclusive evidence of the validity and regularity of the issuance of the Governmental Agency Bond, and the Governmental Agency Bond delivered by the Governmental Agency to the Authority containing such recital shall be incontestable for any cause whatsoever after its delivery for value.

IN WITNESS WHEREOF, the Authority and the Governmental Agency have caused this Loan Agreement to be executed, and delivered, as of the Loan Closing.

COLORADO WATER RESOURCES AND POWER DEVELOPMENT AUTHORITY

By: _____
Executive Director

(SEAL)

CITY OF EVANS, COLORADO, ACTING BY AND THROUGH ITS STORM DRAINAGE ENTERPRISE

By: _____
Mayor

ATTEST:

_____
City Clerk

EXHIBIT A

SECURITY DESCRIPTION

(1) Description of the Project

The project consists of two major stormwater construction projects designed to mitigate severe localized flooding and exercise best management practices that reduce the discharge of pollutants from the system. The work will include new storm sewer conveyance infrastructures and outfall structures; and replacement, upsizing, and various appurtenant improvements of the stormwater control system.

(2) Description of System

"System" shall mean, (i) any facility, plant, works, system, building, structure, improvement, machinery, equipment, fixture or other real or personal property, relating to the treatment of sewerage which is owned, operated or controlled by the Governmental Agency, including, without limitation, the Project (ii) any renewal, replacement, addition, modification or improvement to (i) above paid or financed in whole or in part from Revenues (as defined in paragraph (4) of Exhibit A of this Loan Agreement), and (iii) all real or personal property and rights therein and appurtenances thereto that are owned, operated or controlled by the Governmental Agency and necessary or useful or convenient for the effectiveness of the purposes of the Governmental Agency in the treatment of sewage.

(3) Pledged Property

The Pledged Property shall consist of Net Revenue, as defined below:

"*Fiscal Year*" means the twelve (12) months [commencing January 1 of any year and ending December 31 of said year].

"*Revenue*" means (a) all revenues, income, rents and receipts earned by the Governmental Agency from or attributable to the ownership and operation of the System, (b) the proceeds of any insurance covering business interruption loss relating to the System, and (c) interest earned on any moneys or investments which are required to be paid into any fund or account pledged to the payment of this Loan Agreement and the Governmental Agency Bond pursuant to this Loan Agreement and the Governmental Agency Bond pursuant to paragraph 3 of Exhibit A of this Loan Agreement; provided however, that there shall be excluded from Revenue: ad valorem property taxes; any moneys borrowed and

used for providing Capital Improvements; any money and securities and investment income therefrom in any refunding fund, escrow account, or similar account pledged to the payment of any bonds or other obligations; and any moneys received as grants or appropriations from the United States, the State of Colorado, or other sources, the use of which is limited or restricted by the grantor or donor to the provision of Capital Improvements or for other purposes resulting in the general unavailability thereof, except to the extent any such moneys shall be received as payments for the use of the System, services rendered thereby, the availability of any such service, or the disposal of any commodities therefrom. Notwithstanding anything contained above, amounts deposited in a rate stabilization account shall not be deemed Revenue in the calendar year deposited and amounts withdrawn from the rate stabilization account shall be deemed Revenue in the year withdrawn.

"*Capital Improvements*" means the acquisition of land, easements, facilities and equipment (other than ordinary repairs and replacements), and the construction or reconstruction of improvements, betterments and extensions, for use by or in connection with the System.

"*Net Revenue*" means the Revenue after deducting the Operations and Maintenance Expenses.

"*Operations and Maintenance Expenses*" means all actual maintenance and operation costs of the System incurred by the Governmental Agency in any particular period or charges made therefor during such period, but only if such charges are made in conformity with Generally Accepted Accounting Principles (as defined in paragraph (3) of Exhibit A of this Loan Agreement) including amounts reasonably required to be set aside in reserves for items of Operating Expenses the payment of which is not then immediately required.

Such Operating Expenses include, but are not limited to, expenses for ordinary repairs, renewals and replacements of the System, salaries and wages, employees' health, hospitalization, pension and retirement expenses, fees for services, materials and supplies, rents, administrative and general expenses, insurance expenses, legal, engineering, accounting, trustee, paying agent and financial advisory fees and expenses and costs of other consulting and technical services, taxes (except as set forth in the following paragraph), payments in lieu of taxes and other governmental charges, payments of the United States Treasury pursuant to Section 148 of the Internal Revenue Code or similar requirement to pay rebate, fuel costs, and any other current expenses or obligations required to be paid by the Governmental Agency by law, all to the extent properly allocable to the System.

Such Operating Expenses do not include depreciation or obsolescence charges or reserves, amortization of intangibles or other bookkeeping entries of a similar nature, interest charges and charges for the payment of principal, or amortization, of bonded or other indebtedness of the Governmental Agency, costs, or charges made therefor, for capital additions, replacements, betterments, extensions or improvements to or retirements from the System which under Generally Accepted Accounting Principles are properly chargeable to the capital account or the reserve for depreciation, and do not include losses from the sale, abandonment, reclassification, revaluation or other disposition of any properties of the System nor such property items, including taxes and fuel, which are capitalized pursuant to the then existing accounting practice of the Governmental Agency.

"Generally Accepted Accounting Principles" means accounting principles, methods and terminology followed and construed for enterprises which are employed in business comparable to the business of the Governmental Agency, as amended from time to time.

(4) <u>Lien Representation</u>

The Pledged Property is free and clear of any pledge, lien, charge or encumbrance thereon or with respect thereto which is superior to the lien of this Loan Agreement and the Governmental Agency Bond on the Pledged Property, and all corporate or other action on the part of the Governmental Agency to that end has been and will be duly and validly taken. As of the date of this Loan Agreement there are no outstanding bonds, notes or evidences of indebtedness or contractual obligations secured by a lien on the Pledged Property which are on a parity with the lien of the Loan Agreement and Governmental Agency Bond. Except as permitted by Exhibit F hereto, the Governmental Agency shall not issue any bonds or other evidences of indebtedness of a similar nature secured by a pledge, lien or assignment on the Pledged Property or create a lien or charge thereon.

(5) <u>Rate Covenant</u>

During the Loan Term, the Governmental Agency shall establish and collect such rates and charges for the use or the sale of the products and services of the System as, together with other moneys available therefor, are expected to produce Revenue (as defined in Paragraph (3) of this Exhibit A to this Loan Agreement) for each calendar year that will be at least sufficient for such calendar year to pay the sum of:

(a) all amounts estimated to be required to pay Operations and Maintenance Expenses (as defined in paragraph (3) of this Exhibit A of this Loan Agreement) during such calendar year;

(b) 110% of the debt service coming due during the calendar year on: (i) the

Governmental Agency Bond, and (ii) any other obligations secured by a lien on the Pledged Property which lien is on a parity with the lien of this Loan Agreement on the Pledged Property, in each case computed as of the beginning of such calendar year (except to the extent the Governmental Agency has by binding resolution committed reserves to the payment of such debt service);

(c) the amount, if any, to be paid during such calendar year into any debt service reserve account in connection with any obligations secured by a lien on the Pledged Property which lien is on a parity with the lien of this Loan Agreement on the Pledged Property;

(d) all debt service coming due during the calendar year on any obligations secured by a lien on the Pledged Property which lien is subordinate to the lien of this Loan Agreement on the Pledged Property computed as of the beginning of such calendar year; and

(e) amounts necessary to pay and discharge all charges and liens or other indebtedness not described above payable out of the Revenue during such calendar year.

Notwithstanding anything contained above, amounts deposited in a rate stabilization account shall not be deemed Revenue (as defined in Paragraph (3) of this Exhibit A to this Loan Agreement) in the calendar year deposited and amounts withdrawn from the rate stabilization account shall be deemed Revenue (as defined in Paragraph (3) of this Exhibit A to this Loan Agreement) in the year withdrawn.

EXHIBIT B

DESCRIPTION OF THE LOAN

1. Address of Governmental Agency:

City of Evans, Colorado, Acting By and Through Its Storm Drainage Enterprise
1100 37th Street
Evans, Colorado 80620
Email address: Jtroudt@evanscolorado.gov

2. Cost of Project: Approximately $9,474,280

3. Principal Amount of Loan Commitment: $_____ (and $_____ is the amount of funds available to be drawn and spent on the project)

4. Loan Term: The date commencing on the Loan Closing and ending on the final Loan Repayment date set forth in Exhibit C.

5. Description of the Project: See Exhibit A, 1.

6. Authorized Officer(s):

Jim Becklenberg, City Manager
Jacque Troudt, Finance Director
Brian Rudy, Mayor

7. Project Completion Date: _____

EXHIBIT C

LOAN REPAYMENT SCHEDULE

EXHIBIT D

GOVERNMENTAL AGENCY BOND

FOR VALUE RECEIVED, the undersigned, **CITY OF EVANS, COLORADO, ACTING BY AND THROUGH ITS STORM DRAINAGE ENTERPRISE** (the "Governmental Agency") hereby promises to pay to the **COLORADO WATER RESOURCES AND POWER DEVELOPMENT AUTHORITY** (the "Authority"), or registered assigns, the principal amount of _____ Dollars ($_____), at the times and in the amounts determined as provided in the Loan Agreement dated as of November 1, 2020, by and between the Authority and the Governmental Agency (the "Loan Agreement"), together with interest thereon in the amount calculated as provided in the Loan Agreement, payable on the dates and in the amounts determined as provided in the Loan Agreement.

This Governmental Agency Bond is issued pursuant to the Loan Agreement and is issued in consideration of the loan made thereunder (the "Loan") and to evidence the obligations of the Governmental Agency thereunder to make the Loan Repayments (as defined in the Loan Agreement). This Governmental Agency Bond has been assigned to U.S. Bank National Association., as trustee (the "Trustee") under the Bond Resolution (as defined in the Loan Agreement) and payments hereunder shall, except as otherwise provided in the Loan Agreement, be made directly to the Loan Servicer (as defined in the Bond Resolution) for the account of the Authority pursuant to such assignment. Such assignment has been made as security for the payment of the Authority Bonds (as defined in the Bond Resolution) issued to finance or refinance, and in connection with, the Loan and as otherwise described in the Loan Agreement. All of the terms, conditions and provisions of the Loan Agreement are, by this reference thereto, incorporated herein as a part of this Governmental Agency Bond.

This Governmental Agency Bond is entitled to the benefits and is subject to the conditions of the Loan Agreement. The obligations of the Governmental Agency to make the payments required hereunder shall be absolute and unconditional without any defense or right of setoff, counterclaim or recoupment by reason of any default by the Authority under the Loan Agreement or under any other agreement between the Governmental Agency and the Authority or out of any indebtedness or liability at any time owing to the Governmental Agency by the Authority or for any other reason.

This Governmental Agency Bond is subject to optional prepayment under the terms and conditions, and in the amounts provided in Section 3.08 of the Loan Agreement.

The obligation of the Governmental Agency to make payments under the Loan Agreement and this Governmental Agency Bond is a special and limited obligation of the Government Agency and is payable solely from the repayment source described in the Loan Agreement and the obligation of the Governmental Agency to pay the Loan Repayments is secured by an irrevocable pledge and lien (but not necessarily an exclusive lien) upon the Pledged Property (as defined in paragraph 3. of Exhibit A of the Loan Agreement). This Governmental Agency Bond does not constitute a debt or an indebtedness of the Governmental Agency within the meaning of any constitutional, charter or statutory provision or limitation. This Governmental Agency Bond is not payable in whole or in part from the proceeds of general property taxes, and the full faith and credit of the Governmental Agency is not pledged for the payment of the principal of or interest on this Governmental Agency Bond.

This Governmental Agency Bond is issued under the authority of and in full conformity with the Home Rule Charter of the City, the Constitution and laws of the State of Colorado including, without limitation, Title 31, Article 35, part 4, Title 37, Article 45.1, Part 1, C.R.S., and certain provisions of Title 11, Article 57, Part 2, Colorado Revised Statutes, and pursuant to the Loan Agreement. Pursuant to §11-57-210, Colorado Revised Statutes, such recital shall be conclusive evidence of the validity and regularity of the issuance of the Governmental Agency Bond after its delivery for value. This Governmental Agency Bond shall be incontestable for any cause whatsoever after its delivery for value.

IN WITNESS WHEREOF, the Governmental Agency has caused this Governmental Agency Bond to be duly executed, sealed and delivered, as of the 18th day of November, 2020.

(SEAL)

CITY OF EVANS, COLORADO, ACTING BY AND THROUGH ITS STORM DRAINAGE ENTERPRISE

By: _____
Mayor

ATTEST:

_____
City Clerk

EXHIBIT E-1

OPINION OF GOVERNMENTAL AGENCY COUNSEL – PROVIDED SEPARATELY

[LETTERHEAD OF COUNSEL TO GOVERNMENTAL AGENCY]

(Date of Closing)

Colorado Water Resources and
Power Development Authority

U.S. Bank National Association
as Trustee

_____.,
as Representative of the Underwriters

Ladies and Gentlemen:

We are attorneys admitted to practice in the State of Colorado and We have acted as counsel to the **CITY OF EVANS, COLORADO, ACTING BY AND THROUGH ITS STORM DRAINAGE ENTERPRISE** (the "Governmental Agency"), which has entered into a Loan Agreement (as hereinafter defined) with the **COLORADO WATER RESOURCES AND POWER DEVELOPMENT AUTHORITY** (the "Authority"), and have acted as such in connection with the authorization, execution and delivery by the Governmental Agency of the Loan Agreement and its Governmental Agency Bond (as hereinafter defined).

In so acting we have examined the Constitution and laws of the State of Colorado and by-laws of the Governmental Agency. We have also examined originals, or copies certified or otherwise identified to our satisfaction, of the following:

1. the Authority's State Revolving Fund 2020 Series B Revenue Bond Resolution, adopted by the Authority on October 2, 2020 (the "Bond Resolution");

2. the Loan Agreement, dated as of November 1, 2020 (the "Loan Agreement") by and between the Authority and the Governmental Agency;

3. proceedings of the governing members of the Governmental Agency relating to the approval of the Loan Agreement and the execution, issuance and delivery thereof on behalf of the Governmental Agency, and the authorization of the undertaking and completion of the Project (as defined in the Loan Agreement);

4. the Governmental Agency Bond, dated November __, 2020 (the "Governmental Agency Bond") issued by the Governmental Agency to the Authority to evidence the Loan;

5. proceedings of the governing body of the Governmental Agency relating to the issuance of the Governmental Agency Bond and the execution, issuance and delivery thereof to the Authority (the Loan Agreement and the Governmental Agency Bond are referred to herein collectively as the "Loan Documents"); and

6. all outstanding instruments relating to bonds, notes or other indebtedness of or relating to the Governmental Agency.

We have also examined and relied upon originals, or copies certified or otherwise authenticated to our satisfaction, of such other records, documents, certificates and other instruments, and made such investigation of law as in our judgment we have deemed necessary or appropriate to enable us to render the opinions expressed below.

Based upon the foregoing, we are of the opinion that:

1. The Governmental Agency is a "governmental agency" within the meaning of the Authority's enabling legislation with the legal right to carry on the business of the System (as defined in the Loan Agreement) as currently being conducted and as proposed to be conducted.

2. The Governmental Agency has full legal right and authority to execute the Loan Documents and to observe and perform its duties, covenants, obligations and agreements thereunder and to undertake and complete the Project; subject, however, to the effect of, restrictions and limitations imposed by or resulting from, bankruptcy, insolvency, moratorium, reorganization, debt adjustment or other similar laws affecting creditors' rights generally (Creditor's Rights Limitations) heretofore or hereafter enacted.

3. The proceedings of the Governmental Agency's governing members approving the Loan Documents and authorizing their execution, issuance and delivery on behalf of the Governmental Agency, and authorizing the Governmental Agency to undertake and complete the Project have been duly and lawfully adopted and authorized in accordance with applicable Colorado law (hereinafter collectively called the "Authorizing Resolution"), which Authorizing Resolution was duly approved and published in accordance with applicable Colorado law, at a meeting or meetings which were duly called pursuant to necessary public notice and held in accordance with applicable Colorado law, and at which a quorum was present acting throughout.

4. To the best of our knowledge, after such investigation as we have deemed appropriate, the authorization, execution and delivery of the Loan Documents by the Governmental Agency, the observation and performance by the Governmental Agency of its duties, covenants, obligations and agreements thereunder and the consummation of the transactions contemplated therein and the undertaking of the Project do not and will not contravene any existing law or any existing order, injunction, judgment, decree, rule or regulation of any court or governmental or administrative agency, authority or person having jurisdiction over the

Governmental Agency or its property or assets or result in a breach or violation of any of the terms and provisions of, or constitute a default under, any existing bond resolution, trust agreement, indenture, mortgage, deed of trust or other agreement to which the Governmental Agency is a party or by which it, the System (as defined in the Loan Agreement) or its property or assets is bound.

5. To the best of our knowledge, after such investigation as we have deemed appropriate, all approvals, consents or authorizations of, or registrations of or filings with, any governmental or public agency, authority or person required to date on the part of the Governmental Agency in connection with the authorization, execution, delivery and performance of the Loan Documents and, other than authorizations, licenses and permits relating to the siting, construction and acquisition of the Project which we expect to receive in the ordinary course of business, the undertaking and completion of the Project have been obtained or made.

6. To the best of our knowledge, after such investigation as we have deemed appropriate, there is no litigation or other proceeding pending or threatened in any court or other tribunal of competent jurisdiction (either State or Federal) questioning the creation, organization or existence of the Governmental Agency or the validity, legality or enforceability of the Loan Documents or the undertaking or completion of the Project or which if adversely determined, could (a) materially adversely affect (i) the financial position of the Governmental Agency, (ii) the ability of the Governmental Agency to perform its obligations under the Loan Documents, (iii) the security for the Loan Documents, or (iv) the transactions contemplated by the Loan Documents, or (b) impair the ability of the Governmental Agency to maintain and operate its system.

The opinions expressed in this opinion letter are subject to the following:

The obligations of the Governmental Agency pursuant to the Loan Documents are subject to the application of equitable principles, to the reasonable exercise in the future by the State of Colorado and its governmental bodies of the police power inherent in the sovereignty of the State of Colorado, and to the exercise by the United States of America of the powers delegated to it by the Federal Constitution, including without limitation, bankruptcy powers.

No opinion is expressed herein regarding the validity or enforceability of Section 3.06 of the Loan Agreement or any other provision thereof which purports to require the Governmental Agency to indemnify or hold any person harmless.

We are opining only upon those matters set forth herein, and we are not passing upon the accuracy, adequacy, or completeness of any statements made in connection with any offer or sale of the Authority Bonds, the Governmental Agency Bond, or on any other security, or upon any Federal or State tax consequences arising from the receipt or accrual of interest on or the ownership or disposition thereof, except those specifically addressed herein. This opinion letter is rendered on the basis of Federal law and the laws of the State of Colorado as enacted and construed on the

date hereof, and we express no opinion as to any matter not set forth in the numbered paragraphs herein. This opinion letter is issued as of the date hereof and we assume no obligation to revise or supplement this opinion letter to reflect any facts or circumstances that may hereafter come to our attention or changes in law that may hereafter occur.

In connection with the execution and delivery of the Loan Documents, we have represented the Governmental Agency which is our sole client in this transaction. Delivery of this letter to you does not establish an attorney-client relationship between any of the addressees and this firm.

We hereby authorize Norton Rose Fulbright US LLP, Bond Counsel to the Authority, and Carlson, Hammond & Paddock, L.L.C., General Counsel to the Authority, to rely on this opinion letter as if we had addressed this opinion to them in addition to you. This opinion letter is furnished to you solely for your information and benefit in connection with the initial execution and delivery of the Loan Documents and may not be relied upon by you for any other purpose or relied upon by any other person (other than the Authority's Bond Counsel and General Counsel identified above) without the prior written consent of this firm.

Very truly yours,

EXHIBIT E-2

OPINION OF GOVERNMENTAL AGENCY BOND COUNSEL – PROVIDED SEPARATELY

[LETTERHEAD OF BOND COUNSEL TO GOVERNMENTAL AGENCY]

(Date of Closing)

Colorado Water Resources and Power
Development Authority
1580 Logan Street, Suite 620
Denver, Colorado 80203 add Trustee and
Bond Purchaser as addressees

CITY OF EVANS, COLORADO, ACTING BY AND THROUGH ITS STORM DRAINAGE ENTERPRISE
Loan Agreement dated as of November 1, 2020 with the
Colorado Water Resources and Power Development Authority

Ladies and Gentlemen:

We have acted as bond counsel to CITY OF EVANS, COLORADO, ACTING BY AND THROUGH ITS STORM DRAINAGE ENTERPRISE (the "Governmental Agency"), in connection with its authorization, execution, and delivery of a Loan Agreement (the "Loan Agreement") dated as of November 1, 2020, between the Governmental Agency and the Colorado Water Resources and Power Development Authority (the "Authority") and its issuance to the Authority of a governmental agency bond in the initial principal amount of $_____ (the "Bond") in connection therewith, as authorized by a resolution adopted by the City Council of the Governmental Agency on _____ __, 2020. In such capacity, we have examined the Governmental Agency's certified proceedings and such other documents and such law of the State of Colorado and of the United States of America as we have deemed necessary to render this opinion letter. Capitalized terms not otherwise defined herein shall have the meanings ascribed to them by the Loan Agreement. The Loan Agreement and the Bond are collectively referred to herein as the "Loan Documents."

Regarding questions of fact material to our opinions, we have relied upon the certified proceedings of the Governmental Agency and other representations and certifications of public officials and others furnished to us without undertaking to verify the same by independent investigation.

Based upon such examination, it is our opinion as bond counsel that:

1. The Governmental Agency is a "governmental agency" within the meaning of the Authority's enabling legislation.

2. The Governmental Agency has full legal right and authority to execute the Loan Documents and to observe and perform its duties, covenants, obligations and agreements thereunder.

3. The Governmental Agency has pledged the Pledged Property for the punctual payment of the principal of and interest on the Loan and all other amounts due under the Loan Documents according to their respective terms, and the Loan Agreement creates a valid lien on such Pledged Property on a parity with [any other liens?]. No filings or recordings are required under the Colorado Uniform Commercial Code in order to create or perfect a lien on the Pledged Property, and all actions have been taken as required by Section 11-57-208, Colorado Revised Statutes.

4. The Loan Documents have been duly authorized, executed and delivered by authorized officers of the Governmental Agency; and, assuming in the case of the Loan Agreement, that the Authority has all the requisite power and authority to authorize, execute and deliver, and has duly authorized, executed and delivered the Loan Agreement, the Loan Documents constitute legal, valid and binding obligations of the Governmental Agency enforceable in accordance with their respective terms.

5. The execution and delivery of the Loan Documents are not subject to the limitations of Article X, Section 20 of the Colorado Constitution ("TABOR") because the water, wastewater, and storm drainage system of the Governmental Agency constitutes an enterprise under TABOR as of the date hereof. The performance of the obligations of the Governmental Agency under the Loan Documents is not subject to the limitations of TABOR as long as the Governmental Agency continues to qualify as an enterprise under TABOR. If the Governmental Agency ceases to qualify as an enterprise under TABOR, the Loan Documents will continue to constitute legal, valid and binding obligations of the Governmental Agency enforceable in accordance with their respective terms subject to the revenue and spending limitations of TABOR; provided, however, that if the Governmental Agency at any time ceases to qualify as an enterprise under TABOR, (a) the Governmental Agency may impose any increased fees, rates and charges of the System without voter approval; (b) all revenues of the Governmental Agency used to pay Loan Repayments by the Governmental Agency are to be included in the Governmental Agency's fiscal year spending limit under Section 7(d) of TABOR, except that creation of bonded debt increases fiscal year spending by the amount of debt service so funded and debt service changes and reductions are exceptions to, and not part of, the Governmental Agency's revenue and spending base and limits; and (c) if the Governmental Agency is required to reduce spending in order to comply with its fiscal year spending limit under Section 7(b) of TABOR, the Governmental Agency will first be required to reduce spending for purposes for which it does not have an obligation under law or by contract prior to reducing spending required to comply with the other covenants contained in the Loan Documents.

The opinions expressed in this opinion letter are subject to the following:

The obligations of the Governmental Agency pursuant to the Loan Documents are limited by bankruptcy, insolvency, reorganization, moratorium, and other similar laws affecting creditors' rights generally, and by equitable principles, whether considered at law or in equity.

No opinion is expressed herein regarding the validity or enforceability of Section 3.06 of the Loan Agreement or any other provision thereof which purports to require the Governmental Agency to indemnify or hold any person harmless.

We are opining only upon those matters set forth herein, and we are not passing upon the accuracy, adequacy or completeness of any statements made in connection with the Loan Documents or any federal or state tax consequences arising from the receipt or accrual of interest on or the ownership or disposition of the Loan Documents, except those specifically addressed herein.

This opinion letter is issued as of the date hereof and we assume no obligation to revise or supplement this opinion letter to reflect any facts or circumstances that may hereafter come to our attention or changes in law that may hereafter occur.

In connection with the execution and delivery of the Loan Documents, we have represented the Governmental Agency which is our sole client in this transaction. Delivery of this letter to you does not establish an attorney-client relationship between the Authority and this firm. In connection with the Loan, the Authority has been represented by Carlson, Hammond & Paddock, L.L.C., as General Counsel, which is hereby authorized to rely on the legal conclusions expressed herein in its capacity as General Counsel to the Authority.

This opinion letter is furnished to you solely for your information and benefit in connection with the initial execution and delivery of the Loan Documents and may not be relied upon by you for any other purpose or relied upon by any other person (other than the Authority's General Counsel) without the prior written consent of this firm.

Respectfully submitted,

EXHIBIT F

ADDITIONAL COVENANTS AND REQUIREMENTS

Audit Requirements. For each year in which the Governmental Agency requests a disbursement from the Project Loan Subaccount, the Governmental Agency shall conduct its annual audit in accordance with the federal Single Audit Act, 31 U.S.C. § 7501 et seq.

Additional Senior, Parity and Subordinate Lien Bonds. The Governmental Agency covenants that it will not issue any obligations payable out of, or secured by a lien or charge on the Pledged Property which is superior to the lien or charge of this Loan Agreement on the Pledged Property. In addition, the Governmental Agency covenants that it will not issue any obligations payable out of, or secured by a lien or charge on the Pledged Property which is on a parity with the lien or charge of this Loan Agreement on the Pledged Property, except as provided in this paragraph with respect to obligations issued to finance the cost of completion of the Project (as defined in paragraph 1. of Exhibit A to this Loan Agreement), unless the Governmental Agency certifies to the Authority that Net Revenue (as defined in paragraph 3. of Exhibit A to this Loan Agreement and subject to the next sentence) for any 12 consecutive months out of the 18 months preceding the month in which such obligations are to be issued is at least equal to the sum of (a) 110% of the maximum annual debt service of (i) this Loan Agreement and all outstanding obligations of the Governmental Agency payable out of, or secured by a lien or charge on the Pledged Property which is on a parity with the lien or charge of the Governmental Agency Bond on the Pledged Property, and (ii) such proposed obligations to be issued, and (b) 100% of the maximum annual debt service of all obligations payable out of, or secured by a lien or charge on the Pledged Property which is subordinate to the lien or charge of the Loan Agreement on the Pledged Property. Net Revenue may be adjusted to reflect any rate increases prior to the issuance of such additional obligations by adding to the actual Net Revenue for such period an estimated sum equal to 100% of the estimated increase in Net Revenue which would have been realized during such period had such rate increase been in effect during all of such period. Notwithstanding the foregoing, the Governmental Agency may issue refunding obligations payable out of, or secured by a lien or charge on the Pledged Property, without compliance with the requirements stated above, provided that the debt service payments on such refunding obligations do not exceed the debt service payments on the refunded obligations during any calendar year. In addition, the Governmental Agency covenants that it will not issue any obligations payable out of, or secured by a lien or charge on the Pledged Property which is subordinate to this Loan Agreement on the Pledged Property, unless the Governmental Agency certifies to the Authority that for any 12 consecutive months out of the 18 months preceding the month in which such obligations are to be issued Net Revenue were at least 100% of the maximum annual debt service on all obligations payable out of, or secured by a lien or charge on the Pledged Property, which are outstanding during such period.

Operations and Maintenance Reserve Fund. The Governmental Agency shall maintain an operations and maintenance reserve in an amount equal to three months of Operations and Maintenance Expenses excluding depreciation of the System as set forth in the annual budget for the current fiscal year but in no event greater than $1,250,000. Said reserve may be in the form of unobligated fund balances or other unobligated cash or securities (i.e., capital reserves) or may be in a separate segregated fund and shall be maintained as a continuing reserve for payment of any lawful purpose relating to the System. If the operations and maintenance reserves fall below this requirement, the shortfall shall be made up in 24 substantially equal monthly installments beginning the second month after such shortfall or the date of delivery.

Rate Study. In the event that Revenue collected during a fiscal year are not sufficient to meet the requirements set forth in the Rate Covenant contained in paragraph 5. of Exhibit A of this Loan Agreement, the Governmental Agency shall, within 90 days of the end of such fiscal year, cause an independent firm of accountants or consulting engineers, to prepare a rate study for the purpose of recommending a schedule of rates, fees and charges for the use of the System which in the opinion of the firm conducting the study will be sufficient to provide Revenue to be collected in the next succeeding fiscal year which will provide compliance with the Rate Covenant described in paragraph 5. of Exhibit A of this Loan Agreement. Such a study shall be delivered to the Authority and the Trustee. The Governmental Agency shall within six months of receipt of such study, adopt rates, fees and charges for the use of the System, based upon the recommendations contained in such study, which provide compliance with said Rate Covenant.

Special Fund. The Governmental Agency covenants to create a special fund into which shall be deposited the Revenue (as defined in paragraph 3. of Exhibit A to this Loan Agreement). The Revenue shall be applied, on or before the last day of each month, first to the payment of the Operations and Maintenance Expenses (as defined in paragraph 3. of Exhibit A to this Loan Agreement) and then applied to the payment of the Loan Repayments and other amounts payable on a parity with the Loan Repayments. Any further application shall be as provided by resolution or ordinance of the Governmental Agency.

Davis Bacon & Related Acts (DBRA). The Governmental Agency will comply with the requirements of the Davis Bacon & Related Acts, codified at 40 U.S.C. §§ 3140 through 3148.

American Iron and Steel Requirement. The Governmental Agency will comply with all federal requirements applicable to the Loan, including Section 436 of P.L. 113-76, Consolidated Appropriations Act, 2014, (the "Appropriations Act") and related State Revolving Fund Policy Guidelines, which require that all of the iron and steel products (as defined in the Appropriations Act and Guidelines) used in the Project must be produced in the United States unless the Governmental Agency has requested and received a waiver from the requirement pursuant to the "waiver process" described in the Appropriations Act and Guidelines.

Signage. The Governmental Agency will comply with all federal requirements applicable to the Loan, including the Guidelines for Enhancing Public Awareness of SRF Assistance Agreements as issued by the United States Environmental Protection Agency in the Memorandum dated June 3, 2015. The Governmental Agency will provide project signage consistent with the guidelines in one or more of the listed strategies including:

1. Standard signage
2. Posters or wall signage in a public building or location
3. Newspaper or periodical advertisement for project construction, groundbreaking ceremony, or operation of the new or improved facility
4. Online signage place on a community website or social media outlet
5. Press release

First Draw Requirement. Pursuant to § 37-60-126 C.R.S., if the Governmental Agency sells more than 2,000 acre-feet of water per year, then the Governmental Agency must have an approved "water use efficiency plan" on file with the Colorado Water Conservation Board ("CWCB"). The Governmental Agency may not draw any funds on the Loan until the water use efficiency plan is approved and on file with CWCB.

EXHIBIT G

COLORADO WATER RESOURCES AND POWER DEVELOPMENT AUTHORITY

TAX COMPLIANCE QUESTIONNAIRE
REGARDING USE OF FACILITIES FINANCED WITH
TAX-EXEMPT BONDS

BOND ISSUE: State Revolving Fund Revenue Bonds 2020 Series B.

NAME OF GOVERNMENT AGENCY: CITY OF EVANS, COLORADO, ACTING BY AND THROUGH ITS STORM DRAINAGE ENTERPRISE (the "Government Agency")

Please provide the information requested below with respect to the Government Agency's facilities (the "Bond-Financed Facilities") financed with the above-referenced issue of tax-exempt obligations ("Bonds") issued by the Colorado Water Resources and Power Development Authority (the "Authority").

1. (a) Are all of the Bond-Financed Facilities owned by a governmental person? (For purposes of this Questionnaire, a "governmental person" is a state or local governmental unit or any instrumentality thereof and a "nongovernmental person" is any person or entity other than a governmental person.) ___Yes ___No

   (b) If the answer to 1(a) is "No," provide a brief description of the owner, the properties it owns and the ownership arrangement.

2. (a) Are any of the Bond-Financed Facilities leased to a nongovernmental person? ___Yes ___No

   (b) If the answer to 2(a) is "Yes," provide a brief description of the lease.

3. (a) Has the Government Agency entered into a contract with a nongovernmental person for the operation or management of the Bond-Financed Facilities? ___Yes ___No

   (b) If the answer to 3(a) is "Yes," provide a brief description of the contract.

4. (a) Has the Government Agency entered into any wholesale contract with a nongovernmental person for the sale, exchange, pooling or other use of the capacity or output of the Bond-Financed Facilities? ___Yes ___No

   (b) If the answer to 4(a) is "Yes," provide a brief description of the contract.

5. (a) Are the Bond-Financed Facilities used to serve any retail customer under an arrangement other than (1) a general rate schedule or tariff or (2) a requirements contract

under which the purchaser is obligated to make payments only to the extent it has output requirements served under the contract? ___Yes ___No

(b) If the answer to 5(a) is "Yes," provide a brief description of the contract or other arrangement.

6. (a) To the best of its knowledge, is the Government Agency in compliance with its covenants in the Loan Agreement executed by the Government Agency in connection with the issuance of the Bonds? ___Yes ___No

(b) If the answer to 6(a) is "No," provide a brief explanation.

Provide the name, title and contact information for the person(s) who completed this Questionnaire:

Name: _____
Title: _____
Telephone number: _____
E-mail address: _____

CITY OF EVANS, COLORADO, ACTING BY AND THROUGH ITS STORM DRAINAGE ENTERPRISE

By: _____
Name: _____
Title: _____

CITY COUNCIL AGENDA REPORT

DATE:	October 5, 2020
AGENDA ITEM:	9.C
SUBJECT:	Consideration of Approval of the Development Agreement for the Peakview [Solstice] Development
PRESENTED BY:	James L. Becklenberg, City Manager Randy L. Ready, Assistant City Manager Anne Best Johnson, Community Development Director

AGENDA ITEM DESCRIPTION:

On December 3, 2019, City Council approved the PUD Final Plat for Filing 1 of the Peakview (Solstice) project by Resolution 27-2019. The PUD Change of Zone was approved by Ordinance 689-19 on February 19, 2019 followed by the Preliminary Plan by Resolution 08-2019 on April 2, 2019. Both the Preliminary Plan and the Change of Zone cover the entire property. The Final Plat plats the entire property into Tracts for filings outside of 1A and 1B. These future Tracts will have a separate Final Plat Filing at a later date.

The Final Plat for Filing 1 contemplates 202 Single Family lots, 85 Townhomes for a total of 287 dwelling units. Phase A of Filing 1 consists of approximately 43.15 acres and Phase B of Filing 1 contains approximately 47.15 acres. The total development is approximately 244 acres. The project site is south of and adjacent to 37th Street between Two Rivers Parkway on the west and 65th Avenue on the east. The final step of the approval process includes City Council review and approval of the Development Agreement associated with this project. The Development Agreement (Attachment "A") outlines the on- and off-site improvements and legal requirements associated with developing the property.

Specific improvements, agreements or obligations in this Development Agreement are listed below:

1. The standard warranty requirement of 115% and post-release of 15% is proposed. The warranty period will be for two years. A surety bond will be posted prior to the issuance of a grading permit.
2. The Developer and Metro District are responsible for the following:
    a. The Developer is responsible for the design and construction/installation of:
        i. Potable and Non-Potable Water improvements. Upon acceptance by the City, the Developer shall convey to the Metro District which will then convey the potable water improvements to the City for ownership, operations, and maintenance. The City will retain ownership of the raw water and carriage rights for the Non-Potable Water system. The Metro District will operate and maintain the non-potable irrigation system.
        ii. Internal Street improvements. Upon acceptance by the City, the Developer shall convey to the Metro District which will then convey internal streets to

the City for ownership, operations, and maintenance. Until the warranty period has concluded, the Developer is responsible for maintenance.

iii. Storm Drainage improvements. Upon acceptance by the City, the Developer shall convey to the Metro District which will then convey the hard surface drainage improvements to the City for ownership, operations, and maintenance; however, until the warranty period has concluded, the Developer is responsible for maintenance. The Developer or Metro District shall remain responsible for the ownership and maintenance of soft-surface drainage facilities (water quality ponds, for example).

iv. Traffic Signal improvements at 37th Street and 77th Avenue. The Developer has agreed to participate financially on a signalized intersection at 37th Street and 77th Avenue. The participation rate is based on the development's impact to the intersection of 37th Street and 77the Avenue at the estimated sum of $270,000 and will be paid prior to issuance of the first Building Permit in Phase 1B.

v. Sanitary Sewer improvements. Upon acceptance by the City, the Developer shall convey to the Metro District which will then convey the sanitary sewer improvements to the City for ownership, operations, and maintenance.

b. The Developer will install the following elements which will be maintained by the Metro District:

i. Landscape improvements;
ii. Park improvements;
iii. Street lighting;
iv. Fencing;
v. Sidewalks and Trails;
vi. Bus shelters;
vii. Mailboxes;
viii. Community Center; and
ix. Signage.

c. The Developer is also responsible for the following off-site improvements to adjacent streets:

i. 37th Street along the project frontage and required tapers according to Freedom Parkway plans prior to construction commencement in Phase 4. This is a Greeley Street and the Developer will coordinate with the Cities of Greeley and Evans.

ii. 77th Avenue along the project frontage and required tapers prior to construction of Phase 2.

iii. 65th Avenue along the project frontage and north to 37th Street including project tapers approaching the southern property frontage.

d. The Developer will place any overhead utility lines underground.

e. The Developer will reimburse the developer associated with the Ashcroft Draw sanitary sewer line in accordance with the Ashcroft Draw Sanitary Sewer Joint Venture agreement in the amount of $144,009.60 or a lump sum payment of $120,000.

3. The City of Evans has agreed to the following:
    a. Reimburse the Developer $93,740 to upsize the sanitary sewer line on 37th Street from the City's Sewer Tap Fees collected at the time of individual building permits. This amount will be reimbursed to the Developer once the applicable tap fees collected reaches the total amount due. This amount may be recaptured with further development along this line.
    b. Reimburse the Developer $177,958 from the City's Water Tap Fees collected at the time of individual Building Permits. This amount will be reimbursed to the Developer once the applicable tap fees collected reaches the total amount due. This amount may be recaptured from further development along this line.
    c. Reimburse the Developer up to $80,814 from the City's Street Impact Fees collected at the time of Building Permit issuance for additional improvements to the arterial section of 65th Avenue. This amount will be reimbursed to the Developer once the Street Impact Fees collected reaches the total amount due.

FINANCIAL SUMMARY:

The City has the following financial obligations as a result of this Development Agreement. The timing of payment shall be made at the time of individual Building Permits from the City's Sewer Tap Fees, Water Tap Fees and Street Impact Fees.

Upsize Sewer lines	$ 93,740.00
Upsize Water lines	$177,958.00
37th Street Improvements	$ 80,814.00

RECOMMENDATION:

Staff recommends that the City Council approve the Peakview [Solstice] Development Agreement.

SUGGESTED MOTIONS:

"I move to Approve the Development Agreement for the Peakview Development and authorize the mayor to sign the Development Agreement."

"I move to Deny the Development Agreement for the Peakview Development."

ATTACHMENTS:

- Development Agreement with all Exhibits

DEVELOPMENT AGREEMENT
Peakview Subdivision

THIS DEVELOPMENT AGREEMENT ("Agreement") is made this ____ day of _____, 2020 and entered into between the City of Evans, a Colorado home rule municipality (hereafter, the "City"), which term shall include its successors and assigns, and Solstice Development LLC, a Colorado limited liability company, (hereafter, the "Developer"), which term shall include its predecessors, heirs, affiliates, successors and assigns.

RECITALS

WHEREAS, Solstice Holdings LLC, a Colorado limited liability company, ("Property Owner") and an affiliate of Developer, is the owner of certain real property located in the City of Evans, Colorado, described on Exhibit "A" (Legal Description) attached hereto and incorporated herein (hereafter, the "Property"); and

WHEREAS, Developer submitted to the City an application to develop the Property as a Planned Unit Development to be known as "Peakview Estates" or the "Peakview Subdivision" and shown on Exhibit "B" (PUD/Site Plan) attached hereto and incorporated herein as the "PUD/Site Plan"; and

WHEREAS, Developer acknowledges that approval of the PUD, Preliminary Plan, Final Plat, and Site Plan along with the subsequent use of the Property will directly impact existing infrastructure and generate the need for both on-site and off-site improvements (such improvements (the "Improvements") being further described in Exhibit "C" (Developer Requirements) attached hereto). The Improvements are required as set forth on Exhibit "D" (Schedule of Improvements) hereto and incorporated herein to this Agreement; and

WHEREAS, the City approved the PUD Change of Zone by Ordinance No. 689-19 on February 19, 2019; which was recorded by the City with the Weld County Clerk and Recorder's office at Reception 4489500 on May 8, 2019; and

WHEREAS, the City approved the Preliminary Plan by Resolution No. 08-2019 on April 2, 2019; which was recorded by the City with the Weld County Clerk and Recorder's office at Reception 4489500 on May 8, 2019; and

WHEREAS, Developer intends to develop the Property in two or more development phases (each, a "Phase") pursuant to a phasing plan attached hereto as Exhibit "F" (Phasing Plan) describing the period for commencement and completion of all work, the Phase boundaries, sequencing and Improvements to be included within each Phase. This Agreement applies to the entire Development, but shall toll for vesting purposes only for a particular Phase as more particularly set forth on Exhibit "F" (Phasing Plan). For purposes of clarification, this first phase of development includes Phase IA and IB as referenced below in Exhibit F and the phasing map attached hereto. Developer and City acknowledge future amendment to this Agreement may be warranted; and

WHEREAS, the City has approved the PUD Final Plat for Filing I by Resolution 27-2019 on December 3, 2019 and shall be recorded by the City with the Weld County Clerk and Recorder's office; and

WHEREAS, Developer agrees and acknowledges that the exactions and requirements set forth in this Agreement are reasonably attributable to the special impacts that will be generated by the proposed

development and use of the Property, and that the terms and conditions set forth in this Agreement are necessary, reasonable and appropriate, and directly benefit or result from the impact of the Development.

AGREEMENT:

NOW, THEREFORE, in consideration of the premises, mutual covenants and obligations contained herein, and the sufficiency of which is acknowledged, the parties mutually agree as follows:

1. Title and Scope of Development: The Development subject to this Agreement shall initially be titled Peakview Estates. Subsequent Filings may necessitate an amendment to this Agreement. Notwithstanding anything in this Agreement to the contrary, Developer may elect to use a name other than "Peakview Estates" for marketing one or more portions of the Development, including, without limitation, a name using the word "Solstice."

2. Description of Development and Uses: Peakview Estates is an approximately 225-acre site located in the area identified on the PUD/Site Plan contained in Exhibit "B" (PUD/Site Plan). The Development will be used for residential, commercial, recreational and/or ancillary purposes in accordance with the PUD Site Plan and Final Plat.

3. Definitions: For the purposes of this Agreement, the following words and terms shall be defined as follows:

3.1 "City Official" includes the City Manager, City Attorney, City Treasurer, Public Works Director, Community Development Director, and their designated representatives.

3.2 "Developer" includes the Developer, Developer's agents, representatives, predecessors, heirs, affiliates, successors or assigns, or any other party authorized by the Developer to provide services, construction, or maintenance of any improvements required by this Agreement, including any Metropolitan District. It is anticipated that one or more metropolitan districts will be formed in support of this subdivision.

3.3 "Development" means all the Property, property rights and Improvements within and related to the Property.

3.4 "Metropolitan District" shall mean the one or more metropolitan districts (collectively, the "Metropolitan District") which may from time to time pay for and construct, own, operate and maintain certain public improvements needed for the Property.

3.5 "Plans and Specifications" shall refer to the engineering and design documents that have been reviewed and approved by the City submitted to the City on November 6, 2019.

3.6 "Final Plat Materials" means those certain Final Plat Materials including but not limited to Final Plat, Development Guide and Neighborhood Development Plan. The final grading plans, drainage reports, utility plans, road plans, landscape plans ("Construction Plans"), shall be prepared and submitted for review and approval by the City prior to issuance of a grading permit. Final Plat Materials and supporting Construction Plans are to be prepared with each Final Plat Filing Application. The Final Plat for Filing 1 was prepared by Northern Engineering, dated November 7, 2019, and approved by the City on December 3, 2019.

4. Public Improvements: Developer shall design, construct and install at its own expense, the public Improvements described in Exhibit "C" attached hereto and incorporated herein to this Agreement. Once the Metropolitan District is formed, it is the intent of the City and the Developer that certain obligations created under this Agreement may be assumed and transferred to the Metropolitan District. However, such assumption or transfer of obligations to the Metropolitan District shall not release the Developer from any of its obligations under the Agreement unless such release is specifically agreed to by the City in writing. Developer may use commercially reasonable efforts to cause such districts to expressly assume the development and maintenance obligations herein to the extent allowed by their respective service plans. Any obligation of Developer may be met through a contract with an appropriately authorized Metropolitan District, but the obligation and performance responsibility of the Developer shall not be released by such contract. From time to time and upon the City's reasonable request, Developer agrees to keep the City informed of the progress of its work and provide a projection of when Improvements will be installed as well as the approximate cost of the remaining Improvements.

4.1 Dedication of Improvements. Upon completion of an improvement and Final Acceptance of the improvement by the City or by the Metropolitan District, the Improvements shall be dedicated as set forth on Exhibit "C-2" (Dedications to the City) and Exhibit "C-3" (Dedications to Metropolitan District). As more particularly described in Exhibit C-2, upon request of the City, Developer shall convey Improvements, or a portion of them, to the City by bill of sale or other conveyance documents deemed appropriate by the City Attorney.

4.2 Certificates of Occupancy & Water Meters: Certificates of Occupancy are required for all residential and commercial construction. A water meter is required for connection to the Metropolitan District's non-potable water supply, for the landscaping required by this Agreement. Water meters for potable and non-potable water for individual lots will be installed at the expense of the individual builder for each such lot.

5. Completion of Public Improvements:

5.1 Developer Obligations: The obligations of the Developer provided for herein shall be performed on or before the Estimated Completion Date set forth in the Exhibit "D" (Schedule of Improvements) and the Phasing Plan attached hereto as Exhibit "F" (Phasing Plan), subject to extension as provided herein or for delays due to Force Majeure. The Schedule of Improvements set forth on Exhibit "D" is hereby approved by the City.

5.2 Plans and Specifications: Construction of the Improvements shall be in substantial and material conformance with the Plans and Specifications, as reviewed and approved by the Public Works Director or a designated representative, and which shall be in compliance with all policies, ordinances, standards and specifications adopted by the City relating thereto in effect at the time of such construction. The City's review and approval of the Plans and Specifications shall not impose any liability on the City and shall not limit or affect Developer's responsibility or liability for design, construction and installation of the Improvements. Developer agrees to save and hold the City harmless from any claims, fault or negligence attributable to the City's review and approval of such design, construction and installation, in accordance with the provisions of section 17.1 herein below.

5.3 Developer Responsibilities and Liabilities: Developer shall remain solely responsible and liable for the following:

5.3.1 Testing: Developer shall employ (at its own expense) a qualified independent testing company to be approved by the Public Works Director or a designated representative in its reasonable discretion, to perform all testing of materials or construction that may be reasonably required by the City during Developer's construction of the Improvements and for a period of up to six (6) months following completion of construction of the Improvements. Developer shall furnish certified copies of test results to the Public Works Director and, upon request by the Public Works Director, release and authorize full access to the Public Works Director of all work-up materials, procedures and documents used in preparing the test results.

5.3.2 Inspection: At all times during construction of the Improvements, on a reasonable schedule to be mutually agreed by the parties, and until final acceptance by the City, the City shall have the right, but not the duty, to inspect materials and workmanship utilized for the Improvements at Developer's cost, provided the City's inspector is accompanied by Developer or its designated representative. All materials and work must conform to the approved Plans and Specifications and all applicable regulations. Any material or work not materially and substantially conforming to the Plans and Specifications or other applicable regulations shall be promptly removed, repaired or replaced by Developer, at Developer's expense and to the reasonable satisfaction of the Public Works Director.

5.3.3 Street Access: Developer shall, at its own expense, be responsible for keeping on-site streets, off-site streets used as construction routes, and rights-of-way reasonably clean of mud, rocks, and debris at all times during said construction. All work shall conform to the requirements for erosion control as described in applicable statutes, ordinances, or regulations.

5.3.4 Utilities: Developer shall furnish proof in a form acceptable to the City (as-built construction documents) in its reasonable discretion that all proper conveyances and arrangements have been made for the installation of streets, streetlights, sidewalks, water, sanitary sewer, gas, electricity, cable television (or equivalent satellite, internet or other technology based communications), telephone services, drainage facilities, and other public improvements.

5.3.5 Completion of Landscape Improvements: Developer shall install landscaping and related elements including irrigation required by this Agreement for each Phase of Development no later than six (6) months after completion of all non-landscaping improvements for such Phase, unless an extension is granted in writing by the Public Works Director or the Community Development Director. Extensions will not be denied if reasonably requested due to seasonal or weather issues or Force Majeure events. Completion of the landscaping and related elements including irrigation shall be assured by Developer in the form of a Letter of Credit for landscaping given by the Developer or the contractor for the construction and installation of the landscaping, in a form acceptable to the City, and provided with this Agreement in an amount being 115% of the approved estimated cost of the landscaping improvements and related elements. Upon inspection and approval of the landscaping and related elements by the City, and provision to the City of as-built drawings acceptable to the City, the amount of the landscaping letter of credit will be reduced to 15% of the approved estimated cost of the landscaping improvements and related elements, which shall be held for a two (2)-year warranty period by the City. On completion of the two (2)-year warranty period the remaining balance shall be returned to the Developer. If any of the landscaping or related elements fails to such an

extent that such landscaping or related elements must be entirely replaced, such failed portion shall be replaced with similar landscaping deemed satisfactory to the Public Works Director in the exercise of his reasonable discretion, and upon completion of such replacement and approval by the Public Works Director, the two (2)-year warranty period shall begin anew as to the replaced Improvement only. At any time following inspection and approval of the landscaping improvements by the City, the landscaping improvements may be conveyed by Developer to the Metropolitan District for ownership, operations and maintenance. Conveyance of the landscaping improvements from the Developer to the District does not relieve the Developer from its obligations under this section unless and until the City agrees in writing to relieve the Developer from such landscaping obligations, in whole or in part. For the avoidance of doubt, notwithstanding anything herein to the contrary, Developer shall not be required to construct landscaping improvements upon any lot to be developed for residential or commercial use.

5.3.6 Completion of Other Improvements: Obligations of the Developer required by this Agreement and provided for herein shall be performed on or before the estimated completion date set forth in Exhibit "D" (Schedule of Improvements) attached hereto and incorporated herein to this Agreement as such date may be hereafter extended from time to time in accordance with the provisions of this Agreement. The Developer's construction and completion of the Improvements shall be assured by the Developer or the general contractor for the construction of the Improvements (Gerrard Excavating Inc.) providing a Performance Guarantee in the amount of 115% of the estimated cost of the Improvements at the time of development. The Developer shall have no direct or indirect ownership or managerial control over the entity issuing any Performance Guarantee. In the event that prior to the City's initial acceptance of the Improvements, the Performance Guarantee should expire or the entity issuing the Performance Guarantee becomes non-qualifying or the cost of the Improvements is reasonably determined by the City to be greater than the amount of the security provided, then the City shall furnish the Developer with written notice of such condition, and within thirty (30) days of receipt of such notice the Developer shall provide the City with a substituted qualifying Performance Guarantee or augment the deficient security to achieve 115% of the cost of the Improvements. If such Performance Guarantee is not timely furnished, then development activities including but not limited to the issuance of building permits and certificates of occupancy, may be suspended by the City pending compliance herewith, and upon such compliance shall be immediately reinstated. To the extent the Performance Guarantee shall cover more than one Phase of Development, the amount of the Performance Guarantee shall be reduced from time to time upon completion of each Phase of Development in the amount attributable to the completed Phase and a Performance Guarantee Reduction Notice (in substantially the form annexed hereto as Exhibit D-4) for such costs shall be signed and issued to Developer (and to the issuer of the Performance Guarantee) by the City's Public Works Director.

5.3.7 If the Developer cannot or wishes not to perform and/or construct some or all of the Improvements, then, provided Developer has first obtained the City's consent in writing (which consent may be issued administratively by the City's Public Works Director and without public hearing), the Metropolitan District shall be permitted to construct and complete the proposed Improvements in place of the Developer if: (1) the District is legally permitted to construct such Improvements, (2) the District is ready, willing and able to construct those Improvements, and (3) the District can demonstrate the financial

ability to complete the construction in a manner deemed by the City to be sufficient to meet the Performance Guarantee requirements for such portion of the Development. If the Metropolitan District provides evidence of its financial ability to construct and/or install all or such part of the Improvements and the City is satisfied with the same, then the Improvements' guarantee requirements, including without limitation, the Performance Guarantee, for such portion of the Improvements shall be deemed to have been met with respect to the same and a Guarantee Reduction Notice (in substantially the form annexed hereto as Exhibit D-4) releasing the guarantor to such extent, shall be promptly signed and issued to Developer (and to such guarantor) by the City's Public Works Director. If the Metropolitan District has issued and sold the bonds needed to construct and/or install such Improvements and furnishes evidence of the placement of such bonds and the segregation of the proceeds from such bonds in a separate account that cannot be used for other purposes, then upon demonstrating these matters to the satisfaction of the City's Director of Public Works, the Metropolitan District will be deemed to have the financial ability needed to construct and/or install such Improvements, and will not be required to provide any evidence required under Subsections (i)-(iii), below nor any further evidence of its financial abilities, and no letter of credit or financial guarantee shall be required. In order to demonstrate its financial ability to construct, complete, and/or install those Improvements for which the Metropolitan District desires to assume all responsibility, except as otherwise permitted by the preceding sentence, the District shall submit the following materials to the City in connection with each phase of the Development:

(i) Most-recent monthly financial statement of the Metropolitan District;

(ii) Most-recent annual audit of the Metropolitan District, if available; and

(iii) A letter bearing the signature of the Metropolitan District's accountant containing the accountant's statement that the funds for this project are available and that the Metropolitan District is financially viable, is reasonably implementing its general plan of finance contained in its service plan, and is reasonably capable of financing the construction, completing and/or installing the Improvements for which the waiver of security is sought and that the funds available for this project have been set aside in a separate account that cannot be used for other purposes.

5.3.8 Ashcroft Sewer Line Reimbursement: The Development will benefit from use of the Ashcroft Draw sanitary sewer line and thus is subject to the Agreement Regarding Discount of Sewer Reimbursement (regarding the Ashcroft Draw Sanitary Sewer Main) pursuant to the Ashcroft Draw Sanitary Sewer Joint Venture. The agreement is included as Exhibit J. Development is in Sub-basins 1, 2A and 3. It is subject to the 130% per acre Surcharge Rate of $1,023.21 plus ten years of compounded interest at 3.9% for a total per acre Surcharge Rate of $1,500.10. A portion of the Development's reimbursement responsibility was fulfilled in 2003 when Wheeler Management Group, INC. made an initial payment of $151,966 for the area in Sub-basins 1 and 2A. The Development is responsible for the remaining area lying outside of Sub-basins 1 and 2A.

Based on a site area of 96 acres existing outside of Sub-basins 1 and 2A and a per-acre cost of $1,500.10, the reimbursement amount due is approximately $144,009.60. The absolute reimbursement costs will be calculated based upon the gross area at the time of

final platting and prorated among residential units for each filing or phased development. This amount will be added to the City of Evans' building fees to be paid at the time of building permit issuance. The City of Evans will remit these fees to the developer of the sewer line.

The Developer's reimbursement obligation under this subsection may be satisfied by a separate agreement between the Developer and the Ashcroft Draw Sanity Sewer Joint Venture, acknowledging that all obligations for reimbursement pursuant to the provisions of the Ashcroft raw Sanitary Sewer Reimbursement Agreement in connection with the Development have been satisfied in full and will be permitted to be reduced to $120,000 as a "Discounted Reimbursement" if the conditions are met as outlined in Exhibit J.

5.3.9 Phasing of Improvements. It is anticipated that the first phase of development will be broken into three separate phases:

(i) Offsite Improvements Phase
(ii) Phase IA Improvements
(iii) Phase IB Improvements

Each phase shall have its own security, letter of credit or payment and performance bond in a form acceptable to the City as provided in this Agreement and shall be considered separately (not in the aggregate). The warranty for each phase will not start until that certain phase is completed. The City can release the letter of credit or payment and performance bond provided by contractor of certain Improvements in each phase when the utilities are completed for each phase. This concession is allowed to ensure sufficient security is provided by Developer or contractor for a phase or Improvement construction, but will allow for the release of a completed phase so the bond, letter of credit or security can be released and the construction can begin on the next phase. With regard to all or such part of the security, letter of credit or payment and performance bond, if the City is satisfied that some or all of the Improvements are completed and initial acceptance has been granted for any or all of the following improvements within each phase listed above:

(A) Offsite Improvements
(B) Grading
(C) Utilities
(D) Pavement

And provided the City is satisfied with the same, then the Improvements' guarantee, letter of credit or payment and performance bond related to those completed improvements, including without limitation, the Performance Guarantee, for such portion of the Improvements shall be deemed to have been met with respect to the same and a Guarantee Reduction Notice as referenced in Section 5.3.7 (in substantially the form annexed hereto as Exhibit D-4) releasing the guarantor to such extent, shall be promptly signed and issued to Developer (and to such guarantor) by the City's Public Works Director.

5.3.10 Procedure for Release of Warranty Security. Except as otherwise expressly provided by any agreement in other sections of this Agreement, immediately preceding the expiration of the warranty for any Improvements within a Phase outlined in Section 5.3.9, the Developer shall make a written request to the City to inspect and accept the

Improvements for that phase. The City shall inspect such Improvements within twenty (20) days of such request and shall notify Developer in writing of any deficiencies and repairs required to meet the construction standards within twenty (20) days of the inspection. Developer shall, within thirty (30) days of receiving such notice, correct such defect or, if the defect is of a nature that cannot reasonably be cured within thirty (30) days, notify the City that it has commenced reasonable efforts to cure such defect within said thirty (30)-day period and continue diligently thereafter. After Developer has corrected all such defects and completed all required repairs identified in the City's written notice, if any, the City shall issue to Developer a letter indicating its acceptance of the applicable Improvements. After satisfaction of any deficiency issues related to Improvements dedicated to the City or other public entity, the City shall make such security available for the Improvements which have been conveyed to the City for fulfillment of any warranty obligations owed to the City. At the time all deficiencies relating to the Improvements have been cured, and written notice of final acceptance has been received from the City, the City shall release all remaining warranty security to Developer for those Improvements dedicated to the City. This procedure for release of warranty security shall also apply and be duplicated for the Improvements to be dedicated to the Metro District as applicable for ownership, operation and maintenance.

6. Initial Acceptance: Developer shall make written application to the Public Works Director for initial acceptance of the Improvements for the first Phase of development (and any subsequent Phase of development subjected to this Agreement by Developer pursuant to Exhibit "F" (Phasing Plan)) ("Initial Acceptance") within 30 days of their completion and issuance by the City of a Certificate of Initial Acceptance, as defined below. Such Improvements will be described on a "Developer's Contribution Worksheet" provided by the City Engineer. The Developer shall be responsible for the accuracy and completeness of all information provided. The affidavit, lien waivers and other materials described below may be reviewed by the City, but the City assumes no responsibility or liability to or for anyone regarding the veracity of the information so provided. Developer's application for initial acceptance shall be accompanied by the following information and materials:

6.1. As Built Drawings: One (1) set of surveyed Mylar and one digital/CAD file of the "as built" drawings, certified as to accuracy by the Developer or its architect or Engineer; and

6.2. Engineer's Certification: Written certification by the Developer's Engineer that the Improvements for such Phase of development have been fully constructed and installed in substantial conformance with the Plans and Specifications; and

6.3. Cost Affidavit: A final affidavit of the Improvements' construction cost including verification reasonably satisfactory to the City; and

6.4 Improvements Affidavit: Developer shall provide a signed affidavit that the Improvements for such Phase of development have been paid for in full; and

6.5 Lien Waivers: Developer shall provide lien waivers from (i) its general contractor, and (ii) from all subcontractors, suppliers and materialmen who have furnished or performed $25,000.00 or more in labor, material or services for the Improvements for such Phase of development. To the extent Developer bonds any outstanding disputed claim and/or recorded lien by a surety or judicial bond equal to the amount of the alleged liability, the claim or lien so bonded shall be deemed equivalent to a lien waiver for purposes of satisfying this subsection 6.5; and

6.6 Maintenance Guarantee: Developer acknowledges the Maintenance Guarantee that accompanies

the request for Initial Acceptance shall be in the form of (1) a cash escrow deposited with the City, or (2) an irrevocable letter of credit in the form approved by the City as Exhibit "E" (Letter of Credit) attached hereto and incorporated herein to this Agreement, in which the City is designated as the beneficiary and in the amount of fifteen percent (15%) of the total costs of the Improvements. The City hereby acknowledges and agrees that such letter of credit may be given by Gerrard Excavating Inc., rather than Developer,. Unless expressly stated otherwise in the form attached as Exhibit "E", the Maintenance Guarantee shall be subject to the same conditions as those set forth for the Performance Guarantee in Section 5.3.6 and Exhibit "G" of this Agreement. The Maintenance Guarantee shall warrant and guarantee all expenses and costs for maintenance, repairs, and replacement of the Improvements for a period of two (2) years after their Initial Acceptance by the City. If any of the Improvements shall fail and require repair or replacement, such failed Improvements shall be repaired or replaced with similar Improvements deemed satisfactory by the Public Works Director in the exercise of his reasonable discretion, and upon completion of such repair or replacement and approval by the Public Works Director, the two (2)-year warranty period shall begin anew as to the replaced Improvement only. In such instance, the Maintenance Guarantee shall remain in place during such extended warranty period. Notwithstanding anything herein to the contrary, the amount that may be drawn or demanded on under the Letter of Credit or cash escrow, as the case may be, given for the Maintenance Guarantee shall be reduced to fifteen (15) percent of the approved estimated cost of the improvement upon completion signified by issuance of a Certificate of Initial Acceptance.

7. Receipt and Inspection by City: City and Developer acknowledge that the City is relying on the construction documents prepared by Northern Engineering dated December 12, 2019. Developer is to ensure construction occurs according to the Construction Documents. After the receipt of said written application, the Public Works Director (or a designated representative) will use reasonable efforts to promptly inspect the Improvements and prepare a detailed written description of all Improvements that are not in compliance with the requirements of the City or the Plans and Specifications and deliver that description to the Developer. Any review, inspections, testing, or acceptance by the City does not relieve Developer of its obligations to design and construct the improvements in a manner that substantially complies with all applicable drawings, rules and regulations. Any actions conducted by the City do not relieve Developer or the Developer's engineer from representations made in the Construction Documents. After curing such defects as are noted (if any) on the written statement provided by the Public Works Director to the Developer, if defects were noted and cured, the Developer shall make written application to the City for re-inspection of the Improvements, and the Public Works Director will use reasonable efforts to promptly (no later than three (3) weeks following receipt of Developer's written application for re-inspection) re-inspect such Improvements. (No re-inspection shall be required in the absence of any defects having been noted on such written statement.) Nothing in this paragraph shall preclude the City and Developer from modifying the Construction Documents to reflect actual field conditions which shall be memorialized in Construction Document Record Drawings to be provided to the City.

8. Approval and Certification by City: No Improvements shall be deemed to be initially accepted by the City until the Public Works Director has certified, in writing, by signing a Certificate of Initial Acceptance (substantially in the form annexed hereto as D-1) that the Improvements appear to have been completed in accordance with the applicable Plans and Specifications. This shall then constitute Initial Acceptance.

9. Maintenance, Repair and Replacement: Until Final Acceptance of the Improvements by a Certificate of Completion reviewed and approved by the Public Works Director as set forth in Section 10 of this Agreement, Developer agrees that (a) the Maintenance Guarantee shall not be released; and (b) the Developer shall bear all risks and liability related to any loss, damage, or claims due to defects or failures

of any of the Improvements; and (c) the Developer shall perform all maintenance and make all repairs and replacements of all defects or failure of Improvements at Developer's expense which, in the reasonable opinion of the Public Works Director, may be necessary. If, within thirty (30) days after the Developer's receipt of written notice from a City Official requesting such reasonably required maintenance, repairs, and/or replacements of the Improvements, the Developer shall not have undertaken with due diligence to make same, the City, after providing written notice to Developer, may make such maintenance, repairs, and/or replacements at the Developer's expense. The City shall be entitled to draw upon the Maintenance Guarantee, either before undertaking to make such repairs or at any time thereafter, or the City may charge the Developer for the costs thereof if such charges are not paid by the Maintenance Guarantee. In case of emergency (an "emergency" being a circumstance presenting an imminent threat of harm to persons or property upon the Property, which harm would be exacerbated by providing written notice to Developer as otherwise required herein), such written notice shall be waived and the City may proceed as it reasonably deems necessary, at the expense of the Developer or the issuers of the Maintenance Guarantee. In the event Developer elects to subject any subsequent Phase of development to this Agreement pursuant to Exhibit "F" (Phasing Plan), the provisions of this Section 9 shall apply to such Phase or Phases.

10. Final Acceptance: The Developer shall make a written request to the Public Works Director (or a designated representative) for a final inspection of the Improvements no sooner than two (2) years after the City's Initial Acceptance of all of the Improvements for such Phase of Development, or such earlier time as the City shall agree in writing. Upon receipt of such request the City may, but shall not be obligated to, conduct a final inspection of the Improvements. If the Developer fails to have the Improvements finally accepted as provided in this Section within one year and six months after the City's Initial Acceptance, the City shall have the right, but not the obligation, at any time thereafter to conduct a Final Inspection of the Improvements. If, pursuant to a final inspection requested by the Developer or initiated by the City, any Improvement is found to not conform to this Agreement, the Plans and Specifications, or other applicable regulation or requirement, then the City shall have the rights set forth in Section 5 (Completion of Public Improvements) of this Agreement to remedy such defects. Nothing herein shall be construed or deemed as requiring the City to finally accept and release from the Maintenance Guarantee any Improvement that is defective or damaged. After receipt of satisfactory evidence that the Improvements substantially and materially conform to this Agreement, the Plans and Specifications, all applicable regulations and requirements, and that all of the maintenance, repairs, and replacements reasonably requested by City Officials pursuant to the terms of this Agreement have been completed to the reasonable satisfaction of the City, the Public Works Director shall certify completion and Final Acceptance of such Improvements by signing a Certificate of Completion (substantially in the form annexed hereto as Exhibit D-2). This shall then constitute Final Acceptance. The Maintenance Guarantee provided by the Developer shall be released after the Final Acceptance and delivery of a true copy of the Certificate of Completion to the City.

11. Rights-of-Way and Easements: Before commencing the construction of any Improvements the Developer shall acquire, at its own expense, good and sufficient rights-of-way or easements, clear of any encumbrances except permitted encumbrances to which the City has consented in advance and in writing, on all lands and facilities, if any, traversed by the proposed improvements. All such rights-of-way and easements shall be conveyed to the City at the time of Initial Acceptance and the documents of conveyance shall be in a commercially reasonable form acceptable to the City and shall be furnished to the Public Works Director or their designee for recording.

11.1 Title Insurance: The Developer shall provide at its expense a policy of title insurance with a reputable title insurance company, insuring title in the City, free and clear of all liens and encumbrances other than those encumbrances identified on a commitment for title insurance delivered to the City on or prior to the Effective Date, as set forth in Exhibit D-3 hereto and hereby deemed acceptable, for all land, property, and easements dedicated or conveyed (except

those easements that do not affect the City's use of the property) to the City or for public use.

12. Engineering Services: The Developer shall furnish, at its expense, all engineering and landscaping services in connection with the Development and the Improvements.

12.1 Professional Engineer Requirement: Engineering services shall be performed by a professional engineer registered in the State of Colorado.

12.2 Engineering Scope of Services: Engineering services shall consist of, but not be limited to, survey, designs, plans, and profiles, estimates, studies, construction supervision, and the furnishing of necessary documents in connection therewith. All engineering plans shall be submitted for review by the Public Works Director. The City's review will not relieve Developer or Developer's Engineer of any responsibility or liability for design, construction and installation of the improvements and Developer agrees to save and hold the City harmless from any claims for fault or negligence attributable to such services, in accordance with the provisions of section 17.1 herein below.

12.3 Landscape Plan Preparation: Landscaping plans shall be provided by or under the supervision of a Landscape Architect licensed and registered in the State of Colorado.

13. Water and Non-potable Water Service: The Development has been approved for a maximum of 1,097 residential dwelling units and 19.32 acres of commercial space. The parties acknowledge that Developer has dedicated 763 EQRs to the City as described by Exhibit I.

13.1 The approved, maximum 1,097 residential dwelling units is comprised of 446 Single-Family units (utilizing a 0.60 EQR/unit rate) and 651 Multi-family units (utilizing a rate of 0.35 EQR/unit rate). Based on the projected number of units and their respective EQR/unit rate the total required EQR's for residential use equals 495.45 as described by Exhibit I.

13.2 The Development has committed to the use of a non-potable irrigation system. Based on the projected irrigation demand, the Development requires 152.00 EQR's for the non-potable system as described by Exhibit I.

13.3 The projected EQR demand for residential and irrigation use equals 647.45 EQRs (495.45 residential + 152.00 irrigation). The Development has dedicated a total of 763 EQRs. The remaining EQR total equals 115.55 (763–495.45–152.00). The projected consumption of water (EQR requirement) planned for the 19.32 acres of commercial space is unknown at this time. The remaining EQRs are intended to be applied to the commercial space as needed to meet the City's EQR dedication requirements. Additional EQRs may be needed if the commercial EQR requirement exceeds the remaining 115.55 EQRs.

13.4 The City shall be under no obligation to construct or operate a non-potable water system. Exhibit H provides information regarding the expectations for the operation of the Peakview Non-potable Water system.

14. Operation Standards:

14.1 Construction Equipment: The operation of construction equipment outside an enclosed structure (i.e. grading, other surface improvements, underground utilities, either public or private) shall be prohibited between the hours of 8:00 p.m. and 6:00 a.m. on weekdays and

4:00 p.m. and 8:00 a.m. on legal holidays and weekends. In situations of need, and upon written request, the hours of operation may be altered by the Public Works Director.

14.2 Debris in the Public Right-of-Way: The Developer shall, at all times, keep the public right-of-way reasonably free from accumulation of waste material or rubbish caused by its operation. Developer shall remove such rubbish no less than weekly and, at the completion of its work, shall remove all waste materials, rubbish, tools, construction equipment, machinery, and surplus materials from the public right-of-way caused by its operation. Any excessive accumulation of dirt and/or construction materials shall be considered sufficient cause for the City, after written notice and failure by Development to cure within seven (7) days after receipt of such notice, to withhold building permits and/or certificates of occupancy or other approvals or permits until corrected to the reasonable satisfaction of the Public Works Director or designee.

14.3 Erosion Control Requirements: Developer shall install temporary and permanent erosion control in the Development to control erosion by both wind and water. Developer shall maintain said erosion controls on a routine basis. In the event that the Developer fails to perform erosion control maintenance, Developer shall have 20 days upon receiving written notice to bring the Development into compliance, or to commence to cure for those corrections hat cannot be reasonably completed within such 20-day period. Failure to comply shall be sufficient cause, after further written notice, for the City to withhold water service or any approvals or permits until corrected to the satisfaction of the Public Works Director or designee. By way of explanation and without limitation, said control may consist of seeding of approved grasses, temporary dikes, gabions and/or other devices.

14.4 Notification of Failure to Comply: In the event that the Developer fails to perform the work required under this Agreement and after reasonable written notice and opportunity to Developer to cause such work to be performed or to be commenced to be performed, the City may perform the work required and charge the Developer for said cost of such work. In the event Developer responds to the City in writing objecting to the City's view that Developer has failed to perform, then no action to perform such work shall be undertaken by the City unless and until such issue has been finally determined in accordance with the dispute resolution process set forth herein at Section 30. The Developer shall pay the City for all costs incurred by the City in the performance of the above said service within 30 days of the City submitting an invoice for said services.

14.5 Standards for Subcontractors: The Developer hereby agrees that it shall require its subcontractors to cooperate with the City's construction inspectors by, after receipt of notice from the City, ceasing operations when winds are of sufficient velocity to create blowing dust, which, in the inspector's opinion, is hazardous to the public health and welfare.

14.6 Dust Mitigation and Stormwater Management. The Developer shall provide a final dust mitigation plan at the time of Grading Permit application for each Phase of Development. The Stormwater Management Plan shall be kept on site and one copy shall be provided to the City. Evidence of filing with the Colorado Department of Public Health and Environment shall be provided to the City. Evidence should be an acknowledgement of the Developer or Contractor filing a Notice of Intent with the Colorado Department of Public Health and Environment. The Dust Mitigation Plan and the Stormwater Management Plan shall be implemented by Developer during construction of the Improvements. Developer will implement such plan at its sole cost and expense.

15. Development Standards: Developer acknowledges certain responsibilities for design, engineering, construction, maintenance and funding of improvements detailed below.

15.1 Road Improvements: Developer will design and construct road, sidewalk, drainage and landscaping improvements adjacent to that portion of the Property to be improved during the first Phase of Development or subsequent Phases as reflected in Exhibit "F" (Phasing Plan), and in accordance with the approved Construction Plans prepared by Northern Engineering and approved by the City on December 12, 2019. Road improvements identified as site-related improvements are required adjacent to (on the same side of the street) of the first Phase of Development and shall include asphalt paving, curb and gutter, asphalt paving for right and left turn lanes, and arterial street landscaping (trees along with deciduous shrub beds, bluegrass or approved seed mix, and an irrigation system), ornamental street lighting, a meandering pedestrian/bike path constructed in accordance with City standards applicable at the time of construction, uniform fencing with columns (i.e. brick, stone, etc.) on 50-foot centers, and bus shelters if required by G.E.T. (Greeley-Evans Transit). All overhead primary, secondary and service utility lines shall be placed underground. Road improvements and landscaping for roads must be completed within six (6) months after the start of construction (weather permitting) but in any event, no later than the issuance of Initial Acceptance. Prior to commencing construction, Developer shall provide an irrigation system plan, landscaping plan, fencing plan, and an entryway signage plan, all to have prior approval of City Officials, which approval shall not be unreasonably withheld, conditioned or delayed.

15.2 Right-of-Way Improvements and Dedications: Developer has dedicated appropriate right-of-way as shown on Exhibit "B" (PUD/Site Plan) attached hereto and incorporated herein to this Agreement, for all public streets in and adjacent to this Development, in accordance with the most current City standards for the same. Except as expressly otherwise set forth herein, Developer shall construct, at its expense, all right-of-way improvements at the time when adjacent rights-of-way are planned adjacent to the property as required by the Public Works Director including road improvements, auxiliary lanes, signalization, landscaping, irrigation, utility lines and bikeway/walkways. Except as expressly otherwise set forth herein, Developer shall also construct, at its expense all streets, roadways and right-of-way improvements as required by the Public Works Director and agreed by Developer as reflected in Exhibit "C" (Developer Requirements). This should be set forth, preferably in a graphic, to make sure all parties are in agreement, the costs should be included in the Developer's engineer's estimate of costs and the costs should be covered by the Performance Guarantee.

15.3 Internal Roadway Standards: Roadways shall be designed and constructed in accordance with the design standards adopted by and in effect for the City at the time of development. Upon Final Acceptance, the City will maintain the internal roads.

15.4 Fencing Standards: Fencing required for the trail improvement depicted on Exhibit "B" (PUD/Site Plan) shall be constructed in accordance with plans approved in advance by the City. Fencing required for any Phase of Development shall be completed no later than the deadline for completion of all other Improvements for such Phase. The Developer shall maintain, repair, and replace all fencing within the Property.

15.5 Access and Egress Requirements: There shall be a minimum of two means of all-weather ingress and egress into the Development at all times for emergency vehicle access or as may otherwise be approved by the City. A temporary all-weather ingress and egress has been

identified for the first Phase of Development. This is for emergency vehicles only and is depicted on Exhibit "B" (PUD/Site Plan). Developer shall design, construct, maintain, repair and replace all access egress points.

15.6 Mailbox Locations: Developer shall install mailboxes as may be required by the United States Postal Service.

15.7 Overhead Utility Lines: The existing and proposed Xcel Energy and Poudre Valley Rural Electric Association Utility Transmission lines, if any, located on the property or in the right-of-way adjacent to the property, are required to be located or relocated underground. Other than the Xcel Energy and Poudre Valley Rural Electric Association Utility Transmission lines, there are no other overhead utility lines on the property at the time of this approval. Maintenance of utilities is provided by the utility.

15.8 Bicycle & Pedestrian Trails: If and to the extent Exhibit "B" (PUD/Site Plan) attached hereto provides for a trail easement to be dedicated as part of the Development, then construction of the trail easement shall be performed on (or before) the Estimated Completion Date as set forth in Exhibit "D" (Schedule of Improvements) attached hereto and incorporated herein to this Agreement, subject to delays due to weather, season, or Force Majeure. Any bicycle/pedestrian trails within the Development must be constructed in accordance with City standards applicable at the time of construction and must be constructed of approved materials. Trails shall be ten (10) feet wide (six (6) inches thick) and constructed of concrete. Interior sidewalks shall be a minimum of five (5) feet wide (six (6) inches thick) and constructed of concrete. If required by the PUD/Site Plan and Development Guide, Developer shall also construct fencing consistent with existing fencing owned by the City along the trail section already in place along the existing trail improvement. Any trail and fencing design and construction shall be approved by the City Community Development Department or designee prior to final acceptance of the improvements. The City shall maintain sidewalks and trails dedicated to the City after Final Acceptance. The Developer shall maintain, repair and replace all sidewalks and trails on the Property other than those dedicated to the City.

15.9 Final Plat and As-Built Drawings: All final plat and as-built construction drawings of the Improvements shall be surveyed and submitted in Mylar, print, and digital form (which must conform to the City's format and content requirements).

15.10 Management of Storm Water Improvements: Subject to the approved Final Plans, Developer (or its assignees, subject to the advance written approval of the Public Works Director, which may include the Metropolitan District,) shall maintain and keep reasonably free of debris all storm water management improvements constructed as part of each Phase of development as subjected to this Agreement by Developer pursuant to Exhibit "F" (Phasing Plan) in perpetuity, unless and until dedication of same to an appropriate entity. Such dedication shall be subject to the advance written approval of the Public Works Director. The City shall have the right, but not the duty, to inspect storm water improvements at any reasonable time to verify they are in proper working order and reasonably free of debris. Any damage or other defect shall be promptly corrected by Developer (at Developer's expense) and to the satisfaction of the Public Works Director or a designated representative. The Developer shall maintain, repair, replace and operate the Storm Water Improvements.

15.11 Non-Potable Water System: Developer and the City agree that each Phase of development subjected to this Agreement from time to time will be served by a non-potable water system for irrigation. The non-potable system shall be installed on (or before) the Estimated Completion Date set forth in the Exhibit "D" (Schedule of Improvements) attached hereto and incorporated herein to this Agreement. Improvements shall be subject to the provisions of this Agreement regarding inspection, testing and acceptance, and shall be subject to a two (2) - year warranty period and maintenance guarantee, as provided in connection with the Improvements. The parties acknowledge that Developer has dedicated 763 EQRs to the City, as outlined on Exhibit I. Of these EQRs, 152 are reserved for non-potable irrigation as outlined in Exhibit K, the Aqua Engineering Outdoor Water Use Analysis. Developer shall cause the system to be engineered, designed and constructed to the standards established by the Municipal Code. The non-potable water system shall be dedicated to the Metropolitan District, or such other entity as the City shall approve in writing. This system shall not be designed for human consumption. Developer or its assigns shall also install non-potable water signs as specified by the City, throughout the Development and around any non-potable irrigation ponds within the Development.

15.12 Developer and City have agreed the improvements to oversize the sewer line on 37th Street as shown on the PUD/Site Plan and according to the Final Plans prepared by Northern Engineering are necessary as a benefit to both the City and Developer. Developer and City have agreed that in lieu of a Reimbursement Agreement to cover the additional costs required to upsize and construct these additional 37th Street Sewer Line improvements, the City shall reimburse Developer $93,740 from the City's Sewer Tap Fees collected at the time of Building Permit issuance for those Building Permits with regard to the 37th Street Sewer Line improvements. This amount will be reimbursed to the Developer by the City once the applicable tap fees collected from building permits issued within the Development reaches the total amount due. Upon the Developer's full construction and the City's initial acceptance of the oversized 37th Street Sewer Line improvements, Developer shall submit a full accounting of the construction and installation of the upsized and upsized and oversized 37th Street Sewer Line improvements to the City. Improvements necessitating closure of 37th Street shall occur during extended periods of time when school is not in session. Any street closure will require prior written approval from the City.

15.13 Developer and City have agreed the improvements to oversize the water lines as shown on the PUD/Site Plan and according to the Final Plans prepared by Northern Engineering are necessary as a benefit to both the City and Developer. Developer and City have agreed that in lieu of a Reimbursement Agreement to cover the additional costs required to upsize and construct these additional water line improvements, the City shall reimburse Developer $177,958 from the City's Water Tap Fees collected at the time of Building Permit issuance for those Building Permits with regard to the water line improvements. This amount will be reimbursed to the Developer by the City once the applicable tap fees collected from building permits issued within the Development reaches the total amount due. Upon the Developer's full construction and the City's initial acceptance of the oversized water line improvements, Developer shall submit a full accounting of the construction and installation of the upsized and upsized and oversized water line improvements to the City.

15.14 Arterial Road. Developer will construct all Arterial Roads surrounding the Property as shown on the PUD/Site Plan and according to the Final Plans. Such construction is necessary to serve the Development. Future Final Plats will necessitate additional construction by the Developer along 37th Street in accordance with Freedom Parkway requirements. These improvements shall occur prior to construction commencement in Phase 4. Future Final Plats

will necessitate construction by Developer along 77th Avenue. It is anticipated that construction of the 77th Avenue improvements may be warranted prior to construction of Phase 2. The necessity and timing for when the roadway discussed in this Section 15.14 will be required to be constructed by the Developer will be determined solely by the City in the exercise of its reasonable discretion and consistent with the roadway and development requirements of the City.

15.14.1 Design and construction of the arterial section of 65th Avenue along the property frontage will be completed by Developer during extended periods of time when school is not in session such as summer break. Construction shall not interfere with school-related traffic. Developer will expedite construction and minimize closure time for 65th Avenue and 37th Street. This construction will include transitions to the existing road section north and south of the property as shown on the plans prepared by Northern Engineering dated December 12, 2019. Any street closure will require prior written approval from the City.

Developer and City have agreed the improvements to 65th Avenue as shown on the PUD/Site Plan and according to the Final Plans prepared by Northern Engineering are necessary as a benefit to both the City and Developer. Developer and City have agreed that in lieu of a Reimbursement Agreement to cover the additional costs required to upsize and construct these additional roadway improvements, the City shall reimburse Developer up to $80,814 from the City's Street Impact Fees collected at the time of Building Permit issuance for those Building Permits with regard to the 65th Avenue improvements. This amount will be reimbursed to the Developer by the City once the impact fees collected from building permits issued within the Development reaches the total amount due. Upon the Developer's full construction and the City's initial acceptance of the oversized street Improvements, Developer shall submit a full accounting of the construction and installation of the upsized and oversized street Improvements to the City

15.14.2 37th Street is a City of Greeley roadway. The developer shall construct 37th Street improvements across the entire frontage of the property before building permits are issued for Phase 4 or before October 1, 2025, whichever comes first. The developer shall be required to design and construct the roadway improvements in accordance with City of Greeley requirements. The improvements shown on the plans prepared by Northern Engineering dated December 12, 2019 were not approved by the City of Greeley. The City of Greeley has required that the Developer and Northern Engineering revise the plans for 37th Street to comply with City of Greeley standards and specifications. No portion of 37th Street will be constructed until the revised plans have been approved by the City of Greeley and the City of Evans.

15.15 37th Street Project Entrance and Access Cost Sharing/Reimbursement. The Parties acknowledge that Developer, at the City's request, has incurred significant costs related to the design of roadway connectivity improvements serving certain real property adjacent to and east of the Property consisting of approximately 16 acres (the "16-Acre Parcel") as contained in the final Construction Plans. The 16-Acre Parcel is currently owned by Advantage Bank in Colorado. Future developers of the 16-Acre Parcel may benefit by receiving design and engineering services as part of the Peakview Development for site access to any future development that may occur on the 16-Acre Parcel. Design and engineering works include a) A shared access from 37th Street onto the Peakview property and onto the 16-Acre Property as separate accesses from 37th Street will not be allowed; b)

A roundabout providing access to both the Peakview property and the 16-Acre Property; and c) A transition lane to be constructed across the frontage of the 16-Acre Property.

The City agrees to notify future developers of the 16-Acre Parcel of this access limitation and to encourage the developers of the 16-Acre Parcel to work with the developers of Peakview to negotiate a reimbursement agreement pursuant to the formula provided in Exhibit M and prepared by Delich Associates, Traffic and Transportation Engineer dated October 11 2018 (see Exhibit M). The share of the 16 Acre Parcel for purposes of reimbursement is hereby deemed to be 27.50% of the total engineering and/or design costs incurred by Developer for same. Current designed improvement costs through preliminary approval associated with the 16 Acre Parcel are $17,700 based upon Engineering Cost estimates.

Developer shall construct in accordance with approved development plans the roadway and access points, however, the roundabout or future access to the 16 Acre Parcel from Developer's property into the 16 Acre Parcel shall be the sole responsibility of the adjacent property owner.

16. Other Special Provisions: Other special terms, conditions or provisions relating to this Development are set forth in Exhibit "C" (Developer Requirements).

17. Liability:

17.1 Indemnification: To the extent permitted by law, Developer hereby agrees to indemnify and hold the City, City Officials, its employees, agents, representatives, and insurers (collectively, "City Parties") harmless from and against any and all suits, demands, actions, damages, liability, losses, claims, fees, and expenses (including reasonable attorney's fees) resulting or arising in any way from any breach or default of this Agreement or any acts or omissions of the Developer, its employees, agents, consultants, representatives, or subcontractors except to the extent caused by negligence, gross negligence or willful misconduct of the City or one or more City Parties. Developer, using counsel reasonably acceptable to the City, shall promptly investigate, handle, respond to and provide defense for and defend against any such liability, claims, or demands at the sole expense of Developer. Developer also agrees to bear all reasonable costs, expenses, and attorney's fees related thereto whether or not such liability, claims or demands are groundless, false or fraudulent unless they are caused by negligence, gross negligence or willful misconduct of the City or one or more of its officers, agents or employees. Further, the City shall promptly provide written notice to Developer of any suit or claim that, in the City's reasonable opinion, may or would trigger the obligations of Developer to indemnify or hold the City harmless under this Sub-Section 17.1.

17.2 Insurance: Developer shall (for itself and for its contractors, subcontractors, representatives and agents engaged in the design, construction, or installation of Improvements) maintain such liability insurance including general liability, contractors liability, professional liability for those professionals performing professional services pursuant to this Development Agreement and subcontracts intended to perform requirements hereof, comprehensive automobile liability, worker's compensation insurance and sufficient public liability insurance as will protect the City, City Officials, City's employees, agents and representatives against any and all potential liability, claims, damage, demands, losses and expenses, that may be incurred or asserted pursuant to Sub-Section 17.1 above. Liability

insurance shall be in the minimum amount of three hundred thirty thousand dollars ($330,000.00) for injury to one person, or nine hundred ninety-thousand dollars ($990,000.00) for injury to two or more persons in any single occurrence, or such greater amounts as may be established by the Colorado Governmental Immunity Act, as it may be amended. Whenever reasonably requested by City or City Officials, the Developer agrees to submit certificates of insurance evidencing sufficient amounts, types and duration of insurance and which show the City, City Officials, its employees, agents, and representatives as additional insureds. Developer shall not be relieved of any liability, claims, demands or other obligations assumed or set forth in this Agreement by reason of its failure to procure or maintain such insurance, or by reason of its failure to procure or maintain insurance in sufficient amounts, durations, or types.

17.3 Drainage Liability: To the extent permitted by law, Developer shall indemnify and hold the City harmless from any liability the City may have on account of any change in the nature, direction, quantity or quality of drainage flow, resulting from the Development, in accordance with the provisions of Sub-Section 17.1 herein above. In addition, Developer shall reimburse the City for any and all costs, fees, and expenses, including reasonable attorney's fees, that the City incurs in acquiring any rights of way or easements that the City deems necessary or is required to acquire or condemn or that the City is held to have acquired or condemned for drainage or as a result of or relating in any manner to the Development. Prior to the City commencing or defending any litigation related to these easements, rights of way or condemnation, the City shall obtain the written consent of the Developer, which consent shall not be unreasonably withheld or delayed. Further, the City shall promptly provide written notice to Developer of any suit or claim that, in the City's reasonable opinion, would trigger the obligations of Developer under this Section 17.3.

17.4 Tax Liability: Developer shall pay any outstanding taxes, encumbrances or obligations on any property dedicated or conveyed to the City prior to or at the time of such dedication or conveyance, and shall indemnify and hold the City harmless from any and all encumbrances, obligations, or tax liability incurred prior to the dedication or conveyance to the City. Any use tax due for construction materials shall be paid prior to construction of any improvements on the Property. The City shall promptly provide written notice to Developer of any suit or claim that, in the City's reasonable opinion, may or would trigger the obligations of Developer to indemnify or hold the City harmless under this Sub-Section 17.4.

17.5 Use Tax: Any and all use tax due on construction and building materials for public facilities shall be paid as provided under Municipal Code including but not limited to Section 3.04.200.

17.6 Cost Reimbursement to City: Developer shall reimburse City for all reasonable costs incurred for professional consultants including but not limited to engineers, testing companies, contractors, and attorneys reasonably used by the City in connection with the preparation or implementation of this Agreement and in the review and processing of the Application, as well as the design, construction, review, testing, completion, repair, replacement, and approval of the Development. Any request for reimbursement shall be made in writing within six (6) months following the completion of the Phase of Development in which the asserted costs were incurred.

18. Breach of Agreement by Developer: If at any time this Agreement (or any part hereof) has been breached by Developer or if Developer has failed to make satisfactory progress (substantially in accordance with Exhibit "D" (Schedule of Improvements) on the design, construction, installation, repair, replacement

or maintenance of the Improvements the City may, after 30 days' prior written notice to Developer or such additional period as may reasonably be agreed to by the City in writing in light of the nature of the alleged breach, draw on the Performance Guarantee or Maintenance Guarantee and the City may withhold approval of any or all building permits, certificates of occupancy, water meters, or tap hook-ups for any area within the Development, or other approvals or permits, if Developer then fails to make reasonable progress as reasonably determined by the City, unless such failure is caused by circumstances which are outside the Developer's reasonable control, meaning that such circumstance is a result of an act of god (including fire, flood, earthquake, or other natural disaster) regionally recognized shortage of materials, strike, lockout or interruption of utility service or Force Majeure. Notwithstanding these rights and remedies, the City may pursue whatever additional remedies it may have against Developer or anyone, either at law, equity, or pursuant to this Agreement. The City's remedies shall be cumulative.

19. Breach of Agreement by City: If at any time the Developer believes the City is in breach of this Agreement, the Developer shall provide the City with 20 days' prior written notice before pursuing any of the remedies set forth in this Section 19. In the event the City fails to remedy the alleged breach within such 20 days or such additional period as may be necessary in light of the nature of the alleged breach, then the Developer's remedies are limited to specific performance of this Agreement and shall not include any claim for damages, unless Developer suffers damages caused by the gross negligence or willful misconduct of the City or one or more City Parties, in which case Developer may pursue all rights and remedies available at law or in equity based on such gross negligence or willful misconduct.

20. No Waiver: Delays by a Party in enforcement or the waiver of any one or more breaches of this Development Agreement shall not constitute a waiver of any of the remaining terms or obligations or any future breaches. In addition, the parties acknowledge that the City is a Colorado home rule municipality and entitled to the protections afforded by the Colorado Governmental Immunity Act (CGIA), Sections 24-10-101, et seq., C.R.S. Any provision of this Agreement to the contrary notwithstanding, the City does not waive any of the rights, protections or immunities afforded to it by the CGIA.

21. Severability: If any provisions or parts of this Development Agreement are judged to be unenforceable or invalid, to the extent practicable, such judgment shall not affect, impair, or invalidate the remaining parts of this Agreement, the intention being that the various parts and provisions hereof are severable.

22. Recording of Agreement and Encumbrance on the Property: This Development Agreement shall be recorded with the Weld County Clerk and Recorder at Developer's expense and shall be a covenant running with and against all the Property, property rights, and improvements contained within the Development in order to put prospective owners, purchasers, successors, assigns, and others acquiring any interest in the Property on notice as to the terms and obligations herein.

23. Binding Effect: Unless otherwise provided herein, this Development Agreement shall be binding upon each Party's heirs, successors, assigns, transferees, and any other person or entity acquiring or purchasing any interest in any part of the Property.

24. Transfer or Assignments: In the event of a sale or transfer of any portion of the Property, the seller or transferor and the purchaser or transferee shall be jointly and severally liable for the performance of each of the obligations contained in this Development Agreement unless, prior to the transfer or the sale, a written Agreement delineating and allocating the various rights and obligations for the Improvements, has been approved and executed by the City Council. Notwithstanding anything herein to the contrary, Developer shall have the right to transfer and/or assign its rights and interests in this Agreement to any entity that

controls, is controlled by, or is under common control with Developer without the approval of the City or City Council, provided the City is given written notice within 30 days of such transfer.

25. Title and Authority: Developer expressly warrants and represents to the City that, as of the Effective Date, Solstice Holdings LLC, an affiliate of Developer, is the record owner of the Property and further represents and warrants that the undersigned has full power and authority to enter into this Development Agreement. Developer understands that the City is relying on the representations and warranties contained herein, in its consideration of the application and in entering into this Agreement.

26. Notice: Any notice to Developer or the City, which may be given under the terms of this Agreement, shall be in writing and shall be deemed sufficiently given on the fifth (5th) day following the date such notice is sent by certified or registered U.S. Mail, postage prepaid, return receipt requested, or as of the immediately following business day after deposit with Federal Express or a similar overnight courier service that provides evidence of receipt, addressed as follows:

TO CITY:

Attention: City Manager
1100 37th Street
Evans, CO 80620-2036

With a copy to

Scotty P. Krob

Krob Law Office LLC
8400 E. Prentice Ave, Penthouse
Greenwood Village, CO 80111

TO DEVELOPER:

Solstice Holdings LLC
c/o ROI Dev Canada Inc.
Sherbrooke West, Suite 1430
Montreal (Quebec) H3A 3L6 Canada
Attention: M. Scott Vayer, Manager

With a copy to:

Spencer Fane, LLP
1700 Lincoln Street, Suite 2000
Denver, Colorado 80203
Attention: David O'Leary

With a copy, VIA EMAIL ONLY, to:
Marc-André Lévesque
Email: malevesque@roilandinvestments.com
Phone: 303-918-7918

Any party may change its notice address by providing the other party(ies) notice as set forth in this section.

27. Force Majeure: Whenever a period of time is herein prescribed for an action to be taken or performed by any Party, that Party will not be liable to so perform within such time period due to, and there will be excluded from the computation of such period of time, any delays due to, strikes, riots, acts of God, shortages of labor and materials, war, governmental laws, regulations or restriction or any other cause of any kind whatsoever which are beyond the reasonable control of the Party required to take or perform such action.

28. Recitals: The recitals to this Agreement are true and correct and are hereby incorporated into this Agreement by this reference.

29. Conflicting Terms: If and to the extent any of the terms or descriptions of the Improvements described in this Agreement shall conflict with the Plans and Specifications attached and made a part of Exhibit C and Exhibit D, the City-approved Plans and Specifications shall control.

30. Dispute Resolution: If a dispute arises relating to this Agreement and is not resolved, the parties shall first proceed in good faith to submit the matter to mediation before a mutually acceptable mediator with experience in real estate development in the greater Denver, Colorado metropolitan area. The parties will jointly appoint an acceptable mediator and will share equally in the cost of such mediation. In the event the dispute is not resolved within ninety (90) calendar days from the date written notice requesting mediation is sent by one of the parties to the other(s), the mediation, unless otherwise agreed, shall terminate.

(No Further Information This Page)

IN WITNESS WHEREOF, and agreeing to be fully bound by the terms of this PUD Development Agreement, the parties have set their hands below on this __ day of _____, 2020.

SOLSTICE DEVELOPMENT LLC (DEVELOPER)

By: _____ Manager _____ August 21, 2020
Signature Title Date

ATTEST:

_____ _____
Secretary/Member Date

STATE OF ~~COLORADO~~ NEW YORK

COUNTY OF BRONX ss.
SUBSCRIBED AND SWORN to before me this 21st day of AUGUST, 2020 by
M. SCOTT VAYER.

MARIA D BLONDETT
Notary Public, State of New York
No. 01BL6288407
Qualified in Bronx County
Commission Expires February 6, 2022

WITNESS my hand and official seal.

My commission expires: February 6, 2022 _____
Notary Public

(SEAL)

SOLSTICE HOLDINGS LLC (PROPERTY OWNER)

By: _____ Manager _____ August 21, 2020
Signature Title Date

ATTEST:

_____ _____
Secretary/Member Date

STATE OF ~~COLORADO~~ NEW YORK

COUNTY OF BRONX ss.
SUBSCRIBED AND SWORN to before me this 21st day of AUGUST, 2020 by
M. Scott VAYER.

WITNESS my hand and official seal.

My commission expires: FEBRUARY 6, 2022 Maria D. Blondett

Notary Public

(SEAL)

MARIA D BLONDETT
Notary Public, State of New York
No. 01BL6288407
Qualified in Bronx County
Commission Expires February 6, 2022

CITY OF EVANS, COLORADO
A Municipal Corporation

By: _____
Mayor

ATTEST:

By: _____
City Clerk

Development Agreement
Peakview Estates
List of Exhibits

EXHIBIT A:	**Legal Description**
EXHIBIT B:	**PUD/Site Plan**
EXHIBIT C:	**Developer Requirements and Additional Terms, Conditions, or Provisions**
EXHIBIT C-1:	**Improvements Map**
EXHIBIT C-2:	**City Public Improvements and Engineer's Cost Estimate**
EXHIBIT C-3:	**Metropolitan District Improvements and Engineer's Cost Certificate**
EXHIBIT D:	**Schedule of Improvements**
EXHIBIT D-1:	**Form of Certificate of Initial Completion**
EXHIBIT D-2:	**Form of Certificate of Completion**
EXHIBIT D-3:	**Commitment for Title Insurance**
EXHIBIT E:	**Irrevocable Letter of Credit**
EXHIBIT F:	**Phasing Plan**
EXHIBIT G:	**Performance Guarantee**
EXHIBIT H:	**Peakview Non Potable Water Operations**
EXHIBIT I:	**Peakview Analysis of Equivalent Residential Units (EQRs)**
EXHIBIT J:	**Ashcroft Draw Sanitary Sewer Reimbursement Agreement**
EXHIBIT K:	**Aqua Engineering Outdoor Water Use Analysis dated August 10, 2018**
EXHIBIT L:	**Peakview Development Guidelines prepared by LAI Design Group dated November 15, 2019**
EXHIBIT M:	**Letter regarding proportionate share of the 37th Street Access and the Peakview Transportation Impact Study dated September, 2018, both prepared by Delich and Associates**

EXHIBIT A
LEGAL DESCRIPTION
(See following pages)

Peakview Subdivision Legal Description

A parcel of land being a part of the Northwest Quarter (NW1/4) and the Southwest Quarter (SW1/4) of Section 28, Township 5 North, Range 66 West of the 6th P.M., City of Evans, County of Weld, State of Colorado more particularly described as follows:

COMMENCING at the Northwest Corner of said Section 28 and assuming the North line of the Northwest Quarter (NW1/4) to bear North 89°31'10" East, a grid bearing of the Colorado State Plane Coordinate System, North Zone, North American Datum 1983/92, a distance of 2630.69 feet with all other bearings herein relative thereto;

THENCE South 00°00'23" West along the West line of the Northwest Quarter (NW1/4) of said Section 28 a distance of 1300.00 feet to the POINT OF BEGINNING;
THENCE North 87°18'20" East a distance of 5.50 feet;
THENCE North 85°13'21" East a distance of 96.84 feet;
THENCE South 27°27'44" East a distance of 242.29 feet;
THENCE South 67°07'10" East a distance of 57.18 feet;
THENCE South 89°36'33" East a distance of 149.42 feet;
THENCE South 81°22'04" East a distance of 17.54 feet;
THENCE South 70°20'32" East a distance of 15.18 feet;
THENCE South 89°24'31" East a distance of 54.03 feet;
THENCE North 87°48'26" East a distance of 458.26 feet;
THENCE North 88°16'13" East a distance of 458.19 feet;
THENCE North 87°51'08" East a distance of 396.99 feet;
THENCE South 86°26'03" East a distance of 219.45 feet;
THENCE South 87°36'34" East a distance of 233.89 feet;
THENCE South 76°40'27" East a distance of 81.06 feet;
THENCE South 55°55'55" East a distance of 124.97 feet;
THENCE South 49°40'47" East a distance of 82.48 feet;
THENCE South 65°54'17" East a distance of 62.19 feet;
THENCE South 81°05'34" East a distance of 64.18 feet; to the East line of the Northwest Quarter (NW1/4) of said Section 28;
THENCE South 00°03'05" East along the East line of the Northwest Quarter (NW1/4) of said Section 28 a distance of 925.43 feet to the South line of the Northwest Quarter (NW1/4) of said Section 28;
THENCE South 00°04'21" East along the East line of the Southwest Quarter (SW1/4) of said Section 28 a distance of 43.09 feet to the South line of a parcel of land described in Reception No. 3040268 of the Records of Weld County;
THENCE South 89°38'54" West along the South line of said parcel of land a distance of 941.80 feet;
THENCE North 43°27'30" West along the Westerly line of said parcel of land described in Reception No. 3040268 a distance of 59.04 feet to the South line of the Northwest Quarter (NW1/4) of said Section 28 and the Southeast Corner of a parcel of land described in Reception No. 3040269 of the Records of Weld County;
THENCE North 43°27'30" West along the Easterly line of said parcel of land described in Reception No. 3040269 a distance of 28.42 feet to the North line of said parcel of land;
THENCE South 89°58'24" West along the North line of said parcel of land described in Reception No. 3040269 a distance of 1631.39 feet to the West line of the Northwest Quarter (NW1/4) of said Section 28;

THENCE North 00°00'23" East along the West line of the Northwest Quarter (NW1/4) a distance of 1304.36 feet to the POINT OF BEGINNING.

TOGETHER WITH

The Northeast Quarter (NE1/4) of Section 29, Township 5 North, Range 66 West of the 6th P.M., in the City of Evans, County of Weld, State of Colorado.

AND EXCEPTING THEREFROM parcels of land conveyed by instruments recorded in Book 114 at Page 124, and in Book 1557 as Reception No. 2502153, both of the Records of Weld County.

Containing 225.72 acres more or less

EXHIBIT B
PUD/SITE PLAN
(See following page)

The Final Plat has been recorded at Reception _____ with the Weld County Clerk and Recorder's office.

EXHIBIT C
DEVELOPER REQUIREMENTS AND ENGINEER'S COST ESTIMATES

---

1. Traffic Study: Developer shall comply with all requirements of the City approved Traffic Impact Study.

2. Engineering Plans: City Approved Final engineering Plans and Specifications shall be followed during construction of the project. Any revisions to the plans resulting in substantive changes to design concepts shall be submitted to the City for determination of need for revised City approval. Revisions deemed minor shall be noted on the contractor redlines and depicted on final project record drawings for the associated phase of construction.

3. Water and Sewer Lines: All water and sewer lines shown on the City approved construction drawings shall be installed with associated phases and documented on phased record drawings prior to issuance of Initial acceptance.

4. Drainage Design: Developer shall comply with all requirements of the City approved Final Drainage Report

5. Easements and Rights-of-Way: All Public Easements and Rights of way within the site as shown on Exhibit "B" (PUD/Site Plan) shall be dedicated to the City of Evans by execution of the subdivision plat. All Public Easements and Rights of way along 37th Street and 77th Avenue shall be dedicated to the City of Greeley by execution of the subdivision plat.

6. Description of Improvements, all as set forth on the approved Plans and Specifications, inclusive of those Improvements contained in Section 15 of this Agreement:

   - Landscaping
   - Parks
   - Trails
   - Sidewalks
   - Streets and Drives
   - Streetlights
   - Development Signage – monument and street signs, traffic control signs, for example
   - Sanitary Sewer
   - Subsurface drainage facilities.
   - Water Utilities
   - Stormwater Drainage Facilities
   - Internal Streets
   - Irrigation & Non-Potable Water Lines, Water
   - Irrigation and Ditch piping
   - Improvements to 65th Avenue
   - Improvements to 37th Street
   - Improvements to 77th Avenue
   - Participation in a proportionate share agreement for lighted intersection at 37th and 77th
   - Internal School Bus Stops and Mail Box locations
   - Community Center
   - Commercial Parking lot

See Exhibits C-1, C-2 and C-3 for additional information on the Improvements.

7. Additional Terms, Conditions or Provisions:

7.1 Developer shall provide surety for adequate facilities according to the requirements within the City Code and approved by this Final Plat and associated approved Construction Plans. The Performance Guarantee shall be provided prior to commencement of work on the Property. The Maintenance and Warranty Guarantee shall be provided at the time of Initial Acceptance.

EXHIBIT C-1
Improvements Map

(The improvements maps can be found by reviewing the landscaping plans of LAI dated November 20, 2019, irrigation plans provided by Aqua Engineering dated December 12, 2019, and construction plans provided by Northern Engineering dated December 12, 2019 – on file with the City)

EXHIBIT C-2
Improvements to be conveyed to City
and
Engineer's Cost Estimate

PART I: LIST OF PUBLIC IMPROVEMENTS TO BE DEDICATED TO CITY
(Describe type of Public Improvement and whether construction will be by Developer or District--it is the intent of the Developer to enter into an agreement with the Metropolitan District, which may change this designation of Constructor from Developer to Metropolitan District. In the event such a change takes place, the Developer will notify the City in writing of such change).

IMPROVEMENT	CONSTRUCTOR	TIMING
Potable Water Improvements	Developer	Following Gravity Sewer and installed per phase
Street Improvements On-Site	Developer	Following wet utility installation per phase
37th Street Improvements	Developer	Prior to construction of Phase 4
65th Avenue Improvements	Developer	During onsite street installation Phase 1A
77th Avenue Improvements	Developer	Prior to construction of Phase 2
Traffic Signal Improvements at the intersection of 37th Street and 77th Avenue	Greeley	Installed by others with financial participation from the developer only (the Developer share is anticipated to be paid in 2021 depending upon completion of development phases).
Right of Way Storm Drainage Improvements as shown on Improvements Map at Ex. C-1	Developer	Following sanitary sewer installation and installed per phase
Sanitary Sewer Improvements	Developer	Following overlot grading and installed per phase

PART II: ENGINEER'S COST ESTIMATES: See engineer's estimates included with Exhibit C-3

PART III: ANY SPECIAL PROVISIONS REGARDING TIMING, FEES, DESIGN, OR OPERATIONS WITH RESPECT TO ANY PUBLIC IMPROVEMENT

1. **Potable and Non-Potable Water Improvements**. The Developer will provide potable water and dedication of raw water rights including any credits for provision of a non-potable water system shall be in accordance with applicable rules and regulations as contained in Exhibits H and I. Upon completion of the installation of the potable water Improvements and upon initial acceptance by the City, the potable water improvements shall be conveyed by Developer to the Metropolitan District, which in turn shall immediately convey the potable water Improvements to the City for ownership, operations and maintenance.

2. **Street Improvements**. Upon completion of the installation of the Street Improvements and upon initial acceptance by the City, all Street Improvements shall be conveyed by Developer to the Metropolitan District, which in turn shall immediately convey said Street Improvements to the City for ownership, operations and maintenance.

Developer shall be responsible for maintaining the construction elements within the roadways until the same are accepted by the City, and during the warranty period unless otherwise agreed and approved by the City.

3. **Traffic Signal Improvements.** Developer's financial participation will be based on a proportionate share of the development's impact to the intersection at 37th Avenue and 77th Street. The proportionate share of traffic at the intersection that can be attributed to the development has been determined by current traffic counts and is estimated to be $270,000.00 to be paid prior to issuance of the first Building Permit in Phase 1B.

4. **Storm Drainage Improvements**. Upon completion of the installation of the Storm Drainage Improvements and upon initial acceptance by the City, only the Storm Drainage Improvements as shown on Exhibit C-1 shall be conveyed by Developer to the Metropolitan District, which in turn shall immediately convey the Storm Drainage Improvements to the City for ownership. Developer, or if consented to by the City in writing, the Metropolitan District, shall remain responsible for , operations and maintenance, repair and replacement until successful completion of the two-year warranty period. City will only be conveyed the hard surfaces of Storm Drainage Improvements. All soft-surface drainage facilities shall be owned and maintained by the Developer or the Metropolitan District as may be agreed to in writing by the City.

EXHIBIT C-3
Improvements that may be conveyed to District
and
Engineer's Cost Estimate

PART I: LIST OF PUBLIC IMPROVEMENTS TO BE DEDICATED TO METROPOLITAN DISTRICT (Describe type of Public Improvement and whether construction will be by Developer or District--it is the intent of the Developer to enter into an agreement with the Metropolitan District, which may change this designation of Constructor from Developer to Metropolitan District. In the event such a change takes place, the Developer will notify the City in writing of such change). Note that improvements within the public right-of-way which have been accepted for dedicated to the City will be the City's responsibility to maintain after the warranty period has expired. Improvements outside the public right-of-way which have are the maintenance responsibility of either Developer or Metro District.

IMPROVEMENT	CONSTRUCTED BY
Storm Drainage Improvements as shown Utility Plans	Developer
Landscape Improvements	Developer
Non-potable Water Improvements	Developer

PART II: ENGINEER'S COST ESTIMATES: See engineer's estimates included with Exhibit C

PART III: ANY SPECIAL PROVISIONS REGARDING TIMING, FEES, DESIGN, OR OPERATIONS WITH RESPECT TO ANY PUBLIC IMPROVEMENT

1. **Storm Drainage Improvements**. Upon completion of the installation of the Storm Drainage Improvements and upon initial acceptance by the City, hard surfaces of the Storm Drainage Improvements as shown on Exhibit C-1 shall be conveyed by Developer to the Metropolitan District, which in turn shall immediately convey the hard surfaces of the Storm Drainage Improvements to the City for ownership, operations and maintenance. City will only be conveyed the hard surface drainage facilities of the Storm Drainage Improvements. All soft-surface drainage facilities shall be conveyed by Developer to the Metropolitan District and all such soft-surface drainage facilities shall be owned and maintained by the Metropolitan District.

2. **Landscape Improvements**. Upon completion of the installation of the Landscape Improvements and upon Initial Acceptance by the City, all Landscape Improvements may be conveyed by Developer to the Metropolitan District for ownership, operations maintenance, repair and replacement if such conveyance is approved in writing by the City.

3. **Non-potable Water Improvements**. Non-potable water improvements shall provide a system to provide irrigation water service to individual lots and landscaped areas within the Property as set forth in the PUD/Site Plan. Upon completion of the installation of the Non-potable Water Improvements and upon Initial Acceptance by the Metropolitan District, all Non-potable Water Improvements may be conveyed by Developer to the Metropolitan District for ownership, operations, maintenance, repair and replacement if such conveyance is approved in writing by the City.

EXHIBIT D
SCHEDULE OF IMPROVEMENTS
(See the following page)

The following is a draft only and remains subject to change by Developer with acceptance by the City. Developer to provide timing of all on-site and off-site improvements – attached or incorporate here.

PEAKVIEW CONSTRUCTION PRELIMINARY SCHEDULE

	Start	***Finish***
Offsite improvements phase 1A: Sewer Water 37th St Demo 65th Ave Curb Gutter Paving	March 2021	Jun 2021
Offsite improvements phase 1B: Sewer 37th St 37th St turn lanes: Demo Earthwork Curb Gutter Paving	Jun 2022	Sep 2022
Offsite improvements phase 2: Connect to Two Rivers Parkway	Jun 2023	Apr 2023
Offsite improvements phase 3-4: Two Rivers Parkway Access 37th St access	Jun 2025	Sept 2025
Onsite improvements phase 1A:	Jun 2021	Dec 2021
Onsite Improvements Phase 1B:	Jun 2022	Dec 2022
Onsite improvements Phase 2:	Jun 2023	Jun 2024
Onsite improvements Phase 3-4:	Jun 2025	Dec 2025

***: Subject to financing in place and home builders contracts signed.

EXHIBIT D-1
FORM OF CERTIFICATE OF INITIAL COMPLETION

[Date]

[Name]
[Address]
[Address]
[Address]

Re: Two Year Warranty Commencement—[Name of Project]

Dear [ ]:

This letter will serve as notice of the Initial Acceptance and the commencement of the two (2) year warranty period for public improvements specifically related to the [_____] Project. All items detailed in the public improvements plan and the development agreement associated with [_____] Project have been satisfactorily completed and confirmed with an initial acceptance walkthrough. The warranty period begins effective the date of this letter. The City's initial acceptance is based on the representations of the Developer and the Developer's engineer that all of the improvements have been constructed of acceptable materials, in a workmanlike manner, and in substantial conformance with all applicable Plans and Specifications, rules, regulations, and laws. The City's acceptance of the improvements does not relieve Developer of its obligations to design and construct the improvements in a manner that substantially complies with all applicable drawings, rules, regulations, and professional standards.

When the two (2) year warranty period is nearing completion, a final acceptance walkthrough will be conducted and a punch-list of damaged improvements will be documented and provided to you. Until the warranty period is complete, it will be the responsibility of [Name of Contractor/ Developer] to repair or replace any damaged or defective improvements as per the contract documents and the development agreement associated with [_____] Project. Once the final punch list items have been completed satisfactorily and the two year period has expired for all Improvements, including any that were repaired or replaced during the tow year warranty period, City staff will prepare, a final letter accepting full responsibility for perpetual maintenance of the public improvements.

The City thanks you for your hard work and time in making this project a success. If you have any questions and/or concerns, please call me at (970) 475-1110.

Sincerely,

Mark Oberschmidt, P.E.
City Engineer

cc: File

EXHIBIT D-2
FORM OF CERTIFICATE OF COMPLETION

[Date]

[Name]
[Address]
[Address]
[Address]

Re: Final Acceptance Letter—[Name of Project]

Dear [ ]:

This letter serves as notice of the end of the two (2) year warranty of public improvements specifically related to the [_____] Project and the City's acceptance of the public improvements within the [_____] Project limits. All items detailed in the public improvements plans and the development agreement associated with [_____] Project have been satisfactorily completed and confirmed with a final acceptance walkthrough on [_____].The City's acceptance is based on the representations of the Developer and the Developer's engineer that all of the improvements have been constructed of acceptable materials, in a workmanlike manner, and in substantial conformance with all applicable Plans and Specifications, rules, regulations, and laws and have operative without defect or failure for at least two years.The City's acceptance of the improvements does not relieve Developer of its obligations to design and construct the improvements in a manner that substantially complies with all applicable drawings, rules, regulations, and professional standards.

The City thanks you for your hard work and time in making this project a success. If you have any questions and/or concerns, please call me at (970) 475-1110.

Sincerely,

Mark Oberschmidt, P.E.
City Engineer

cc: File

EXHIBIT D-3
COMMITMENT FOR TITLE INSURANCE

Unified Title Company of Northern Colorado, LLC

1275 58th Avenue, Unit C
Greeley, CO 80634
Phone: **970-356-3551**
Fax: **970-356-2063**

Transmittal Information

Date:	**12/18/2019**
File No:	**18717UTG**
Property Address:	**7090 West 37th Street, Evans, CO 80620**
Buyer\Borrower:	**Solstice Holdings LLC, a Colorado limited liability company**
Seller:	

For changes and updates please contact your Escrow officer(s):

Escrow Officer:
Not Applicable
Unified Title Company of Northern Colorado, LLC
1275 58th Avenue, Unit C
Greeley, CO 80634
Phone: **970-356-3551**
Direct Phone:
Fax: **970-356-2063**
Email:

Escrow Processor:

E-Mail:
Direct Phone:

Title Officer:
Melissa Scherer
Unified Title Company of Northern Colorado, LLC
1275 58th Avenue, Unit C
Greeley, CO 80634
Phone: 970-356-3551
Fax: 970-356-2063
Email: mscherer@unifiedtitle.com

Copies Sent to:

Customer:
ROI Land Investments, LTD.
1002 Sherbrooke West, Suite 1430
Montréal, Québec, Canada, H3A 3L6
Phone: 303-918-7918 Fax:
Attn:

Buyer:
Solstice Holdings LLC, a Colorado limited liability company

Seller:

DELIVERED VIA: AGENT

Buyer's Agent:

Seller's Agent:

Buyer's Attorney:

Seller's Attorney:

Lender:

Phone: Fax:
Attn:

Mortgage Broker:

Phone: Fax:
Attn:

Other:

ROI Land Investments, LTD.
45 Rockefeller Plaza, 20th FL, Office #87
New York, NY 10111
Phone: 303-918-7918
Attn: Marc-André Lévesque
DELIVERED VIA: E-MAIL

File No: **18717UTG**
Amendment No: **1**

COMMITMENT FOR TITLE INSURANCE

Issued by

Westcor Land Title Insurance Company

SCHEDULE A

1. Effective Date: **December 11, 2019, 8:00 am**

2. Policy to be issued:

   (a) 2006 ALTA® Owner's Policy
   Proposed Insured:
   Proposed Policy Amount:

   (b) 2006 ALTA® Loan Policy
   Proposed Insured:
   Proposed Policy Amount:

Working Commitment Search End	*$*	**250.00**
Total:	*$*	*250.00*

3. The estate or interest in the land described or referred to in this Commitment is **Fee Simple**.

4. The Title is, at the Commitment Date, vested in:
   Solstice Holdings LLC, a Colorado limited liability company

5. The land referred to in this Commitment is described as follows:

   SEE ATTACHED EXHIBIT "A"

For Informational Purposes Only: **7090 West 37th Street, Evans, CO 80620**

Countersigned
Unified Title Company of Northern Colorado, LLC

By: _____
Melissa Scherer

EXHIBIT "A"

A parcel of land being a part of the Northwest Quarter (NW ¼) and the Southwest Quarter (SW ¼) of Section 28, Township 5 North, Range 66 West of the 6th P.M., City of Evans, County of Weld, State of Colorado, more particularly described as follows:
COMMENCING at the Northwest Corner of said Section 28 and assuming the North line of the Northwest Quarter (NW ¼) to bear North 89°31‘10” East, a grid bearing of the Colorado State Plane Coordinate System, North Zone, North American Datum 1983/92, a distance of 2,630.69 feet with all other bearings herein relative thereto;
THENCE South 00°00'23" West along the West line of the Northwest Quarter (NW ¼) of said Section 28 a distance of 1300.00 feet to the TRUE POINT OF BEGINNING;
THENCE North 87°18’20” East a distance of 5.50 feet;
THENCE North 85°13’21” East a distance of 96.84 feet;
THENCE South 27°27’44” East a distance of 242.29 feet;
THENCE South 67°07’10” East a distance of 57.18 feet;
THENCE South 89°36’33” East a distance of 149.42 feet;
THENCE South 81°22’04” East a distance of 17.54 feet;
THENCE South 70°20’32” East a distance of 15.18 feet;
THENCE South 89°24’31” East a distance of 54.03 feet;
THENCE North 87°48’26” East a distance of 458.26 feet;
THENCE North 88°16’13” East a distance of 458.19 feet;
THENCE North 87°51‘08” East a distance of 396.99 feet;
THENCE South 86°26’03” East a distance of 219.45 feet;
THENCE South 87°36’34” East a distance of 233.89 feet;
THENCE South 76°40’27” East a distance of 81.06 feet;
THENCE South 55°55’55” East a distance of 124.97 feet;
THENCE South 49°40’47” East a distance of 82.48 feet;
THENCE South 65°54’17” East a distance of 62.19 feet;
THENCE South 81°05’34” East a distance of 64.18 feet to the East line of the Northwest Quarter (NW ¼) of said Section 28;
THENCE South 00°03’05” East along the East line of the Northwest Quarter (NW ¼) of said Section 28 a distance of 925.43 feet to the South line of the Northwest Quarter (NW ¼) of said Section 28;
THENCE South 00°04’21” East along the East line of the Southwest Quarter (SW ¼) of said Section 28 a distance of 43.09 feet to the South line of a parcel of land described in Reception No. 3040268 of the Records of Weld County;
THENCE South 89°38’54” West along the South line of said parcel of land a distance of 941.80 feet;
THENCE North 43°27’30” West along the Westerly line of said parcel of land described in Reception No. 3040268 a distance of 59.04 feet to the South line of the Northwest Quarter (NW ¼) of said Section 28 and the Southeast Corner of a parcel of land described in Reception No. 3040269 of the Records of Weld County;
THENCE North 43°27’30” West along the Easterly line of said parcel of land described in Reception No. 3040269 a distance of 28.42 feet to the North line of said parcel of land;
THENCE South 89°58’24” West along the North line of said parcel of land described in Reception No. 3040269 a distance of 1631.39 feet to the West line of the (NW ¼) of said Section 28;
THENCE North 00°00’23” East along the West line of the Northwest Quarter (NW ¼) a distance of 1304.36 feet to the POINT OF BEGINNING.

AND

The Northeast Quarter (NE¼) of Section 29, Township 5 North, Range 66 West of the 6th P.M., in the City of Evans, County of Weld, State of Colorado. EXCEPTING THEREFROM parcels of land conveyed by instruments recorded in Book 114 at Page 124, in Book 258 at Page 186 and in Book 1557 as Reception No. 2502153.

AND

A one hundred (100) foot strip or parcel of land, being fifty (50) feet on each side of the center line as surveyed through the property beginning at a point on the north line of the property above mentioned 1202 feet more or less from the north west corner of the said property and continuing on a two degree curve to the left 1040 feet to a point; thence south 22 degrees 47 minutes west to the east line at a point 552 feet more or less from the southwest corner of said property with the privilege of re-locating said center line fifty (50) feet to one or the other side of said above described center line, in the NE 1/4 of Section 29, Township 5 North, Range 66 West of the 6th P.M., County of Weld, State of Colorado.

File No: **18717UTG**
Amendment No: **1**

COMMITMENT FOR TITLE INSURANCE

Issued by

Westcor Land Title Insurance Company

SCHEDULE B, PART I
Requirements

Effective Date: December 11, 2019 at 8:00am

The following are the requirements to be complied with prior to the issuance of said policy or policies. Any other instrument recorded subsequent to the effective date hereof may appear as an exception under Schedule B of the policy to be issued. Unless otherwise noted, all documents must be recorded in the office of the clerk and recorded of the county in which said property is located.

All of the following Requirements must be met:

1. The Proposed Insured must notify the Company in writing of the name of any party not referred to in this Commitment who will obtain an interest in the Land or who will make a loan on the Land. The Company may then make additional Requirements or Exceptions.

2. Pay the agreed amount for the estate or interest to be insured.

3. Pay the premiums, fees, and charges for the Policy to the Company.

4. Documents satisfactory to the Company that convey the Title or create the Mortgage to be insured, or both, must be properly authorized, executed, delivered, and recorded in the Public Records.

NOTE: This commitment has been issued for information purposes only and there are no requirements. The liability of the Company in terms of this Commitment is limited to the charges paid for the Commitment.

FOR INFORMATIONAL PURPOSES ONLY:

24-month Chain of Title: The only conveyance(s) affecting said land recorded within the 24 months preceding the date of this commitment is (are) as follows:

Deed recorded February 15, 2019 as Reception No. 4467243.

Deed recorded August 14, 2015 as Reception No. 4130762.

Deed recorded June 10, 2015 as Reception No. 4114851.

NOTE: If no conveyances were found in that 24 month period, the last recorded conveyance is reported. If the subject land is a lot in a subdivision plat less than 24 months old, only the conveyances subsequent to the plat are reported.

Westcor Land Title Insurance Company

Westcor Land Title Insurance Company

SCHEDULE B, PART II
Exceptions

Effective Date: December 11, 2019 at 8:00am

THIS COMMITMENT DOES NOT REPUBLISH ANY COVENANT, CONDITION, RESTRICTION, OR LIMITATION CONTAINED IN ANY DOCUMENT REFERRED TO IN THIS COMMITMENT TO THE EXTENT THAT THE SPECIFIC COVENANT, CONDITION, RESTRICTION, OR LIMITATION VIOLATES STATE OR FEDERAL LAW BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, GENDER IDENTITY, HANDICAP, FAMILIAL STATUS, OR NATIONAL ORIGIN.

The Policy or Policies to be issued will contain exceptions to the following matters unless the same are disposed of to the satisfaction of the Company:

1. Rights or claims of parties in possession not shown by the Public Records.

2. Easements or claims of easements not shown in the Public Records.

3. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, and any facts which a correct survey and inspection of the land would disclose, and which are not shown by the public record.

4. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the public records or attaching subsequent to the effective date hereof but prior to the date the proposed insured acquires of record for value the estate or interest or mortgage thereon covered by this Commitment.

6. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof.

7. Any water rights or claims or title to water, in or under the land, whether or not shown by the public records.

8. Taxes due and payable; and any tax, special assessments, charge or lien imposed for water or sewer service, or for any other special taxing district. Note: Upon verification of payment of all taxes the above exception will be amended to read, "Taxes and assessments for the current year, and subsequent years, a lien not yet due and payable."

9. Rights of way, whether in fee or easement only. for county roads 30 feet wide on each side of section and township lines as established by Order of the Board of County Commissioners for Weld County recorded October 14, 1889 in Book 86 at Page 273.

10. Reservations by the Union Pacific Railroad Company of (1) all coal and other minerals underlying subject property, (2) the exclusive right to prospect for, mine and remove coal and other minerals, and (3) the right of ingress and egress and regress to prospect for, mine and remove coal and other minerals, all as contained in Deed recorded August 23, 1899 in Book 170 at Page 462, and any

interests therein or rights thereunder.

11. Right of way, whether in fee or easement only, for Lateral Ditch, as conveyed by instrument recorded April 3, 1903 in Book 207 at Page 179, in which the specific location is not defined.

12. Terms, agreements, provisions, conditions and obligations as contained in Agreement by and between John M. Michael and Jerome Igo recorded December 19, 1907 in Book 272 at Page 12.

13. This item is hereby intentionally deleted.

14. Right of way, whether in fee or easement only, for Ramsdell Lateral as conveyed by instrument recorded March 23, 1922 in Book 655 at Page 396, in which the specific location is not defined.

15. Oil and gas lease between Union Pacific Railroad Company and Pan American Petroleum Corp. recorded February 16, 1971 at Reception No. 1562223, and any interests therein or rights thereunder.

16. Oil and gas lease between Roland L. Coltrane, Dorene 0. Igo-Ancillary Personal Representative far the William J. Igo Estate, Robert Paul Igo, & Margaret Virginia lgo Peterson, and Aeon Energy Co. dated April 1, 1981, recorded June 29, 1981 in Book 940 as Reception No. 1861871, and any interests therein or rights thereunder.

17. Right of way, whether in fee or easement only, to lay, maintain, inspect, replace, erect, operate, and remove one pipeline and appurtenances, as granted to Snyder Oil Corporation by Roland L. Coltrane, Dorene 0. Igo, Margaret Virginia Igo Peterson, and Robert Paul Igo, in the instrument recorded February 10, 1995 in Book 1479 as Reception No. 2426211, the location of which is shown in the map attached to said instrument.

18. Terms, agreements, provisions, conditions and obligations as contained in Surface Owner ’s Agreement by and between May Ann Feuerstein and Kenneth Homyak and Union Pacific Resources Company recorded December 16, 1992 in Book 1363 as Reception No. 2314776.

19. Right of way, whether in fee or easement only, far 3” gas pipeline and appurtenances, granted to SOCO Wattenberg Corporation by Mary Ann Feuerstein and Kenneth Homyak by instrument recorded March 3, 1993 in Book 1372 as Reception No. 2323860, in which the specific location of the easement is not defined.

20. Right of way, whether in fee or easement only, for various purposes, granted to Snyder Oil Corporation by Kenneth Homyak by instrument recorded August 12, 1994 in Book 1454 as Reception No. 2402117, in which the specific location of the easement is not defined.

21. Right of way, whether in fee or easement only, for various purposes, granted to Snyder Oil Corporation by Mary Ann Feuerstein by instrument recorded August 12, 1994 in Book 1454 as Reception No. 2402118, in which the specific location of the easement is not defined.

22. Right of way, whether in fee or easement only, for pipeline and appurtenances, granted to Snyder Oil Corporation by Mary Ann Feuerstein by instrument recorded August 16, 1994 in Book 1455 as Reception No. 2402528, in which the specific location of the easement is nat defined.

23. Right of way, whether in fee or easement only, pipeline and appurtenances, granted to Snyder Oil Corporation by Kenneth Homyak by instrument recorded August 16, 1994 in Book 1455 as Reception No. 2402529, in which the specific location of the easement is not defined.

24. Right of way, whether in fee or easement only, for pipeline and appurtenances, granted to Snyder Oil Corporation by Kenneth Homyak by instrument recorded July 7, 1995 in Book 1500 as Reception No. 2445641 , in which the specific location of the easement is nat defined.

25. Right of way, whether in fee or easement only, for various purposes, granted to Snyder Oil Corporation by Kenneth Homyak by instrument recorded July 7, 1995 in Book 1500 as Reception No. 2445642, in which the specific location of the easement is not defined.

26. Right of way, whether in fee or easement only, for pipeline and appurtenances, granted to Snyder Oil Corporation by Mary Ann Feuerstein by instrument recorded July 7, 1995 in Book 1500 as Reception No. 2445643, in which the specific location of the easement is not defined.

27. Right of way, whether in fee or easement only. for various purposes, granted to Snyder Oil Corporation by Mary Ann Feuerstein by instrument recorded July 7, 1995 in Book 1500 as Reception No. 2445644, in which the specific location of the easement is not defined.

28. Oil and gas lease between Union Pacific Resources Company and Snyder Oil Corporation recorded July 13, 1995 at Reception No. 2446330, and any interests therein or rights thereunder.

29. Oil and gas lease between Union Pacific Resources Company and Snyder Oil Corporation recorded April 30, 1996 at Reception No. 2488267, and any interests therein or rights thereunder.

30. Terms, agreements, provisions, conditions, obligations and restrictions, as Annexation Agreement recorded April 3, 2002 as Reception No. 2939511 and Annexation Maps recorded April 3, 2002 at Reception No. 2939512 and Reception No. 2939513.

31. All items as set forth on the ALTA/ACSM Land Title Survey recorded December 30, 2003 at Reception No. 3139679.

32. Terms, conditions, provisions and obligations of Resolution no. 55-2008, recorded November 26, 2008 at Reception No. 3592075.

33. Right(s) of way, including its terms and conditions, whether in fee or easement only, as granted to Kinder Morgan Interstate Gas Transmission LLC, as described in instrument recorded April 25, 2008 at Reception No. 3549952.

34. Terms, agreements, provisions, conditions, obligations and easements as contained in Surface Use Agreement, recorded July 16, 2009 at Reception No. 3636904.

35. Terms, conditions, provisions and obligations of Notice of Right to Use Surface of Land, recorded February 25, 2010 at Reception No. 3677921.

36. Notice of Property line Waiver recorded June 17, 2009 at Reception No. 3630696, at Reception No. 3630697, at Reception No. 3630698 and at Reception No. 3630699.

37. Request for Notification of Surface Development recorded by Noble Energy, Inc., et al recorded October 15, 2007 at Reception No. 3511023.

38. Request for Notification of Surface Development recorded by Kerr-McGee Oil & Gas Onshore LP December 21, 2007 at Reception No. 3525268.

39. Any leases or tenancies and any and all parties claiming by, through, or under such leases or tenancies.

40. The following items as setforth on the ALTA/ACSM Land Title Survey prepared by King Surveyors, dated March 3, 2015, File name: 2015051ALTA recorded April 29, 2015 at Reception No. 4103083, to-wit:

a. Concrete and Dirt Ditches.
b. Surveyors note 4.
c. Dirt and gravel Access roads.
d. Irrigation Structures.

e. Any loss or damage arising from the fact that the fence lines on or near the perimeter of subject property do not coincide with the exact property lines as described in Improvement Location to Property Line Table.
f. Bridges.
g. Notes.

41. Mineral reservations made by Great Northern Properties, LLLP, a Colorado limited liability limited partnership and Bensler Family LLLP, a Colorado limited liability limited partnership, as described in deed recorded June 10, 2015 at Reception No. 4114851, and any interests therein or rights thereunder.

42. Deed of Trust from ROI DEV CANADA INC., a Canadian business corporation to the Public Trustee of Weld County, Colorado for the use of Great Northern Properties, LLLP, a Colorado limited liability limited partnership and Bensler Family LLLP, a Colorado limited liability limited partnership to secure $3,350,000.00, dated June 8, 2015 and recorded June 10, 2015 at Reception No. 4114852, Modification of Deed of Trust recorded May 5, 2017 at Reception No. 4299630.

43. Reservations made by Great Northern Properties, LLLP, a Colorado limited liability limited partnership and Bensler Family LLLP, a Colorado limited liability limited partnership, as described in deed recorded August 4, 2015 at Reception No. 4130762, and any interests therein or rights thereunder.

44. Deed of Trust from ROI DEV CANADA INC., a Canadian business corporation to the Public Trustee of Weld County, Colorado for the use of ROI LAND INVESTMENTS LTD., a Nevada (USA) corporation to secure $3,350,000.00, dated June 9, 2015 and recorded October 2, 2015 at Reception No. 4147066.

45. Terms, agreements, provisions, conditions, obligations and easements as contained in Dry-Up Covenant, recorded September 27, 2016 at Reception No. 4240321.

46. Deed of Trust from ROI DEV CANADA INC., a Canadian business corporation to the Public Trustee of Weld County, Colorado for the use of Great Northern Properties, LLLP, a Colorado limited liability limited partnership and Bensler Family LLLP, a Colorado limited liability limited partnership to secure $3,350,000.00, dated March 30, 2017 and recorded April 18, 2017 at Reception No. 4294623.

47. Deed of Trust from ROI DEV CANADA INC., a Canadian business corporation to the Public Trustee of Weld County, Colorado for the use of Kapito Canada, SAS to secure € 900,155.62, dated April 13, 2017 and recorded April 20, 2017 at Reception No. 4295469.

48. Deed of Trust from ROI DEV CANADA INC., a Canadian business corporation to the Public Trustee of Weld County, Colorado for the use of ROI SECURITISATION, SA to secure €10,000,000.00, dated June 22, 2017 and recorded June 26, 2017 at Reception No. 4313113.

49. Final Award in Arbitration No. 02-15-0005-6466 in International Centre for Dispute Resolution, International Arbitration Tribunal, entitled Seth Shaw vs. ROI LAND INVESTMENTS, LTD., recorded July 31, 2017 at Reception No. 4322686.

50. Terms, agreements, provisions, conditions, obligations and easements as contained in Dry-up Covenant, recorded November 15, 2017 at Reception No. 4352560.

51. Judgment in favor of Seth Shaw, against ROI Land Investments, Ltd., in the amount of $861,859.67, plus interest and court costs, entered on March 1, 2018 in Case No. 2:17-cv01165-JAD-VCF, United State District Court Court, District of Nevada, recorded May 30, 2018 at Reception No. 4403073.

52. Request for Notification of Application for Development recorded August 2, 2018 at Reception

No. 4420477.

53. The effect, if any, of the inclusion in the Peakview Metropolitan District No. 1, the Peakview Metropolitan District No. 2, the Peakview Metropolitan District No. 3, and the Peakview Metropolitan District No. 4, as evidenced in instruments recorded November 29, 2018 at Reception No. 4449961 and recorded November 29, 2018 at Reception No. 4449991 and recorded November 29, 2018 at Reception No. 4450005 and recorded November 29, 2018 at Reception No. 4450006.

54. Deed of Trust from ROI Dev Canada Inc. to the Public Trustee of Weld County, Colorado for the use of ROI Land Investments Ltd. to secure $7,675,045.00, dated February 14, 2019 and recorded February 15, 2019 at Reception No. 4467238.

55. Deed of Trust from Solstice Holdings LLC, to the Public Trustee of Weld County, Colorado for the use of ROI Securitisation S.A. to secure EURO $20,000,000.00 or its equivalent in U.S. Dollars, dated February 14, 2019 and recorded February 15, 2019 at Reception No. 4467250.

56. Terms, agreements, provisions, conditions, obligations and easements as contained in City of Evans, Colorado Ordinance No. 689-19, recorded February 22, 2019 at Reception No. 4468647.

57. All items as shown on map of Peakview PUD Master Plan Rezoning recorded May 8, 2019 at Reception No. 4487500.

58. All items as shown on map of Peakview Zoning Amendment Map recorded May 8, 2019 at Reception No. 4487502.

59. Mechanics Lien, evidenced by statement of Mechanics' Lien, in the amount of $12,913.17 recorded September 23, 2019 at Reception No. 4525741 and Amended Statement of Mechanics' Lien recorded October 1, 2019 at Reception No. 4528445.

60. Terms, agreements, provisions, conditions, obligations and easements as contained in Surface Use Agreement, recorded October 1, 2019 at Reception No. 4528404.

61. Terms, agreements, provisions, conditions, obligations and easements as contained in Notice of Oil and Gas Operations, recorded October 25, 2019 at Reception No. 4535483.

62. Terms, agreements, provisions, conditions, obligations and easements as contained in City of Evans, Colorado City Council Resolution No. 24-2019, recorded December 9, 2019 at Reception No. 4547971.

63. Terms, agreements, provisions, conditions, obligations and easements as contained in City of Evans, Colorado Resolution No. 30-2019, recorded December 9, 2019 at Reception No. 4547973.

NOTE: The following notices pursuant to CR5 9-1.5-103 concerning underground facilities have been filed with, the Clerk and Recorder. These statements are general and do not necessarily give notice of underground facilities within the property.
(a) Mountain Bell Telephone Company, recorded October 1, 1981 in Book 949 as Reception No. 1870705.
(b) Colorado Interstate Gas Company, recorded August 31 , 1984 in. Book 1 041 as Reception No. 1979784.
(c) Associated Natural Gas, Inc., recorded April 10, 1989 in Book 1229 as Reception No. 2175917.
(d) Western Slope Gas Company, recorded March 9, 1993 in Book 990 as Reception No. 1919757.
(e) Panhandle Eastern Pipe Line Company, recorded June 26, 1986 in Book 1117 as Reception No. 2058722.

NOTE: The policy(s) of insurance may contain a clause permitting arbitration of claims at the request of either the Insured or the Company. Upon request, the Company will provide a copy of this clause and the accompanying arbitration rules prior to the closing of the transaction.

EXHIBIT E
Letter of Credit

(Signed LOC to be provided for acceptance prior to this Agreement being signed by the City, based on the template below.)

FORM--IRREVOCABLE LETTER OF CREDIT NO. __

[NAME OF ISSUING BANK]
[ADDRESS OF ISSUING BANK]

City of Evans
1100 37th Street
Evans, CO 80620-2036

ATTENTION: CITY OF EVANS ATTORNEY AND CITY MANAGER

We hereby establish, at the request and for the account of this Irrevocable Letter of Credit, in favor of the City of Evans in the amount of $. The purpose of this Letter of Credit is to secure performance of a Developments Agreement for __ Subdivision, dated _____, 20__, between the City of Evans and _____.

You are hereby authorized to draw on sight by drafts or written demand up to the aggregate amount of $ _____. The sole condition for payment of any demand made or draft drawn against this Irrevocable Letter of Credit is that the City's demand or draft be accompanied by a letter, on the City's stationary, signed by the City Manager to the effect that "the City of Evans has declared a default under the Developer's Agreement" and an affirmation, certified as truthful to the best of their knowledge and belief, by the City Manager summarizing the factual particulars of such declared default (such letter and affirmation, collectively, called the "Presentment Documents").

We hereby agree with the City of Evans and its drawers, endorsers, and bona fide holders of demands made or drafts negotiated under this Letter of Credit that the same shall be duly honored upon presentation and delivery of the documents as specified above.

This Irrevocable Letter of Credit is not transferable.

This Irrevocable Letter of Credit shall not expire unless the City of Evans City Manager and the City of Evans Attorney have received 60 days' prior written notice by certified U.S. Mail of the impending expiration. Such expiration shall not occur prior to 36 months from the date of this letter. Upon your receipt of our written notification of impending expiration, you may draw the unused balance of this Irrevocable Credit upon your written demand or your sight draft accompanied by the Presentment Documents. Subject to Public Works Director acceptance, the Letter of Credit may be reduced if presented with a payment and performance bond by the contractor constructing some or all of the Improvements which shall cover the costs of construction and construction guaranty for those improvements covered by said payment and performance bond. A sample form of such bond is attached hereto.

With the exception of C.R.S. '4-5-112(1) which allows three (3) banking days in which to honor or reject a draft, demand or credit, this credit shall be governed and construed in accordance with the laws of the State of Colorado. In the event of a conflict between the provisions of the Colorado Uniform Commercial Code and the provisions hereof, the provisions hereof shall control.

Signed this _____ day of _____, 20___.

Issuing Bank: _____

By: _____

Officer's Title: _____

Address: _____

STATE OF COLORADO
COUNTY OF _____

SUBSCRIBED AND SWORN to before me this ____ day of _____, 201____

by _____ as the _____ of
_____.

WITNESS my hand and official seal.

My commission expires: _____

_____

Notary Public

EXHIBIT F
Development Phasing Plan

Developer shall commence and complete all work on the first Phase of development for the project as depicted on the following Phasing Plan. Notwithstanding the foregoing sentence, all work contemplated by this Agreement for the first Phase of Development (Phase IA and IB) shall be commenced and completed by Developer not later than thirty-six (36) months following the date of this Agreement; and all work for any subsequent Phase of Development shall be completed by Developer not later than thirty-six (36) months following the date the City records a duly approved final plat for such subsequent Phase submitted by Developer. No later than six (6) months following Developer's substantial completion of an approved Phase of Development, Developer shall submit plans for a subsequent Phase of Development (if any) to the City. Should Developer fail to complete all Public Improvement work within said period, an extension of time may be granted by the City or this Agreement shall automatically terminate and the City may, in addition to any other remedies it may have against Developer, execute on any Performance Guarantee provided by Developer and withhold the issuance of building permits requested on the Property or a certificate of occupancy for property for which a building permit was previously issued. Should Developer fail to commence the Improvements for any Phase within the schedule required by this Paragraph and without a prior extension from the City, Developer's rights hereunder (but not those of the City) shall automatically terminate. Any request for extension must be submitted at least forty-five (45) days prior to the date of expiration and approved in writing before becoming effective.

THE INITIAL APPROVED PHASING PLAN IS ON THE FOLLOWING PAGE.

EXHIBIT G
Performance Guarantee
Method of Performance Security

HELD BY CITY **$____NA_____**

PROVISIONS:

1. Prior to commencement of construction of any Phase, Developer, or such other party as the City shall have approved in writing, shall be required to provide an Performance Guarantee to the City for those improvements identified on Exhibit ___ for the applicable Phase. This performance guaranty shall be substituted by the Developer or such other party as the City shall have approved in writing (including, but not limited to the District) for the portions of the letter of credit secured by the performance guarantee. When possible, the Letter of Credit and Performance Guarantee will not secure the same construction/improvements, rather they are intended to provide the same level of security approved by the City. The Performance Guarantee is intended to provide flexibility and the option to have the District or a third-party construct some or all of the improvements on behalf of the Developer, upon written approval of the City.

2. For purposes of this Agreement, Developer has provided a Performance Guarantee only for the Phase or Phases of development that have been subjected to this Agreement by Developer in writing (initially, the first Phase only). Prior to construction of any subsequent Phase, Developer shall provide the City with Performance Guarantees for those Phases, except as otherwise set forth in the Agreement to which this Performance Guarantee is attached.

3Public Improvements Constructed by or Owned by the Metropolitan District. For any particular public improvement authorized by the Metropolitan District's Service Plan and conveyed to the Metropolitan District with the express written consent of the City, so long as the Metropolitan District requires payment and performance bonds, payable to the City or the District, on any contracts in excess of Twenty-Five Thousand Dollars ($25,000), or in such higher amount as may then be required pursuant to the Special District Act, the City shall not require any additional bond, letter of credit or other form of security or collateral from the Developer to ensure the completion of such Public Improvement for the benefit of the Propertyto the extent that such Metropolitan District is constructing particular Improvements and can demonstrate adequate funds on hand in Metropolitan District accounts to cover 115% of the Engineer's cost estimate as set forth herein, which funds are by resolution of the District Board appropriated and restricted for such construction to the satisfaction of the City and cannot be released from such restriction or used for other purposes unless the City specifically agrees to such release in writing, the City will waive any further security for construction of Improvements covered by such funds.

The payment and performance bond shall be in a form reasonably acceptable to and approved by the City in an amount equal to one hundred percent (115%) of the cost of any such contract for metropolitan district improvements, naming the City as an additional obligee or insured. Such bonds shall be issued by a corporate surety company which is acceptable to the City and the Metropolitan District, is authorized to transact business in the State of Colorado, is rated by A.M. Best as a A-minus or better, and is listed in the current printing of the U.S. Treasury Department Circular 570, listing of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies." Notwithstanding the foregoing, the City may require for completed Public Improvements such warranties, surety bonds or other security as may be required by City Regulations or this Agreement.

a. Prior to the release of any security provided for in such Performance Guarantee agreement, as-built plans shall have been submitted and shall be in substantial compliance with the Plans and Specifications approved by the City. All other requirement of the Development Agreement and the Municipal Code shall be fulfilled.

b. The parties hereby agree that in addition to and independent of executing on any Performance Guarantee provided by Developer, the City may, in addition to any other remedies it may have against Developer, withhold the issuance of building permits requested on the Property or a certificate of occupancy for property for which a permit was previously issued.

d. Notwithstanding any other provision herein to the contrary, if any Improvement is not completed as required by this Agreement, the City shall give Developer notice

of its empirical, quantified deficiencies. Developer shall then, within thirty (30) days of such notice, correct such construction defect. If the construction defect is of a nature that cannot reasonably be cured within thirty (30) days, Developer shall not be considered in default provided that they have commenced reasonable efforts to cure such defect within said thirty (30) day period and continue diligently thereafter. If such defect is not cured within the thirty (30) day period, or if reasonable efforts have not been made to cure within said thirty (30) day period, the City may exercise the powers set forth in this Agreement.

4. Notwithstanding anything in the Performance Guarantee (and any letter of credit, surety bond or other form of security therefor) to the contrary, the amount that may be drawn or demanded on under the Performance Guarantee shall be reduced to 15% of the cost of the improvement upon presentation of a Guarantee Reduction Notice referencing such Performance Guarantee and signed by the City's Director of Public Works, in the format annexed hereto as Schedule A.

Exhibit H
Peakview Non-Potable Water Operations

The following information will be provided and attached to the Peakview Development Agreement (DA) within 90 days following the adoption of the DA by the Evans City Council. The City Council does not need to re-hear the DA with approval by the City Attorney, City Engineer, and City Community Development Director of the following documentation:

1. The City of Evans will be deeded running rights in the Ramsdell Ditch for sufficient water carriage to meet the non-potable demands of the Peakview subdivision. This is illuminated in the attached Certificate of Transfer dated September 30, 2020 and is contingent upon the Developer satisfying the promissory note dated June 8, 2015. The dedication of these running rights shall be made within 90 days following the approval of the Development Agreement by the Evans City Council and attached to this document.

2. An Agreement between the Developer/Peakview Metro District and the City of Evans shall be executed and will include the following at a minimum:
    a. The Peakview Metro District has the responsibility to design, construct, operate maintain, repair, and replace the non-potable system.
    b. Calling for water – even though the water rights are owned by the City, the Metro District will have permission to place calls for the non-potable water.
    c. The method of metering and accounting of the non-potable water delivered to the Peakview ponds.
    d. Maximum delivery of raw water shall not exceed 152 acre-feet per year as determined by the "Aqua Engineering Outdoor Water Use Analysis" developed by Aqua Engineering on August 10, 2018 for the Peakview Development found in Exhibit J.
    e. Peakview Metro District is to reimburse City for the annual assessment on the water provided by the City and assessed and paid by the City as part of the non-potable system.
    f. First Right of Refusal – Metro District agrees to retain ownership of the System. After the effective date of the Development Agreement, the Developer and the Metro District agree that prior to entering into any agreement or letter of intent for the purchase, long-term lease, transfer or option for any of the foregoing of all or any portion of the System, the City shall have a right of first refusal to purchase, long-term lease, acquire the transfer or obtain an option for any of the foregoing on substantially the same basis as set forth in the proposed agreement or letter of intent with any other person or entity. The City shall have a minimum of 60 days to determine whether to exercise its right of first refusal.

For Value Received *Solstice Holdings, LLC* *hereby sell, transfer and assign*

to *The City of Evans, Colorado*

The *16* *Shares of Stock within The Ramsdell Lateral Company,*

certificate *No. 66* *and authorize the Secretary of Said Company to cancel this*

certificate and issue new certificate, or certificates, to effectuate this transfer, on the Stock Books

and Stock Ledger of said Company.

On this day of September 30, *20* 20

Owner

In presence of

KEI KOTANI

EXHIBIT I
Peakview Analysis of Equivalent Residential Units (EQRs)

EXHIBIT J
Ashcroft Draw Sanitary Sewer Reimbursement Agreement

Attached is an Agreement Regarding Discount of Sewer Reimbursement between Solstice Holdings LLC and the Ashcroft Draw Sanitary Sewer Joint Venture which is not dated.

EXHIBIT K
Aqua Engineering Outdoor Water Use Analysis

August 10, 2018 Aqua Engineering Outdoor Water Use Analysis

T A B L E 1: WATER USE ANALYIS

Aqua Engineering, Inc. 4803
Innovation Drive
Fort Collins, Colorado 80525

August 10, 2018
Project Name: Evans
Location: Evans, CO
Prepared By: JHK

	Turf	Seed	Lots	Pond Evaporation	TOTAL
AREA , acres	31.8	43.1	32	1.5	108.4
PEAK SEASON DESIGN PLANT WATER REQUIREMENT, inches/day	0.20	0.15	0.15	0.00	NA
OPERATING LOSS, inches	0.09	0.06	0.06	0.00	NA
TOTAL DAILY APPLICATION REQUIREMENT, inches	0.29	0.21	0.21	0.00	NA
TOTAL DAILY APPLICATION REQUIREMENT, acre*ft	0.77	0.75	0.56	0.00	2.08
TOTAL DAILY APPLICATION REQUIREMENT, gallons	250,900	244,400	182,500	0	677,800
SEASONAL PLANT WATER REQUIREMENTS, inches	21	16	16	30	81.86
SEASONAL EFFECTIVE PRECIPITATION, inches	5.5	5.5	5.5	5.5	NA
TOTAL SEASONAL IRRIGATION APPLICATION, inches	21.8	14.4	14.4	35.0	NA
TOTAL SEASONAL IRRIGATION APPLICATION, acre*ft	57.7	51.6	38.3	4.3	151.83
TOTAL SEASONAL IRRIGATION APPLICATION, gallons	18,792,000	16,807,000	12,487,000	1,388,000	49,474,000
IRRIGATION FLOW REQUIREMENT WITH AN IRRIGATION WINDOW OF 8 HOURS, (gpm)	762	743	554	0	2,059
IRRIGATION FLOW REQUIREMENT WITH AN IRRIGATION WINDOW OF 10 HOURS, (gpm)	610	594	444	0	1,647
IRRIGATION FLOW REQUIREMENT WITH AN IRRIGATION WINDOW OF 12 HOURS, (gpm)	508	495	370	0	1,373

NOTES:

1) IRRIGATION SYSTEM APPLICATION EFFICIENCY IS ASSUMED TO BE 70%.
2) IRRIGATION SYSTEM TAP UTILIZATION EFFICIENCY IS ASSUMED TO BE 80%.
TAP UTILIZATION EFFICIENCY IS DEFINED AS THE AVERAGE DESIGN FLOW/AVERAGE AVAILABLE FLOW.
3) PEAK SEASON PLANT WATER REQUIREMENT OF 0.20 IN/DAY IS ASSUMED FOR Turf
AND IS BASED ON Northern Colorado Water Conservation District DATA AND A CROP COEFFICIENT OF 80%.
4) PEAK SEASON PLANT WATER REQUIREMENT OF 0.15 IN/DAY IS ASSUMED FOR Seed
AND IS BASED ON Northern Colorado Water Conservation District DATA AND A CROP COEFFICIENT OF 60%.
5) PEAK SEASON PLANT WATER REQUIREMENT OF 0.15 IN/DAY IS ASSUMED FOR Lots
AND IS BASED ON Northern Colorado Water Conservation District DATA AND A CROP COEFFICIENT OF 60%.
6) PEAK SEASON PLANT WATER REQUIREMENT OF 0.00 IN/DAY IS ASSUMED FOR Pond Evaporation
AND IS BASED ON Northern Colorado Water Conservation District DATA AND A CROP COEFFICIENT OF 0%.
7) A SEASONAL PRECIPITATION OF 11- INCHES IS USED AND IS BASED ON Northern Colorado Water Conservation District
DATA PRECIPITATION IS ASSUMED TO BE 50% EFFECTIVE.

EXHIBIT L
Peakview Development Guidelines prepared by LAI Design Group dated November 18, 2019 on file with the City and need not be recorded

EXHIBIT M
Peakview Transportation Impact Study prepared by Delich and Associates dated September 2018 on file with the City and need not be recorded

PEAKVIEW
TRANSPORTATION IMPACT STUDY

EVANS, COLORADO

SEPTEMBER 2018

Prepared for:

ROI Land Investments, LTD
1002 Rue Sherbrooke West, Suite 1430
Montreal, Quebec, Canada, H3A 3L6

Prepared by:

DELICH ASSOCIATES
2272 Glen Haven Drive
Loveland, CO 80538
Phone: 970-669-2061
FAX: 970-669-5034

COLORADO LICENSED
JOSEPH M. DELICH
39306
9/27/18
PROFESSIONAL ENGINEER

Project #1810

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I. INTRODUCTION

This Transportation Impact Study (TIS) addresses the capacity, geometric, and control requirements for the proposed Peakview development. The proposed Peakview development is located south of 37th Street, between 65th Avenue and Two Rivers Parkway in Evans, Colorado.

During the course of the analysis, numerous contacts were made with the project developer (ROI Land Investments), project planning consultant (LAI), the project civil engineer (Northern Engineering), and the City of Evans. This study generally conforms to the format set forth in the Evans Street Specifications. A scoping discussion was held with the Evans City Engineer. The Base Assumptions Form and related information is provided in Appendix A. The study involved the following steps:

- Collect physical, traffic, and development data;
- Perform trip generation, trip distribution, and trip assignment;
- Determine peak hour traffic volumes;
- Conduct capacity and operational level of service analyses on key intersections;
- Analyze signal warrants;
- Conduct evaluation of pedestrian, bicycle, and transit modes of transportation.

This TIS is a revision of the "Peakview Transportation Impact Study" dated July 2018. It addresses a change in access location, number of residential units, and the size of the commercial.

II. EXISTING CONDITIONS

The location of the Peakview development is shown in Figure 1. It is important that a thorough understanding of the existing conditions be presented.

Land Use

Land uses in the area are residential, institutional, and open/agricultural. There are residential uses to the north of the site. The Prairie Heights Middle School is to the east of the site. The Peakview site is currently vacant. The center of Evans lies to the east of the proposed Peakview site.

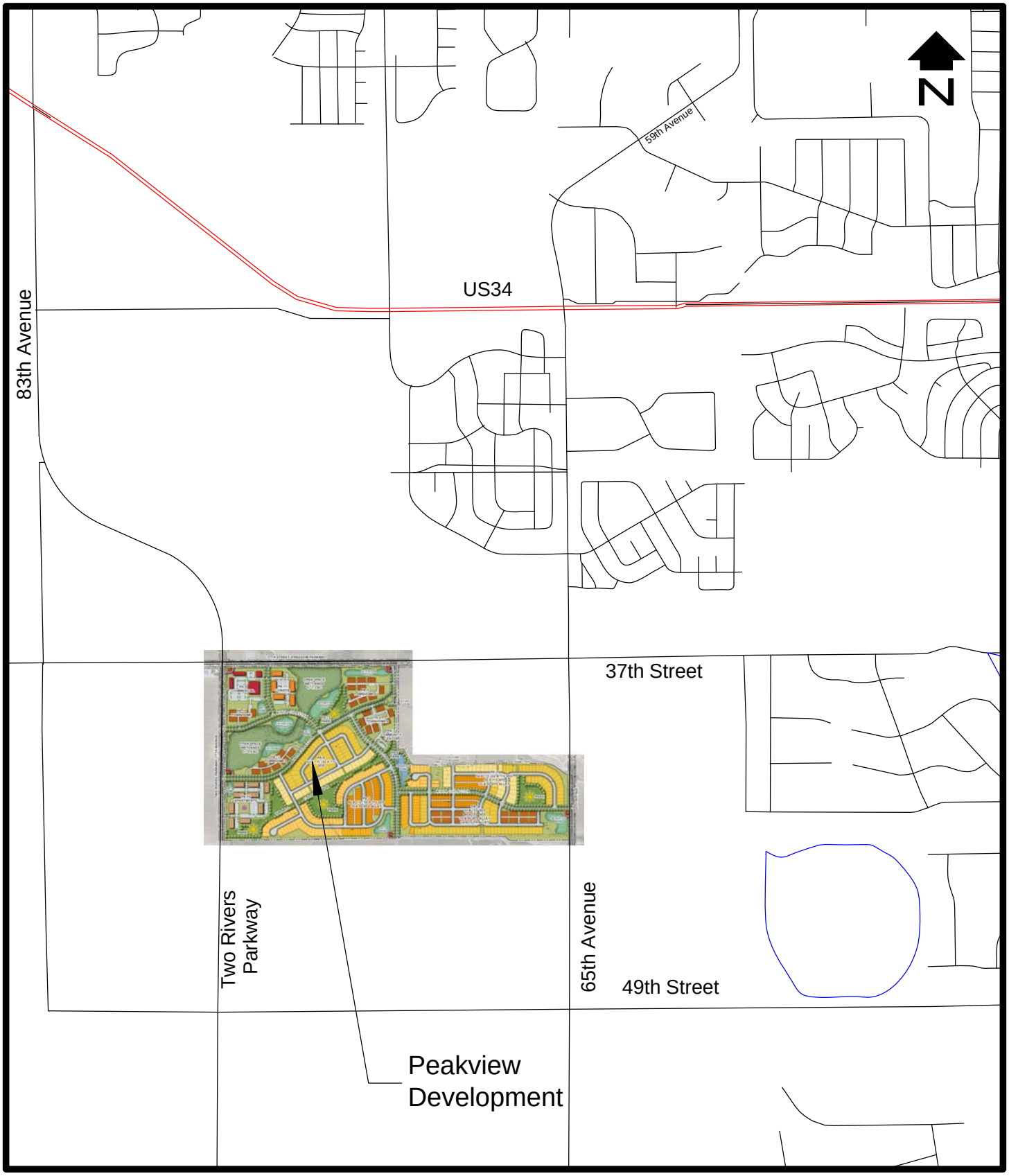
Streets

The primary streets in the area of the Peakview development are 37th Street, 65th Avenue, and Two Rivers Parkway. The existing geometry at the key existing intersections is shown in Figure 2.

Thirty-Seventh Street is an east/west street classified as a four-lane arterial on the Evans Master Street Plan. A portion of 37th Street is within Greeley. Currently, 37th Street has a two-lane cross section. The existing speed limit is 50 mph in this area. At the 37th Street/65th Avenue intersection, 37th Street has an eastbound and westbound left-turn lane and a through/right-turn lane in each direction. The 37th Street/65th Avenue intersection has signal control. At the 37th Street/Two River Parkway intersection, 37th Street has an eastbound and westbound left-turn lane, a through lane in each direction, an eastbound right-turn lane, and an eastbound right-turn acceleration lane. The 37th Street/Two rivers Parkway intersection has stop sign control on Two Rivers Parkway.

Sixty-Fifth Avenue is a north/south street classified as a four-lane arterial on the Evans Master Street Plan. North of 37th Street, 65th Avenue is within Greeley. Currently, 65th Avenue has a four-lane cross section, north of 37th Street, and a two-lane cross section, south of 37th Street. The existing speed limit is 45 mph, north of 37th Street, and 50 mph, south of 37th Street. At the 37th Street/65th Avenue intersection, 65th Avenue has a southbound left-turn lane, a southbound through lane, a southbound right-turn lane, a northbound left-turn/through lane, and a northbound right-turn lane.

Two Rivers Parkway is a north/south street classified as a four-lane arterial on the Evans Master Street Plan. North of 37th Street, Two Rivers Parkway is within Greeley. Currently, Two Rivers Parkway has a two-lane cross section. The existing speed limit is 55 mph in this area. At the 37th Street/Two Rivers Parkway intersection, Two Rivers Parkway has southbound and northbound movements combined into single lanes.

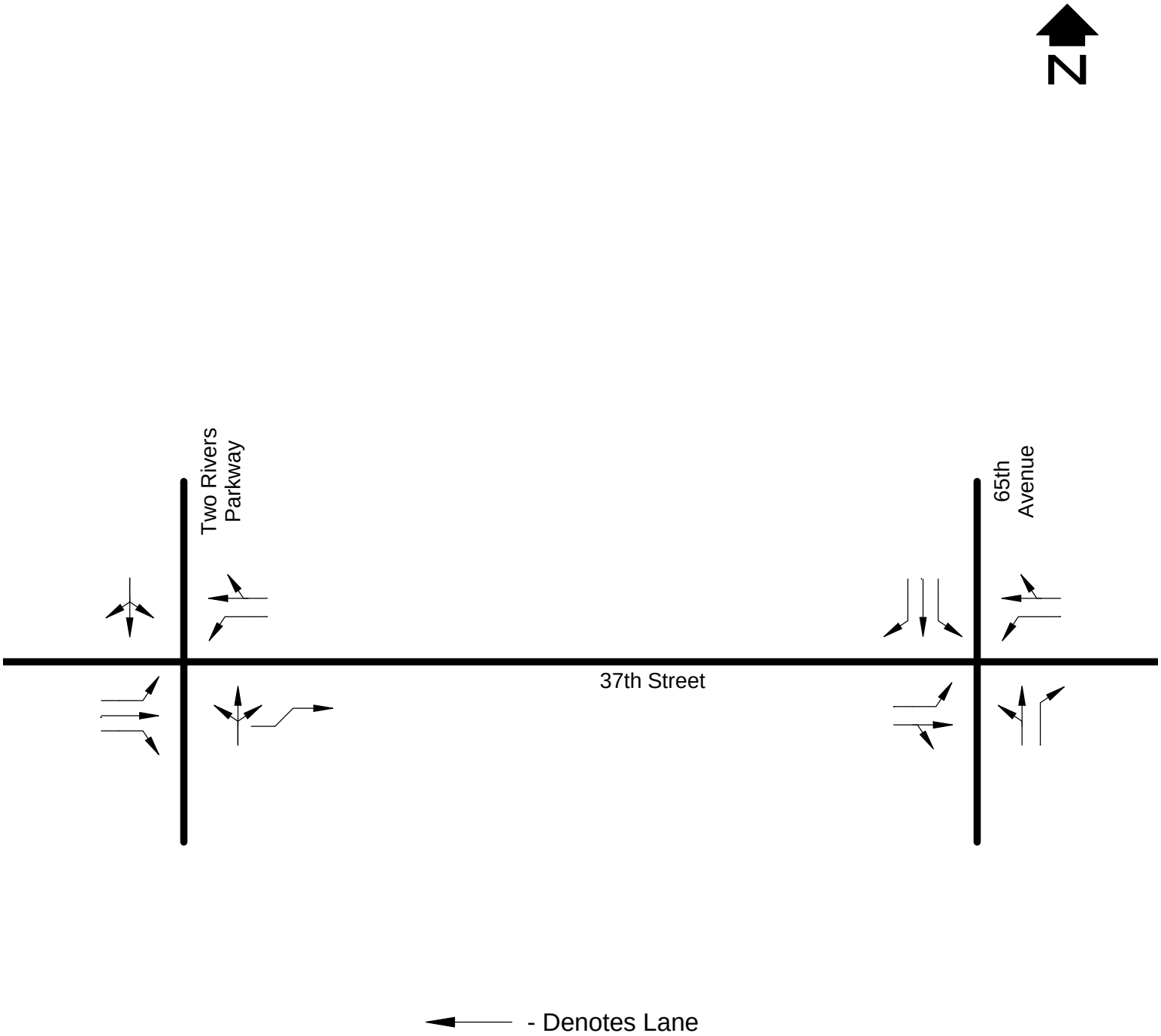


SCALE: 1"=2000'

SITE LOCATION

Figure 1

DELICH ASSOCIATES



EXISTING GEOEMETRY

Figure 2

Existing Traffic

Recent morning and afternoon peak hour traffic volumes at the 37th Street/65th Avenue and 37th Street/Two Rivers Parkway intersections are shown in Figure 3. The counts at the key intersections were obtained in February 2018. Raw traffic count data is provided in Appendix B.

Existing Operation

The 37th Street/65th Avenue and 37th Street/Two Rivers Parkway intersections were evaluated using techniques provided in the 2010 Highway Capacity Manual. Using the morning and afternoon peak hour traffic shown in Figure 3, the peak hour operation is shown in Table 1. Calculation forms are provided in Appendix C. The key intersections are currently operating acceptably with existing control and geometry in the morning and afternoon peak hours. A description of level of service for signalized and unsignalized intersections from the 2010 Highway Capacity Manual and a table showing the Greeley Motor Vehicle LOS Standards (Intersections) are also provided in Appendix C. The Peakview site is in an area termed "mixed use." In areas termed "mixed use," acceptable operation at signalized intersection during the peaks is defined as level of service E or better for the overall intersection, and level of service E or better for any leg or movement. At arterial/collector or local unsignalized intersections, acceptable operation is defined as level of service F. At arterial/arterial or collector/local unsignalized intersections, acceptable operation is defined as level of service F.

Pedestrian Facilities

Currently, there are no pedestrian facilities along 37th Street, 65th Avenue, and Two Rivers Parkway. As future development occurs in the area, it is assumed that the future developments will build adjacent streets in accordance with Evans Standards and will include sidewalks.

Bicycle Facilities

There are bicycle lanes on Two Rivers Parkway, north of 37th Street.

Transit Facilities

Currently, this area of Evans is not served by the Greeley-Evans Transit (GET).

RECENT PEAK HOUR TRAFFIC

Figure 3

TABLE 1 Current Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T/RT	A	B
	EB APPROACH	A	B
	WB LT	B	B
	WB T/RT	B	B
	WB APPROACH	B	B
	NB LT/T	B	B
	NB RT	A	B
	NB APPROACH	B	B
	SB LT	B	B
	SB T	B	B
	SB RT	A	A
	SB APPROACH	B	B
	OVERALL	B	B
37th Street/Two Rivers Parkway (stop sign)	EB LT	A	A
	WB LT	A	A
	NB LT/T/RT	D	F
	SB LT/T/RT	E	F
	OVERALL	B	C

III. PROPOSED DEVELOPMENT

The Peakview development is a mixed-use development, located south of 37th Street, between 65th Avenue and Two Rivers Parkway in Evans. Figure 4 shows a site plan of the Peakview site. The Peakview development is proposed as 1097 dwelling units and 83,000 square feet of commercial uses. Phase 1 includes 219 single family homes and 78 Townhomes. Phase 2 includes 242 single family homes and 85 townhomes. Phase 3 includes 65 townhomes, 408 apartment/condo units, and 55,000 square feet of commercial. Phase 1 will likely be built in the next year or so following approval. The short range (2020) future includes Phase 1 of the Peakview development and an appropriate increase in the background traffic due to normal growth in the area. The mid range (2023) and long range (2040) futures includes full development of the Peakview site and an appropriate increase in background traffic due to normal growth and other potential developments in the area. In phase 1 the Peakview development will have access to/from 65th Avenue and 37th Street. With full development, the site plan shows that the Peakview development will have access to/from 65th Street, 37th Street, and Two Rivers Parkway.

Trip Generation

Trip generation is important in considering the impact of a development such as this upon the existing and proposed street system. Trip generation information contain in Trip Generation, 10th Edition, ITE was used to estimate trips that would be generated by a proposed/expected uses at the Peakview. A trip is defined as a one-way vehicle movement from origin to destination. Table 2 shows the expected trip generation on a daily and peak hour basis. Phase 1 of the Peakview development will generate approximately 2,638 daily trip ends, 198 morning peak hour trip ends, and 260 afternoon peak hour trip ends. At full development of the Peakview development will generate approximately 14,954 daily trip ends, 1,027 morning peak hour trip ends, and 1,167 afternoon peak hour trip ends. Passby for the commercial was based on data in the Trip Generation Handbook, 3rd Edition, ITE.

Trip Distribution

Trip distribution for Peakview development was estimated using the existing/future travel patterns, land uses in the area, consideration of trip attractions/productions in the area, and engineering judgment. Figure 5 shows the trip distribution for the short range (2020), mid range (2023) and long range (2040) futures.

Background Traffic Projections

Figure 6 shows the short range (2020) background traffic projections. Background traffic projections for the short range (2020) future horizon were calculated by increasing the traffic volumes by two percent per year.

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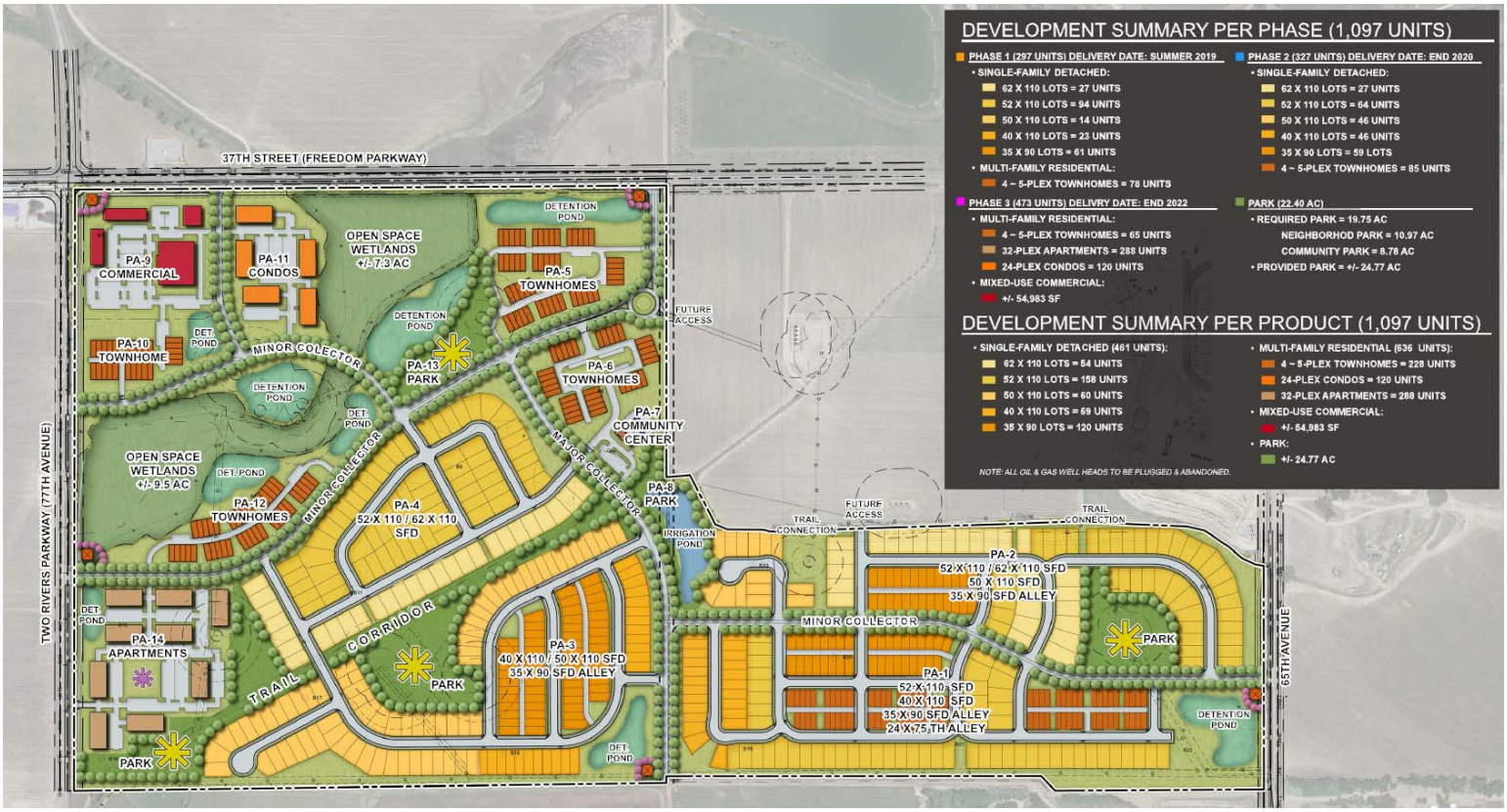
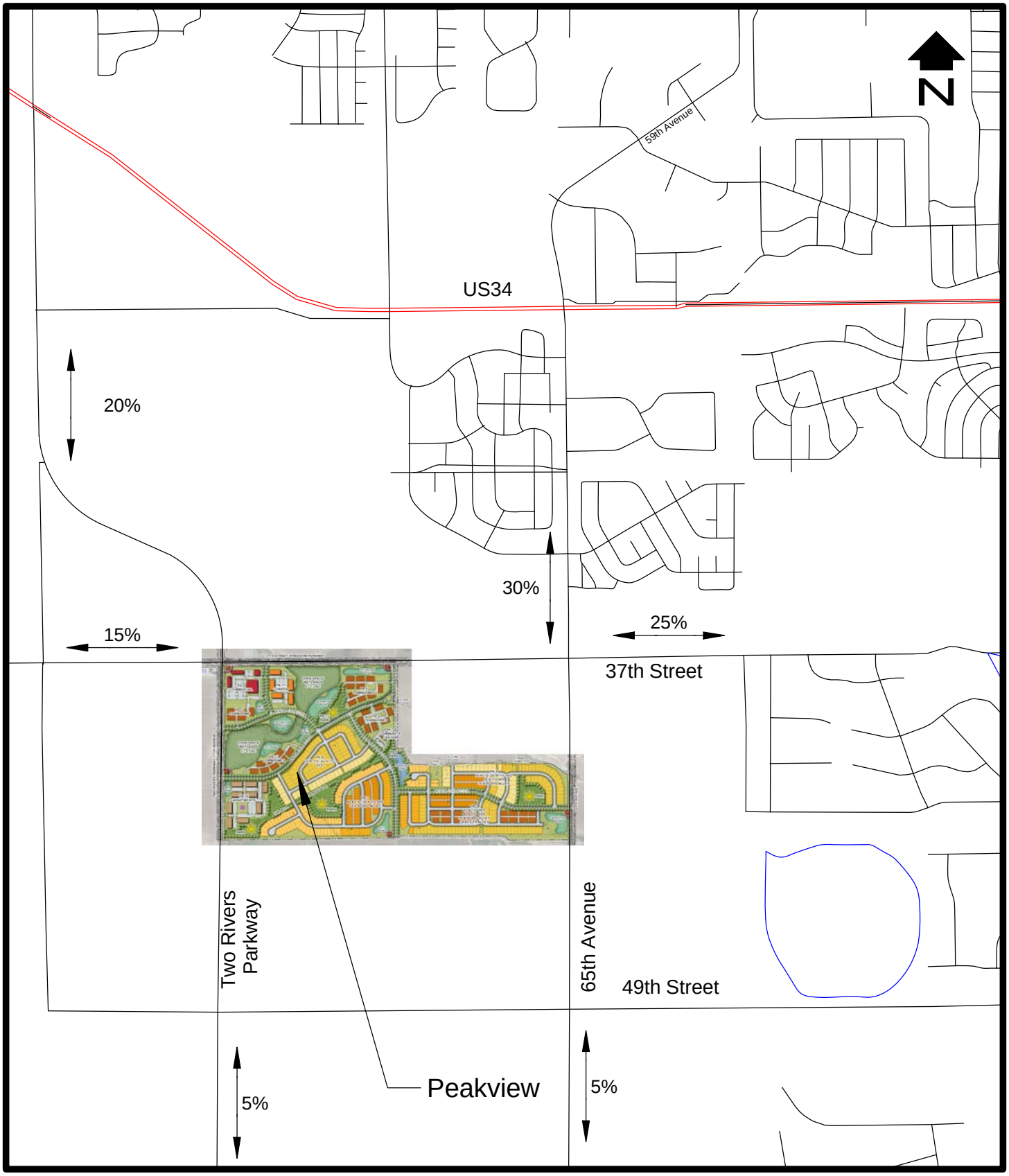


SITE PLAN

Figure 4

TABLE 2 Trip Generation												
Code	Use	Size	AWDTE		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	In	Rate	Out	Rate	In	Rate	Out
Phase 1												
210	Single Family	219 D.U.	9.44	2068	0.19	42	0.55	120	0.62	136	0.37	81
220	Multifamily	78 D.U.	7.32	570	0.11	9	0.35	27	0.35	27	0.21	16
Phase 1 Total				2638		51		147		163		97
Phase 2												
210	Single Family	242 D.U.	9.44	2284	0.19	46	0.55	133	0.62	150	0.37	90
220	Multifamily	85 D.U.	7.32	622	0.11	9	0.35	30	0.35	30	0.21	18
Phase 2 Total				2906		55		163		180		108
Phase 3												
220	Multifamily	65 D.U.	7.32	476	0.11	7	0.35	23	0.35	23	0.21	14
221	Multifamily	408 D.U.	5.44	2220	0.09	37	0.27	110	0.27	110	0.17	69
Phase 3 Total				2696		44		133		133		83
Residential Subtotal				8240		150		443		476		288
Internal Capture				412		7		25		39		22
Residential Assigned				7828		143		418		437		266
Commercial (Phase 3)												
850	Supermarket	25.0 KSF	106.78	2670	2.29	57	1.53	38	4.71	118	4.53	113
Passby (17%/34%)				454		10		10		40		40
820	Shopping Center	20.0 KSF	37.75	756	0.58	12	0.36	7	1.83	37	1.98	40
Passby (17%/34%)				128		2		2		13		13
934	Fast-Food Restaurant	10.0 KSF	470.95	4710	20.5	205	19.6	197	16.9	170	15.6	157
Passby (49%/50%)				2308		100		100		85		85
Commercial Subtotal				8136		274		242		325		310
Internal Capture				1010		34		16		77		94
Commercial Passby				2890		112		112		138		138
Commercial Assigned				4236		128		114		110		78
External Total				14954		383		644		685		482
Total Passby				2890		112		112		138		138
Total Assigned				12064		271		532		547		344

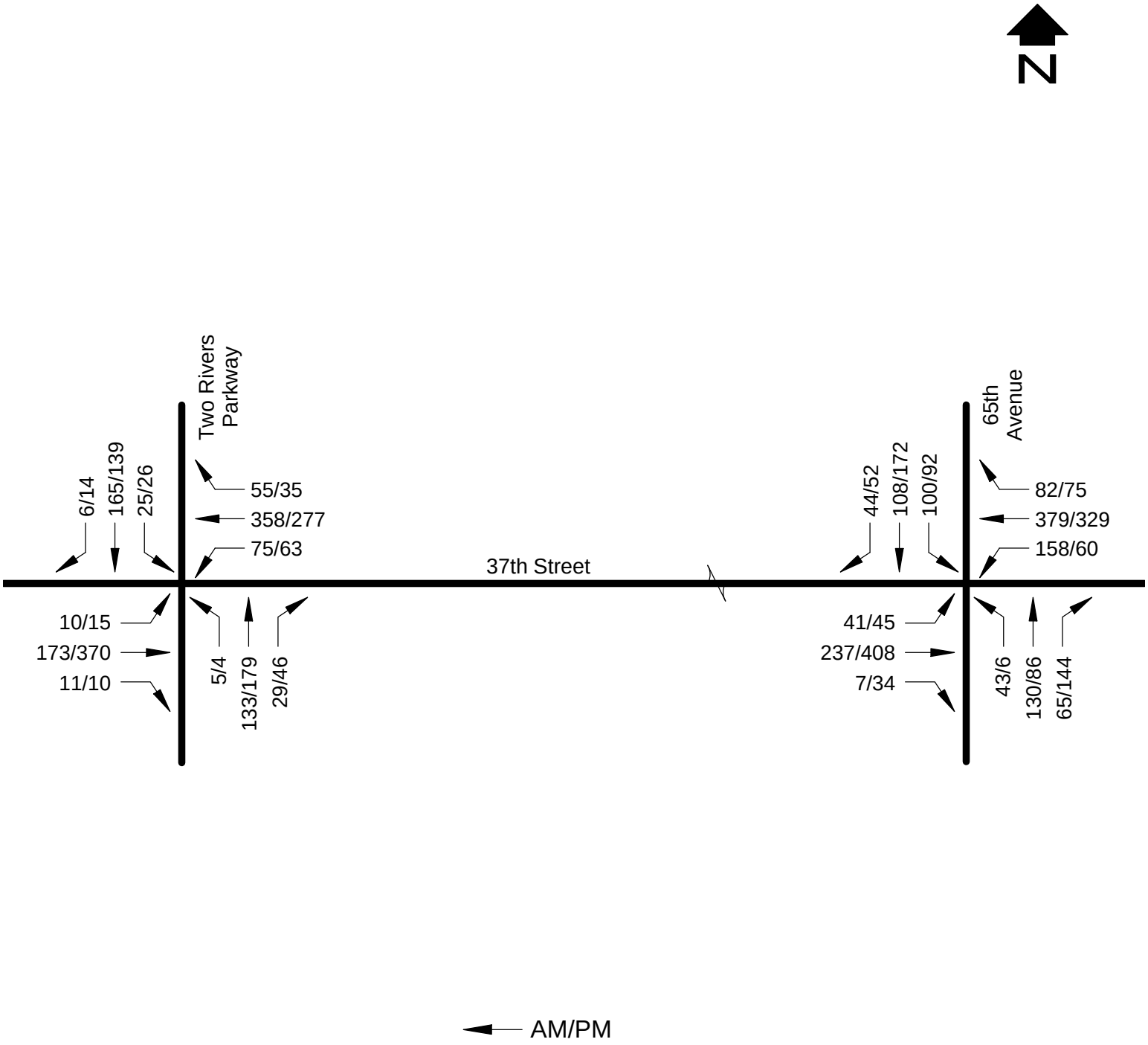


SCALE: 1"=2000'

TRIP DISTRIBUTION

Figure 5

DELICH ASSOCIATES



SHORT RANGE (2020) BACKGROUND PEAK HOUR TRAFFIC

Figure 6

Figure 7 shows the mid range (2023) background traffic projections. Background traffic projections for the mid range (2023) future horizon were calculated by increasing the traffic volumes by two percent per year.

Figure 8 shows the long range (2040) background traffic projections. Background traffic projections for the long range (2040) future horizon were calculated by increasing the traffic volumes by two percent per year. It was assumed that all vacant parcels in the Peakview area would be developed by/before the long range (2040) future. It was also assumed that the street network would be fully constructed in the Peakview area. The completed street network would provide numerous routes for the travelling public.

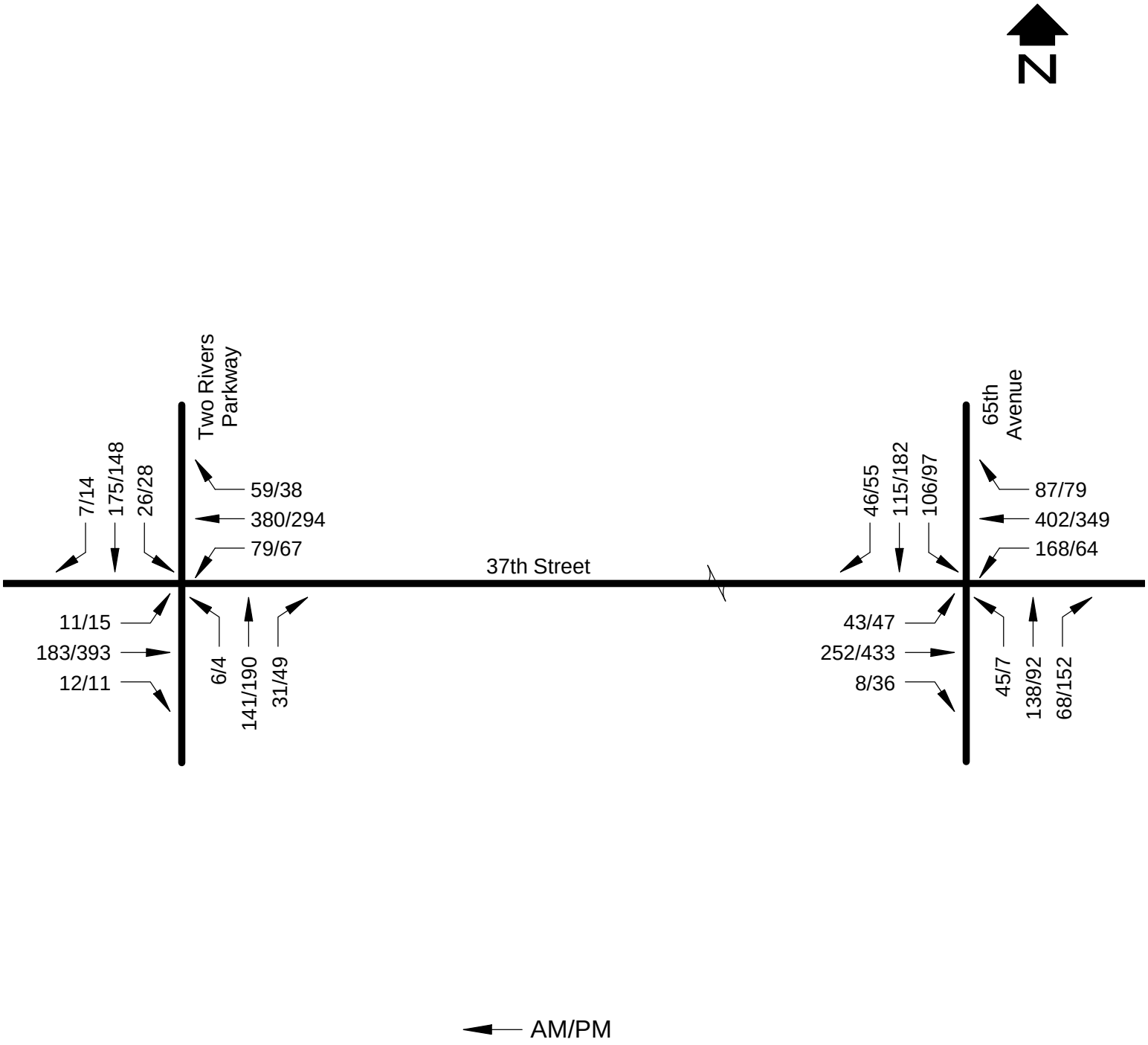
Trip Assignment

Trip assignment is how the generated and distributed trips are expected to be loaded on the street system. The assigned trips are the resultant of the trip distribution process. Figure 9 shows the Phase 1 site generated morning and afternoon peak hour traffic at the key intersections. Figure 10 shows the site generated (full development) morning and afternoon peak hour traffic at the key intersections. Figure 11 shows the short range (2020) total (phase 1 site plus background) peak hour traffic at the key intersections. Figure 12 shows the mid range (2023) total (site plus background) peak hour traffic at the key intersections. Figure 13 shows the long range (2040) total (site plus background) peak hour traffic at the key intersections.

Signal Warrants

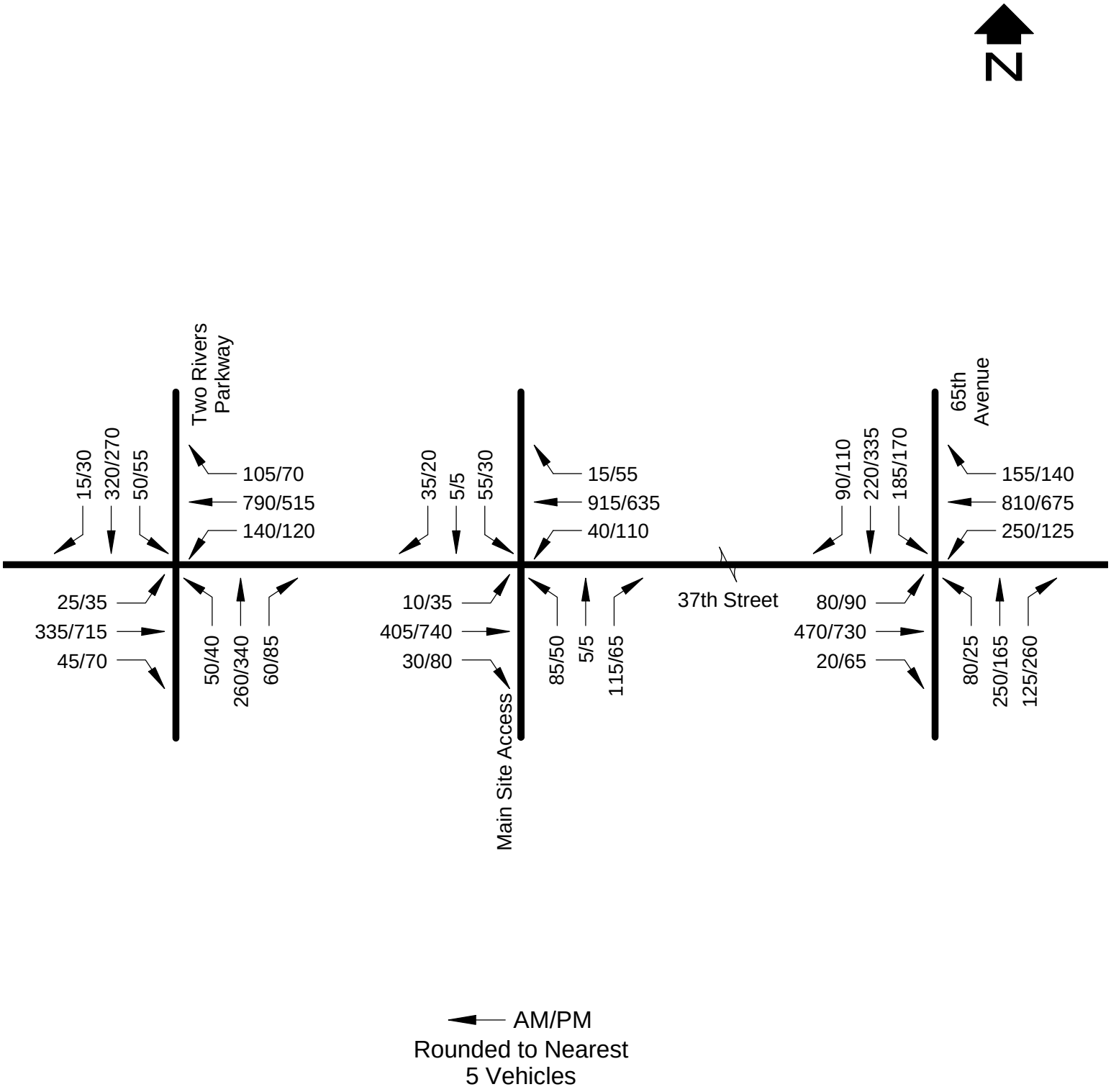
As a matter of policy, traffic signals are not installed at any location unless warrants are met according to the Manual on Uniform Traffic Control Devices. For the roads in the vicinity of The Waterfield development, four hour and/or eight hour signal warrants are applicable. These warrants require much data and are applied when the traffic is actually on the area road system. It is acknowledged that peak hour signal warrants should not be applied, but since the peak hour forecasts are readily available in a traffic impact study, it is reasonable to use them to get an idea whether other signal warrants may be met. If peak hour signal warrants will not be met at a given intersection, it is reasonable to conclude that it is not likely that other signal warrants would be met. If peak hour signal warrants are met, it merely indicates that further evaluation should occur in the future as the development occurs. However, a judgment can be made that some intersections will likely meet other signal warrants. The 37th Street/65th Avenue intersection is currently signalized.

Using the short range (2020) total peak hour traffic (Figure 11), the peak hour signal warrant will be met in the morning and afternoon peak hour at the 37th Street/Two Rivers Parkway intersection. However, other signal warrants may or may not be met. Therefore, the short range (2020) future was analyzed with and without a signal at the 37th Street/Two Rivers Parkway intersection.



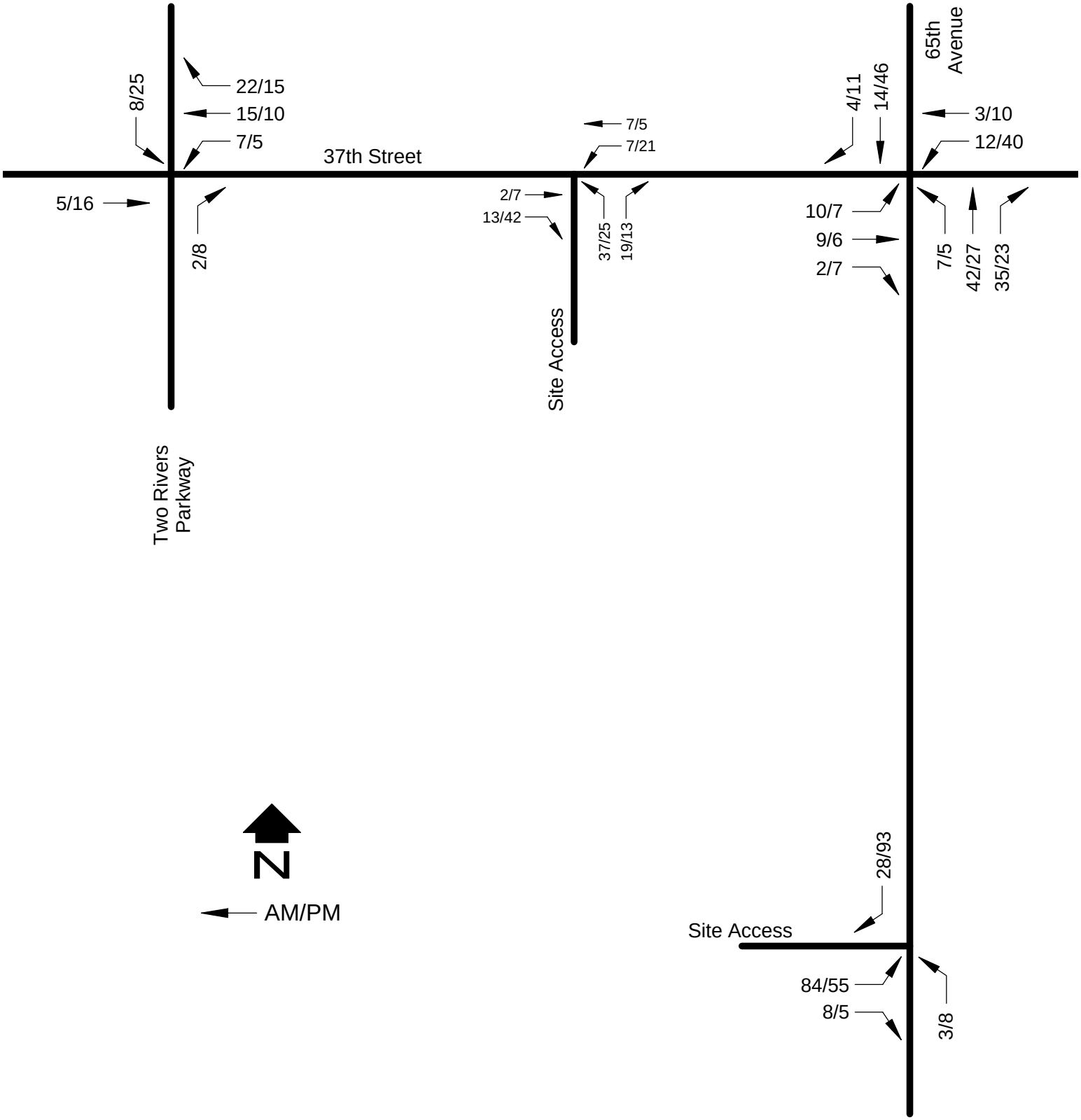
MID RANGE (2023) BACKGROUND
PEAK HOUR TRAFFIC

Figure 7



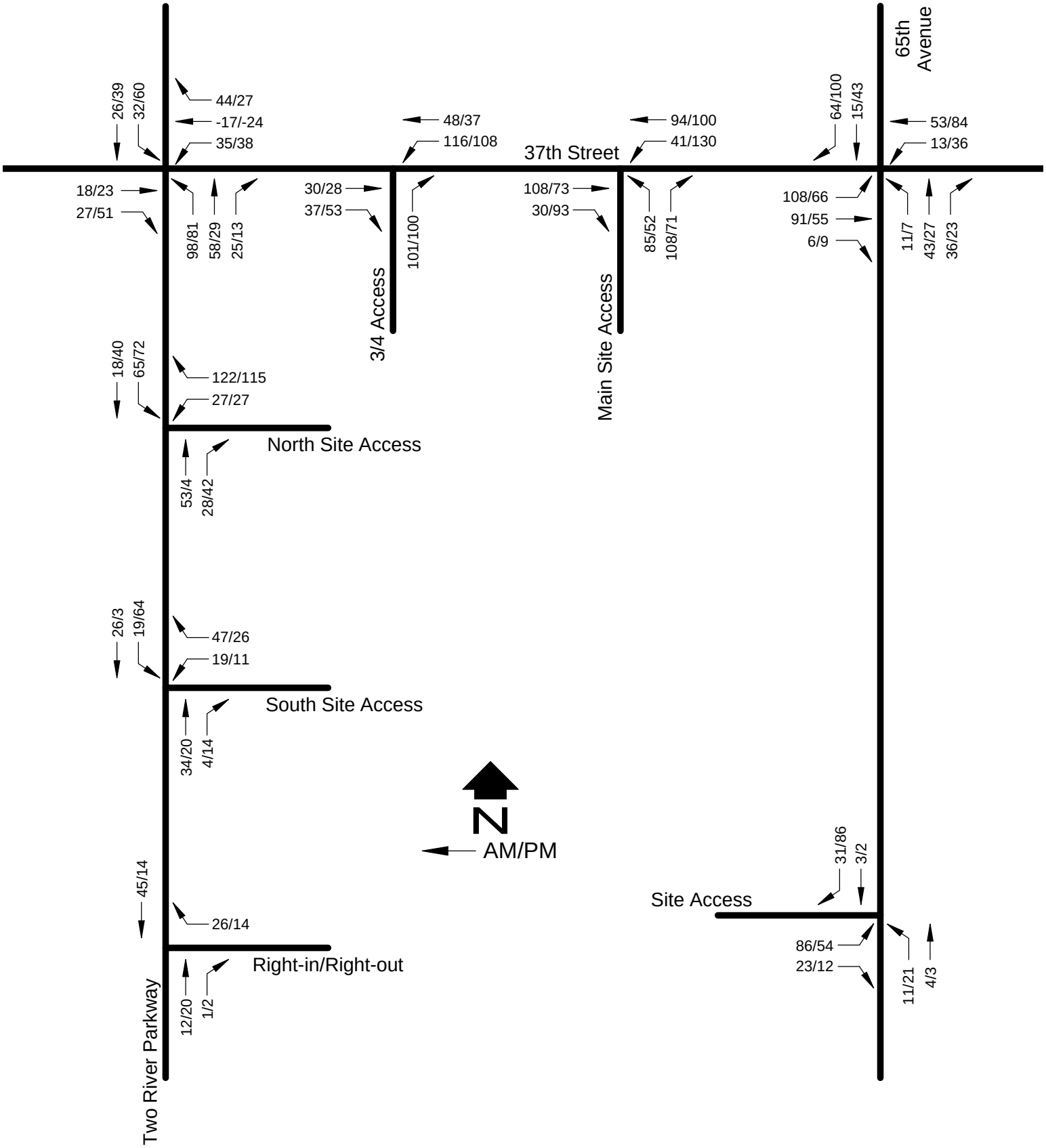
LONG RANGE (2040) BACKGROUND
PEAK HOUR TRAFFIC

Figure 8



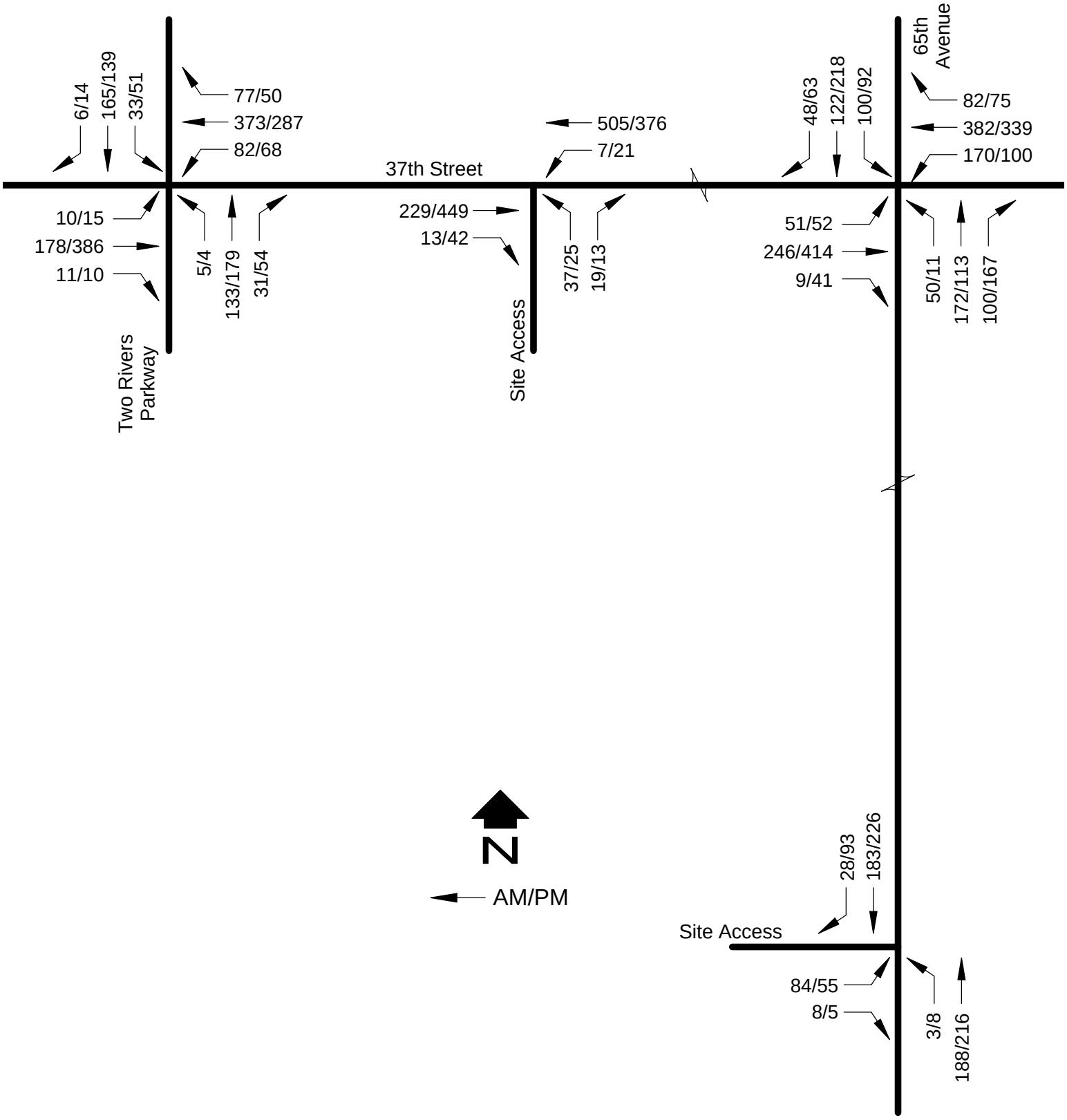
PHASE 1 SITE GENERATED
PEAK HOUR TRAFFIC

Figure 9



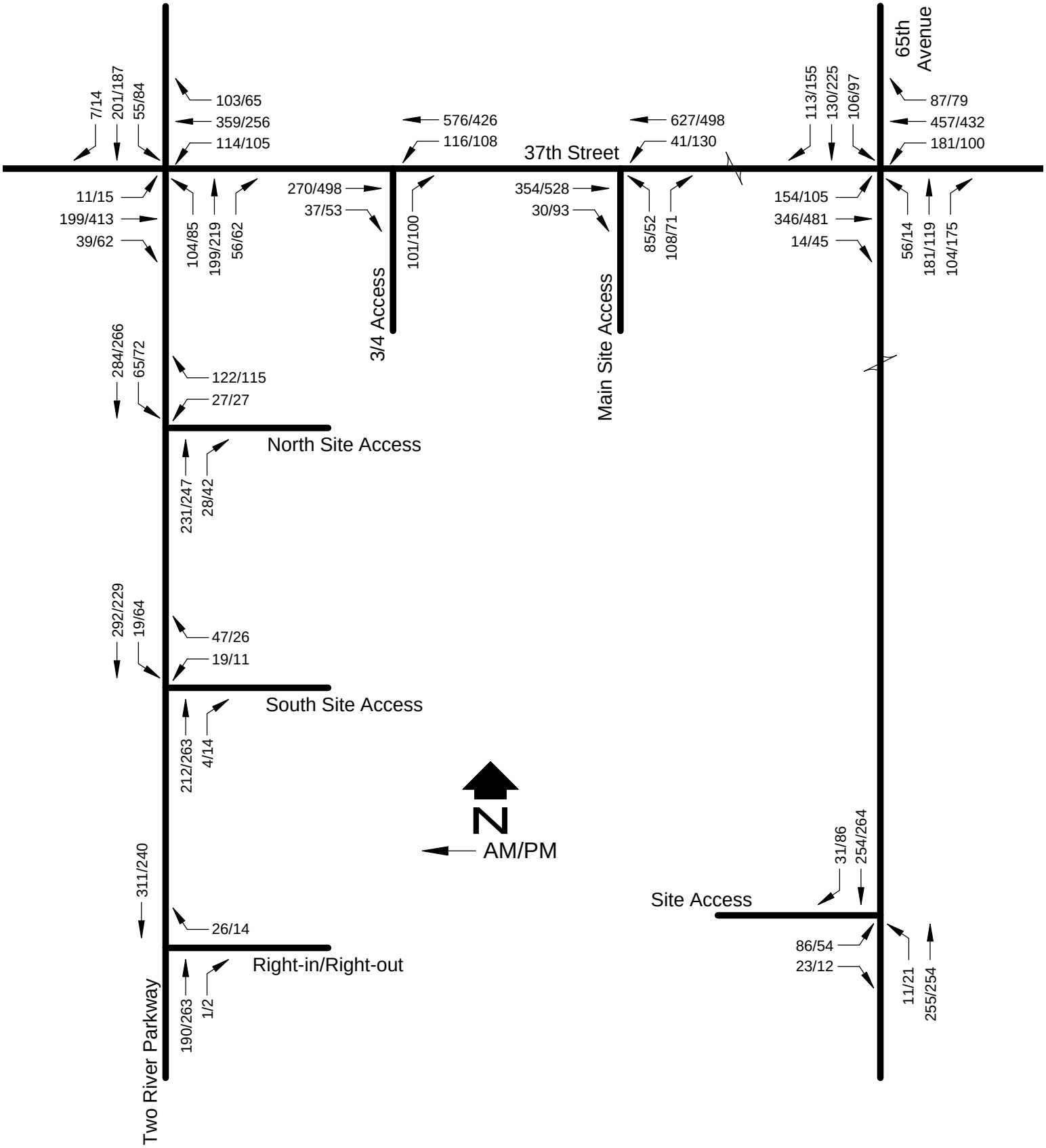
FULL DEVELOPMENT SITE GENERATED PEAK HOUR TRAFFIC

Figure 10



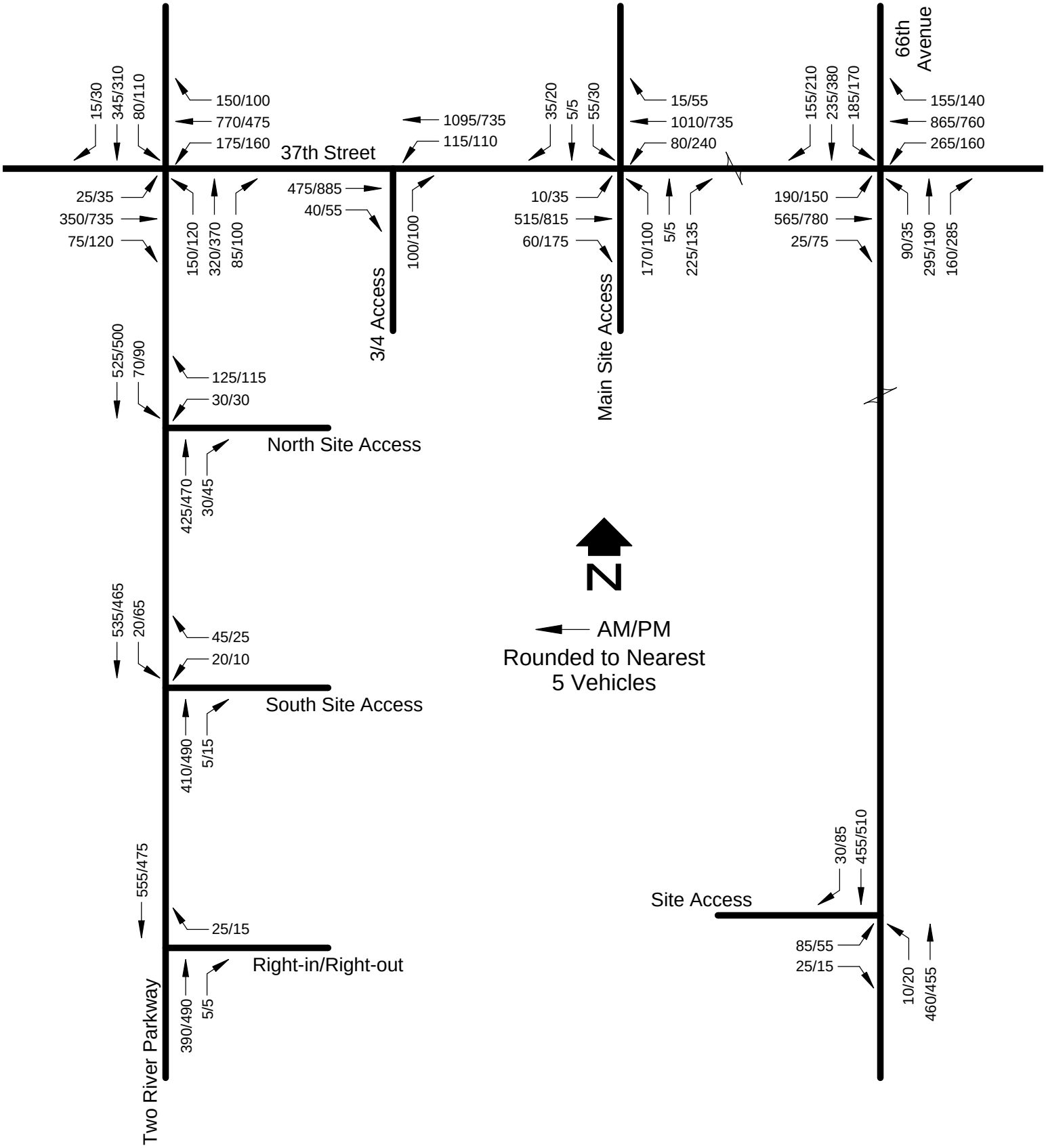
SHORT RANGE (2020) TOTAL PEAK HOUR TRAFFIC

Figure 11



MID RANGE (2023) TOTAL PEAK HOUR TRAFFIC

Figure 12



LONG RANGE (2040) TOTAL PEAK HOUR TRAFFIC

Figure 13

Using the mid range (2023) total peak hour traffic (Figure 12), the peak hour signal warrant will be met in the morning and afternoon peak hour at the 37th Street/Two Rivers Parkway intersection. It is likely that other signal warrants will be met. The 37th Street/Site Access intersection will not meet the lower threshold for the minor street in the mid range (2023) future.

Using the long range (2040) total peak hour traffic (Figure 13), the peak hour signal warrant will be met in the morning and afternoon peak hour at the 37th Street/Site Access intersection. It is likely that other signal warrants will be met. The peak hour signal warrant analyses are provided in Appendix D.

Geometry

Figure 14 shows a schematic of the short range (2020) intersection geometry. At the 37th Street/65th Avenue intersection, a northbound left-turn lane is required based on existing traffic volumes. At the 37th Street/Site Access intersection, a westbound left-turn lane is required. At the 65th Avenue/Site Access intersection, a northbound left-turn lane and southbound right-turn lane are required. At the 37th Street/Two Rivers Parkway intersection, northbound and southbound left-turn lanes are required based on the arterial classification.

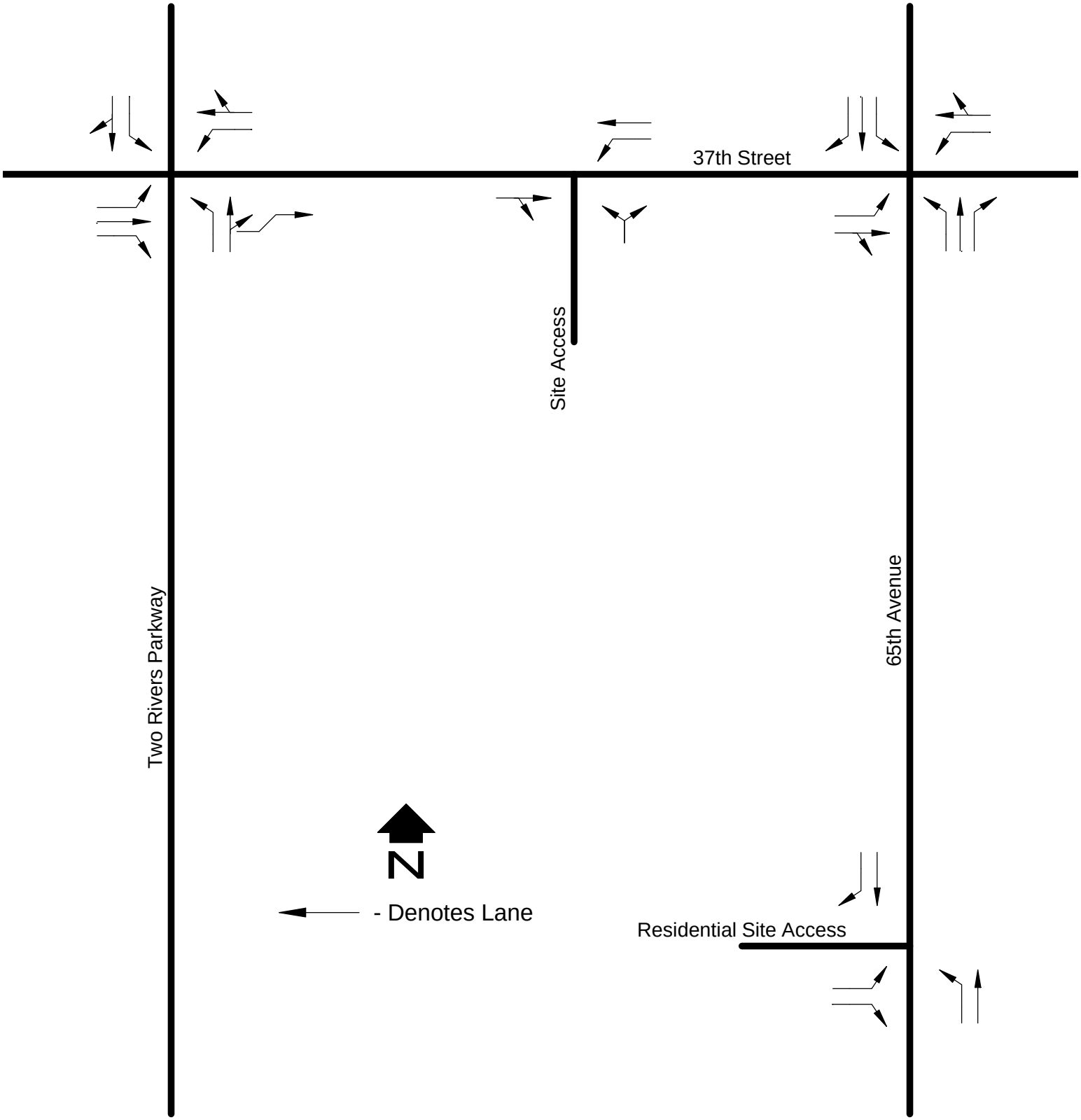
Figure 15 shows a schematic of the mid range (2023) intersection geometry. Left-turn lanes are required at all intersections based on the arterial classification. Right-turn lanes are required at all intersections, except the Two Rivers/Right-in Right-out and Two Rivers/South Site Access intersections.

Figure 16 shows a schematic of the long range (2040) intersection geometry. It is assumed that 37th Street, 65th Avenue, and Two Rivers Parkway will have two through lanes in each direction in the long range (2040) future. However, they may not be needed based on the forecasted traffic volumes.

Operation Analysis

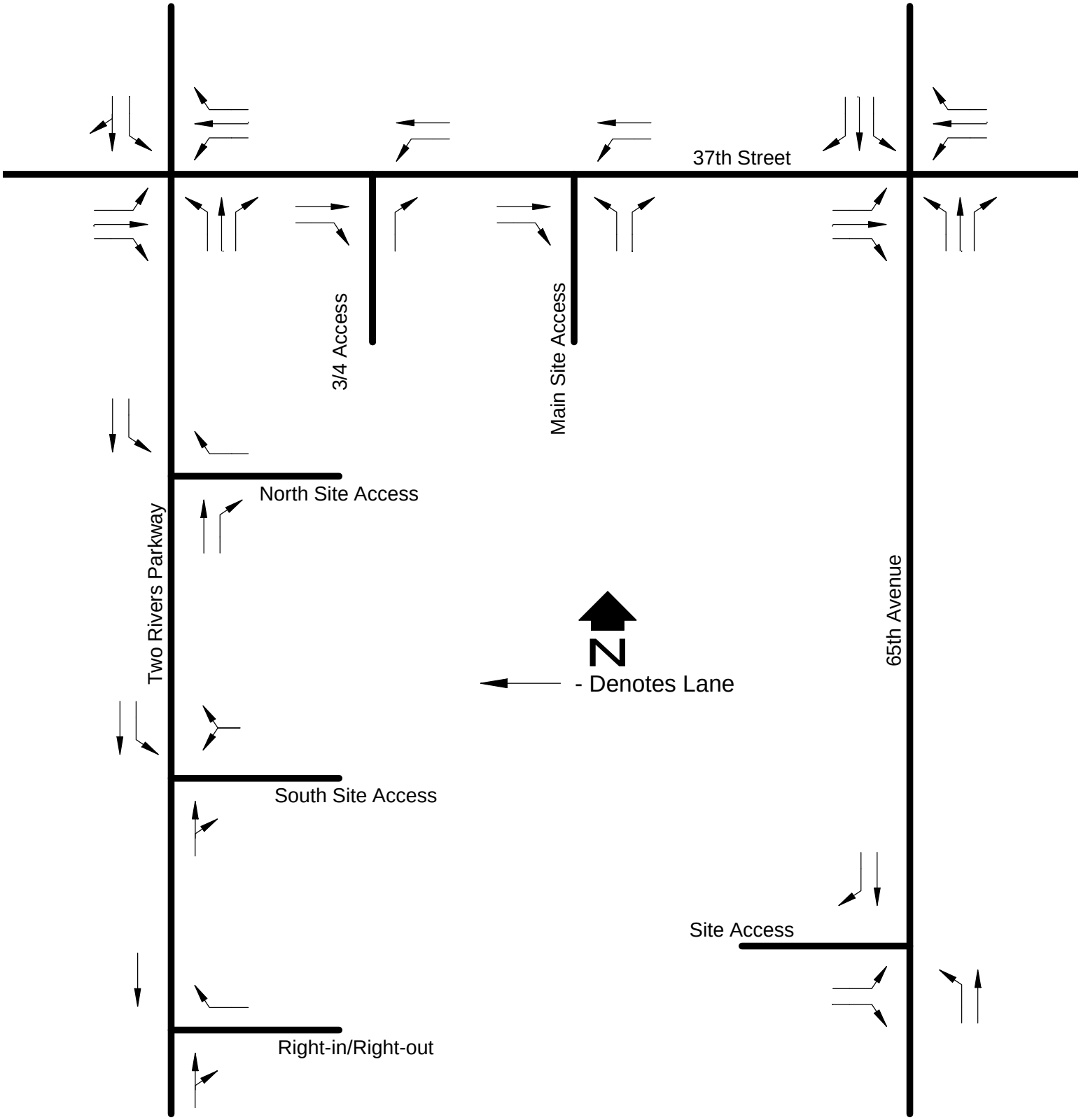
Operation analyses were performed at the 37th Street/65th Avenue, 37th Street/Site Access, 37th Street/ ¾ Access, 37th Street/Two Rivers Parkway, 65th Avenue/Site Access, Two Rivers/North Site Access, Two Rivers/South Site Access, and Two Rivers/Right-in Right-out intersections. The operations analyses were conducted for the short range future, reflecting a year 2020 condition; mid range future, reflecting a year 2023 condition; and long range future, reflecting a year 2040 condition.

Using the short range (2020) background peak hour traffic volumes (Figure 6), the 37th Street/65th Avenue and 37th Street/Two Rivers Parkway intersections operate as indicated in Table 3. Calculation forms for these analyses are provided in Appendix E. The key intersections will operate acceptably. At the 37th Street/Two Rivers Parkway intersection, the calculated delay for the afternoon approaches was commensurate with level of service E and F with stop sign control.



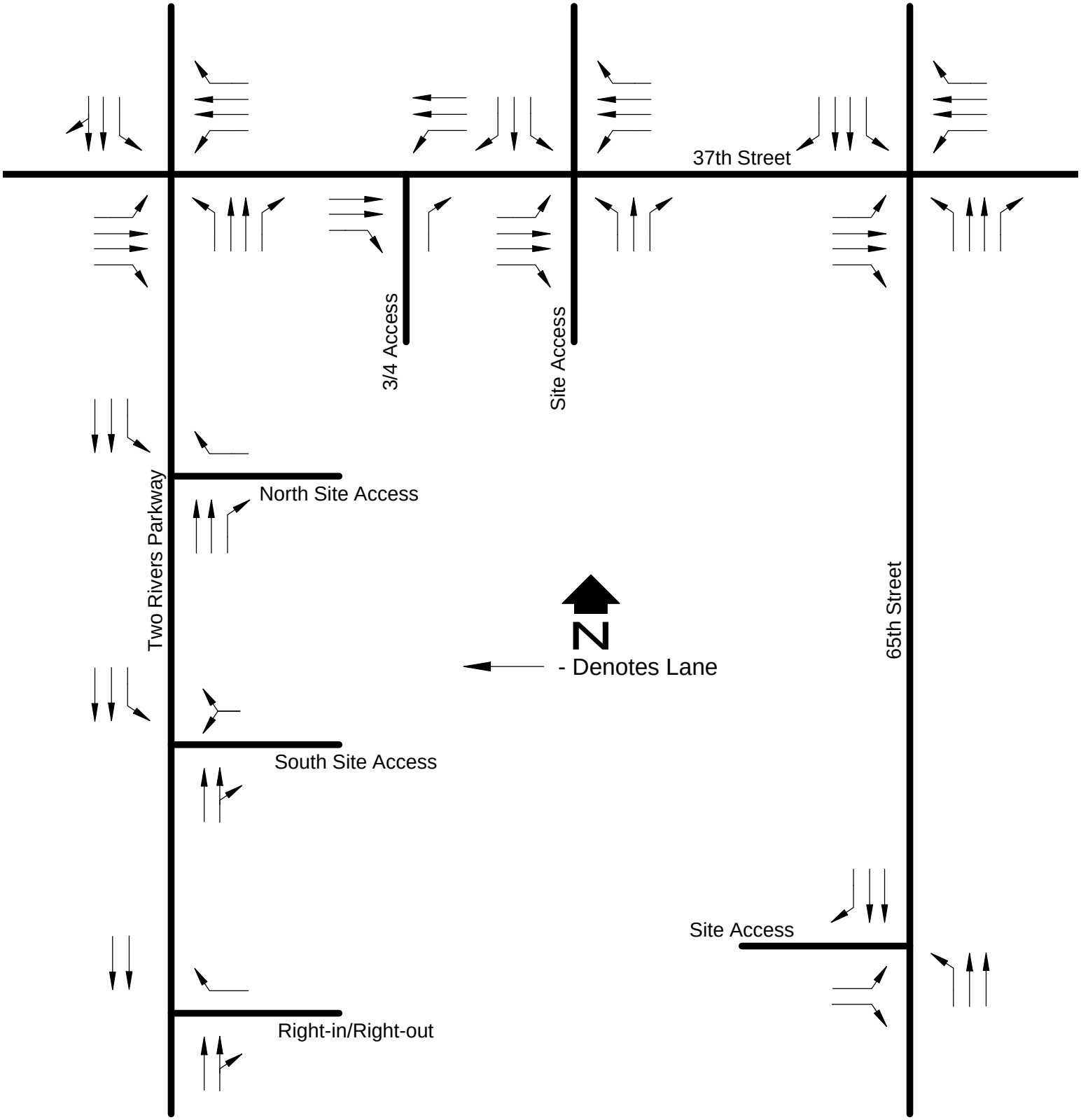
SHORT RANGE (2020) GEOMETRY

Figure 14



MID RANGE (2023) GEOMETRY

Figure 15



LONG RANGE (2040) GEOMETRY

Figure 16

TABLE 3 Short Range (2020) Background Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T/RT	B	B
	EB APPROACH	B	B
	WB LT	B	B
	WB T/RT	B	B
	WB APPROACH	B	B
	NB LT	B	B
	NB T	C	C
	NB RT	A	A
	NB APPROACH	C	C
	SB LT	B	B
	SB T	C	C
	SB RT	A	A
	SB APPROACH	B	C
	OVERALL	B	B
37th Street/Two Rivers Parkway (stop sign)	EB LT	A	A
	WB LT	A	A
	NB LT	D	E
	NB T/RT	D	F
	NB APPROACH	D	F
	SB LT	D	F
	SB T/RT	D	E
	SB APPROACH	D	E
	OVERALL	B	C
37th Street/Two Rivers Parkway (signal)	EB LT	B	B
	EB T/RT	B	B
	EB APPROACH	B	B
	WB LT	B	B
	WB T/RT	B	B
	WB APPROACH	B	B
	NB LT	A	A
	NB T	A	A
	NB RT	A	A
	NB APPROACH	A	A
	SB LT	A	A
	SB T/RT	A	A
	SB APPROACH	A	A
	OVERALL	B	B

Using the mid range (2023) background peak hour traffic volumes (Figure 7), the 37th Street/65th Avenue and 37th Street/Two Rivers Parkway intersections operate as indicated in Table 4. Calculation forms for these analyses are provided in Appendix F. The key intersections will operate acceptably.

Using the long range (2040) background peak hour traffic volumes (Figure 8), the 37th Street/65th Street, 37th Street/Site Access, and 37th Street/Two Rivers Parkway intersections operate as indicated in Table 5. Calculation forms for these analyses are provided in Appendix G. The key intersections will operate acceptably.

Using the short range (2020) total peak hour traffic volumes (Figure 11), the 37th Street/65th Avenue, 37th Street/Site Access, 37th Street/Two Rivers Parkway, and 65th Avenue/Site Access intersections operate as indicated in Table 6. Calculation forms for these analyses are provided in Appendix H. The key intersections will operate acceptably. At the 37th Street/Two Rivers Parkway intersection, the calculated delay for the afternoon approaches was commensurate with level of service E and F with stop sign control.

Using the mid range (2023) total peak hour traffic volumes (Figure 12), the 37th Street/65th Avenue, 37th Street/Site Access, 37th Street/ ¾ Access, 37th Street/Two Rivers Parkway, 65th Avenue/Site Access, Two Rivers/North Site Access, Two Rivers/South Site Access, and Two Rivers/Right-in Right-out intersections operate as indicated in Table 7. Calculation forms for these analyses are provided in Appendix I. The key intersections will operate acceptably.

Using the long range (2040) total peak hour traffic volumes (Figure 13), the 37th Street/65th Avenue, 37th Street/Site Access, 37th Street/ ¾ Access, 37th Street/Two Rivers Parkway, 65th Avenue/Site Access, Two Rivers/North Site Access, Two Rivers/South Site Access, and Two Rivers/Right-in Right-out intersections operate as indicated in Table 8. Calculation forms for these analyses are provided in Appendix J. The key intersections will operate acceptably.

TABLE 4 Mid Range (2023) Background Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T	B	B
	EB RT	A	A
	EB APPROACH	B	B
	WB LT	B	B
	WB T	B	B
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	B	B
	NB T	C	C
	NB RT	A	A
	NB APPROACH	B	C
	SB LT	B	B
	SB T	C	C
	SB RT	A	A
	SB APPROACH	B	C
	OVERALL	B	B
37th Street/Two Rivers Parkway (signal)	EB LT	B	B
	EB T	B	B
	EB RT	A	A
	EB APPROACH	B	B
	WB LT	B	B
	WB T	B	B
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	A	A
	NB T	A	A
	NB RT	A	A
	NB APPROACH	A	A
	SB LT	A	B
	SB T/RT	A	A
	SB APPROACH	A	A
	OVERALL	B	B

TABLE 5 Long Range (2040) Background Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	A
	EB T	C	A
	EB RT	A	A
	EB APPROACH	B	A
	WB LT	B	A
	WB T	B	B
	WB RT	B	B
	WB APPROACH	B	B
	NB LT	C	C
	NB T	D	D
	NB RT	A	D
	NB APPROACH	D	D
	SB LT	C	C
	SB T	C	D
	SB RT	A	A
	SB APPROACH	C	C
	OVERALL	C	B
37th Street/Two Rivers Parkway (signal)	EB LT	C	C
	EB T	C	C
	EB RT	A	A
	EB APPROACH	C	C
	WB LT	C	C
	WB T	B	B
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	B	B
	NB T	B	B
	NB RT	A	A
	NB APPROACH	B	B
	SB LT	B	B
	SB T/RT	B	B
	SB APPROACH	B	B
	OVERALL	B	C

TABLE 6 Short Range (2020) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T/RT	B	C
	EB APPROACH	B	B
	WB LT	B	B
	WB T/RT	B	B
	WB APPROACH	B	B
	NB LT	B	B
	NB T	C	C
	NB RT	A	B
	NB APPROACH	C	C
	SB LT	B	B
	SB T	C	C
	SB RT	A	A
	SB APPROACH	B	C
	OVERALL	B	B
37th Street/Site Access (stop sign)	WB LT	A	A
	NB LT/RT	B	C
	OVERALL	A	A
37th Street/Two Rivers Parkway (stop sign)	EB LT	A	A
	WB LT	A	A
	NB LT	E	E
	NB T/RT	D	F
	NB APPROACH	D	F
	SB LT	E	F
	SB T/RT	E	E
	SB APPROACH	E	F
	OVERALL	B	D
37th Street/Two Rivers Parkway (signal)	EB LT	B	B
	EB T/RT	B	B
	EB APPROACH	B	B
	WB LT	B	B
	WB T/RT	B	B
	WB APPROACH	B	B
	NB LT	A	A
	NB T	A	A
	NB RT	A	A
	NB APPROACH	A	A
	SB LT	A	A
	SB T/RT	A	A
	SB APPROACH	A	A
	OVERALL	B	B
65th Avenue/Site Access (stop sign)	EB LT	B	B
	EB RT	A	A
	EB APPROACH	B	B
	NB LT	A	A
	OVERALL	A	A

TABLE 7 Mid Range (2023) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T	B	C
	EB RT	A	A
	EB APPROACH	B	C
	WB LT	B	B
	WB T	B	C
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	B	B
	NB T	C	C
	NB RT	A	C
	NB APPROACH	C	C
	SB LT	B	B
	SB T	C	C
	SB RT	C	C
	SB APPROACH	C	C
	OVERALL	B	C
37th Street/Site Access (stop sign)	WB LT	A	A
	NB LT	D	E
	NB RT	B	B
	NB APPROACH	C	C
	OVERALL	A	A
37th Street/ ¾ Site Access (stop sign)	WB LT	A	A
	NB RT	B	B
	OVERALL	A	A

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TABLE 7 Mid Range (2023) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/Two Rivers Parkway (signal)	EB LT	B	B
	EB T	B	B
	EB RT	B	A
	EB APPROACH	B	B
	WB LT	B	B
	WB T	B	B
	WB RT	B	A
	WB APPROACH	B	B
	NB LT	A	B
	NB T	A	B
	NB RT	A	A
	NB APPROACH	A	B
	SB LT	A	B
	SB T/RT	A	B
	SB APPROACH	A	B
	OVERALL	B	B
65th Avenue/Site Access (stop sign)	EB LT	B	B
	EB RT	A	A
	EB APPROACH	B	B
	NB LT	A	A
	OVERALL	A	A
Two Rivers Parkway/North Site Access (stop sign)	WB LT	C	C
	WB RT	B	B
	WB APPROACH	B	B
	SB LT	A	A
	OVERALL	A	A
Two Rivers Parkway/North Site Access (stop sign)	WB LT	B	B
	SB LT	A	A
	OVERALL	A	A
Two Rivers Pkwy/Right-in Right-out (stop sign)	EB LT	A	A
	OVERALL	A	A

TABLE 8 Long Range (2040) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T	C	A
	EB RT	A	A
	EB APPROACH	C	A
	WB LT	B	B
	WB T	B	B
	WB RT	B	B
	WB APPROACH	B	B
	NB LT	C	C
	NB T	D	D
	NB RT	C	D
	NB APPROACH	D	D
	SB LT	C	C
	SB T	C	D
	SB RT	C	C
	SB APPROACH	C	C
	OVERALL	C	B
8th Street/71st Avenue (signAL	EB T	B	C
	EB RT	B	B
	EB APPROACH	B	C
	WB LT	B	B
	WB T	A	A
	WB APPROACH	A	A
	NB LT	B	B
	NB RT	B	B
	NB APPROACH	B	B
	OVERALL	B	B
37TH Street/ ¾ Access (stop sign)	WB LT	B	B
	NB RT	A	B
	OVERALL	A	B

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TABLE 8 Long Range (2040) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/Two Rivers Parkway (signal)	EB LT	C	C
	EB T	C	C
	EB RT	A	A
	EB APPROACH	C	C
	WB LT	C	C
	WB T	B	B
	WB RT	B	A
	WB APPROACH	B	B
	NB LT	B	B
	NB T	B	C
	NB RT	A	A
	NB APPROACH	B	C
	SB LT	B	B
	SB T/RT	B	C
	SB APPROACH	B	C
	OVERALL	C	C
65th Avenue/Site Access (stop sign)	EB LT	C	C
	EB RT	B	B
	EB APPROACH	C	C
	NB LT	A	A
	OVERALL	A	A
Two Rivers Parkway/North Site Access (stop sign)	WB LT	C	C
	WB RT	B	B
	WB APPROACH	B	B
	SB LT	A	A
	OVERALL	A	A
Two Rivers Parkway/North Site Access (stop sign)	WB LT	B	B
	SB LT	A	A
	OVERALL	A	A
Two Rivers Pkwy/Right-in Right-out (stop sign)	EB LT	A	B
	OVERALL	A	A

IV. CONCLUSIONS

This study assessed the impacts of the Peakview development on the street system in the vicinity of the proposed development in the short range (2020), mid range (2023), and long range (2040) futures. As a result of this analysis, the following is concluded:

- The Peakview development is feasible from a traffic engineering standpoint. Phase 1 of the Peakview development will generate approximately 2,646 daily trip ends, 199 morning peak hour trip ends, and 262 afternoon peak hour trip ends. At full development of the Peakview development will generate approximately 17,660 daily trip ends, 1,177 morning peak hour trip ends, and 1,662 afternoon peak hour trip ends.

- Currently, the 37th Street/65th Avenue and 37th Street/Two Rivers Parkway intersections operate acceptably with existing control and geometry. At the 37th Street/Two Rivers Parkway intersection, the calculated delay for the northbound and southbound approaches was commensurate with level of service F in the afternoon peak hour.

- The 37th Street/65th Avenue intersection is currently signalized. The 37th Street/Two Rivers Parkway intersection will meet peak hour signal warrants in the short range (2020) future. However, other signal warrants may or may not be met. In the mid range (2023) future, the peak hour signal warrant will be met in the morning and afternoon peak hour at the 37th Street/Two Rivers Parkway intersection. It is likely that other signal warrants will be met. In the long range (2040) future, the peak hour signal warrant will be met in the morning and afternoon peak hour at the 37th Street/Site Access intersection.

- In the short range (2020) future, given development of Phase 1 of the Peakview site and an increase in background traffic, the key intersections will operate acceptably with the recommended geometry. At the 37th Street/Two Rivers Parkway intersection, the calculated delay for the afternoon approaches was commensurate with level of service E and F with stop sign control.

- In the mid range (2023) future, given full development of the Peakview site and an increase in background traffic, the key intersections will operate acceptably with the recommended geometry and a signal at the 37th Street/Two Rivers Parkway intersection.

- In the long range (2040) future, given full development of the Peakview site and an increase in background traffic, the key intersections will operate acceptably with a signal at the 37th Street/Two Rivers Parkway and 37th Street/Site Access intersections.

- The short range (2020), mid range (2023), and long range (2040) geometry is shown in Figures 14, 15 and 16, respectively.

APPENDIX A

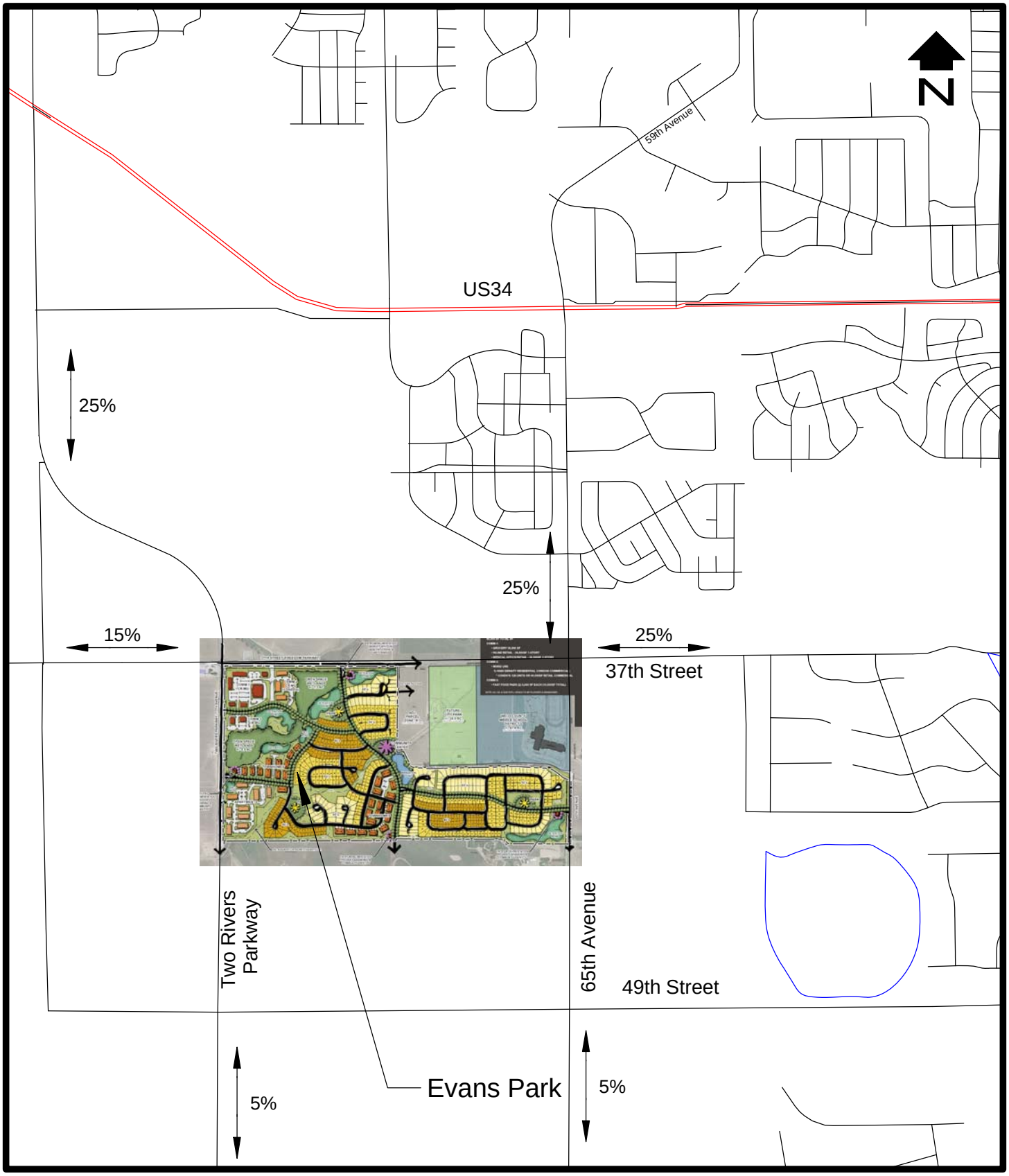
Attachment "A"
Transportation Impact Study
Base Assumptions Form

Project Information				
Project Name: Evans Park				
Project Location: South of 37th Street between 65th Avenue and Two Rivers Parkway				
TIS Assumptions				
Type of Study	Memo:	Intermediate:	Full: Yes	
Study Area Boundaries	North: 37th Street		South: Site Access	
	East: 65th Avenue		West: Two Rivers Parkway	
Study Years	Short Range: 2023		Long Range: 2040	
Future Traffic Growth Rate	Short term: 2%/year		Long term: 2%/year	
Study Intersections	1. All access drives		5.	
	2. 37th Street/ 65th Avenue		6.	
	3. 37th Street/Two Rivers		7.	
	4. Site Access intersections		8.	
Time Period for Study	AM: 7:00-9:00	PM: 4:00-6:00	Sat:	
Trip Generation Rates (see attached)	Per ITE			
Trip Adjustment Factors	Passby: N/A		Captive Market: N/A	
Trip Distribution (see attached)	North: 50%	South: 10%	East: 15%	West: 25%
Mode Split Assumptions	N/A			
Other Traffic Studies				
Active Modes Analysis				
Other Areas Requiring Special Study				

Date: March 28, 2018

Traffic Engineer: Delich Associates

City of Evans Engineer: _____

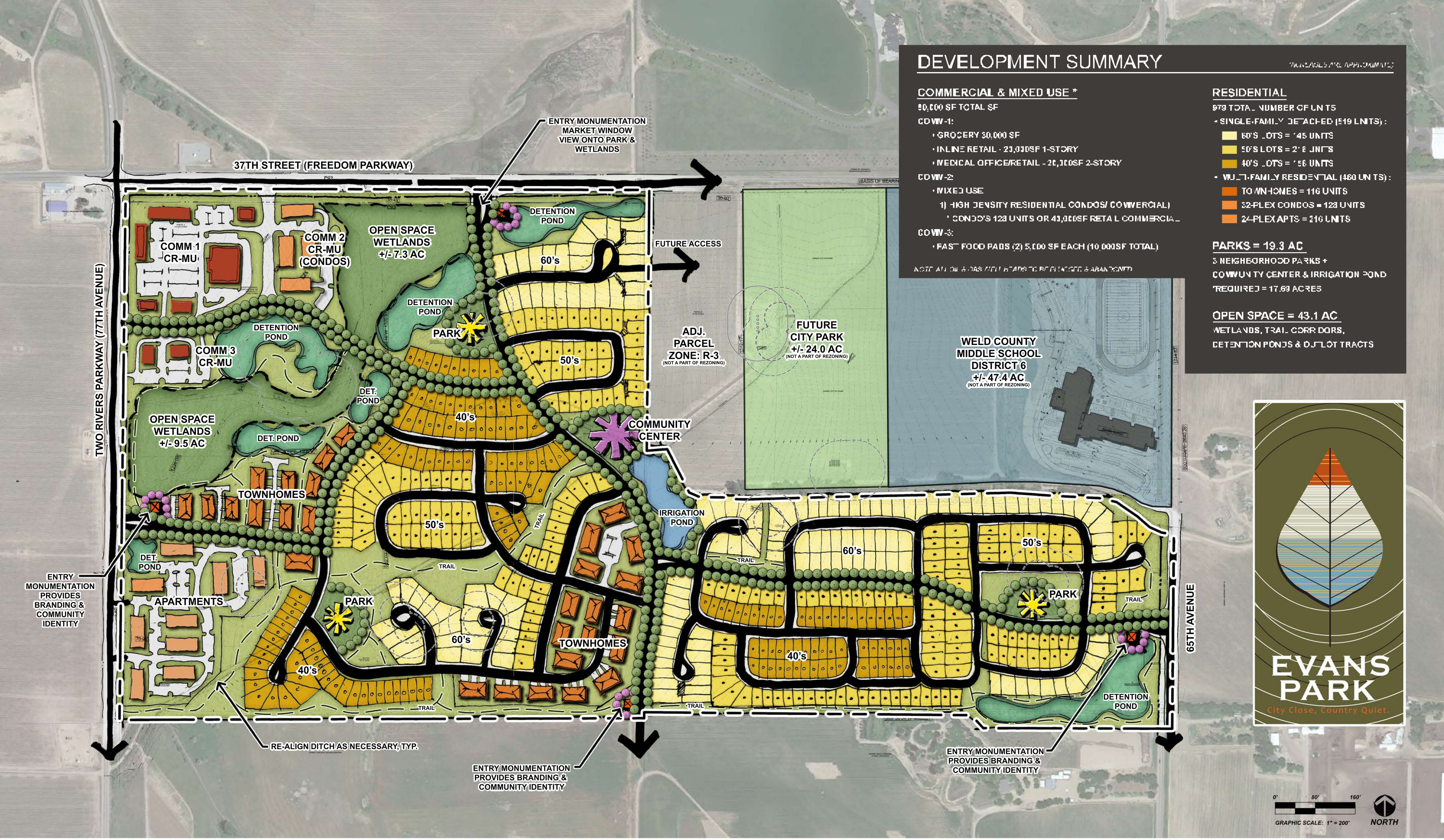


SCALE: 1"=2000'

SITE LOCATION/TRIP DISTRIBUTION

Figure 5

DELICH ASSOCIATES



DEVELOPMENT SUMMARY

TOTALS ARE APPROXIMATE

COMMERCIAL & MIXED USE *

80,000 SF TOTAL SF

COMM-1:

- GROCERY 30,000 SF
- INLINE RETAIL - 20,000SF 1-STORY
- MEDICAL OFFICE/RETAIL - 20,000SF 2-STORY

COMM-2:

- MIXED USE
  1) HIGH DENSITY RESIDENTIAL CONDOS/ COMMERCIAL
     - CONDOS 128 UNITS OR 41,000SF RETAIL COMMERCIAL

COMM-3:

- FAST FOOD PADS (2) 5,000 SF EACH (10,000SF TOTAL)

NOTE: ALL OUTPARCELS ARE TO BE PLATTED & BRANDED

RESIDENTIAL

979 TOTAL NUMBER OF UNITS

- SINGLE-FAMILY DETACHED (519 UNITS):
  - 60'S LOTS = 145 UNITS
  - 50'S LOTS = 216 UNITS
  - 40'S LOTS = 158 UNITS
- MULTI-FAMILY RESIDENTIAL (460 UNITS):
  - TOWNHOMES = 116 UNITS
  - 32-PLEX CONDOS = 128 UNITS
  - 24-PLEX APTS = 216 UNITS

PARKS = 19.3 AC

3 NEIGHBORHOOD PARKS +
COMMUNITY CENTER & IRRIGATION POND
REQUIRED = 17.69 ACRES

OPEN SPACE = 43.1 AC

WETLANDS, TRAIL CORRIDORS,
DETENTION PONDS & OUTLOT TRACTS

Evans Park Master Plan

Evans, CO
ROI Land Investments. Ltd.
March 21, 2018
Project #171096

LAI Design Group
www.LAIdesigngroup.com | 303.734.1777 - Corporate
Denver | Houston

Architecture ■ Planning & Entitlements ■ Visual Media ■ Landscape Architecture ■ Real Estate Advisory

TABLE 2 Trip Generation												
Code	Use	Size	AWDTE		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	In	Rate	Out	Rate	In	Rate	Out
Commercial												
850	Supermarket	30.0 KSF	106.78	3204	2.29	69	1.53	46	4.71	141	4.53	136
Passby (17%/34%)				544		10		10		47		47
820	Shopping Center	80.0 KSF	37.75	3020	0.58	46	0.36	29	1.83	146	1.98	158
Passby (17%/34%)				514		6		6		52		52
934	Fast-Food Restaurant	10.0 KSF	470.95	4710	20.5	205	19.6	196	16.9	169	15.6	156
Passby (49%/50%)				2308		98		98		81		81
Commercial Subtotal				10934		320		271		456		450
Commercial Passby				3366		114		114		180		180
Commercial Assigned				7568		206		157		276		270
Single Family												
210	Single Family	519 D.U.	9.11	4730	0.18	93	0.54	280	0.60	311	0.35	183
Multi-Family												
220	Multifamily	460 D.U.	7.26	3438	0.11	47	0.36	156	0.36	145	0.21	85
Residential Subtotal				8168		140		436		456		268
Total				19102		460		707		912		718
Total Passby				7568		114		114		180		180
Total Assigned				11534		346		593		732		538

APPENDIX B

DELICH ASSOCIATES
2272 GLEN HAVEN DRIVE
LOVELAND, CO 80538
Phone: (970) 669-2061

TABULAR SUMMARY OF VEHICLE COUNTS

Date: 2/7/2018 Observer: Vickie
Day: Tuesday Jurisdiction: Evans

Intersection: 37th Street/65th Avenue

R = right turn
S = straight
L = left turn

Time	Northbound: 65th Avenue				Southbound: 65th Avenue				Total	Eastbound: 37th Street				Westbound: 37th Street				Total	Total
Begins	L	S	R	Total	L	S	R	Total	north/south	L	S	R	Total	L	S	R	Total	east/west	All
7:00	13	33	12	58	31	22	8	61	119	5	49	1	55	25	84	25	134	189	308
7:15	14	34	12	60	38	24	10	72	132	6	55	1	62	25	85	25	135	197	329
7:30	13	40	21	74	31	22	9	62	136	8	64	1	73	25	117	22	164	237	373
7:45	6	28	18	52	18	27	10	55	107	9	44	0	53	42	102	20	164	217	324
8:00	8	23	11	42	9	31	13	53	95	16	65	5	86	60	60	12	132	218	313
8:15	5	16	12	33	8	33	7	48	81	9	93	3	105	59	51	10	120	225	306
8:30	2	14	14	30	17	9	7	33	63	8	44	3	55	13	40	10	63	118	181
8:45	1	14	13	28	12	10	7	29	57	7	45	3	55	10	38	10	58	113	170
7:15-8:15	41	125	62	228	96	104	42	242	470	39	228	7	274	152	364	79	595	869	1339
PHF	0.73	0.78	0.74	0.77	0.63	0.84	0.81	0.84	0.86	0.61	0.88	0.35	0.8	0.63	0.78	0.79	0.91	0.92	0.9
4:00	4	21	23	48	22	22	9	53	101	11	83	7	101	15	50	17	82	183	284
4:15	5	25	26	56	27	22	11	60	116	12	86	7	105	18	52	18	88	193	309
4:30	4	22	21	47	19	26	14	59	106	12	72	7	91	21	73	27	121	212	318
4:45	5	26	24	55	9	32	10	51	106	10	82	3	95	17	90	19	126	221	327
5:00	1	23	39	63	23	41	10	74	137	13	95	9	117	13	68	15	96	213	350
5:15	0	30	37	67	34	41	13	88	155	9	102	9	120	16	92	26	134	254	409
5:30	3	15	32	50	16	43	14	73	123	11	101	8	120	14	80	16	110	230	353
5:45	2	15	30	47	15	40	13	68	115	10	94	7	111	15	76	15	106	217	332
5:00-6:00	6	83	138	227	88	165	50	303	530	43	392	33	468	58	316	72	446	914	1444
PHF	0.5	0.69	0.88	0.85	0.65	0.96	0.89	0.86	0.85	0.83	0.96	0.92	0.98	0.91	0.86	0.69	0.83	0.9	0.88

DELICH ASSOCIATES
2272 GLEN HAVEN DRIVE
LOVELAND, CO 80538
Phone: (970) 669-2061

TABULAR SUMMARY OF VEHICLE COUNTS

Date: 2/8/2018 Observer: Vickie
Day: Thursday Jurisdiction: Evans

Intersection: 37th Street/Two Rivers

R = right turn
S = straight
L = left turn

Time	Northbound:			Two Rivers	Southbound:			Two Rivers	Total	Eastbound:			37th Street	Westbound:			37th Street	Total	Total
Begins	L	S	R	Total	L	S	R	Total	north/south	L	S	R	Total	L	S	R	Total	east/west	All
7:00	1	32	5	38	5	39	1	45	83	1	38	2	41	14	81	11	106	147	230
7:15	0	36	6	42	5	46	1	52	94	1	41	4	46	17	87	16	120	166	260
7:30	2	31	11	44	7	37	1	45	89	5	45	2	52	27	96	10	133	185	274
7:45	2	29	6	37	7	37	3	47	84	3	42	3	48	14	80	16	110	158	242
8:00	8	33	4	45	8	32	0	40	85	0	31	5	36	14	59	10	83	119	204
8:15	1	21	9	31	4	21	1	26	57	1	36	0	37	11	43	10	64	101	158
8:30	0	18	8	26	3	10	0	13	39	1	38	1	40	12	47	4	63	103	142
8:45	1	18	7	26	3	11	1	15	41	1	36	1	38	10	44	4	58	96	137
7:00-8:00	5	128	28	161	24	159	6	189	350	10	166	11	187	72	344	53	469	656	1006
PHF	0.63	0.89	0.64	0.91	0.86	0.86	0.5	0.91	0.93	0.5	0.92	0.69	0.9	0.67	0.9	0.83	0.88	0.89	0.92
4:00	1	32	11	44	11	25	1	37	81	1	82	2	85	12	49	6	67	152	233
4:15	0	34	15	49	13	27	0	40	89	0	85	3	88	11	50	8	69	157	246
4:30	1	35	7	43	4	34	5	43	86	2	82	1	85	13	57	6	76	161	247
4:45	2	42	12	56	9	28	2	39	95	6	91	2	99	17	60	12	89	188	283
5:00	1	44	9	54	9	39	2	50	104	2	95	4	101	11	63	7	81	182	286
5:15	0	51	16	67	3	33	4	40	107	4	88	3	95	20	86	9	115	210	317
5:30	0	46	17	63	7	26	1	34	97	4	71	1	76	12	52	9	73	149	246
5:45	1	44	15	60	6	25	2	33	93	4	71	2	77	13	51	9	73	150	243
4:30-5:30	4	172	44	220	25	134	13	172	392	14	356	10	380	61	266	34	361	741	1133
PHF	0.5	0.84	0.69	0.82	0.69	0.86	0.65	0.86	0.92	0.58	0.94	0.63	0.94	0.76	0.77	0.71	0.78	0.88	0.89

APPENDIX C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	228	7	152	364	79	41	125	62	96	104	42
Future Volume (veh/h)	39	228	7	152	364	79	41	125	62	96	104	42
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	42	248	7	165	396	76	45	136	0	104	113	0
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	744	21	524	627	120	71	214	246	212	223	189
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.16	0.16	0.00	0.12	0.12	0.00
Sat Flow, veh/h	918	1803	51	1120	1520	292	457	1382	1583	1774	1863	1583
Grp Volume(v), veh/h	42	0	255	165	0	472	181	0	0	104	113	0
Grp Sat Flow(s),veh/h/ln	918	0	1854	1120	0	1811	1840	0	1583	1774	1863	1583
Q Serve(g_s), s	1.6	0.0	4.0	5.1	0.0	8.9	4.0	0.0	0.0	2.4	2.5	0.0
Cycle Q Clear(g_c), s	10.6	0.0	4.0	9.1	0.0	8.9	4.0	0.0	0.0	2.4	2.5	0.0
Prop In Lane	1.00		0.03	1.00		0.16	0.25		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	0	765	524	0	748	285	0	246	212	223	189
V/C Ratio(X)	0.12	0.00	0.33	0.31	0.00	0.63	0.63	0.00	0.00	0.49	0.51	0.00
Avail Cap(c_a), veh/h	603	0	1266	826	0	1237	788	0	678	760	798	678
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.3	0.0	8.6	11.7	0.0	10.1	17.1	0.0	0.0	17.8	17.8	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.3	0.0	0.9	2.3	0.0	0.0	1.7	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.1	1.6	0.0	4.5	2.2	0.0	0.0	1.3	1.4	0.0
LnGrp Delay(d),s/veh	14.4	0.0	8.9	12.1	0.0	11.0	19.4	0.0	0.0	19.5	19.6	0.0
LnGrp LOS	B		A	B		B	B			B	B	
Approach Vol, veh/h		297			637			181			217	
Approach Delay, s/veh		9.7			11.3			19.4			19.6	
Approach LOS		A			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		22.3		9.7		22.3		11.2
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		29.5		18.5		29.5		18.5
Max Q Clear Time (g_c+I1), s		12.6		4.5		11.1		6.0
Green Ext Time (p_c), s		5.2		0.7		5.4		0.7

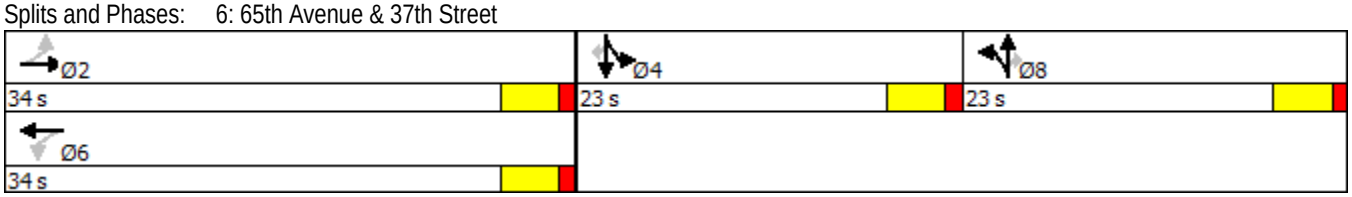
Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Phase Number	2	4	6	8
Movement	EBTL	SBTL	WBTL	NBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	34	23	34	23
Maximum Split (%)	42.5%	28.8%	42.5%	28.8%
Minimum Split (s)	22.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	7
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	34	0	57
End Time (s)	34	57	34	0
Yield/Force Off (s)	29.5	52.5	29.5	75.5
Yield/Force Off 170(s)	18.5	52.5	18.5	75.5
Local Start Time (s)	0	34	0	57
Local Yield (s)	29.5	52.5	29.5	75.5
Local Yield 170(s)	18.5	52.5	18.5	75.5

Intersection Summary

Cycle Length	80
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	392	33	58	316	72	6	83	138	88	165	50
Future Volume (veh/h)	43	392	33	58	316	72	6	83	138	88	165	50
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	47	426	32	63	343	67	7	90	13	96	179	0
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	411	725	54	379	641	125	15	195	179	279	293	249
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.11	0.11	0.11	0.16	0.16	0.00
Sat Flow, veh/h	972	1711	129	930	1515	296	134	1722	1583	1774	1863	1583
Grp Volume(v), veh/h	47	0	458	63	0	410	97	0	13	96	179	0
Grp Sat Flow(s),veh/h/ln	972	0	1840	930	0	1811	1856	0	1583	1774	1863	1583
Q Serve(g_s), s	1.7	0.0	8.4	2.5	0.0	7.4	2.2	0.0	0.3	2.1	4.0	0.0
Cycle Q Clear(g_c), s	9.1	0.0	8.4	10.9	0.0	7.4	2.2	0.0	0.3	2.1	4.0	0.0
Prop In Lane	1.00		0.07	1.00		0.16	0.07		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	411	0	779	379	0	767	210	0	179	279	293	249
V/C Ratio(X)	0.11	0.00	0.59	0.17	0.00	0.53	0.46	0.00	0.07	0.34	0.61	0.00
Avail Cap(c_a), veh/h	649	0	1231	607	0	1211	778	0	664	744	781	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.9	0.0	9.8	13.9	0.0	9.5	18.3	0.0	17.5	16.6	17.3	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.7	0.2	0.0	0.6	1.6	0.0	0.2	0.7	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	4.4	0.7	0.0	3.8	1.2	0.0	0.1	1.1	2.2	0.0
LnGrp Delay(d),s/veh	13.0	0.0	10.5	14.1	0.0	10.1	19.9	0.0	17.6	17.3	19.4	0.0
LnGrp LOS	B		B	B		B	B		B	B	B	
Approach Vol, veh/h		505			473			110			275	
Approach Delay, s/veh		10.7			10.6			19.6			18.7	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		23.2		11.4		23.2		9.5
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		29.5		18.5		29.5		18.5
Max Q Clear Time (g_c+I1), s		11.1		6.0		12.9		4.2
Green Ext Time (p_c), s		6.1		1.0		5.8		0.4

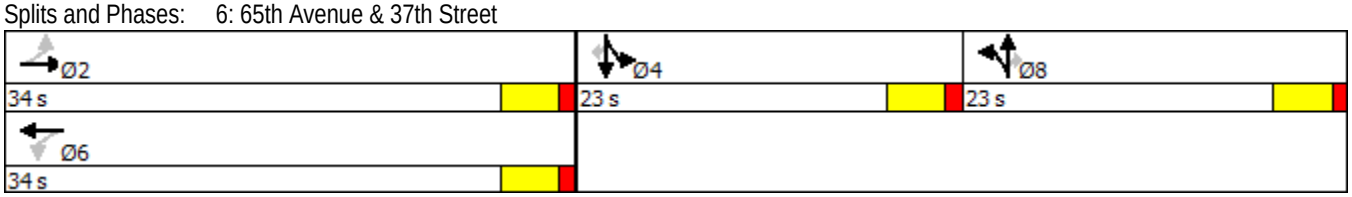
Intersection Summary	
HCM 2010 Ctrl Delay	13.0
HCM 2010 LOS	B

Phase Number	2	4	6	8
Movement	EBTL	SBTL	WBTL	NBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	34	23	34	23
Maximum Split (%)	42.5%	28.8%	42.5%	28.8%
Minimum Split (s)	22.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	7
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	34	0	57
End Time (s)	34	57	34	0
Yield/Force Off (s)	29.5	52.5	29.5	75.5
Yield/Force Off 170(s)	18.5	52.5	18.5	75.5
Local Start Time (s)	0	34	0	57
Local Yield (s)	29.5	52.5	29.5	75.5
Local Yield 170(s)	18.5	52.5	18.5	75.5

Intersection Summary

Cycle Length	80
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 6: 65th Avenue & 37th Street



Intersection	
Int Delay, s/veh	13.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	166	11	72	344	53	5	128	28	24	159	6
Future Vol, veh/h	10	166	11	72	344	53	5	128	28	24	159	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	180	12	78	374	58	5	139	30	26	173	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	432	0	0	180	0	0	851	790	180	846	761	403
Stage 1	-	-	-	-	-	-	202	202	-	559	559	-
Stage 2	-	-	-	-	-	-	649	588	-	287	202	-
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	1128	-	-	1396	-	-	280	322	863	282	335	647
Stage 1	-	-	-	-	-	-	800	734	-	513	511	-
Stage 2	-	-	-	-	-	-	458	496	-	720	734	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1128	-	-	1396	-	-	149	301	863	166	313	647
Mov Cap-2 Maneuver	-	-	-	-	-	-	149	301	-	166	313	-
Stage 1	-	-	-	-	-	-	792	727	-	508	482	-
Stage 2	-	-	-	-	-	-	275	468	-	556	727	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.2	27.9	44.1
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	328	1128	-	-	1396	-	-	286
HCM Lane V/C Ratio	0.534	0.01	-	-	0.056	-	-	0.718
HCM Control Delay (s)	27.9	8.2	-	-	7.7	-	-	44.1
HCM Lane LOS	D	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	3	0	-	-	0.2	-	-	5.1

Intersection												
Int Delay, s/veh	22											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	356	10	61	266	34	4	172	44	25	134	13
Future Vol, veh/h	14	356	10	61	266	34	4	172	44	25	134	13
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	150	-	150	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	387	11	66	289	37	4	187	48	27	146	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	326	0	0	387	0	0	937	876	387	975	857	308
Stage 1	-	-	-	-	-	-	417	417	-	440	440	-
Stage 2	-	-	-	-	-	-	520	459	-	535	417	-
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	1234	-	-	1171	-	-	245	287	661	231	295	732
Stage 1	-	-	-	-	-	-	613	591	-	596	578	-
Stage 2	-	-	-	-	-	-	539	566	-	529	591	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1234	-	-	1171	-	-	133	268	661	89	275	732
Mov Cap-2 Maneuver	-	-	-	-	-	-	133	268	-	89	275	-
Stage 1	-	-	-	-	-	-	606	584	-	589	545	-
Stage 2	-	-	-	-	-	-	365	534	-	330	584	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.4	52.2	74.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	298	1234	-	-	1171	-	-	219
HCM Lane V/C Ratio	0.802	0.012	-	-	0.057	-	-	0.854
HCM Control Delay (s)	52.2	8	-	-	8.3	-	-	74.5
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	6.5	0	-	-	0.2	-	-	6.6

UNSIGNALIZED INTERSECTIONS

Level-of-Service	Average Total Delay sec/veh
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

SIGNALIZED INTERSECTIONS

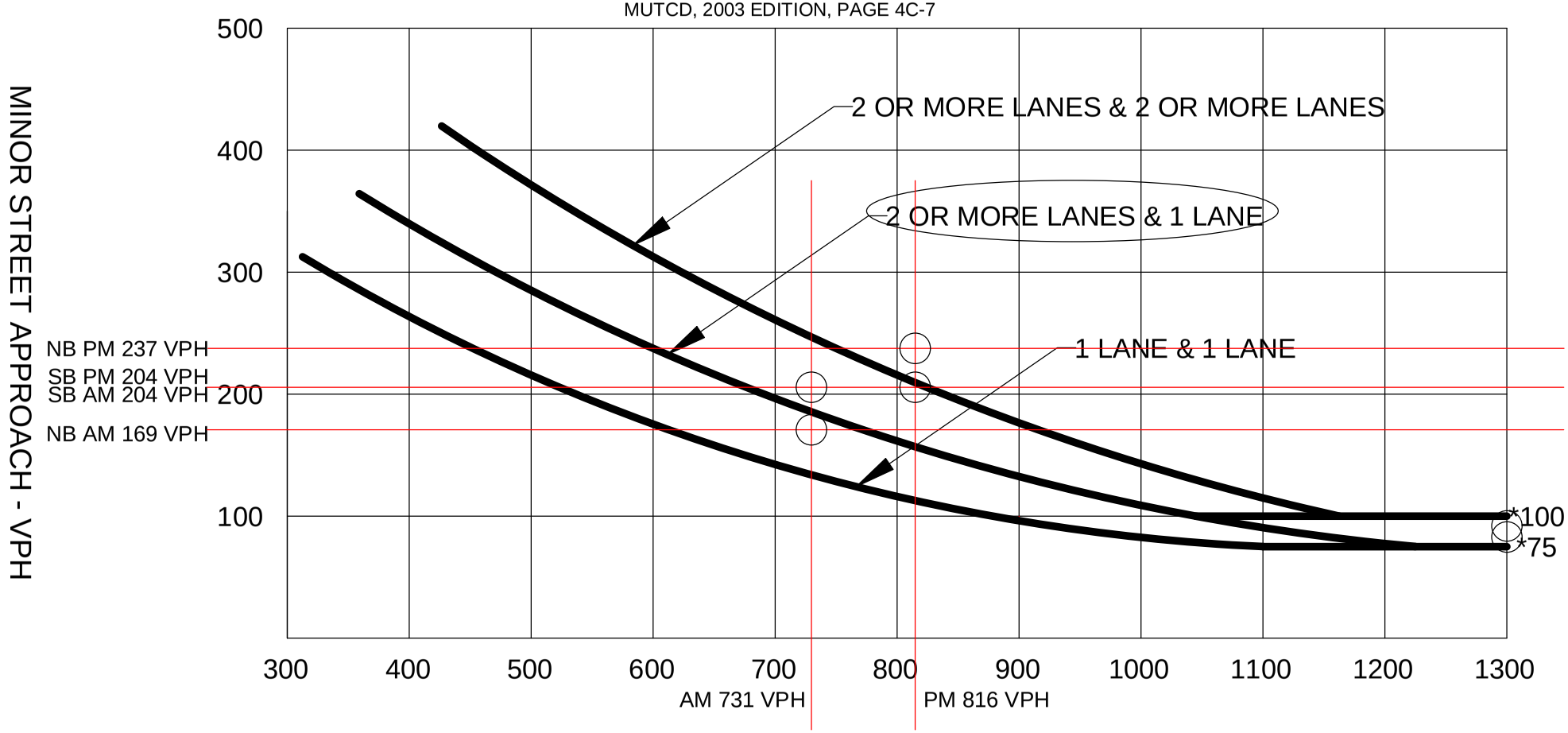
Level-of-Service	Average Total Delay sec/veh
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

APPENDIX D

FIGURE 4C-4. WARRANT 3, PEAK HOUR (70% FACTOR)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 KM/H (40 MPH) ON MAJOR STREET)

MUTCD, 2003 EDITION, PAGE 4C-7



MAJOR STREET - TOTAL OF BOTH APPROACH - VEHICLES PER HOUR (VPH)

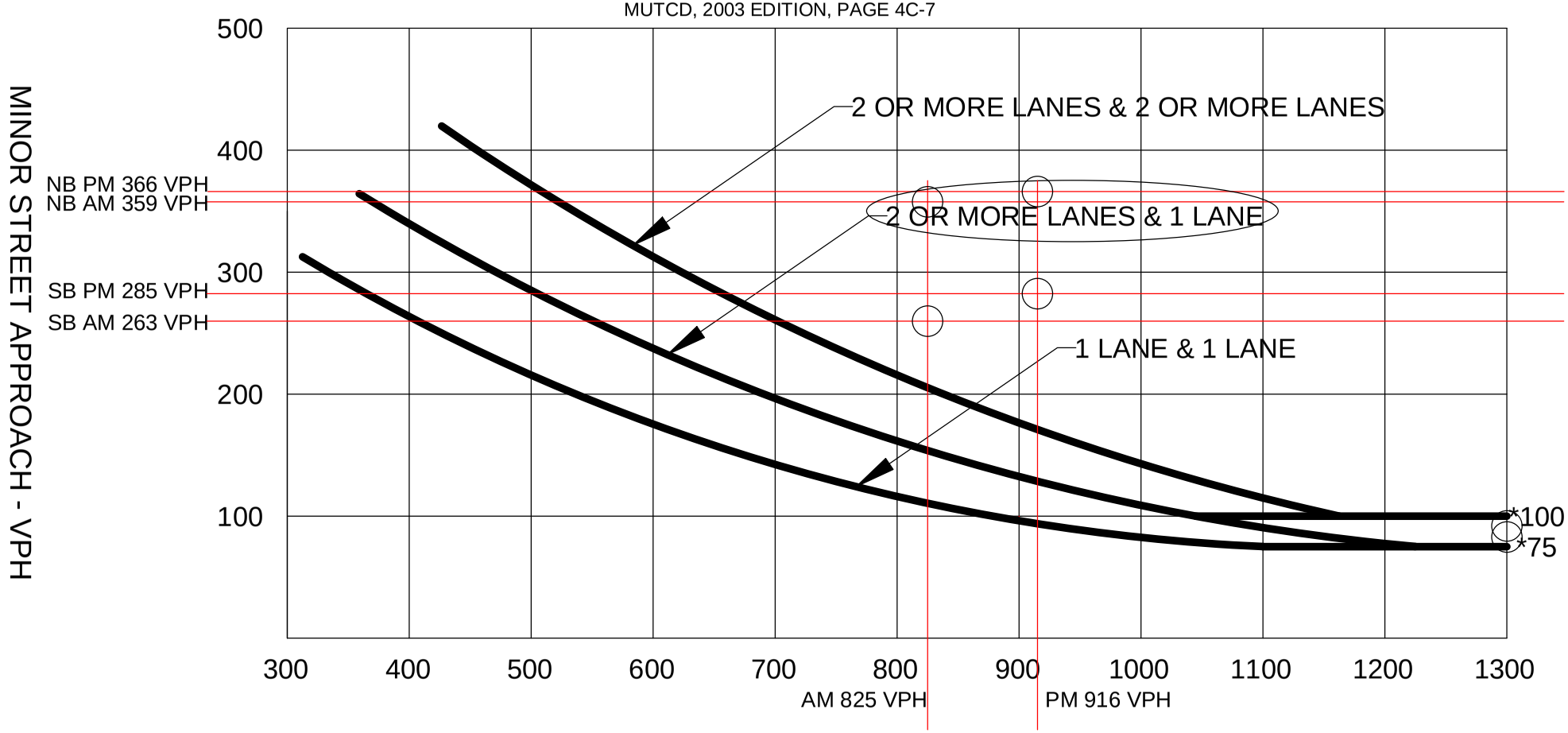
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

SHORT RANGE (2020) TOTAL PEAK HOUR WARRANT AT 37TH STREET/TWO RIVERS PARKWAY

FIGURE 4C-4. WARRANT 3, PEAK HOUR (70% FACTOR)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 KM/H (40 MPH) ON MAJOR STREET)

MUTCD, 2003 EDITION, PAGE 4C-7



MAJOR STREET - TOTAL OF BOTH APPROACH - VEHICLES PER HOUR (VPH)

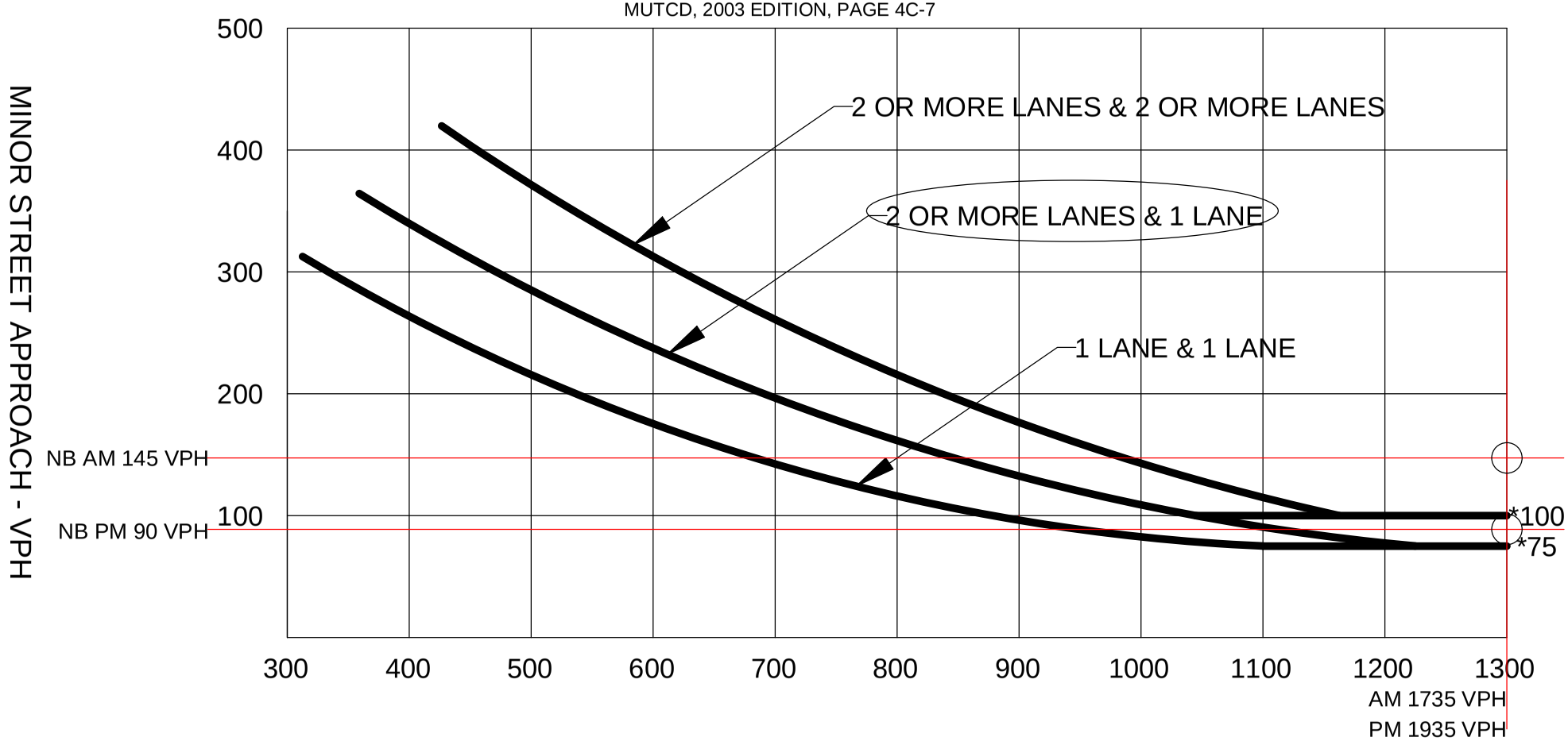
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

MID RANGE (2023) TOTAL PEAK HOUR WARRANT AT 37TH STREET/TWO RIVERS PARKWAY

FIGURE 4C-4. WARRANT 3, PEAK HOUR (70% FACTOR)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 KM/H (40 MPH) ON MAJOR STREET)

MUTCD, 2003 EDITION, PAGE 4C-7



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

LONG RANGE (2040) TOTAL PEAK HOUR WARRANT AT 37TH STREET/SITE ACCESS

APPENDIX E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	237	7	158	379	82	43	130	65	100	108	44
Future Volume (veh/h)	41	237	7	158	379	82	43	130	65	100	108	44
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	45	258	7	172	412	79	47	141	0	109	117	0
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	341	566	15	537	555	106	413	247	210	395	247	210
Arrive On Green	0.05	0.31	0.31	0.10	0.37	0.37	0.10	0.13	0.00	0.10	0.13	0.00
Sat Flow, veh/h	1774	1805	49	1774	1520	291	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	45	0	265	172	0	491	47	141	0	109	117	0
Grp Sat Flow(s),veh/h/ln	1774	0	1854	1774	0	1811	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.8	0.0	5.8	3.2	0.0	11.9	1.1	3.6	0.0	2.5	2.9	0.0
Cycle Q Clear(g_c), s	0.8	0.0	5.8	3.2	0.0	11.9	1.1	3.6	0.0	2.5	2.9	0.0
Prop In Lane	1.00		0.03	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	341	0	582	537	0	661	413	247	210	395	247	210
V/C Ratio(X)	0.13	0.00	0.46	0.32	0.00	0.74	0.11	0.57	0.00	0.28	0.47	0.00
Avail Cap(c_a), veh/h	452	0	901	768	0	1095	853	683	581	835	683	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.5	0.0	13.9	10.0	0.0	14.0	15.4	20.5	0.0	16.0	20.2	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.6	0.3	0.0	1.7	0.1	2.1	0.0	0.4	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	3.0	1.5	0.0	6.2	0.5	2.0	0.0	1.3	1.6	0.0
LnGrp Delay(d),s/veh	11.7	0.0	14.4	10.4	0.0	15.6	15.5	22.6	0.0	16.4	21.7	0.0
LnGrp LOS	B		B	B		B	B	C		B	C	
Approach Vol, veh/h		310			663			188			226	
Approach Delay, s/veh		14.0			14.3			20.8			19.1	
Approach LOS		B			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	20.3	9.5	11.2	6.8	22.9	9.5	11.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	24.5	17.5	18.5	5.5	30.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	5.2	7.8	3.1	4.9	2.8	13.9	4.5	5.6
Green Ext Time (p_c), s	0.2	4.5	0.1	1.1	0.0	4.5	0.2	1.1

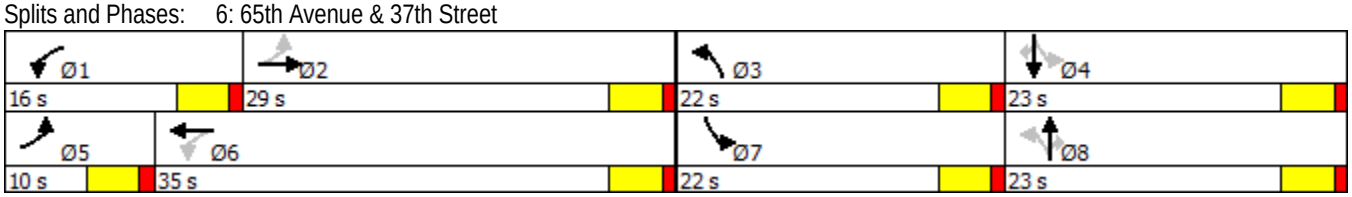
Intersection Summary	
HCM 2010 Ctrl Delay	15.9
HCM 2010 LOS	B

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	Min	None	None	Min	Min
Maximum Split (s)	16	29	22	23	10	35	22	23
Maximum Split (%)	17.8%	32.2%	24.4%	25.6%	11.1%	38.9%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	45	67	0	10	45	67
End Time (s)	16	45	67	0	10	45	67	0
Yield/Force Off (s)	11.5	40.5	62.5	85.5	5.5	40.5	62.5	85.5
Yield/Force Off 170(s)	11.5	29.5	62.5	85.5	5.5	29.5	62.5	85.5
Local Start Time (s)	74	0	29	51	74	84	29	51
Local Yield (s)	85.5	24.5	46.5	69.5	79.5	24.5	46.5	69.5
Local Yield 170(s)	85.5	13.5	46.5	69.5	79.5	13.5	46.5	69.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	408	34	60	329	75	6	86	144	92	172	52
Future Volume (veh/h)	45	408	34	60	329	75	6	86	144	92	172	52
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	49	443	34	65	358	72	7	93	-5	100	187	-11
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	374	595	46	351	539	108	379	288	245	450	288	245
Arrive On Green	0.05	0.35	0.35	0.06	0.36	0.36	0.10	0.15	0.00	0.10	0.15	0.00
Sat Flow, veh/h	1774	1708	131	1774	1506	303	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	49	0	477	65	0	430	7	93	-5	100	187	-11
Grp Sat Flow(s),veh/h/ln	1774	0	1840	1774	0	1809	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.9	0.0	12.0	1.2	0.0	10.5	0.2	2.3	0.0	2.3	4.9	0.0
Cycle Q Clear(g_c), s	0.9	0.0	12.0	1.2	0.0	10.5	0.2	2.3	0.0	2.3	4.9	0.0
Prop In Lane	1.00		0.07	1.00		0.17	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	374	0	640	351	0	648	379	288	245	450	288	245
V/C Ratio(X)	0.13	0.00	0.74	0.19	0.00	0.66	0.02	0.32	-0.02	0.22	0.65	-0.04
Avail Cap(c_a), veh/h	474	0	860	636	0	1053	802	658	559	873	658	559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.8	0.0	15.0	11.0	0.0	14.2	15.0	19.7	0.0	15.7	20.8	0.0
Incr Delay (d2), s/veh	0.2	0.0	2.4	0.3	0.0	1.2	0.0	0.6	0.0	0.2	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	6.4	0.6	0.0	5.3	0.1	1.2	0.0	1.1	2.7	0.0
LnGrp Delay(d),s/veh	11.0	0.0	17.5	11.3	0.0	15.4	15.1	20.4	0.0	15.9	23.3	0.0
LnGrp LOS	B		B	B		B	B	C		B	C	
Approach Vol, veh/h		526			495			95			276	
Approach Delay, s/veh		16.8			14.8			21.0			21.5	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	22.7	9.5	12.6	7.0	23.3	9.5	12.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	24.5	17.5	18.5	5.5	30.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	3.2	14.0	2.2	6.9	2.9	12.5	4.3	4.3
Green Ext Time (p_c), s	0.1	4.3	0.0	1.2	0.0	5.7	0.2	1.3

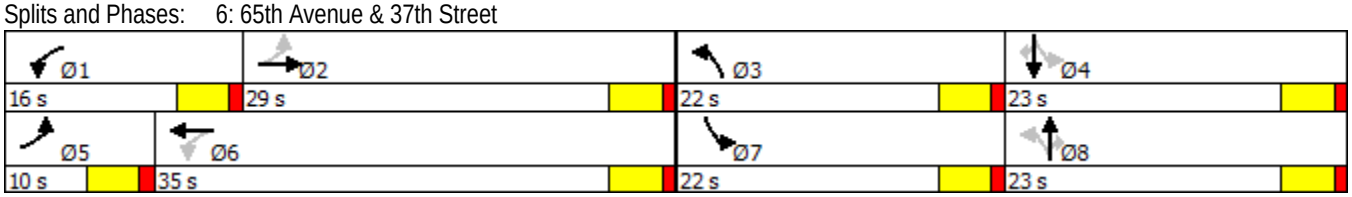
Intersection Summary	
HCM 2010 Ctrl Delay	17.3
HCM 2010 LOS	B

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	Min	None	None	Min	Min
Maximum Split (s)	16	29	22	23	10	35	22	23
Maximum Split (%)	17.8%	32.2%	24.4%	25.6%	11.1%	38.9%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	45	67	0	10	45	67
End Time (s)	16	45	67	0	10	45	67	0
Yield/Force Off (s)	11.5	40.5	62.5	85.5	5.5	40.5	62.5	85.5
Yield/Force Off 170(s)	11.5	29.5	62.5	85.5	5.5	29.5	62.5	85.5
Local Start Time (s)	74	0	29	51	74	84	29	51
Local Yield (s)	85.5	24.5	46.5	69.5	79.5	24.5	46.5	69.5
Local Yield 170(s)	85.5	13.5	46.5	69.5	79.5	13.5	46.5	69.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 6: 65th Avenue & 37th Street



Intersection												
Int Delay, s/veh	11.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	173	11	75	358	55	5	133	29	25	165	6
Future Vol, veh/h	10	173	11	75	358	55	5	133	29	25	165	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	188	12	82	389	60	5	145	32	27	179	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	449	0	0	188	0	0	885	822	188	880	792	419
Stage 1	-	-	-	-	-	-	210	210	-	582	582	-
Stage 2	-	-	-	-	-	-	675	612	-	298	210	-
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	1111	-	-	1386	-	-	266	309	854	268	322	634
Stage 1	-	-	-	-	-	-	792	728	-	499	499	-
Stage 2	-	-	-	-	-	-	444	484	-	711	728	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1111	-	-	1386	-	-	132	288	854	149	300	634
Mov Cap-2 Maneuver	-	-	-	-	-	-	132	288	-	149	300	-
Stage 1	-	-	-	-	-	-	784	721	-	494	469	-
Stage 2	-	-	-	-	-	-	255	455	-	542	721	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.2	28.3	33.5
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	132	327	1111	-	-	1386	-	-	149	306
HCM Lane V/C Ratio	0.041	0.538	0.01	-	-	0.059	-	-	0.182	0.607
HCM Control Delay (s)	33.4	28.1	8.3	-	-	7.8	-	-	34.5	33.4
HCM Lane LOS	D	D	A	-	-	A	-	-	D	D
HCM 95th %tile Q(veh)	0.1	3	0	-	-	0.2	-	-	0.6	3.7

Intersection												
Int Delay, s/veh	18.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	370	10	63	277	35	4	179	46	26	139	14
Future Vol, veh/h	15	370	10	63	277	35	4	179	46	26	139	14
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	150	-	150	150	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	402	11	68	301	38	4	195	50	28	151	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	339	0	0	402	0	0	975	911	402	1014	892	320
Stage 1	-	-	-	-	-	-	435	435	-	457	457	-
Stage 2	-	-	-	-	-	-	540	476	-	557	435	-
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	1220	-	-	1157	-	-	231	274	648	217	281	721
Stage 1	-	-	-	-	-	-	600	580	-	583	568	-
Stage 2	-	-	-	-	-	-	526	557	-	515	580	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1220	-	-	1157	-	-	116	255	648	71	261	721
Mov Cap-2 Maneuver	-	-	-	-	-	-	116	255	-	71	261	-
Stage 1	-	-	-	-	-	-	592	572	-	575	535	-
Stage 2	-	-	-	-	-	-	348	524	-	309	572	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.4	58.3	43.1
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	116	291	1220	-	-	1157	-	-	71	277
HCM Lane V/C Ratio	0.037	0.84	0.013	-	-	0.059	-	-	0.398	0.6
HCM Control Delay (s)	37.2	58.7	8	-	-	8.3	-	-	85.9	35.8
HCM Lane LOS	E	F	A	-	-	A	-	-	F	E
HCM 95th %tile Q(veh)	0.1	7.1	0	-	-	0.2	-	-	1.5	3.6

APPENDIX F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	252	8	168	402	87	45	138	68	106	115	46
Future Volume (veh/h)	43	252	8	168	402	87	45	138	68	106	115	46
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	47	274	0	183	437	0	49	150	0	115	125	0
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	357	515	438	503	621	528	434	263	224	415	263	224
Arrive On Green	0.05	0.28	0.00	0.11	0.33	0.00	0.10	0.14	0.00	0.10	0.14	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	47	274	0	183	437	0	49	150	0	115	125	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.9	6.0	0.0	3.4	9.9	0.0	1.0	3.6	0.0	2.5	3.0	0.0
Cycle Q Clear(g_c), s	0.9	6.0	0.0	3.4	9.9	0.0	1.0	3.6	0.0	2.5	3.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	357	515	438	503	621	528	434	263	224	415	263	224
V/C Ratio(X)	0.13	0.53	0.00	0.36	0.70	0.00	0.11	0.57	0.00	0.28	0.47	0.00
Avail Cap(c_a), veh/h	510	1062	903	629	1139	969	894	715	607	875	715	607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.8	14.8	0.0	10.6	14.0	0.0	14.2	19.3	0.0	14.8	19.1	0.0
Incr Delay (d2), s/veh	0.2	0.9	0.0	0.4	1.5	0.0	0.1	1.9	0.0	0.4	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.2	0.0	1.7	5.2	0.0	0.5	2.0	0.0	1.3	1.6	0.0
LnGrp Delay(d),s/veh	12.0	15.7	0.0	11.1	15.5	0.0	14.3	21.3	0.0	15.2	20.4	0.0
LnGrp LOS	B	B		B	B		B	C		B	C	
Approach Vol, veh/h		321			620			199			240	
Approach Delay, s/veh		15.1			14.2			19.6			17.9	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	17.8	9.5	11.3	6.8	20.6	9.5	11.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	27.5	17.5	18.5	6.5	29.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	5.4	8.0	3.0	5.0	2.9	11.9	4.5	5.6
Green Ext Time (p_c), s	0.1	4.4	0.1	1.2	0.0	4.2	0.2	1.2

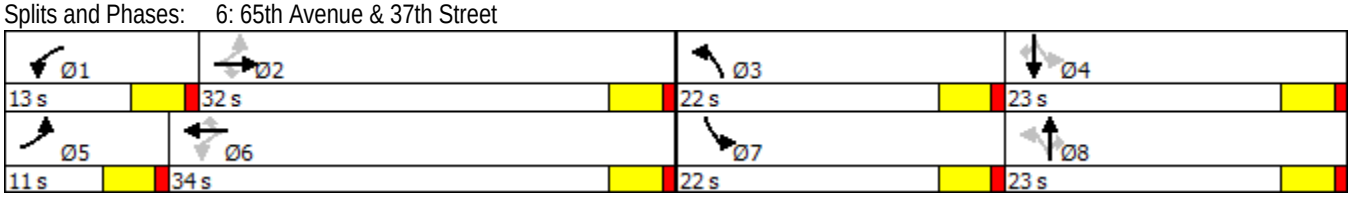
Intersection Summary	
HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	Min	None	None	Min	Min
Maximum Split (s)	13	32	22	23	11	34	22	23
Maximum Split (%)	14.4%	35.6%	24.4%	25.6%	12.2%	37.8%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	13	45	67	0	11	45	67
End Time (s)	13	45	67	0	11	45	67	0
Yield/Force Off (s)	8.5	40.5	62.5	85.5	6.5	40.5	62.5	85.5
Yield/Force Off 170(s)	8.5	29.5	62.5	85.5	6.5	29.5	62.5	85.5
Local Start Time (s)	77	0	32	54	77	88	32	54
Local Yield (s)	85.5	27.5	49.5	72.5	83.5	27.5	49.5	72.5
Local Yield 170(s)	85.5	16.5	49.5	72.5	83.5	16.5	49.5	72.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	433	36	64	349	79	7	92	152	97	182	55
Future Volume (veh/h)	47	433	36	64	349	79	7	92	152	97	182	55
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	51	471	0	70	379	0	8	100	0	105	198	0
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	416	644	547	357	664	565	374	299	254	448	299	254
Arrive On Green	0.05	0.35	0.00	0.06	0.36	0.00	0.09	0.16	0.00	0.09	0.16	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	51	471	0	70	379	0	8	100	0	105	198	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.0	11.8	0.0	1.3	8.7	0.0	0.2	2.5	0.0	2.5	5.3	0.0
Cycle Q Clear(g_c), s	1.0	11.8	0.0	1.3	8.7	0.0	0.2	2.5	0.0	2.5	5.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	416	644	547	357	664	565	374	299	254	448	299	254
V/C Ratio(X)	0.12	0.73	0.00	0.20	0.57	0.00	0.02	0.33	0.00	0.23	0.66	0.00
Avail Cap(c_a), veh/h	545	965	820	534	1035	880	792	649	552	866	649	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.7	15.2	0.0	11.2	13.8	0.0	15.1	19.8	0.0	15.7	20.9	0.0
Incr Delay (d2), s/veh	0.1	1.6	0.0	0.3	0.8	0.0	0.0	0.7	0.0	0.3	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	6.3	0.0	0.6	4.6	0.0	0.1	1.4	0.0	1.2	2.9	0.0
LnGrp Delay(d),s/veh	10.8	16.8	0.0	11.4	14.6	0.0	15.1	20.4	0.0	16.0	23.4	0.0
LnGrp LOS	B	B		B	B		B	C		B	C	
Approach Vol, veh/h		522			449			108			303	
Approach Delay, s/veh		16.2			14.1			20.0			20.9	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	22.9	9.5	13.0	7.1	23.4	9.5	13.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	27.5	17.5	18.5	6.5	29.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	3.3	13.8	2.2	7.3	3.0	10.7	4.5	4.5
Green Ext Time (p_c), s	0.1	4.6	0.0	1.2	0.0	5.3	0.2	1.4

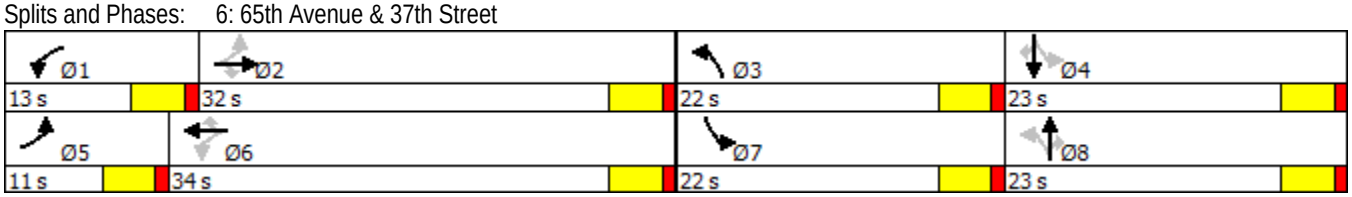
Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	Min	None	None	Min	Min
Maximum Split (s)	13	32	22	23	11	34	22	23
Maximum Split (%)	14.4%	35.6%	24.4%	25.6%	12.2%	37.8%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	13	45	67	0	11	45	67
End Time (s)	13	45	67	0	11	45	67	0
Yield/Force Off (s)	8.5	40.5	62.5	85.5	6.5	40.5	62.5	85.5
Yield/Force Off 170(s)	8.5	29.5	62.5	85.5	6.5	29.5	62.5	85.5
Local Start Time (s)	77	0	32	54	77	88	32	54
Local Yield (s)	85.5	27.5	49.5	72.5	83.5	27.5	49.5	72.5
Local Yield 170(s)	85.5	16.5	49.5	72.5	83.5	16.5	49.5	72.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	183	12	79	380	59	6	141	31	26	175	7
Future Volume (veh/h)	11	183	12	79	380	59	6	141	31	26	175	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	12	199	0	86	413	0	7	153	0	28	190	6
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	603	512	436	603	512	656	911	774	695	878	28
Arrive On Green	0.32	0.32	0.00	0.32	0.32	0.00	0.49	0.49	0.00	0.49	0.49	0.49
Sat Flow, veh/h	969	1863	1583	1179	1863	1583	1182	1863	1583	1229	1796	57
Grp Volume(v), veh/h	12	199	0	86	413	0	7	153	0	28	0	196
Grp Sat Flow(s),veh/h/ln	969	1863	1583	1179	1863	1583	1182	1863	1583	1229	0	1853
Q Serve(g_s), s	0.5	3.9	0.0	2.9	9.3	0.0	0.2	2.2	0.0	0.6	0.0	2.9
Cycle Q Clear(g_c), s	9.8	3.9	0.0	6.8	9.3	0.0	3.1	2.2	0.0	2.8	0.0	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	277	603	512	436	603	512	656	911	774	695	0	906
V/C Ratio(X)	0.04	0.33	0.00	0.20	0.69	0.00	0.01	0.17	0.00	0.04	0.00	0.22
Avail Cap(c_a), veh/h	518	1066	906	729	1066	906	656	911	774	695	0	906
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.4	12.3	0.0	14.9	14.1	0.0	7.9	6.8	0.0	7.6	0.0	7.0
Incr Delay (d2), s/veh	0.1	0.3	0.0	0.2	1.4	0.0	0.0	0.4	0.0	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.0	0.0	1.0	4.9	0.0	0.1	1.2	0.0	0.2	0.0	1.6
LnGrp Delay(d),s/veh	18.4	12.6	0.0	15.1	15.5	0.0	7.9	7.2	0.0	7.7	0.0	7.6
LnGrp LOS	B	B		B	B		A	A		A		A
Approach Vol, veh/h		211			499			160			224	
Approach Delay, s/veh		13.0			15.4			7.3			7.6	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.0		20.0		28.0		20.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		23.5		27.5		23.5		27.5
Max Q Clear Time (g_c+I1), s		5.1		11.8		4.9		11.3
Green Ext Time (p_c), s		2.0		3.8		2.0		3.8

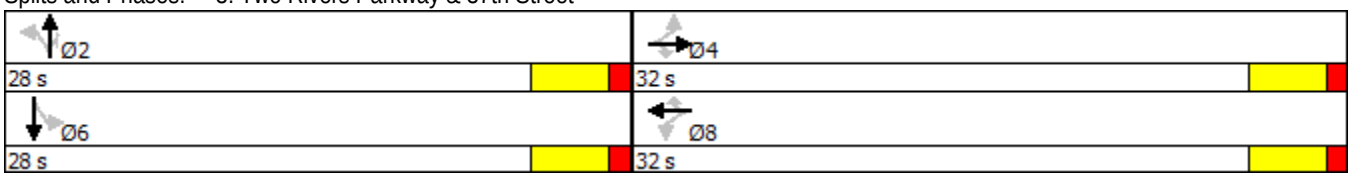
Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	28	32	28	32
Maximum Split (%)	46.7%	53.3%	46.7%	53.3%
Minimum Split (s)	22.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	7
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	28	0	28
End Time (s)	28	0	28	0
Yield/Force Off (s)	23.5	55.5	23.5	55.5
Yield/Force Off 170(s)	12.5	44.5	12.5	44.5
Local Start Time (s)	0	28	0	28
Local Yield (s)	23.5	55.5	23.5	55.5
Local Yield 170(s)	12.5	44.5	12.5	44.5

Intersection Summary

Cycle Length	60
Control Type	Semi Act-Uncoord
Natural Cycle	45

Splits and Phases: 3: Two Rivers Parkway & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	393	11	67	294	38	4	190	49	28	148	14
Future Volume (veh/h)	15	393	11	67	294	38	4	190	49	28	148	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	16	427	0	73	320	0	4	207	14	30	161	11
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	405	704	598	326	704	598	610	828	704	576	766	52
Arrive On Green	0.38	0.38	0.00	0.38	0.38	0.00	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	1055	1863	1583	957	1863	1583	1208	1863	1583	1155	1724	118
Grp Volume(v), veh/h	16	427	0	73	320	0	4	207	14	30	0	172
Grp Sat Flow(s),veh/h/ln	1055	1863	1583	957	1863	1583	1208	1863	1583	1155	0	1842
Q Serve(g_s), s	0.6	9.4	0.0	3.4	6.5	0.0	0.1	3.5	0.3	0.8	0.0	2.9
Cycle Q Clear(g_c), s	7.1	9.4	0.0	12.7	6.5	0.0	3.0	3.5	0.3	4.4	0.0	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	405	704	598	326	704	598	610	828	704	576	0	819
V/C Ratio(X)	0.04	0.61	0.00	0.22	0.45	0.00	0.01	0.25	0.02	0.05	0.00	0.21
Avail Cap(c_a), veh/h	600	1049	892	504	1049	892	610	828	704	576	0	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.5	12.7	0.0	17.9	11.8	0.0	9.5	8.8	7.9	10.1	0.0	8.6
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.3	0.5	0.0	0.0	0.7	0.1	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.9	0.0	0.9	3.4	0.0	0.0	1.9	0.1	0.3	0.0	1.6
LnGrp Delay(d),s/veh	14.5	13.6	0.0	18.2	12.3	0.0	9.6	9.5	7.9	10.3	0.0	9.2
LnGrp LOS	B	B		B	B		A	A	A	B		A
Approach Vol, veh/h		443			393			225			202	
Approach Delay, s/veh		13.6			13.4			9.4			9.4	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		27.0		23.6		27.0		23.6
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		22.5		28.5		22.5		28.5
Max Q Clear Time (g_c+I1), s		5.5		11.4		6.4		14.7
Green Ext Time (p_c), s		2.2		4.8		2.1		4.4

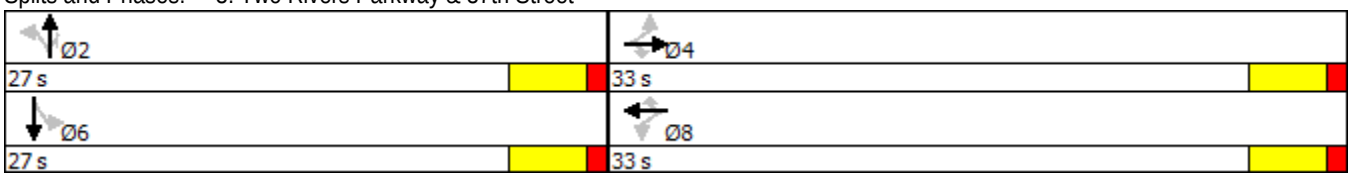
Intersection Summary	
HCM 2010 Ctrl Delay	12.1
HCM 2010 LOS	B

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	27	33	27	33
Maximum Split (%)	45.0%	55.0%	45.0%	55.0%
Minimum Split (s)	22.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	7
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	27	0	27
End Time (s)	27	0	27	0
Yield/Force Off (s)	22.5	55.5	22.5	55.5
Yield/Force Off 170(s)	11.5	44.5	11.5	44.5
Local Start Time (s)	0	27	0	27
Local Yield (s)	22.5	55.5	22.5	55.5
Local Yield 170(s)	11.5	44.5	11.5	44.5

Intersection Summary

Cycle Length	60
Control Type	Semi Act-Uncoord
Natural Cycle	45

Splits and Phases: 3: Two Rivers Parkway & 37th Street



APPENDIX G

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	470	20	250	810	155	80	250	125	185	220	90
Future Volume (veh/h)	80	470	20	250	810	155	80	250	125	185	220	90
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	87	511	0	272	880	52	87	272	0	201	239	0
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	375	1644	736	561	1804	807	328	429	192	345	621	278
Arrive On Green	0.03	0.31	0.00	0.09	0.51	0.51	0.07	0.12	0.00	0.12	0.18	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	87	511	0	272	880	52	87	272	0	201	239	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.3	9.9	0.0	6.9	14.6	1.5	3.8	6.6	0.0	8.5	5.4	0.0
Cycle Q Clear(g_c), s	2.3	9.9	0.0	6.9	14.6	1.5	3.8	6.6	0.0	8.5	5.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	375	1644	736	561	1804	807	328	429	192	345	621	278
V/C Ratio(X)	0.23	0.31	0.00	0.48	0.49	0.06	0.27	0.63	0.00	0.58	0.39	0.00
Avail Cap(c_a), veh/h	416	1644	736	561	1804	807	556	728	325	478	728	325
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.1	20.0	0.0	10.6	14.4	11.2	31.3	37.6	0.0	28.1	32.8	0.0
Incr Delay (d2), s/veh	0.3	0.5	0.0	0.6	0.9	0.2	0.4	1.6	0.0	1.6	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.0	0.0	3.4	7.3	0.7	1.9	3.3	0.0	4.2	2.7	0.0
LnGrp Delay(d),s/veh	12.4	20.5	0.0	11.2	15.3	11.3	31.7	39.2	0.0	29.6	33.2	0.0
LnGrp LOS	B	C		B	B	B	C	D		C	C	
Approach Vol, veh/h		598			1204			359			440	
Approach Delay, s/veh		19.3			14.2			37.4			31.6	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	46.3	10.4	20.3	8.9	50.4	15.3	15.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	27.5	17.5	18.5	6.5	29.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	8.9	11.9	5.8	7.4	4.3	16.6	10.5	8.6
Green Ext Time (p_c), s	0.0	8.7	0.1	2.5	0.0	7.7	0.3	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	21.5
HCM 2010 LOS	C

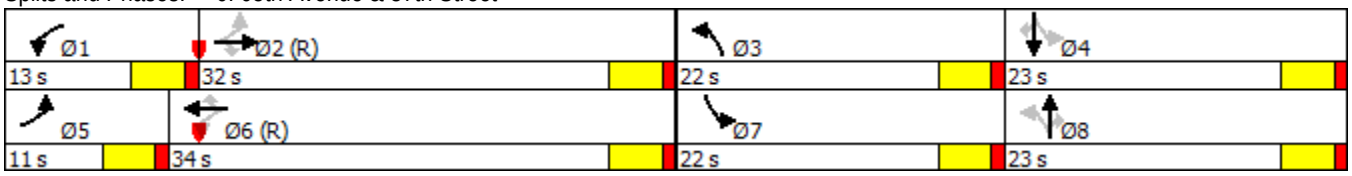
Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	Min	Min	None	C-Max	Min	Min
Maximum Split (s)	13	32	22	23	11	34	22	23
Maximum Split (%)	14.4%	35.6%	24.4%	25.6%	12.2%	37.8%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	13	45	67	0	11	45	67
End Time (s)	13	45	67	0	11	45	67	0
Yield/Force Off (s)	8.5	40.5	62.5	85.5	6.5	40.5	62.5	85.5
Yield/Force Off 170(s)	8.5	29.5	62.5	85.5	6.5	29.5	62.5	85.5
Local Start Time (s)	77	0	32	54	77	88	32	54
Local Yield (s)	85.5	27.5	49.5	72.5	83.5	27.5	49.5	72.5
Local Yield 170(s)	85.5	16.5	49.5	72.5	83.5	16.5	49.5	72.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 13 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	730	65	125	675	140	25	165	280	170	335	110
Future Volume (veh/h)	90	730	65	125	675	140	25	165	280	170	335	110
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	98	793	0	136	734	56	27	179	11	185	364	0
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	452	1872	837	475	1890	845	243	357	160	346	565	253
Arrive On Green	0.07	0.70	0.00	0.06	0.53	0.53	0.06	0.10	0.10	0.11	0.16	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	98	793	0	136	734	56	27	179	11	185	364	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.2	8.5	0.0	3.1	11.0	1.5	1.2	4.3	0.6	8.0	8.7	0.0
Cycle Q Clear(g_c), s	2.2	8.5	0.0	3.1	11.0	1.5	1.2	4.3	0.6	8.0	8.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	452	1872	837	475	1890	845	243	357	160	346	565	253
V/C Ratio(X)	0.22	0.42	0.00	0.29	0.39	0.07	0.11	0.50	0.07	0.53	0.64	0.00
Avail Cap(c_a), veh/h	529	1872	837	551	1890	845	499	708	317	498	708	317
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.0	7.6	0.0	8.9	12.3	10.1	32.6	38.3	36.6	29.5	35.4	0.0
Incr Delay (d2), s/veh	0.2	0.5	0.0	0.3	0.6	0.2	0.2	1.1	0.2	1.3	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.2	0.0	1.6	5.5	0.7	0.6	2.2	0.3	4.0	4.4	0.0
LnGrp Delay(d),s/veh	9.1	8.0	0.0	9.2	12.9	10.3	32.8	39.4	36.8	30.8	36.8	0.0
LnGrp LOS	A	A		A	B	B	C	D	D	C	D	
Approach Vol, veh/h		891			926			217			549	
Approach Delay, s/veh		8.2			12.2			38.4			34.8	
Approach LOS		A			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	52.1	9.5	18.9	9.1	52.6	14.8	13.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.9	27.1	18.0	18.0	8.5	27.5	18.0	18.0
Max Q Clear Time (g_c+I1), s	5.1	10.5	3.2	10.7	4.2	13.0	10.0	6.3
Green Ext Time (p_c), s	0.1	9.8	0.0	2.1	0.1	9.0	0.3	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	17.8
HCM 2010 LOS	B

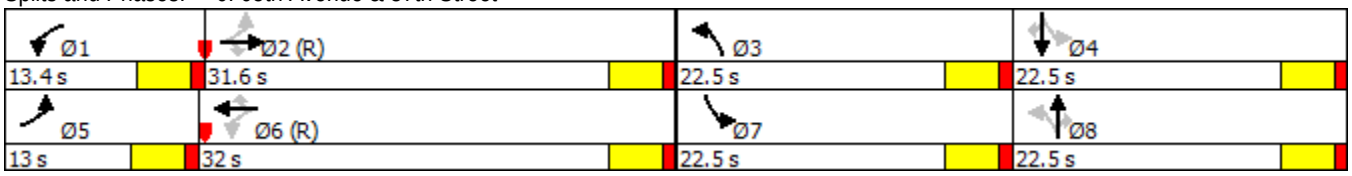
Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	Min	Min	None	C-Max	Min	Min
Maximum Split (s)	13.4	31.6	22.5	22.5	13	32	22.5	22.5
Maximum Split (%)	14.9%	35.1%	25.0%	25.0%	14.4%	35.6%	25.0%	25.0%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	89.6	13	44.6	67.1	89.6	12.6	44.6	67.1
End Time (s)	13	44.6	67.1	89.6	12.6	44.6	67.1	89.6
Yield/Force Off (s)	8.5	40.1	62.6	85.1	8.1	40.1	62.6	85.1
Yield/Force Off 170(s)	8.5	29.1	62.6	85.1	8.1	29.1	62.6	85.1
Local Start Time (s)	76.6	0	31.6	54.1	76.6	89.6	31.6	54.1
Local Yield (s)	85.5	27.1	49.6	72.1	85.1	27.1	49.6	72.1
Local Yield 170(s)	85.5	16.1	49.6	72.1	85.1	16.1	49.6	72.1

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 13 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	405	30	40	915	15	85	5	115	55	5	35
Future Volume (veh/h)	10	405	30	40	915	15	85	5	115	55	5	35
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	11	440	0	43	995	16	92	5	11	60	5	38
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	346	2135	955	633	2202	985	374	328	279	344	287	244
Arrive On Green	0.01	0.60	0.00	0.03	0.62	0.62	0.06	0.18	0.18	0.04	0.15	0.15
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	11	440	0	43	995	16	92	5	11	60	5	38
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.3	6.8	0.0	1.1	17.7	0.5	5.1	0.3	0.7	3.4	0.3	2.5
Cycle Q Clear(g_c), s	0.3	6.8	0.0	1.1	17.7	0.5	5.1	0.3	0.7	3.4	0.3	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	346	2135	955	633	2202	985	374	328	279	344	287	244
V/C Ratio(X)	0.03	0.21	0.00	0.07	0.45	0.02	0.25	0.02	0.04	0.17	0.02	0.16
Avail Cap(c_a), veh/h	405	2135	955	658	2202	985	555	473	402	385	287	244
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.00	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.9	10.8	0.0	8.4	11.9	8.6	38.9	40.8	41.0	40.4	43.0	44.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.1	0.0	0.3	0.0	0.1	0.2	0.1	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.4	0.0	0.5	8.6	0.2	2.5	0.1	0.3	1.7	0.1	1.2
LnGrp Delay(d),s/veh	9.9	11.0	0.0	8.4	12.0	8.7	39.2	40.9	41.1	40.7	43.2	45.3
LnGrp LOS	A	B		A	B	A	D	D	D	D	D	D
Approach Vol, veh/h		451			1054			108			103	
Approach Delay, s/veh		11.0			11.8			39.5			42.5	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	76.9	11.8	23.0	6.0	79.2	9.2	25.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	58.5	19.5	18.5	5.5	58.5	7.5	30.5
Max Q Clear Time (g_c+I1), s	3.1	8.8	7.1	4.5	2.3	19.7	5.4	2.7
Green Ext Time (p_c), s	0.0	15.0	0.1	0.1	0.0	14.0	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

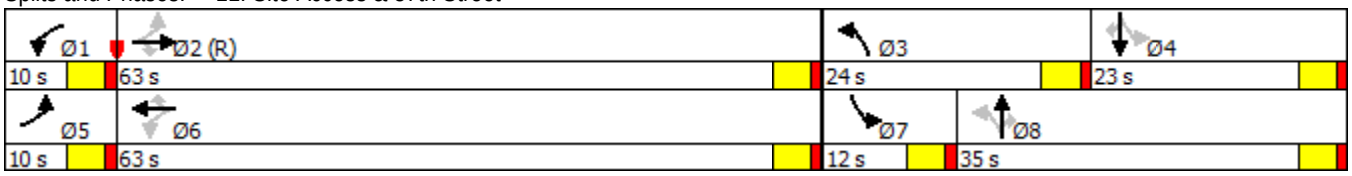
Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	Min	Max	None	None	None	Min
Maximum Split (s)	10	63	24	23	10	63	12	35
Maximum Split (%)	8.3%	52.5%	20.0%	19.2%	8.3%	52.5%	10.0%	29.2%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7		7
Flash Dont Walk (s)		11	11	11		11		11
Dual Entry	No	Yes	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	40	50	113	17	40	50	113	5
End Time (s)	50	113	17	40	50	113	5	40
Yield/Force Off (s)	45.5	108.5	12.5	35.5	45.5	108.5	0.5	35.5
Yield/Force Off 170(s)	45.5	97.5	12.5	24.5	45.5	97.5	0.5	35.5
Local Start Time (s)	110	0	63	87	110	0	63	75
Local Yield (s)	115.5	58.5	82.5	105.5	115.5	58.5	70.5	105.5
Local Yield 170(s)	115.5	47.5	82.5	94.5	115.5	47.5	70.5	105.5

Intersection Summary

Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 50 (42%), Referenced to phase 2:EBTL, Start of Green

Splits and Phases: 11: Site Access & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	740	80	110	635	55	50	5	65	30	5	20
Future Volume (veh/h)	35	740	80	110	635	55	50	5	65	30	5	20
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	38	804	5	120	690	60	54	5	0	33	5	22
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	491	2162	967	469	2206	987	345	315	267	326	287	244
Arrive On Green	0.03	0.61	0.61	0.04	0.62	0.62	0.04	0.17	0.00	0.03	0.15	0.15
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	38	804	5	120	690	60	54	5	0	33	5	22
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.9	13.7	0.1	3.0	10.9	1.8	3.0	0.3	0.0	1.9	0.3	1.4
Cycle Q Clear(g_c), s	0.9	13.7	0.1	3.0	10.9	1.8	3.0	0.3	0.0	1.9	0.3	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	491	2162	967	469	2206	987	345	315	267	326	287	244
V/C Ratio(X)	0.08	0.37	0.01	0.26	0.31	0.06	0.16	0.02	0.00	0.10	0.02	0.09
Avail Cap(c_a), veh/h	534	2162	967	593	2206	987	558	489	416	373	287	244
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	0.92	0.92	0.92	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.3	11.8	9.1	8.7	10.6	8.8	39.9	41.6	0.0	40.9	43.0	43.5
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.3	0.1	0.0	0.2	0.0	0.0	0.1	0.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	6.8	0.1	1.5	5.3	0.8	1.5	0.1	0.0	0.9	0.1	0.7
LnGrp Delay(d),s/veh	8.4	12.1	9.1	9.0	10.6	8.9	40.1	41.6	0.0	41.0	43.2	44.3
LnGrp LOS	A	B	A	A	B	A	D	D		D	D	D
Approach Vol, veh/h		847			870			59			60	
Approach Delay, s/veh		11.9			10.3			40.3			42.4	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	77.8	9.6	23.0	8.1	79.3	7.8	24.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	50.5	19.5	18.5	6.5	57.5	6.5	31.5
Max Q Clear Time (g_c+I1), s	5.0	15.7	5.0	3.4	2.9	12.9	3.9	2.3
Green Ext Time (p_c), s	0.2	14.3	0.1	0.0	0.0	15.5	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

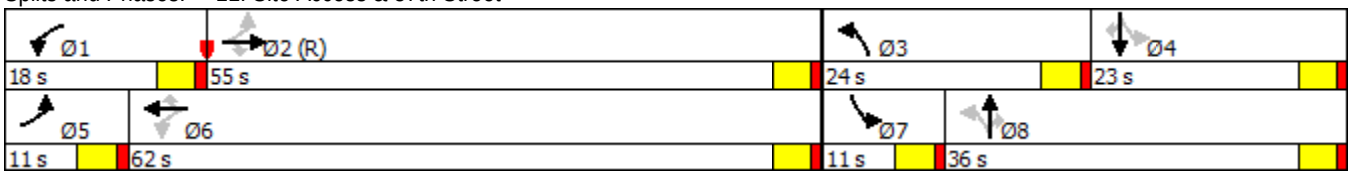
Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	Min	Max	None	None	None	Min
Maximum Split (s)	18	55	24	23	11	62	11	36
Maximum Split (%)	15.0%	45.8%	20.0%	19.2%	9.2%	51.7%	9.2%	30.0%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7		7
Flash Dont Walk (s)		11	11	11		11		11
Dual Entry	No	Yes	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	102	0	55	79	102	113	55	66
End Time (s)	0	55	79	102	113	55	66	102
Yield/Force Off (s)	115.5	50.5	74.5	97.5	108.5	50.5	61.5	97.5
Yield/Force Off 170(s)	115.5	39.5	74.5	86.5	108.5	39.5	61.5	97.5
Local Start Time (s)	102	0	55	79	102	113	55	66
Local Yield (s)	115.5	50.5	74.5	97.5	108.5	50.5	61.5	97.5
Local Yield 170(s)	115.5	39.5	74.5	86.5	108.5	39.5	61.5	97.5

Intersection Summary

Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Splits and Phases: 11: Site Access & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	335	45	140	790	105	50	260	60	50	320	15
Future Volume (veh/h)	25	335	45	140	790	105	50	260	60	50	320	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	27	364	0	152	859	0	54	283	0	54	348	12
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	193	845	378	381	1043	467	534	1546	692	576	1525	52
Arrive On Green	0.03	0.24	0.00	0.17	0.59	0.00	0.04	0.44	0.00	0.04	0.44	0.44
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3491	120
Grp Volume(v), veh/h	27	364	0	152	859	0	54	283	0	54	176	184
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1842
Q Serve(g_s), s	1.0	7.9	0.0	5.5	17.4	0.0	1.5	4.4	0.0	1.5	5.6	5.6
Cycle Q Clear(g_c), s	1.0	7.9	0.0	5.5	17.4	0.0	1.5	4.4	0.0	1.5	5.6	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	193	845	378	381	1043	467	534	1546	692	576	773	804
V/C Ratio(X)	0.14	0.43	0.00	0.40	0.82	0.00	0.10	0.18	0.00	0.09	0.23	0.23
Avail Cap(c_a), veh/h	253	1081	484	460	1317	589	687	1546	692	632	773	804
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.71	0.71	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	29.1	0.0	19.8	16.6	0.0	12.8	15.5	0.0	12.8	15.9	15.9
Incr Delay (d2), s/veh	0.3	0.3	0.0	0.5	2.5	0.0	0.1	0.3	0.0	0.1	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.9	0.0	2.7	8.5	0.0	0.7	2.2	0.0	0.7	2.9	3.0
LnGrp Delay(d),s/veh	25.8	29.4	0.0	20.3	19.1	0.0	12.9	15.8	0.0	12.8	16.5	16.5
LnGrp LOS	C	C		C	B		B	B		B	B	B
Approach Vol, veh/h		391			1011			337			414	
Approach Delay, s/veh		29.2			19.3			15.3			16.0	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	43.8	12.0	26.0	8.2	43.8	7.0	31.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	26.5	11.5	27.5	11.5	21.5	5.5	33.5
Max Q Clear Time (g_c+I1), s	3.5	6.4	7.5	9.9	3.5	7.6	3.0	19.4
Green Ext Time (p_c), s	0.0	3.9	0.1	8.1	0.0	3.4	0.0	7.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.8
HCM 2010 LOS	B

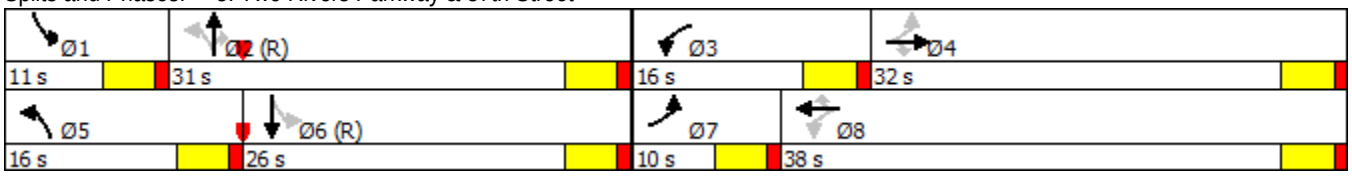
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	11	31	16	32	16	26	10	38
Maximum Split (%)	12.2%	34.4%	17.8%	35.6%	17.8%	28.9%	11.1%	42.2%
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	11	42	58	0	16	42	52
End Time (s)	11	42	58	0	16	42	52	0
Yield/Force Off (s)	6.5	37.5	53.5	85.5	11.5	37.5	47.5	85.5
Yield/Force Off 170(s)	6.5	26.5	53.5	74.5	11.5	26.5	47.5	74.5
Local Start Time (s)	74	85	26	42	74	0	26	36
Local Yield (s)	80.5	21.5	37.5	69.5	85.5	21.5	31.5	69.5
Local Yield 170(s)	80.5	10.5	37.5	58.5	85.5	10.5	31.5	58.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	65

Offset: 16 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: Two Rivers Parkway & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	715	70	120	515	70	40	340	85	55	270	30
Future Volume (veh/h)	35	715	70	120	515	70	40	340	85	55	270	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	38	777	0	130	560	0	43	370	0	60	293	24
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	346	1016	455	266	1147	513	512	1411	631	488	1343	109
Arrive On Green	0.03	0.29	0.00	0.14	0.65	0.00	0.04	0.40	0.00	0.04	0.41	0.41
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3315	270
Grp Volume(v), veh/h	38	777	0	130	560	0	43	370	0	60	156	161
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1815
Q Serve(g_s), s	1.3	18.0	0.0	4.5	7.3	0.0	1.3	6.3	0.0	1.8	5.2	5.2
Cycle Q Clear(g_c), s	1.3	18.0	0.0	4.5	7.3	0.0	1.3	6.3	0.0	1.8	5.2	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	346	1016	455	266	1147	513	512	1411	631	488	717	735
V/C Ratio(X)	0.11	0.76	0.00	0.49	0.49	0.00	0.08	0.26	0.00	0.12	0.22	0.22
Avail Cap(c_a), veh/h	386	1160	519	386	1451	649	619	1411	631	559	717	735
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.89	0.89	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.3	29.3	0.0	20.2	12.0	0.0	14.8	18.2	0.0	14.8	17.5	17.5
Incr Delay (d2), s/veh	0.1	2.7	0.0	1.2	0.3	0.0	0.1	0.5	0.0	0.1	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	9.1	0.0	2.2	3.5	0.0	0.6	3.2	0.0	0.9	2.6	2.7
LnGrp Delay(d),s/veh	21.4	32.0	0.0	21.4	12.3	0.0	14.9	18.6	0.0	14.9	18.2	18.2
LnGrp LOS	C	C		C	B		B	B		B	B	B
Approach Vol, veh/h		815			690			413			377	
Approach Delay, s/veh		31.5			14.0			18.2			17.6	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	40.4	10.9	30.3	7.8	41.0	7.6	33.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	22.5	12.5	29.5	8.7	21.3	5.1	36.9
Max Q Clear Time (g_c+I1), s	3.8	8.3	6.5	20.0	3.3	7.2	3.3	9.3
Green Ext Time (p_c), s	0.0	3.7	0.1	5.8	0.0	3.7	0.0	11.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.6
HCM 2010 LOS	C

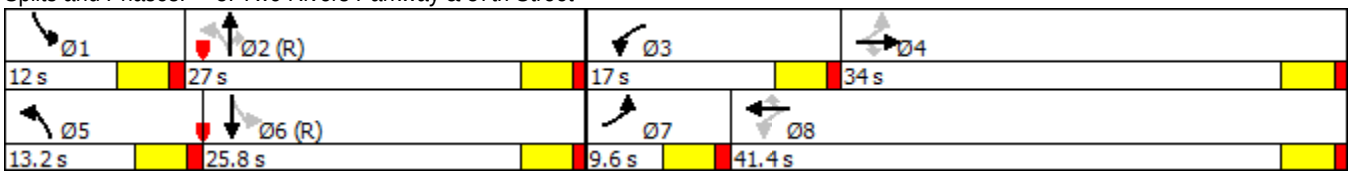
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	12	27	17	34	13.2	25.8	9.6	41.4
Maximum Split (%)	13.3%	30.0%	18.9%	37.8%	14.7%	28.7%	10.7%	46.0%
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	2.8	14.8	41.8	58.8	2.8	16	41.8	51.4
End Time (s)	14.8	41.8	58.8	2.8	16	41.8	51.4	2.8
Yield/Force Off (s)	10.3	37.3	54.3	88.3	11.5	37.3	46.9	88.3
Yield/Force Off 170(s)	10.3	26.3	54.3	77.3	11.5	26.3	46.9	77.3
Local Start Time (s)	76.8	88.8	25.8	42.8	76.8	0	25.8	35.4
Local Yield (s)	84.3	21.3	38.3	72.3	85.5	21.3	30.9	72.3
Local Yield 170(s)	84.3	10.3	38.3	61.3	85.5	10.3	30.9	61.3

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	65

Offset: 16 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: Two Rivers Parkway & 37th Street



APPENDIX H

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	246	9	170	382	82	50	172	100	100	122	48
Future Volume (veh/h)	51	246	9	170	382	82	50	172	100	100	122	48
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	55	267	9	185	415	79	54	187	0	109	133	0
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	336	556	19	525	549	105	416	292	248	375	292	248
Arrive On Green	0.05	0.31	0.31	0.10	0.36	0.36	0.09	0.16	0.00	0.09	0.16	0.00
Sat Flow, veh/h	1774	1792	60	1774	1522	290	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	55	0	276	185	0	494	54	187	0	109	133	0
Grp Sat Flow(s),veh/h/ln	1774	0	1852	1774	0	1812	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.1	0.0	6.5	3.6	0.0	12.8	1.3	5.0	0.0	2.6	3.5	0.0
Cycle Q Clear(g_c), s	1.1	0.0	6.5	3.6	0.0	12.8	1.3	5.0	0.0	2.6	3.5	0.0
Prop In Lane	1.00		0.03	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	336	0	575	525	0	654	416	292	248	375	292	248
V/C Ratio(X)	0.16	0.00	0.48	0.35	0.00	0.76	0.13	0.64	0.00	0.29	0.46	0.00
Avail Cap(c_a), veh/h	426	0	849	724	0	1033	830	645	548	790	645	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.2	0.0	14.9	10.6	0.0	15.0	15.6	21.1	0.0	16.3	20.5	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.6	0.4	0.0	1.8	0.1	2.3	0.0	0.4	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	3.4	1.8	0.0	6.6	0.6	2.8	0.0	1.3	1.9	0.0
LnGrp Delay(d),s/veh	12.5	0.0	15.6	11.1	0.0	16.8	15.8	23.5	0.0	16.7	21.6	0.0
LnGrp LOS	B		B	B		B	B	C		B	C	
Approach Vol, veh/h		331			679			241			242	
Approach Delay, s/veh		15.0			15.3			21.7			19.4	
Approach LOS		B			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	21.1	9.5	12.9	7.3	23.8	9.5	12.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	24.5	17.5	18.5	5.5	30.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	5.6	8.5	3.3	5.5	3.1	14.8	4.6	7.0
Green Ext Time (p_c), s	0.2	4.5	0.1	1.4	0.0	4.5	0.2	1.4

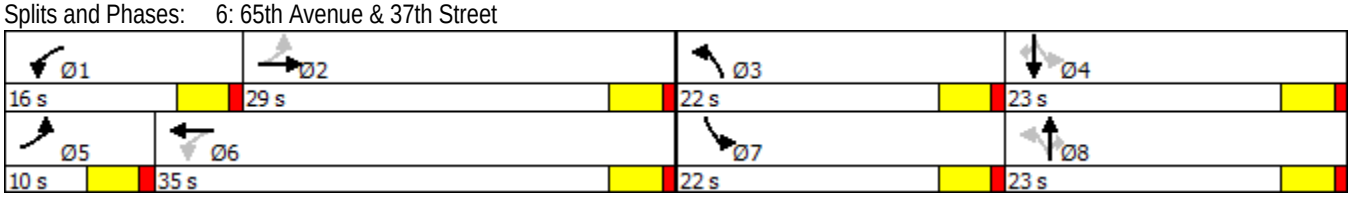
Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	Min	None	None	Min	Min
Maximum Split (s)	16	29	22	23	10	35	22	23
Maximum Split (%)	17.8%	32.2%	24.4%	25.6%	11.1%	38.9%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	45	67	0	10	45	67
End Time (s)	16	45	67	0	10	45	67	0
Yield/Force Off (s)	11.5	40.5	62.5	85.5	5.5	40.5	62.5	85.5
Yield/Force Off 170(s)	11.5	29.5	62.5	85.5	5.5	29.5	62.5	85.5
Local Start Time (s)	74	0	29	51	74	84	29	51
Local Yield (s)	85.5	24.5	46.5	69.5	79.5	24.5	46.5	69.5
Local Yield 170(s)	85.5	13.5	46.5	69.5	79.5	13.5	46.5	69.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	414	41	100	339	75	11	113	167	92	218	63
Future Volume (veh/h)	52	414	41	100	339	75	11	113	167	92	218	63
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	450	42	109	368	72	12	123	20	100	237	0
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	370	578	54	348	551	108	351	336	286	434	336	286
Arrive On Green	0.05	0.34	0.34	0.07	0.36	0.36	0.09	0.18	0.18	0.09	0.18	0.00
Sat Flow, veh/h	1774	1678	157	1774	1514	296	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	57	0	492	109	0	440	12	123	20	100	237	0
Grp Sat Flow(s),veh/h/ln	1774	0	1835	1774	0	1810	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.1	0.0	13.7	2.2	0.0	11.6	0.3	3.3	0.6	2.5	6.8	0.0
Cycle Q Clear(g_c), s	1.1	0.0	13.7	2.2	0.0	11.6	0.3	3.3	0.6	2.5	6.8	0.0
Prop In Lane	1.00		0.09	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	370	0	631	348	0	659	351	336	286	434	336	286
V/C Ratio(X)	0.15	0.00	0.78	0.31	0.00	0.67	0.03	0.37	0.07	0.23	0.71	0.00
Avail Cap(c_a), veh/h	449	0	789	578	0	968	740	604	514	823	604	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.8	0.0	16.8	12.2	0.0	15.2	15.8	20.5	19.4	16.3	21.9	0.0
Incr Delay (d2), s/veh	0.2	0.0	4.0	0.5	0.0	1.2	0.0	0.7	0.1	0.3	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	7.5	1.1	0.0	6.0	0.1	1.8	0.3	1.2	3.7	0.0
LnGrp Delay(d),s/veh	12.0	0.0	20.7	12.7	0.0	16.4	15.8	21.2	19.5	16.6	24.7	0.0
LnGrp LOS	B		C	B		B	B	C	B	B	C	
Approach Vol, veh/h		549			549			155			337	
Approach Delay, s/veh		19.8			15.7			20.5			22.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	24.1	9.5	14.8	7.5	25.3	9.5	14.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	24.5	17.5	18.5	5.5	30.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	4.2	15.7	2.3	8.8	3.1	13.6	4.5	5.3
Green Ext Time (p_c), s	0.1	3.9	0.0	1.5	0.0	5.7	0.2	1.7

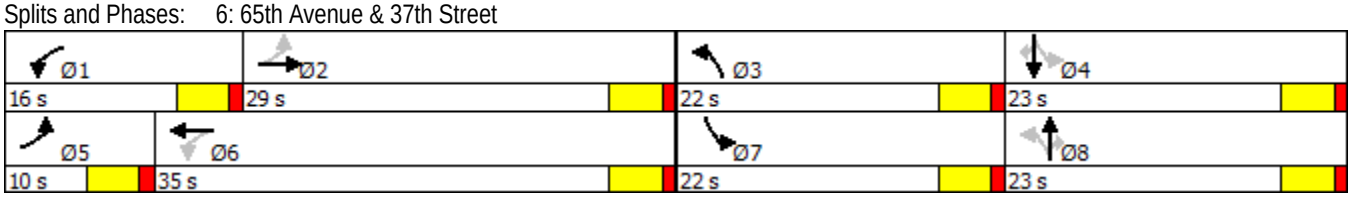
Intersection Summary	
HCM 2010 Ctrl Delay	19.0
HCM 2010 LOS	B

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	Min	None	None	Min	Min
Maximum Split (s)	16	29	22	23	10	35	22	23
Maximum Split (%)	17.8%	32.2%	24.4%	25.6%	11.1%	38.9%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	45	67	0	10	45	67
End Time (s)	16	45	67	0	10	45	67	0
Yield/Force Off (s)	11.5	40.5	62.5	85.5	5.5	40.5	62.5	85.5
Yield/Force Off 170(s)	11.5	29.5	62.5	85.5	5.5	29.5	62.5	85.5
Local Start Time (s)	74	0	29	51	74	84	29	51
Local Yield (s)	85.5	24.5	46.5	69.5	79.5	24.5	46.5	69.5
Local Yield 170(s)	85.5	13.5	46.5	69.5	79.5	13.5	46.5	69.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 6: 65th Avenue & 37th Street



Intersection						
Int Delay, s/veh	1.1					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	229	13	7	505	37	19
Future Vol, veh/h	229	13	7	505	37	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	400	-	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	249	14	8	549	40	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	263	0	820	256
Stage 1	-	-	-	-	256	-
Stage 2	-	-	-	-	564	-
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	-	-	1301	-	345	783
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	569	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1301	-	343	783
Mov Cap-2 Maneuver	-	-	-	-	343	-
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	566	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	14.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	424	-	-	1301	-
HCM Lane V/C Ratio	0.144	-	-	0.006	-
HCM Control Delay (s)	14.9	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	449	42	21	376	25	13
Future Vol, veh/h	449	42	21	376	25	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	400	-	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	488	46	23	409	27	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	534	0	965	511
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	454	-
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	-	-	1034	-	283	563
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	640	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1034	-	277	563
Mov Cap-2 Maneuver	-	-	-	-	277	-
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	626	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	17.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	335	-	-	1034	-
HCM Lane V/C Ratio	0.123	-	-	0.022	-
HCM Control Delay (s)	17.3	-	-	8.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	12.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	178	11	82	373	77	5	133	31	33	165	6
Future Vol, veh/h	10	178	11	82	373	77	5	133	31	33	165	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	193	12	89	405	84	5	145	34	36	179	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	489	0	0	193	0	0	933	882	193	930	841	447
Stage 1	-	-	-	-	-	-	215	215	-	626	626	-
Stage 2	-	-	-	-	-	-	718	667	-	304	215	-
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	1074	-	-	1380	-	-	246	285	849	248	301	612
Stage 1	-	-	-	-	-	-	787	725	-	472	477	-
Stage 2	-	-	-	-	-	-	420	457	-	705	725	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1074	-	-	1380	-	-	112	264	849	128	279	612
Mov Cap-2 Maneuver	-	-	-	-	-	-	112	264	-	128	279	-
Stage 1	-	-	-	-	-	-	779	718	-	467	446	-
Stage 2	-	-	-	-	-	-	232	428	-	535	718	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.2	32.5	39.6
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	112	304	1074	-	-	1380	-	-	128	284
HCM Lane V/C Ratio	0.049	0.586	0.01	-	-	0.065	-	-	0.28	0.654
HCM Control Delay (s)	38.8	32.3	8.4	-	-	7.8	-	-	43.7	38.8
HCM Lane LOS	E	D	A	-	-	A	-	-	E	E
HCM 95th %tile Q(veh)	0.2	3.5	0	-	-	0.2	-	-	1.1	4.2

Intersection	
Int Delay, s/veh	30.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	386	10	68	287	50	4	179	54	51	139	14
Future Vol, veh/h	15	386	10	68	287	50	4	179	54	51	139	14
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	150	-	150	150	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	420	11	74	312	54	4	195	59	55	151	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	366	0	0	420	0	0	1022	966	420	1066	939	339
Stage 1	-	-	-	-	-	-	452	452	-	487	487	-
Stage 2	-	-	-	-	-	-	570	514	-	579	452	-
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	1193	-	-	1139	-	-	214	255	633	200	264	703
Stage 1	-	-	-	-	-	-	587	570	-	562	550	-
Stage 2	-	-	-	-	-	-	506	535	-	501	570	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1193	-	-	1139	-	-	100	235	633	~ 53	244	703
Mov Cap-2 Maneuver	-	-	-	-	-	-	100	235	-	~ 53	244	-
Stage 1	-	-	-	-	-	-	579	562	-	554	514	-
Stage 2	-	-	-	-	-	-	327	500	-	293	562	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.4	75.5	96
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	100	275	1193	-	-	1139	-	-	53	260
HCM Lane V/C Ratio	0.043	0.921	0.014	-	-	0.065	-	-	1.046	0.64
HCM Control Delay (s)	42.6	76.1	8.1	-	-	8.4	-	-	262.4	40.5
HCM Lane LOS	E	F	A	-	-	A	-	-	F	E
HCM 95th %tile Q(veh)	0.1	8.5	0	-	-	0.2	-	-	4.7	4

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	2.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	84	8	3	188	183	28
Future Vol, veh/h	84	8	3	188	183	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	400	-	-	400
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	91	9	3	204	199	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	410	199	199	0	-	0
Stage 1	199	-	-	-	-	-
Stage 2	211	-	-	-	-	-
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	598	842	1373	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	824	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	597	842	1373	-	-	-
Mov Cap-2 Maneuver	597	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	822	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1373	-	597	842	-	-
HCM Lane V/C Ratio	0.002	-	0.153	0.01	-	-
HCM Control Delay (s)	7.6	-	12.1	9.3	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.5	0	-	-

Intersection						
Int Delay, s/veh	1.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	5	8	216	226	93
Future Vol, veh/h	55	5	8	216	226	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	400	-	-	400
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	60	5	9	235	246	101

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	498	246	246	0	-	0
Stage 1	246	-	-	-	-	-
Stage 2	252	-	-	-	-	-
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	532	793	1320	-	-	-
Stage 1	795	-	-	-	-	-
Stage 2	790	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	528	793	1320	-	-	-
Mov Cap-2 Maneuver	528	-	-	-	-	-
Stage 1	795	-	-	-	-	-
Stage 2	785	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1320	-	528	793	-	-
HCM Lane V/C Ratio	0.007	-	0.113	0.007	-	-
HCM Control Delay (s)	7.7	-	12.7	9.6	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	0	-	-

APPENDIX I

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	346	14	181	457	87	56	181	104	106	130	113
Future Volume (veh/h)	154	346	14	181	457	87	56	181	104	106	130	113
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	167	376	0	197	497	0	61	197	0	115	141	12
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	386	631	536	477	656	558	393	295	251	354	303	257
Arrive On Green	0.09	0.34	0.00	0.10	0.35	0.00	0.09	0.16	0.00	0.09	0.16	0.16
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	167	376	0	197	497	0	61	197	0	115	141	12
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	3.5	9.7	0.0	4.0	13.7	0.0	1.6	5.8	0.0	3.0	4.0	0.4
Cycle Q Clear(g_c), s	3.5	9.7	0.0	4.0	13.7	0.0	1.6	5.8	0.0	3.0	4.0	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	386	631	536	477	656	558	393	295	251	354	303	257
V/C Ratio(X)	0.43	0.60	0.00	0.41	0.76	0.00	0.16	0.67	0.00	0.33	0.47	0.05
Avail Cap(c_a), veh/h	428	884	751	556	948	806	775	595	505	730	595	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.3	15.9	0.0	11.2	16.6	0.0	17.2	22.9	0.0	17.8	22.0	20.5
Incr Delay (d2), s/veh	0.8	0.9	0.0	0.6	2.1	0.0	0.2	2.6	0.0	0.5	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	5.1	0.0	2.0	7.3	0.0	0.8	3.2	0.0	1.5	2.1	0.2
LnGrp Delay(d),s/veh	13.0	16.8	0.0	11.8	18.7	0.0	17.4	25.5	0.0	18.3	23.1	20.6
LnGrp LOS	B	B		B	B		B	C		B	C	C
Approach Vol, veh/h		543			694			258			268	
Approach Delay, s/veh		15.6			16.7			23.6			20.9	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	24.1	9.5	13.9	9.6	24.9	9.7	13.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	27.5	17.5	18.5	6.5	29.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	6.0	11.7	3.6	6.0	5.5	15.7	5.0	7.8
Green Ext Time (p_c), s	0.1	5.1	0.1	1.5	0.0	4.8	0.2	1.4

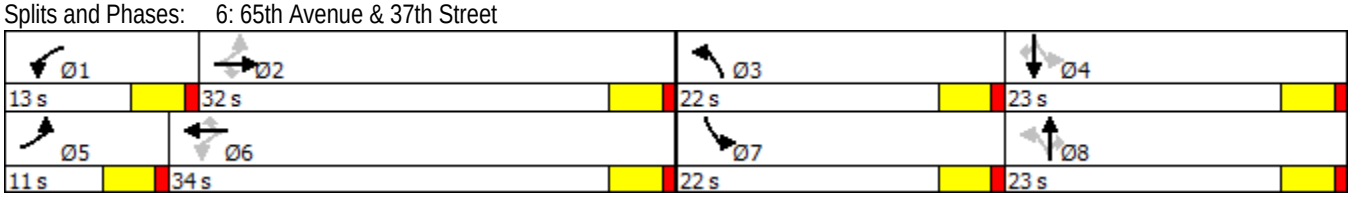
Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	Min	None	None	Min	Min
Maximum Split (s)	13	32	22	23	11	34	22	23
Maximum Split (%)	14.4%	35.6%	24.4%	25.6%	12.2%	37.8%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	13	45	67	0	11	45	67
End Time (s)	13	45	67	0	11	45	67	0
Yield/Force Off (s)	8.5	40.5	62.5	85.5	6.5	40.5	62.5	85.5
Yield/Force Off 170(s)	8.5	29.5	62.5	85.5	6.5	29.5	62.5	85.5
Local Start Time (s)	77	0	32	54	77	88	32	54
Local Yield (s)	85.5	27.5	49.5	72.5	83.5	27.5	49.5	72.5
Local Yield 170(s)	85.5	16.5	49.5	72.5	83.5	16.5	49.5	72.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	413	62	105	256	65	85	219	62	84	187	14
Future Volume (veh/h)	15	413	62	105	256	65	85	219	62	84	187	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	16	449	19	114	278	21	92	238	28	91	203	11
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	464	763	649	340	763	649	537	785	668	509	738	40
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	1076	1863	1583	921	1863	1583	1163	1863	1583	1109	1751	95
Grp Volume(v), veh/h	16	449	19	114	278	21	92	238	28	91	0	214
Grp Sat Flow(s),veh/h/ln	1076	1863	1583	921	1863	1583	1163	1863	1583	1109	0	1846
Q Serve(g_s), s	0.6	10.0	0.4	5.9	5.5	0.4	3.0	4.5	0.6	3.2	0.0	4.0
Cycle Q Clear(g_c), s	6.1	10.0	0.4	15.9	5.5	0.4	7.0	4.5	0.6	7.7	0.0	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	464	763	649	340	763	649	537	785	668	509	0	778
V/C Ratio(X)	0.03	0.59	0.03	0.34	0.36	0.03	0.17	0.30	0.04	0.18	0.00	0.27
Avail Cap(c_a), veh/h	598	995	846	454	995	846	537	785	668	509	0	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.0	12.3	9.4	18.4	10.9	9.4	12.4	10.2	9.1	12.8	0.0	10.1
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.6	0.3	0.0	0.7	1.0	0.1	0.8	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.3	0.2	1.5	2.8	0.2	1.0	2.5	0.3	1.1	0.0	2.2
LnGrp Delay(d),s/veh	13.1	13.0	9.4	19.0	11.2	9.4	13.1	11.2	9.2	13.5	0.0	11.0
LnGrp LOS	B	B	A	B	B	A	B	B	A	B		B
Approach Vol, veh/h		484			413			358			305	
Approach Delay, s/veh		12.8			13.3			11.5			11.7	
Approach LOS		B			B			B			B	

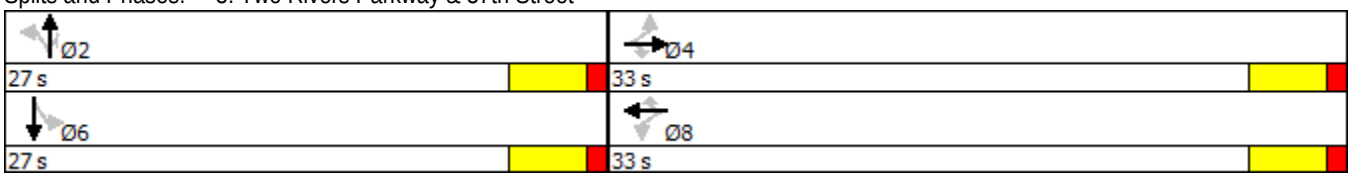
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		27.0		26.4		27.0		26.4
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		22.5		28.5		22.5		28.5
Max Q Clear Time (g_c+I1), s		9.0		12.0		9.7		17.9
Green Ext Time (p_c), s		3.0		5.0		2.9		4.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	27	33	27	33
Maximum Split (%)	45.0%	55.0%	45.0%	55.0%
Minimum Split (s)	22.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	7
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	27	0	27
End Time (s)	27	0	27	0
Yield/Force Off (s)	22.5	55.5	22.5	55.5
Yield/Force Off 170(s)	11.5	44.5	11.5	44.5
Local Start Time (s)	0	27	0	27
Local Yield (s)	22.5	55.5	22.5	55.5
Local Yield 170(s)	11.5	44.5	11.5	44.5

Intersection Summary	
Cycle Length	60
Control Type	Semi Act-Uncoord
Natural Cycle	45

Splits and Phases: 3: Two Rivers Parkway & 37th Street



Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	354	25	34	627	72	97
Future Vol, veh/h	354	25	34	627	72	97
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	400	400	-	100	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	385	27	37	682	78	105

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	385	0	1140	385
Stage 1	-	-	-	-	385	-
Stage 2	-	-	-	-	755	-
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	-	-	1173	-	222	663
Stage 1	-	-	-	-	688	-
Stage 2	-	-	-	-	464	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1173	-	215	663
Mov Cap-2 Maneuver	-	-	-	-	215	-
Stage 1	-	-	-	-	688	-
Stage 2	-	-	-	-	449	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	19.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	215	663	-	-	1173	-
HCM Lane V/C Ratio	0.364	0.159	-	-	0.032	-
HCM Control Delay (s)	31	11.5	-	-	8.2	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	1.6	0.6	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	528	70	91	498	45	57
Future Vol, veh/h	528	70	91	498	45	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	400	400	-	100	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	574	76	99	541	49	62

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	574	0	1313	574
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	739	-
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	-	-	999	-	175	518
Stage 1	-	-	-	-	563	-
Stage 2	-	-	-	-	472	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	999	-	158	518
Mov Cap-2 Maneuver	-	-	-	-	158	-
Stage 1	-	-	-	-	563	-
Stage 2	-	-	-	-	425	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	23.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	158	518	-	-	999	-
HCM Lane V/C Ratio	0.31	0.12	-	-	0.099	-
HCM Control Delay (s)	37.7	12.9	-	-	9	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	1.2	0.4	-	-	0.3	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑		↱
Traffic Vol, veh/h	270	40	123	576	0	109
Future Vol, veh/h	270	40	123	576	0	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	400	400	-	-	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	293	43	134	626	0	118

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	293	0	-	293
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.12	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.218	-	-	3.318
Pot Cap-1 Maneuver	-	-	1269	-	0	746
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1269	-	-	746
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	746	-	-	1269	-
HCM Lane V/C Ratio	0.159	-	-	0.105	-
HCM Control Delay (s)	10.7	-	-	8.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.4	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑		↱
Traffic Vol, veh/h	498	61	117	426	0	100
Future Vol, veh/h	498	61	117	426	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	400	400	-	-	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	541	66	127	463	0	109

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	541	0	-	541
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.12	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.218	-	-	3.318
Pot Cap-1 Maneuver	-	-	1028	-	0	541
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1028	-	-	541
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	13.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	541	-	-	1028	-
HCM Lane V/C Ratio	0.201	-	-	0.124	-
HCM Control Delay (s)	13.3	-	-	9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0.4	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	199	39	114	359	103	104	199	56	55	201	7
Future Volume (veh/h)	11	199	39	114	359	103	104	199	56	55	201	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	12	216	12	124	390	30	113	216	26	60	218	6
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	594	505	414	594	505	638	918	780	634	889	24
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	963	1863	1583	1148	1863	1583	1152	1863	1583	1133	1804	50
Grp Volume(v), veh/h	12	216	12	124	390	30	113	216	26	60	0	224
Grp Sat Flow(s),veh/h/ln	963	1863	1583	1148	1863	1583	1152	1863	1583	1133	0	1854
Q Serve(g_s), s	0.5	4.3	0.2	4.5	8.6	0.6	3.0	3.2	0.4	1.5	0.0	3.3
Cycle Q Clear(g_c), s	9.1	4.3	0.2	8.7	8.6	0.6	6.3	3.2	0.4	4.7	0.0	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	284	594	505	414	594	505	638	918	780	634	0	913
V/C Ratio(X)	0.04	0.36	0.02	0.30	0.66	0.06	0.18	0.24	0.03	0.09	0.00	0.25
Avail Cap(c_a), veh/h	532	1074	913	710	1074	913	638	918	780	634	0	913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.9	12.5	11.2	15.9	14.0	11.3	8.8	6.9	6.2	8.3	0.0	7.0
Incr Delay (d2), s/veh	0.1	0.4	0.0	0.4	1.2	0.0	0.6	0.6	0.1	0.3	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.2	0.1	1.5	4.5	0.3	1.0	1.8	0.2	0.5	0.0	1.8
LnGrp Delay(d),s/veh	18.0	12.9	11.2	16.3	15.2	11.3	9.4	7.6	6.3	8.6	0.0	7.6
LnGrp LOS	B	B	B	B	B	B	A	A	A	A		A
Approach Vol, veh/h		240			544			355			284	
Approach Delay, s/veh		13.1			15.3			8.1			7.8	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.0		19.7		28.0		19.7
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		23.5		27.5		23.5		27.5
Max Q Clear Time (g_c+I1), s		8.3		11.1		6.7		10.7
Green Ext Time (p_c), s		3.0		4.1		3.1		4.1

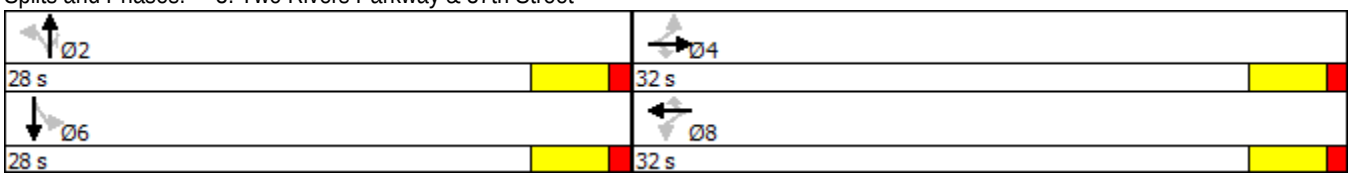
Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	28	32	28	32
Maximum Split (%)	46.7%	53.3%	46.7%	53.3%
Minimum Split (s)	22.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	7
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	28	0	28
End Time (s)	28	0	28	0
Yield/Force Off (s)	23.5	55.5	23.5	55.5
Yield/Force Off 170(s)	12.5	44.5	12.5	44.5
Local Start Time (s)	0	28	0	28
Local Yield (s)	23.5	55.5	23.5	55.5
Local Yield 170(s)	12.5	44.5	12.5	44.5

Intersection Summary

Cycle Length	60
Control Type	Semi Act-Uncoord
Natural Cycle	45

Splits and Phases: 3: Two Rivers Parkway & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	481	45	100	432	79	14	119	175	97	225	155
Future Volume (veh/h)	105	481	45	100	432	79	14	119	175	97	225	155
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	114	523	48	109	470	78	15	129	18	105	245	22
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	648	59	326	599	99	318	332	282	404	335	285
Arrive On Green	0.07	0.39	0.39	0.07	0.38	0.38	0.08	0.18	0.18	0.08	0.18	0.18
Sat Flow, veh/h	1774	1681	154	1774	1558	259	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	114	0	571	109	0	548	15	129	18	105	245	22
Grp Sat Flow(s),veh/h/ln	1774	0	1836	1774	0	1817	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.4	0.0	17.4	2.2	0.0	16.7	0.4	3.8	0.6	2.9	7.8	0.7
Cycle Q Clear(g_c), s	2.4	0.0	17.4	2.2	0.0	16.7	0.4	3.8	0.6	2.9	7.8	0.7
Prop In Lane	1.00		0.08	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	338	0	708	326	0	699	318	332	282	404	335	285
V/C Ratio(X)	0.34	0.00	0.81	0.33	0.00	0.78	0.05	0.39	0.06	0.26	0.73	0.08
Avail Cap(c_a), veh/h	400	0	805	446	0	855	672	550	467	755	550	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.6	0.0	17.2	12.8	0.0	17.0	17.9	22.7	21.4	18.4	24.3	21.4
Incr Delay (d2), s/veh	0.6	0.0	5.4	0.6	0.0	3.9	0.1	0.7	0.1	0.3	3.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	9.8	1.1	0.0	9.0	0.2	2.0	0.3	1.4	4.3	0.3
LnGrp Delay(d),s/veh	13.2	0.0	22.6	13.4	0.0	20.9	17.9	23.5	21.5	18.7	27.4	21.5
LnGrp LOS	B		C	B		C	B	C	C	B	C	C
Approach Vol, veh/h		685			657			162			372	
Approach Delay, s/veh		21.1			19.7			22.8			24.6	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	28.7	9.5	15.8	8.8	28.6	9.6	15.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	27.5	17.5	18.5	6.5	29.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	4.2	19.4	2.4	9.8	4.4	18.7	4.9	5.8
Green Ext Time (p_c), s	0.1	4.4	0.0	1.5	0.0	5.4	0.2	1.8

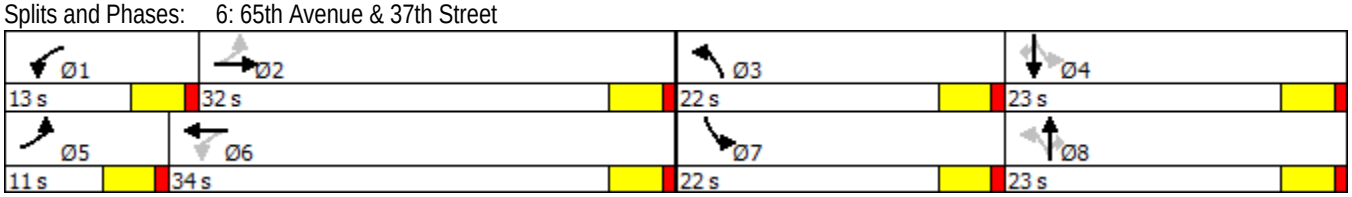
Intersection Summary	
HCM 2010 Ctrl Delay	21.4
HCM 2010 LOS	C

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	Min	None	None	Min	Min
Maximum Split (s)	13	32	22	23	11	34	22	23
Maximum Split (%)	14.4%	35.6%	24.4%	25.6%	12.2%	37.8%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	13	45	67	0	11	45	67
End Time (s)	13	45	67	0	11	45	67	0
Yield/Force Off (s)	8.5	40.5	62.5	85.5	6.5	40.5	62.5	85.5
Yield/Force Off 170(s)	8.5	29.5	62.5	85.5	6.5	29.5	62.5	85.5
Local Start Time (s)	77	0	32	54	77	88	32	54
Local Yield (s)	85.5	27.5	49.5	72.5	83.5	27.5	49.5	72.5
Local Yield 170(s)	85.5	16.5	49.5	72.5	83.5	16.5	49.5	72.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 6: 65th Avenue & 37th Street



Intersection						
Int Delay, s/veh	2.4					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	86	23	11	255	254	31
Future Vol, veh/h	86	23	11	255	254	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	400	-	-	400
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	93	25	12	277	276	34

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	577	276	276	0	-	0
Stage 1	276	-	-	-	-	-
Stage 2	301	-	-	-	-	-
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	478	763	1287	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	751	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	474	763	1287	-	-	-
Mov Cap-2 Maneuver	474	-	-	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	744	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.5	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1287	-	474	763	-	-
HCM Lane V/C Ratio	0.009	-	0.197	0.033	-	-
HCM Control Delay (s)	7.8	-	14.5	9.9	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.7	0.1	-	-

Intersection						
Int Delay, s/veh	1.5					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	12	21	254	264	86
Future Vol, veh/h	54	12	21	254	264	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	400	-	-	400
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	59	13	23	276	287	93

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	609	287	287	0	-	0
Stage 1	287	-	-	-	-	-
Stage 2	322	-	-	-	-	-
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	458	752	1275	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	450	752	1275	-	-	-
Mov Cap-2 Maneuver	450	-	-	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	722	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1275	-	450	752	-	-
HCM Lane V/C Ratio	0.018	-	0.13	0.017	-	-
HCM Control Delay (s)	7.9	-	14.2	9.9	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	0.1	-	-

Intersection						
Int Delay, s/veh	3.1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	128	231	28	70	284
Future Vol, veh/h	27	128	231	28	70	284
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	400	-
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	29	139	251	30	76	309

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	727	266	0	0	282	0
Stage 1	266	-	-	-	-	-
Stage 2	461	-	-	-	-	-
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	391	773	-	-	1280	-
Stage 1	779	-	-	-	-	-
Stage 2	635	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	368	773	-	-	1280	-
Mov Cap-2 Maneuver	368	-	-	-	-	-
Stage 1	779	-	-	-	-	-
Stage 2	597	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	368	773	1280	-
HCM Lane V/C Ratio	-	-	0.08	0.18	0.059	-
HCM Control Delay (s)	-	-	15.6	10.7	8	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.7	0.2	-

Intersection						
Int Delay, s/veh	3.1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	119	247	42	88	266
Future Vol, veh/h	27	119	247	42	88	266
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	400	-
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	29	129	268	46	96	289

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	771	291	0	0	314	0
Stage 1	291	-	-	-	-	-
Stage 2	480	-	-	-	-	-
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	368	748	-	-	1246	-
Stage 1	759	-	-	-	-	-
Stage 2	622	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	340	748	-	-	1246	-
Mov Cap-2 Maneuver	340	-	-	-	-	-
Stage 1	759	-	-	-	-	-
Stage 2	574	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	340	748	1246	-
HCM Lane V/C Ratio	-	-	0.086	0.173	0.077	-
HCM Control Delay (s)	-	-	16.6	10.8	8.1	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.6	0.2	-

Intersection						
Int Delay, s/veh	1.5					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	47	212	4	19	292
Future Vol, veh/h	19	47	212	4	19	292
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	-	-	-	200	-
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	21	51	230	4	21	317

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	592	233	0	0	235	0
Stage 1	233	-	-	-	-	-
Stage 2	359	-	-	-	-	-
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	469	806	-	-	1332	-
Stage 1	806	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	462	806	-	-	1332	-
Mov Cap-2 Maneuver	462	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	696	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	664	1332	-
HCM Lane V/C Ratio	-	-	0.108	0.016	-
HCM Control Delay (s)	-	-	11.1	7.7	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection						
Int Delay, s/veh	1.6					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	26	263	14	64	229
Future Vol, veh/h	11	26	263	14	64	229
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	-	-	-	200	-
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	12	28	286	15	70	249

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	681	293	0	0	301	0
Stage 1	293	-	-	-	-	-
Stage 2	388	-	-	-	-	-
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	416	746	-	-	1260	-
Stage 1	757	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	393	746	-	-	1260	-
Mov Cap-2 Maneuver	393	-	-	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	648	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	589	1260	-
HCM Lane V/C Ratio	-	-	0.068	0.055	-
HCM Control Delay (s)	-	-	11.6	8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	26	190	1	0	311
Future Vol, veh/h	0	26	190	1	0	311
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	28	207	1	0	338

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	207	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	833	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	833	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	833	-
HCM Lane V/C Ratio	-	-	0.034	-
HCM Control Delay (s)	-	-	9.5	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	14	263	2	0	240
Future Vol, veh/h	0	14	263	2	0	240
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	15	286	2	0	261

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	287	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	752	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	752	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	752	-
HCM Lane V/C Ratio	-	-	0.02	-
HCM Control Delay (s)	-	-	9.9	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.1	-

APPENDIX J

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	565	25	265	865	155	90	295	160	185	235	155
Future Volume (veh/h)	190	565	25	265	865	155	90	295	160	185	235	155
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	207	614	0	288	940	52	98	321	15	201	255	23
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	368	1595	714	484	1674	749	338	484	216	342	653	292
Arrive On Green	0.02	0.15	0.00	0.09	0.47	0.47	0.07	0.14	0.14	0.12	0.18	0.18
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	207	614	0	288	940	52	98	321	15	201	255	23
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.5	14.1	0.0	7.9	17.2	1.6	4.2	7.8	0.7	8.3	5.7	1.1
Cycle Q Clear(g_c), s	5.5	14.1	0.0	7.9	17.2	1.6	4.2	7.8	0.7	8.3	5.7	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	368	1595	714	484	1674	749	338	484	216	342	653	292
V/C Ratio(X)	0.56	0.38	0.00	0.59	0.56	0.07	0.29	0.66	0.07	0.59	0.39	0.08
Avail Cap(c_a), veh/h	368	1595	714	484	1674	749	558	728	325	477	728	325
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.3	27.0	0.0	12.8	17.0	12.9	30.0	36.9	33.9	27.3	32.2	30.4
Incr Delay (d2), s/veh	1.8	0.6	0.0	2.0	1.4	0.2	0.5	1.6	0.1	1.6	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	7.1	0.0	4.1	8.7	0.7	2.1	3.9	0.3	4.2	2.8	0.5
LnGrp Delay(d),s/veh	16.1	27.7	0.0	14.8	18.4	13.1	30.4	38.5	34.0	28.9	32.6	30.5
LnGrp LOS	B	C		B	B	B	C	D	C	C	C	C
Approach Vol, veh/h		821			1280			434			479	
Approach Delay, s/veh		24.8			17.4			36.5			31.0	
Approach LOS		C			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	45.1	10.8	21.1	11.0	47.1	15.1	16.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	27.5	17.5	18.5	6.5	29.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	9.9	16.1	6.2	7.7	7.5	19.2	10.3	9.8
Green Ext Time (p_c), s	0.0	7.6	0.2	2.9	0.0	7.1	0.3	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	24.3
HCM 2010 LOS	C

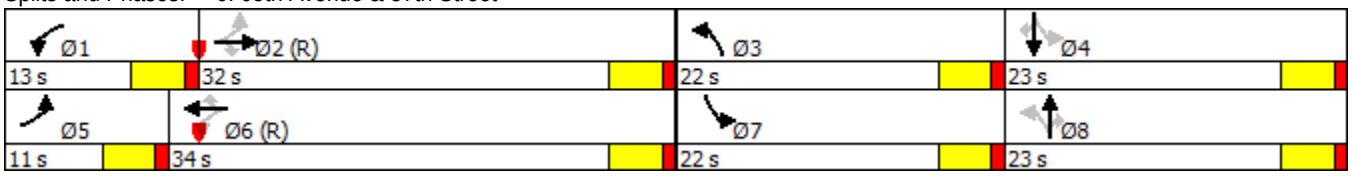
Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	Min	Min	None	C-Max	Min	Min
Maximum Split (s)	13	32	22	23	11	34	22	23
Maximum Split (%)	14.4%	35.6%	24.4%	25.6%	12.2%	37.8%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	13	45	67	0	11	45	67
End Time (s)	13	45	67	0	11	45	67	0
Yield/Force Off (s)	8.5	40.5	62.5	85.5	6.5	40.5	62.5	85.5
Yield/Force Off 170(s)	8.5	29.5	62.5	85.5	6.5	29.5	62.5	85.5
Local Start Time (s)	77	0	32	54	77	88	32	54
Local Yield (s)	85.5	27.5	49.5	72.5	83.5	27.5	49.5	72.5
Local Yield 170(s)	85.5	16.5	49.5	72.5	83.5	16.5	49.5	72.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	90

Offset: 13 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	780	75	160	760	140	35	190	285	170	380	210
Future Volume (veh/h)	150	780	75	160	760	140	35	190	285	170	380	210
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	163	848	2	174	826	56	38	207	17	185	413	30
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	422	1788	800	454	1798	804	236	399	179	347	603	270
Arrive On Green	0.09	0.67	0.67	0.07	0.51	0.51	0.06	0.11	0.11	0.11	0.17	0.17
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	163	848	2	174	826	56	38	207	17	185	413	30
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.9	10.4	0.0	4.2	13.5	1.6	1.6	5.0	0.9	7.9	9.9	1.4
Cycle Q Clear(g_c), s	3.9	10.4	0.0	4.2	13.5	1.6	1.6	5.0	0.9	7.9	9.9	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	422	1788	800	454	1798	804	236	399	179	347	603	270
V/C Ratio(X)	0.39	0.47	0.00	0.38	0.46	0.07	0.16	0.52	0.10	0.53	0.68	0.11
Avail Cap(c_a), veh/h	472	1788	800	507	1798	804	492	708	317	501	708	317
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.2	9.0	7.3	9.9	14.2	11.3	31.9	37.6	35.8	28.7	35.1	31.6
Incr Delay (d2), s/veh	0.4	0.6	0.0	0.5	0.8	0.2	0.3	1.0	0.2	1.3	2.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	5.1	0.0	2.0	6.8	0.7	0.8	2.5	0.4	3.9	5.0	0.6
LnGrp Delay(d),s/veh	10.6	9.7	7.3	10.4	15.1	11.5	32.2	38.7	36.0	30.0	37.3	31.8
LnGrp LOS	B	A	A	B	B	B	C	D	D	C	D	C
Approach Vol, veh/h		1013			1056			262			628	
Approach Delay, s/veh		9.8			14.1			37.6			34.9	
Approach LOS		A			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	50.0	9.5	19.8	10.4	50.2	14.7	14.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.9	27.1	18.0	18.0	8.5	27.5	18.0	18.0
Max Q Clear Time (g_c+I1), s	6.2	12.4	3.6	11.9	5.9	15.5	9.9	7.0
Green Ext Time (p_c), s	0.1	9.8	0.0	2.2	0.1	8.4	0.3	3.2

Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B

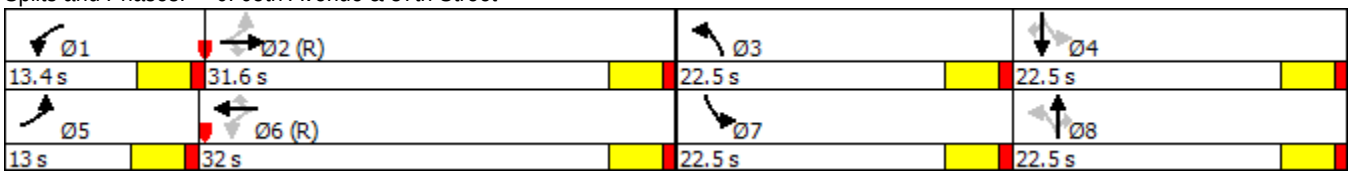
Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	Min	Min	None	C-Max	Min	Min
Maximum Split (s)	13.4	31.6	22.5	22.5	13	32	22.5	22.5
Maximum Split (%)	14.9%	35.1%	25.0%	25.0%	14.4%	35.6%	25.0%	25.0%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	89.6	13	44.6	67.1	89.6	12.6	44.6	67.1
End Time (s)	13	44.6	67.1	89.6	12.6	44.6	67.1	89.6
Yield/Force Off (s)	8.5	40.1	62.6	85.1	8.1	40.1	62.6	85.1
Yield/Force Off 170(s)	8.5	29.1	62.6	85.1	8.1	29.1	62.6	85.1
Local Start Time (s)	76.6	0	31.6	54.1	76.6	89.6	31.6	54.1
Local Yield (s)	85.5	27.1	49.6	72.1	85.1	27.1	49.6	72.1
Local Yield 170(s)	85.5	16.1	49.6	72.1	85.1	16.1	49.6	72.1

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 13 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	530	55	75	1075	145	200
Future Volume (veh/h)	530	55	75	1075	145	200
Number	4	14	3	8	5	12
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	576	18	82	1168	158	82
Adj No. of Lanes	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1084	485	340	1432	879	784
Arrive On Green	0.61	0.61	0.10	0.81	0.50	0.50
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583
Grp Volume(v), veh/h	576	18	82	1168	158	82
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583
Q Serve(g_s), s	8.4	0.4	2.7	16.7	4.4	2.5
Cycle Q Clear(g_c), s	8.4	0.4	2.7	16.7	4.4	2.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1084	485	340	1432	879	784
V/C Ratio(X)	0.53	0.04	0.24	0.82	0.18	0.10
Avail Cap(c_a), veh/h	1632	730	422	2143	879	784
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.72	0.72	1.00	1.00
Uniform Delay (d), s/veh	13.7	12.2	18.0	6.7	12.6	12.1
Incr Delay (d2), s/veh	0.4	0.0	0.3	1.1	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.2	1.3	7.7	2.3	1.1
LnGrp Delay(d),s/veh	14.1	12.2	18.3	7.8	13.0	12.4
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	594			1250	240	
Approach Delay, s/veh	14.1			8.5	12.8	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		49.1	8.9	32.1				40.9
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5
Max Green Setting (Gmax), s		26.5	8.5	41.5				54.5
Max Q Clear Time (g_c+I1), s		6.4	4.7	10.4				18.7
Green Ext Time (p_c), s		0.7	0.0	16.5				17.8

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

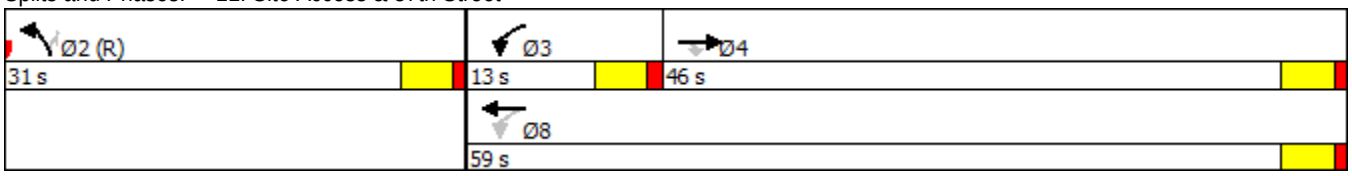
Phase Number	2	3	4	8
Movement	NBL	WBL	EBT	WBTL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize		Yes	Yes	
Recall Mode	C-Min	None	None	None
Maximum Split (s)	31	13	46	59
Maximum Split (%)	34.4%	14.4%	51.1%	65.6%
Minimum Split (s)	22.5	9.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7		7	7
Flash Dont Walk (s)	11		11	11
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	31	44	31
End Time (s)	31	44	0	0
Yield/Force Off (s)	26.5	39.5	85.5	85.5
Yield/Force Off 170(s)	15.5	39.5	74.5	74.5
Local Start Time (s)	0	31	44	31
Local Yield (s)	26.5	39.5	85.5	85.5
Local Yield 170(s)	15.5	39.5	74.5	74.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	55

Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green

Splits and Phases: 11: Site Access & 37th Street



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	840	145	185	765	90	125
Future Volume (veh/h)	840	145	185	765	90	125
Number	4	14	3	8	5	12
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	913	48	201	832	98	43
Adj No. of Lanes	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1267	567	335	1776	706	630
Arrive On Green	0.48	0.48	0.19	1.00	0.40	0.40
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583
Grp Volume(v), veh/h	913	48	201	832	98	43
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583
Q Serve(g_s), s	18.5	1.5	6.2	0.0	3.2	1.5
Cycle Q Clear(g_c), s	18.5	1.5	6.2	0.0	3.2	1.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1267	567	335	1776	706	630
V/C Ratio(X)	0.72	0.08	0.60	0.47	0.14	0.07
Avail Cap(c_a), veh/h	1514	677	454	2261	706	630
HCM Platoon Ratio	1.33	1.33	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.84	0.84	1.00	1.00
Uniform Delay (d), s/veh	20.0	15.5	15.7	0.0	17.3	16.8
Incr Delay (d2), s/veh	1.4	0.1	1.5	0.2	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	0.7	3.1	0.0	1.6	0.7
LnGrp Delay(d),s/veh	21.4	15.6	17.1	0.2	17.7	17.0
LnGrp LOS	C	B	B	A	B	B
Approach Vol, veh/h	961			1033	141	
Approach Delay, s/veh	21.1			3.5	17.4	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		40.3	12.9	36.7				49.7
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5
Max Green Setting (Gmax), s		23.5	14.5	38.5				57.5
Max Q Clear Time (g_c+I1), s		5.2	8.2	20.5				2.0
Green Ext Time (p_c), s		0.3	0.3	11.7				20.9

Intersection Summary	
HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B

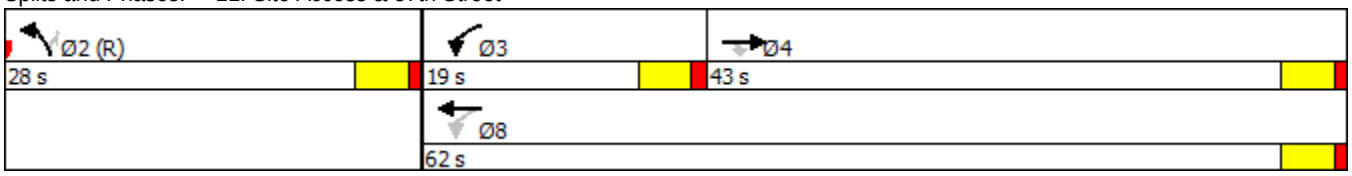
Phase Number	2	3	4	8
Movement	NBL	WBL	EBT	WBTL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize		Yes	Yes	
Recall Mode	C-Min	None	None	None
Maximum Split (s)	28	19	43	62
Maximum Split (%)	31.1%	21.1%	47.8%	68.9%
Minimum Split (s)	22.5	9.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7		7	7
Flash Dont Walk (s)	11		11	11
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	28	47	28
End Time (s)	28	47	0	0
Yield/Force Off (s)	23.5	42.5	85.5	85.5
Yield/Force Off 170(s)	12.5	42.5	74.5	74.5
Local Start Time (s)	0	28	47	28
Local Yield (s)	23.5	42.5	85.5	85.5
Local Yield 170(s)	12.5	42.5	74.5	74.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	55

Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green

Splits and Phases: 11: Site Access & 37th Street



Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	475	40	125	1095	0	110
Future Vol, veh/h	475	40	125	1095	0	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	400	400	-	-	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	516	43	136	1190	0	120

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	516	0	-	258
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	1046	-	0	741
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1046	-	-	741
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	741	-	-	1046	-
HCM Lane V/C Ratio	0.161	-	-	0.13	-
HCM Control Delay (s)	10.8	-	-	9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.4	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱	↰	↑↑		↱
Traffic Vol, veh/h	885	60	120	735	0	100
Future Vol, veh/h	885	60	120	735	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	400	400	-	-	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	962	65	130	799	0	109

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	962	0	-	481
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	711	-	0	531
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	711	-	-	531
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	13.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	531	-	-	711	-
HCM Lane V/C Ratio	0.205	-	-	0.183	-
HCM Control Delay (s)	13.5	-	-	11.2	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.8	-	-	0.7	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	350	75	175	770	150	150	320	85	80	345	15
Future Volume (veh/h)	25	350	75	175	770	150	150	320	85	80	345	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	27	380	0	190	837	37	163	348	0	87	375	12
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	765	342	383	1031	461	546	1530	684	548	1422	45
Arrive On Green	0.03	0.22	0.00	0.20	0.58	0.58	0.08	0.43	0.00	0.05	0.41	0.41
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3501	112
Grp Volume(v), veh/h	27	380	0	190	837	37	163	348	0	87	189	198
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1843
Q Serve(g_s), s	1.1	8.5	0.0	7.2	16.9	0.9	4.7	5.6	0.0	2.5	6.4	6.4
Cycle Q Clear(g_c), s	1.1	8.5	0.0	7.2	16.9	0.9	4.7	5.6	0.0	2.5	6.4	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	194	765	342	383	1031	461	546	1530	684	548	719	749
V/C Ratio(X)	0.14	0.50	0.00	0.50	0.81	0.08	0.30	0.23	0.00	0.16	0.26	0.26
Avail Cap(c_a), veh/h	254	1081	484	429	1317	589	639	1530	684	589	719	749
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	31.0	0.0	20.1	16.8	13.5	13.6	16.1	0.0	14.1	17.8	17.8
Incr Delay (d2), s/veh	0.3	0.5	0.0	1.0	3.1	0.1	0.3	0.3	0.0	0.1	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.2	0.0	3.5	8.4	0.4	2.3	2.8	0.0	1.3	3.3	3.4
LnGrp Delay(d),s/veh	27.1	31.5	0.0	21.1	20.0	13.6	13.9	16.4	0.0	14.2	18.7	18.6
LnGrp LOS	C	C		C	B	B	B	B		B	B	B
Approach Vol, veh/h		407			1064			511			474	
Approach Delay, s/veh		31.2			19.9			15.6			17.8	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	43.4	13.7	24.0	11.3	41.1	7.0	30.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	26.5	11.5	27.5	11.5	21.5	5.5	33.5
Max Q Clear Time (g_c+I1), s	4.5	7.6	9.2	10.5	6.7	8.4	3.1	18.9
Green Ext Time (p_c), s	0.0	4.5	0.1	8.0	0.2	3.8	0.0	7.3

Intersection Summary	
HCM 2010 Ctrl Delay	20.5
HCM 2010 LOS	C

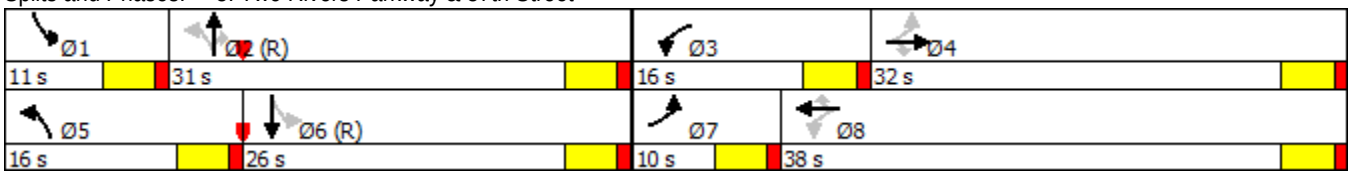
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	11	31	16	32	16	26	10	38
Maximum Split (%)	12.2%	34.4%	17.8%	35.6%	17.8%	28.9%	11.1%	42.2%
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	11	42	58	0	16	42	52
End Time (s)	11	42	58	0	16	42	52	0
Yield/Force Off (s)	6.5	37.5	53.5	85.5	11.5	37.5	47.5	85.5
Yield/Force Off 170(s)	6.5	26.5	53.5	74.5	11.5	26.5	47.5	74.5
Local Start Time (s)	74	85	26	42	74	0	26	36
Local Yield (s)	80.5	21.5	37.5	69.5	85.5	21.5	31.5	69.5
Local Yield 170(s)	80.5	10.5	37.5	58.5	85.5	10.5	31.5	58.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	65

Offset: 16 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: Two Rivers Parkway & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	735	120	160	475	100	120	370	100	110	310	30
Future Volume (veh/h)	35	735	120	160	475	100	120	370	100	110	310	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	38	799	0	174	516	26	130	402	0	120	337	24
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	383	1027	460	294	1222	547	484	1270	568	461	1189	84
Arrive On Green	0.03	0.29	0.00	0.18	0.69	0.69	0.07	0.36	0.00	0.06	0.35	0.35
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3353	238
Grp Volume(v), veh/h	38	799	0	174	516	26	130	402	0	120	177	184
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1821
Q Serve(g_s), s	1.3	18.6	0.0	5.9	5.7	0.5	4.1	7.4	0.0	3.8	6.5	6.5
Cycle Q Clear(g_c), s	1.3	18.6	0.0	5.9	5.7	0.5	4.1	7.4	0.0	3.8	6.5	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	383	1027	460	294	1222	547	484	1270	568	461	628	646
V/C Ratio(X)	0.10	0.78	0.00	0.59	0.42	0.05	0.27	0.32	0.00	0.26	0.28	0.28
Avail Cap(c_a), veh/h	423	1160	519	383	1451	649	538	1270	568	499	628	646
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	29.3	0.0	18.9	10.0	9.2	16.6	20.9	0.0	16.7	20.8	20.9
Incr Delay (d2), s/veh	0.1	3.0	0.0	1.9	0.2	0.0	0.3	0.7	0.0	0.3	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	9.5	0.0	2.9	2.8	0.2	2.0	3.7	0.0	1.9	3.3	3.5
LnGrp Delay(d),s/veh	21.1	32.3	0.0	20.8	10.2	9.2	16.9	21.5	0.0	17.0	22.0	22.0
LnGrp LOS	C	C		C	B	A	B	C		B	C	C
Approach Vol, veh/h		837			716			532			481	
Approach Delay, s/veh		31.8			12.8			20.4			20.7	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	36.8	12.5	30.6	10.5	36.4	7.6	35.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	22.5	12.5	29.5	8.7	21.3	5.1	36.9
Max Q Clear Time (g_c+I1), s	5.8	9.4	7.9	20.6	6.1	8.5	3.3	7.7
Green Ext Time (p_c), s	0.0	4.0	0.2	5.5	0.1	3.9	0.0	11.2

Intersection Summary	
HCM 2010 Ctrl Delay	22.1
HCM 2010 LOS	C

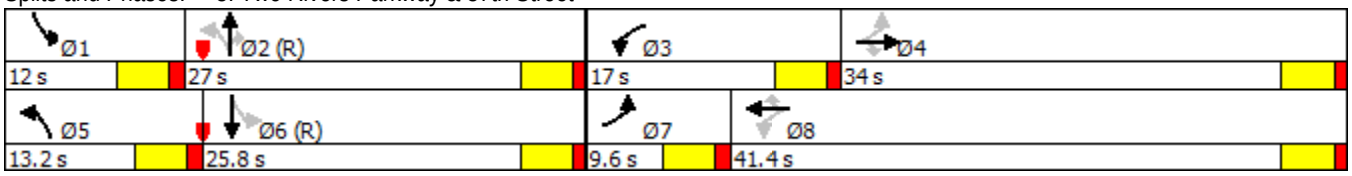
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	12	27	17	34	13.2	25.8	9.6	41.4
Maximum Split (%)	13.3%	30.0%	18.9%	37.8%	14.7%	28.7%	10.7%	46.0%
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	2.8	14.8	41.8	58.8	2.8	16	41.8	51.4
End Time (s)	14.8	41.8	58.8	2.8	16	41.8	51.4	2.8
Yield/Force Off (s)	10.3	37.3	54.3	88.3	11.5	37.3	46.9	88.3
Yield/Force Off 170(s)	10.3	26.3	54.3	77.3	11.5	26.3	46.9	77.3
Local Start Time (s)	76.8	88.8	25.8	42.8	76.8	0	25.8	35.4
Local Yield (s)	84.3	21.3	38.3	72.3	85.5	21.3	30.9	72.3
Local Yield 170(s)	84.3	10.3	38.3	61.3	85.5	10.3	30.9	61.3

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	65

Offset: 16 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: Two Rivers Parkway & 37th Street



Intersection						
Int Delay, s/veh	1.9					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	85	25	10	460	455	30
Future Vol, veh/h	85	25	10	460	455	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	400	-	-	400
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	92	27	11	500	495	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	767	247	495	0	-	0
Stage 1	495	-	-	-	-	-
Stage 2	272	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	339	753	1065	-	-	-
Stage 1	578	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	335	753	1065	-	-	-
Mov Cap-2 Maneuver	335	-	-	-	-	-
Stage 1	578	-	-	-	-	-
Stage 2	741	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.6	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1065	-	335	753	-	-
HCM Lane V/C Ratio	0.01	-	0.276	0.036	-	-
HCM Control Delay (s)	8.4	-	19.8	10	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	1.1	0.1	-	-

Intersection						
Int Delay, s/veh	1.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	15	20	455	510	85
Future Vol, veh/h	55	15	20	455	510	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	400	-	-	400
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	60	16	22	495	554	92

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	845	277	554	0	-	0
Stage 1	554	-	-	-	-	-
Stage 2	291	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	302	720	1012	-	-	-
Stage 1	539	-	-	-	-	-
Stage 2	733	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	295	720	1012	-	-	-
Mov Cap-2 Maneuver	295	-	-	-	-	-
Stage 1	539	-	-	-	-	-
Stage 2	717	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.1	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1012	-	295	720	-	-
HCM Lane V/C Ratio	0.021	-	0.203	0.023	-	-
HCM Control Delay (s)	8.6	-	20.3	10.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	0.1	-	-

Intersection						
Int Delay, s/veh	2.2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	130	425	30	70	525
Future Vol, veh/h	30	130	425	30	70	525
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	200	400	-
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	33	141	462	33	76	571

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	900	231	0	0	462	0
Stage 1	462	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	278	771	-	-	1095	-
Stage 1	601	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	259	771	-	-	1095	-
Mov Cap-2 Maneuver	259	-	-	-	-	-
Stage 1	601	-	-	-	-	-
Stage 2	575	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	259	771	1095	-
HCM Lane V/C Ratio	-	-	0.126	0.183	0.069	-
HCM Control Delay (s)	-	-	20.9	10.7	8.5	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.7	0.2	-

Intersection						
Int Delay, s/veh	2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	120	470	45	90	500
Future Vol, veh/h	20	120	470	45	90	500
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	200	400	-
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	22	130	511	49	98	543

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	978	255	0	0	511	0
Stage 1	511	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	248	744	-	-	1050	-
Stage 1	567	-	-	-	-	-
Stage 2	597	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	225	744	-	-	1050	-
Mov Cap-2 Maneuver	225	-	-	-	-	-
Stage 1	567	-	-	-	-	-
Stage 2	541	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	225	744	1050	-
HCM Lane V/C Ratio	-	-	0.097	0.175	0.093	-
HCM Control Delay (s)	-	-	22.7	10.9	8.8	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.6	0.3	-

Intersection						
Int Delay, s/veh	1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	45	410	5	20	535
Future Vol, veh/h	20	45	410	5	20	535
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	-	-	-	200	-
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	22	49	446	5	22	582

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	782	226	0	0	451	0
Stage 1	448	-	-	-	-	-
Stage 2	334	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	331	777	-	-	1106	-
Stage 1	611	-	-	-	-	-
Stage 2	697	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	324	777	-	-	1106	-
Mov Cap-2 Maneuver	324	-	-	-	-	-
Stage 1	611	-	-	-	-	-
Stage 2	683	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	543	1106	-
HCM Lane V/C Ratio	-	-	0.13	0.02	-
HCM Control Delay (s)	-	-	12.6	8.3	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection						
Int Delay, s/veh	1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	25	490	15	65	465
Future Vol, veh/h	10	25	490	15	65	465
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	-	-	-	200	-
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	27	533	16	71	505

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	935	274	0	0	549	0
Stage 1	541	-	-	-	-	-
Stage 2	394	-	-	-	-	-
Critical Hdwy	7.54	6.94	-	-	4.14	-
Critical Hdwy Stg 1	6.54	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	220	724	-	-	1017	-
Stage 1	493	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	208	724	-	-	1017	-
Mov Cap-2 Maneuver	208	-	-	-	-	-
Stage 1	493	-	-	-	-	-
Stage 2	560	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	424	1017	-
HCM Lane V/C Ratio	-	-	0.09	0.069	-
HCM Control Delay (s)	-	-	14.3	8.8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-

Intersection						
Int Delay, s/veh	0.2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	25	390	5	0	555
Future Vol, veh/h	0	25	390	5	0	555
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	27	424	5	0	603

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	215	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	790	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	790	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	790	-
HCM Lane V/C Ratio	-	-	0.034	-
HCM Control Delay (s)	-	-	9.7	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	15	490	5	0	475
Future Vol, veh/h	0	15	490	5	0	475
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	16	533	5	0	516

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	269	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	729	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	729	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	729	-
HCM Lane V/C Ratio	-	-	0.022	-
HCM Control Delay (s)	-	-	10.1	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

City of
Evans, Colorado

1100 37th Street
Evans, Colorado 80620-2036

MEMO

DATE: March 1, 2019

TO: City Planning

FROM: Rick R. Pickard, P.E.
Senior Civil Engineer

RE: Peakview PUD, Documentation of Adequate EQR Dedication

The attached spreadsheet documents the following:

A. How Peakview PUD property arrived at 763 EQR's
B. Projection of Residential potable demand from the preliminary plan
C. Projection of Commercial potable demand from the preliminary plan
D. Projection of Non-potable demand from the preliminary plan
E. Summary of Total EQR's Required, Provided, Remaining for Commercial, Shoulder Season Potable Water Purchase for irrigation

Summary:

The total EQR's required for residential potable water usage		493.6
Total EQR's required for commercial (unable to determine)		0.0
Total EQR's required for non-potable		152.0
	Total EQR's required	645.6
	Total Available EQR's	763.0
	*Remaining EQR's	117.4

*To be used for future commercial and shoulder season purchase of potable water from the City for irrigation

Peakview PUD has met their requirement for EQR dedication to meet the projected demand for potable and non-potable usage for the density and type of residential units proposed by the preliminary submittal plan.

Further, they have a "set" number of reserve EQR's which could be used for a combination of future commercial development as well as for the purchase of potable water from the City for shoulder season irrigation water.

Igo Coaltrain Property, aka Peakview PUD

A. How Peakview arrived at 763 EQR's

This analysis evaluates the potential to utilize GL System water supplies to meet the projected potable and non-potable water demands for a 220 acre parcel that was historically part of the Igo and Coaltrain farms. The farm was historically irrigated by water contained with the GL System (Greeley Loveland Irrigation Company, Lake Loveland Reservoir and Seven Lakes Reservoir company shares). The historic shares retained by the current owner of this farm include the following:

Summary of Historic shares retained by the current owner of the farm
2 shares of the GLIC
3 Contract rights in the Loveland and Greeley Reservoir Company (Lake Loveland)
4 shares in the Seven Lakes Reservoir Company (Seven Lakes)

Summary of All Shares Historic and Transferred from 2534 Farm (How Peakview arrived at 763 available EQR's)

Description	Native Water	Source	Number of Shares	AF/Share	Available Acre-Feet	EQR's/AF	Available EQR's
Historic	GLIC	Dedicated 2 shares of GLIC	2	28	56	1	56
Historic	7 Lakes	Dedicated 4 shares of 7 Lakes	4	37	148	1	148
Historic	Lake Loveland	Dedicated 2 shares of LL	2	65	130	1	130
Historic	Lake Loveland	Dedicated 1 shares of LL	1	65	65	1	65
		subtotal LL	3		195		195
		Overall Total	9		399		399

In addition the water supplies currently tied to the Igo Coaltrain Property, it is proposed that additional GL water supplies from the historic farm being developed as the 2534 project near I-25 and Highway 34 will be transferred to this property to meet a portion of the water deficit at the Igo Coaltrain Property. The shares proposed to be transferred include the following:

Shares Transferred from 2534 Farm
13 shares of the GLIC
2.5 Contract rights in the Loveland and Greeley Reservoir Company (Lake Loveland)

Description	Native Water	Source	Number of Shares	AF/Share	Available Acre-Feet	EQR's/AF	Available EQR's
Transferred from 2534	GLIC	Dedicated 8 shares of GLIC	8	28	224	1	224
Transferred from 2534	GLIC	Dedicated 5 shares of GLIC	5	28	140	1	140
		Total	13		364		364
		Total Historic & Transferred	22		763		763

Summary of All Shares	Historic	Transferred	Total
GLIC	2	13	15
Lake Loveland	3	0	3
7 Lakes	4	0	4
	9	13	22

Transferred from 2534	Lake Loveland	Dedicated 2.5 contract rts	2.5

B. Determination of Potable Demands on the Igo Coaltrain Property (Units provided by most recent PUD submittal)

The City of Evans currently has a policy requiring all new developments to utilize a non potable system to meet outdoor water demands. In exchange for using a non potable system, new developments receive a reduction in the potable raw water requirement and Plant Investment Fees. The table below gives a comparison of the potable EQRs required for the Igo Coaltrain properties with the use of a non potable system EQR's rates were taken from City policy.

The type and number of residential units reflects the most current numbers from the Peakview PUD. The multiplier reflects current City of Evans policy

Residential Potable Water Demand	Estimated Number of Units	EQR Rate with Non-potable System	Total EQR's required with Non-Potable System
Phase 1-3 Single Family	461	0.60	276.60
Phase 1-3 Multi Family	620	0.35	217.00
Total Residential Potable	1081		493.60

Summary of Makeup of Residential Units	Phase 1	Phase 2	Phase 3	Total
Single Family	219	242	0	461
Multi-Family	79	93	448	620
				1081

C. Estimation of Commercial Development Demand

The original report noted that for Commercial development proposed for this property, the commercial users will supply potable water to Evans directly based on the tap size and related water demand associated with each user. In compliance with the assumption that commercial users will supply potable water to Evans, we have projected a zero projected EQR Demand.

Commercial Projection by Applicant	Estimated Number of Units	Projected EQR's required with Non-Potable System
Commercial	Not available	0.00
Total Commercial Potable		0.00

D. Estimation of Non potable Demands for the Igo Coaltrain Farm

The following data was taken from the Applicants irrigation engineer using the most recent landscape irrigation requirements to determine EQR's required

Type of Use	Total Acreage (acres)	Required EQR's for Irrigation	Calculated Multiplier
Turf (open space)	31.80	57.80	1.82
Seed (open space)	43.10	51.60	1.20
Lot irrigation	32.00	38.30	1.20
Subtotal Irrigation Demand	106.90	147.70	

	Acres	Required EQR's for Evaporation Losses
Pond Evaporation	1.5	4.30
Subtotal Pond Evaporation Demand	1.5	4.30
Total Irrigation & Pond Evaporation		152.00

E. Summary of Total EQR's Required

(B) Total EQR's Required for Residential	493.60	
(C) Total EQR's Required for Commercial	0.00	
(D) Total EQR's Required for Non-potable	152.00	
Total Req's EQR's	645.60	
Total Avail. EQR's	763.00	
Remaining EQR's	117.40	To be used for commercial, shoulder season purchase of Potable water for Irrigation

Igo Coaltrain Property, aka Peakview PUD

A. How Peakview arrived at 763 EQR's

This analysis evaluates the potential to utilize GL System water supplies to meet the projected potable and non-potable water demands for a 220 acre parcel that was historically part of the Igo and Coaltrain farms. The farm was historically irrigated by water contained with the GL System (Greeley Loveland Irrigation Company, Lake Loveland Reservoir and Seven Lakes Reservoir company shares). The historic shares retained by the current owner of this farm include the following:

Summary of Historic shares retained by the current owner of the farm

- 2 shares of the GLIC
- 3 Contract rights in the Loveland and Greeley Reservoir Company (Lake Loveland)
- 4 shares in the Seven Lakes Reservoir Company (Seven Lakes)

Detail of Historic Shares from 2534 Farm

Description	Native Water	Source	Number of Shares	AF/Share	Available Acre-Feet	EQR's/AF	Available EQR's
Historic	GLIC	Dedicated 2 shares of GLIC	2	28	56	1	56
Historic	7 Lakes	Dedicated 4 shares of 7 Lakes	4	37	148	1	148
Historic	Lake Loveland	Dedicated 2 shares of LL	2	65	130	1	130
Historic	Lake Loveland	Dedicated 1 shares of LL	1	65	65	1	65
		Total Historic	**9**		**399**		**399**

In addition the water supplies currently tied to the Igo Coaltrain Property, it is proposed that additional GL water supplies from the historic farm being developed as the 2534 project near I-25 and Highway 34 will be transferred to this property to meet a portion of the water deficit at the Igo Coaltrain Property. The shares proposed to be transferred include the following:

Summary of Transferred Shares from 2534 Farm

- 13 shares of the GLIC
- 2.5 Contract rights in the Loveland and Greeley Reservoir Company (Lake Loveland)

Detail of Transferred Shares from 2534 Farm

Description	Native Water	Source	Number of Shares	AF/Share	Available Acre-Feet	EQR's/AF	Available EQR's
Transferred from 2534	GLIC	Dedicated 8 shares of GLIC	8	28	224	1	224
Transferred from 2534	GLIC	Dedicated 5 shares of GLIC	5	28	140	1	140
		Total Transferred	**13**		**364**		**364**

Total Historic & Transferred	**22**	**763**	**763**

B. Determination of Potable Demands on the Igo Coaltrain Property (The number and type of residential units taken from the latest Site Plan provided by the Developer)

The City of Evans currently has a policy requiring all new developments to utilize a non potable system to meet outdoor water demands. In exchange for using a non potable system, new developments receive a reduction in the potable raw water requirement and Plant Investment Fees. The table below gives a comparison of the potable EQRs required for the Igo Coaltrain properties with the use of a non potable system EQR's rates were taken from City policy.

Type of Residential Potable Water Demand	Estimated Number of Units	EQR Rate with Non-potable System	Total EQR's required with Non-Potable System	Summary of Makeup of Residential Units					
Single Family	446	0.60	267.60	Single Family	Detached	150	Multi-family	Detached Townhomes	209
Multi Family	651	0.35	227.85	Single Family	Detached	180	Multi-family	Townhomes	152
				Single Family	Detached	116	Multi-family	Apartments	290
Total Residential Potable	**1,097**		**495.45**		**SF Subtotal**	**446**		**MF Subtotal**	**651**
								Total Residential Units	**1,097**

C. Estimation of Commercial Development Demand

The Developer for Peakview PUD has projected up to 19.32 acres of the Site Plan for Commercial uses. Since the size, type and number of commercial uses is not available at thiis time, we cannot project an EQR demand for this use. At the time of commercial development application, the applicant will submit the required information in order for the City to develop an EQR demand. The required EQRs will be taken from the remaining EQRs after considering 763 dedicated EQRs less those reserved for residential and non-potable uses.

Commercial Projection by Applicant	Estimated Number of Units	Projected EQR's required with Non-Potable System
Commercial	Not available	0.00
Total Commercial Potable		**0.00**

D. Estimation of Non potable Demands for the Igo Coaltrain Farm

The following data was taken from the Applicants Irrigation consultant using the most recent landscape irrigation requirements to determine EQR's required

Type of Use	Total Acreage (acres)	Required EQR's for Irrigation	Calculated Multiplier
Turf (open space)	31.80	57.80	1.82
Seed (open space)	43.10	51.60	1.20
Lot irrigation	32.00	38.30	1.20
Subtotal Irrigation Demand	**106.90**	**147.70**	

	Acres	Required EQR's for Evaporation Losses
Pond Evaporation	1.5	4.30
Subtotal Pond Evaporation Demand	**1.5**	**4.30**
Total Irrigation & Pond Evaporation		**152.00**

E. Summary of Total EQR's Required

(A) Total EQR's Required for Residential	495.45	
(B) Total EQR's Required for Commercial	N/A	
(C) Total EQR's Required for Non-potable	152.00	
Total Req's EQR's	**647.45**	
Total Dedicated EQR's	**763.00**	
Remaining EQR's	**115.55**	**To be used for commercial and/or shoulder season purchase of Potable water from the City for Irrigation**

AGREEMENT REGARDING DISCOUNT OF SEWER REIMBURSEMENT

This Agreement Regarding Discount of Sewer Reimbursement (the "Agreement") is entered into by and between Solstice Holdings LLC ("Solstice"); and the Ashcroft Draw Sanitary Sewer Joint Venture (the "Joint Venture"), collectively referred to as the "Parties."

WHEREAS, Solstice is engaged in the development of real property in Evans, Colorado, with such development commonly referred to as the "Peakview" development.

WHEREAS, the Joint Venture holds the rights to receive reimbursements for connection to the Ashcroft Draw Sanitary Sewer Main (the "Sanitary Sewer Main"), with such rights stemming from that certain Reimbursement Agreement between the City of Evans and the Joint Venture, as amended and extended by the City of Evans, including but not limited to the most recent extension of the Reimbursement Agreement through December 3, 2022.

WHEREAS, Solstice intends for the Peakview development to connect to the Sanitary Sewer Main, and accordingly will be responsible for paying reimbursement fees to the Joint Venture.

WHEREAS, by this Agreement, the Joint Venture intends to offer a discount on such reimbursement fees, provided that Solstice is in compliance with the terms below.

NOW THEREFORE, incorporating the above recitals as if fully set forth herein, the Parties hereby agree as follows:

1. **The "Standard Reimbursement."** The City of Evans has calculated that the reimbursement fees owed by Solstice in relation to Peakview's connection to the Sanitary Sewer Main would be $144,009.06 (the "Standard Reimbursement"). The Parties acknowledge and agree that, absent this Agreement (or should Solstice not make payment of the Discounted Reimbursement pursuant to the terms of this Agreement), the entirety of the Standard Reimbursement would be owed by Solstice and would be deliverable in installments over the course of the development of Peakview.

2. **The "Discounted Reimbursement."** The Joint Venture agrees to accept a discount from the Standard Reimbursement – from the $144,009.06 Standard Reimbursement down to a total of $120,000 (the "Discounted Reimbursement") – provided that the full Discounted Reimbursement amount is paid by Solstice, directly to the Joint Venture, by the earlier of: (a) December 1, 2020; or (b) within seven days after Solstice submits its first building permit on the Peakview project. Payment of such Discounted Reimbursement shall be submitted by Solstice directly to the Joint Venture (care of Meyer Farm Development, Inc.) it being understood that the Joint Venture shall be responsible for providing verification of such payment to the City of Evans as more fully described in paragraph 4 below.

3. **Untimely Payment of Discounted Reimbursement.** In the event that the Discounted Reimbursement is not submitted by the relevant date described in paragraph 2 above, Solstice will be responsible for the whole Standard Reimbursement, and nothing in this Agreement shall be deemed to have altered, amended or relieved Solstice of any obligations arising out of the Reimbursement Agreement.

4. **Verification to Evans.** Within thirty (30) days following timely payment of the Discounted Reimbursement, the Joint Venture will submit a letter to the City of Evans, signed by an authorized signatory, verifying that the Standard Reimbursement amount has been satisfied. Both Parties agree to, as reasonably necessary, advise the City of Evans of the terms of this Agreement, and to provide any reasonably necessary information requested by the City of Evans to affirm this Agreement and confirm payment of the Discounted Reimbursement if/when it is made.

5. **No waiver of other reimbursement fees, or other fees and/or rights.** The Parties expressly acknowledge and agree that the sole purpose of this Agreement is to agree to the terms surrounding a potential discount – conditioned on Solstice's timely payments as described above – of the Standard Reimbursement amount, as calculated by the City of Evans. Accordingly, the Parties expressly agree to the following:
    a. In the event that it is determined that additional reimbursement fees above the amount of the Standard Reimbursement are owed by Solstice to the Joint Venture – whether due to a change in the plans for the Peakview development or for any other reason – then Solstice shall remain responsible for all such fees above and beyond the Standard Reimbursement, even if Solstice pays the Discounted Reimbursement; and
    b. Except to the extent necessary to effectuate the Discounted Reimbursement (if timely paid), nothing in this Agreement shall be deemed:
        i. To alter or amend the Reimbursement Agreement in any way;
        ii. As a waiver by the Joint Venture of any rights under the Reimbursement Agreement; or
        iii. To relieve Solstice, the City of Evans, or any other party of any other obligations of any kind related to or arising out of the Peakview development, the Sanitary Sewer Main, or the Reimbursement Agreement.

6. **Authorization for Signatures.** The Parties represent and warrant that the undersigned signatories are fully authorized to execute this Agreement. Solstice represents and warrants that it is the proper party in interest to agree to such terms regarding reimbursement fees due by virtue of the intended connection of the Peakview development to the Sanitary Sewer Main.

7. **Counterparts.** This Agreement may be executed in counterparts, all of which shall be considered one and the same Agreement and shall become effective when the counterparts have been signed by all the parties and delivered to the other parties. Facsimile or email copies of signatures shall be effective as originals.

8. **Choice of Law.** This Agreement shall be governed by and construed in accordance with Colorado law.

9. **Entire Agreement.** This Agreement, as well as any exhibits, addenda, amendments, or ancillary agreements constitutes the entire agreement between the Parties regarding the subject matter hereof. No subsequent modification of this Agreement shall be valid unless made in writing and signed by the Parties.

[Rest of page left blank; signature page to follow]

The Parties to this Agreement Regarding Discount of Sewer Reimbursement agree to the above, as of the date of execution by all such Parties:

Ashcroft Draw Sanitary Sewer Joint Venture

By: DJ Calvin, authorized signatory

Solstice Holdings LLC

By: M. Scott Vayen, Manager

REIMBURSEMENT AGREEMENT

SANITARY SEWER MAIN

ASHCROFT DRAW SANITARY SEWER JOINT VENTURE
AND THE CITY OF EVANS, COLORADO

THIS AGREEMENT, effective December 3, 2002, by and between the City of Evans, Colorado, a municipality organized under the laws of the State of Colorado, and acting by and through its wastewater enterprise with governmental offices located at 1100 37th Street, Evans, Colorado 80620 (hereinafter referred to as "City"), and the Ashcroft Draw Sanitary Sewer Joint Venture, organized and existing under and pursuant to the laws of the State of Colorado having its principal office at 5801 West 11th Street, Suite 201, Greeley, Colorado 80634 (hereinafter referred to as "Developer"), shall provide for reimbursement for the construction of the sanitary sewer main described herein to the Developer, by the City through future users.

The parties recite and declare:

WHEREAS, by Ordinance No. 1000-96 of the City of Evans, Colorado (hereinafter referred to as "the Ordinance"), a procedure is in place such that developers of private property may seek reimbursement of costs associated with their construction of a sanitary sewer main from future users of said sanitary sewer main at the time a future user requests to obtain a sanitary sewer tap to connect to the sanitary sewer main constructed by the developer; and

WHEREAS, Developer has extended the existing sanitary sewer main of the City generally from 49th Street immediately east of Ashcroft Draw to the east side of the Saint Michaels Subdivision, as approved by the City of Greeley; and

WHEREAS, The City has participated in providing for part of the costs of the extension, specifically, surveying and design, and

WHEREAS, the City of Evans has determined the Saint Michaels Subdivision is, under Section 13.28.020 of the Ordinance, a "noncontiguous development" such that off-premise sanitary sewer mains may be constructed and the reimbursement for its construction rendered by future users; and

WHEREAS, the parties agree the four conditions of the above-mentioned Section 13.28.020 have been, or will be, complied with before reimbursement may occur; and

WHEREAS, the City of Evans and the City of Greeley have an Intergovernmental Agreement for sewage treatment services allowing the City of Evans to provide sanitary sewer treatment services to customers within a certain part of the City of Greeley; and

WHEREAS, both Developer and the City desire to enter into this Agreement in order to comply with the Ordinance;

Wherefore the parties agree as follows:

Developer may construct and initially pay for, pursuant to the parameters enumerated in Section 13.28.020 of the Ordinance, a sanitary sewer main commencing at the City's existing sanitary sewer main located at approximately 49th Street and Ashcroft Draw and terminating one half mile west of 65th Avenue, adjacent to Ashcroft Draw, more particularly described as follows:

- Phase I Sanitary Sewer Main (36") - from 49th Street east of Ashcroft Draw, northwesterly along the east side of Ashcroft Draw to 47th Avenue, a distance of approximately 7,500 L.F.
- Phase II Sanitary Sewer Main (24") - along 37th Street from 47th Avenue on the east, westerly to its intersection with Ashcroft Draw, thence northwesterly along the north side of Ashcroft Draw to a point one half mile west, a distance of approximately 10,500 L.F.

Both Developer and the City have approved the location of the sanitary sewer main along the above route and acknowledge that a sanitary sewer main located therein will comply with City specifications and service needs with respect to wastewater disposal for the proposed drainage/service area.

NOW, THEREFORE, for mutual consideration, the adequacy of which is sufficient, Developer and the City hereby enter into this Agreement and further do hereby agree to the procedures outlined below for the partial reimbursement to Developers for the construction costs associated with the sanitary sewer main:

I. Construction Commencement

A. Construction will be in accordance with City specifications. The City has retained Jacobsen Helgoth Consultants of Lakewood, Colorado to provide a complete set of plans and specifications for the construction of said sanitary sewer main. Developer shall complete construction of the sanitary sewer main no later than April 1, 2003.

II. Cost of Construction

A. The initial total cost of construction of the sanitary sewer main, sized and using a slope that is adequate to drain the drainage/service area as identified, is $1,750,000. This cost includes, but is not limited to: (1) "drainage/service area" evaluation; (2) right-of-way/easement acquisition; (3) surveying; (4) engineering and design; (5) construction; (6) testing; (7) reclamation; (8) construction loan fees and interest; (9) permits and fees. The

actual cost of construction as provided for above shall be used to determine the total base amount that is subject to reimbursement to the City of Evans for surveying and design and the Developer. The City shall solely determine the costs eligible for reimbursement.

III. Calculation of Reimbursement

A. The City contracted with Jacobsen Helgoth Consultants of Lakewood, Colorado, to evaluate and deliver a report identifying the factors that both the City and Developer agree will serve as the basis for the determination of reimbursement as follows:

1. the drainage/service area of the proposed sanitary sewer main (see attached map);
2. the anticipated "types of use" per property within said drainage/service area based upon the City's February, 1996 Comprehensive Plan and/or preliminary development plans;
3. the number of acres within each property (further broken down into either residential or commercial uses);
4. the number of "units" per acre and total number of "units" per property;

B. The Jacobsen Helgoth report (attached and incorporated with this Agreement) estimates that the average flow of the proposed sanitary sewer main will be 501,000 GPD, with a peak flow of 2,000,000 GPD (4.0 peaking factor). The estimated flow from property owned by Developer within the drainage/service area is 10% of the total capacity. The estimated flow from the balance of the properties within the drainage/service area will utilize 90% of the total capacity.

C. The City has determined that the amount the Developer is eligible for reimbursement of the actual construction costs incurred, is limited to $1,365,000, the "eligible costs". During the first five (5) years of the agreement, Developer may be reimbursed an amount equal to 120% of said eligible costs associated with the construction of the sanitary sewer main, together with accrued interest on the 120% sum. Annual interest shall accrue at a rate equal to the ten-year U.S. treasury bills at the time of acceptance by the City and shall commence on the first of the month following the date of final acceptance of construction of the project by the City, such date being March 18, 2003. Therefore the total amount eligible for reimbursement during the first five years of this Agreement shall be $1,638,000 plus accrued interest compounded annually at said Ten-year U.S. Treasury Bill rate of 3.9%. During the remaining 5 years of the 1st ten year term of the agreement, Developer may be reimbursed an amount equal to 130% of said eligible costs, together with accrued interest compounded annually on the 130% sum at said interest rate. Therefore the total amount eligible for reimbursement after the first five years of this Agreement shall be $1,774,500 plus accrued interest compounded annually at said rate.

D. The City of Evans shall be reimbursed an amount equal to 120% of all costs associated with the surveying and design of said sanitary sewer main plus accrued interest of 3.9% compounded annually. City's eligible costs are initially estimated to be $100,000.

E. Developer shall be reimbursed a portion of all costs associated with the construction of the proposed sanitary sewer main at the rates described below to be added as a surcharge to the City of Evans and/or the City of Greeley wastewater tap fees to be charged to those properties which have been determined to benefit or future users of the sewer line constructed by Developers plus the applicable interest at the rate of 3.9% per annum compounded annually.

1. Residential Uses. For residential uses, the rate of reimbursement shall be calculated based upon the gross area of each development at the time of final platting. Furthermore the rate due and payable before adding accrued interest is based upon the following table according to the benefit area of the development requesting service:

Basin/Sub-basin	Initial per acre Surcharge Rate	120% per acre Surcharge Rate	130% per acre Surcharge Rate
1	$787.08	$944.50	$1,023.21
2A	$787.08	$944.50	$1,023.21
2B	$596.99	$716.39	$776.09
2C	$491.73	$590.08	$639.25
2D	Non-tributary Area		
2E	$364.48	$437.37	$473.82
2F	$186.95	$224.34	$243.04

2. Commercial Uses. Developer shall be reimbursed a portion of all costs associated with the sanitary sewer main at the same rate as residential uses.

F. The City's estimated costs associated with surveying and design of said sanitary sewer main are $100,000. The City of Evans shall be reimbursed an amount equal to 120% of said costs associated with the surveying and design of said sanitary sewer main, i.e. if $100,000 basic costs then $120,000 plus accrued interest compounded annually at the rate of 3.9% per annum. Said reimbursement shall be paid at the rate of $100.00/per single family equivalent sewer tap. The definition of a single family equivalent tap shall be as per the City of Evans Water and Sewer Standards.

G. The term for reimbursement shall be ten (10) years from the date of acceptance by the City of the completed sanitary sewer main. The City agrees that application by Developer within this time shall constitute timely application pursuant to Section 13.28.010 of the Ordinance. In addition, pursuant to Section 13.28.020(2) of the

Ordinance, this term may be renewed for additional five (5) year term upon petition by Developer prior to the end of the initial term. No additional interest shall accrue beyond the initial 10 year term. This agreement shall terminate at the end of the initial term, the end of any five (5) year extension, or at which time the Developer has been reimbursed for all funds provided in this agreement, whichever shall first occur.

H. All reimbursement payments shall be transmitted and paid directly to Developer by the City on a monthly basis at the following address:

Ashcroft Draw Sanitary Sewer Joint Venture
5801 West 11th Street, Suite 201
Greeley, Colorado 80634

I. The City, pursuant to Section 13.28.040 of the Ordinance, shall assume no liability for the receipt of these payments. The City shall have no responsibility under the terms of this Agreement to ensure that any individual, bank, or other organization, who may have an interest in this Agreement, properly deals with said funds. The City shall not recognize any recipients or claimants other than the named individual, bank, or other organization. This Agreement does not constitute a lien or restriction upon City revenues.

J. Both parties agree that the individual surcharge fees described in Paragraphs III.D. and F. are fair and reasonable fees to be assessed to any party requesting to connect to the proposed sanitary sewer main and therefore agree that these fees shall remain fixed as shown unless actual design costs overrun by 10% or more, in which case, the fees may be increased proportionately. There shall be no decrease in the individual surcharge fees in the event City's actual costs are below $100,000.

K. Both parties agree that the individual surcharge fees described in Paragraphs III.C. and E. are fair and reasonable fees to be assessed to any party requesting to connect to the proposed sanitary sewer main and therefore agree that these fees shall remain fixed as shown unless actual construction costs overrun by 10% or more, in which case, the fees may be increased proportionately. There shall be no decrease in the individual surcharge fees in the event Developer's actual costs are below $1,365,000.

IV. Connection to Sanitary Sewer Main

A. Any party desiring to connect to the proposed sanitary sewer main during construction shall apply to the City and make payment of the appropriate tap and surcharge fees to the City at least twenty-one (21) days prior to the date actual construction is scheduled to commence or Developer shall not be obligated to make said connection during the construction period. Any additional costs to make a connection beyond the actual sanitary sewer main shall be borne entirely by the party requesting said

connection. The City agrees to inform any such party that the proposed sanitary sewer main will not be operational until the acceptance of the same by the City.

V. **Paragraph Headings.** The titles to the paragraphs of this Agreement are solely for the convenience of the parties and shall not be used to explain, modify, simplify, or aid in the interpretation of the provisions of this Agreement.

VI. **Entire Agreement.** This Agreement shall constitute the entire agreement between the parties and any prior understanding or presentation of any kind preceding the date of this Agreement shall not be binding upon any party except to the extent incorporated in this Agreement.

The foregoing Agreement constitutes approval of eligibility for reimbursement under Section 13.28.030 of the Ordinance and is approved and accepted as stated herein on this 3rd day of March, 2003, and shall be binding on both Developer and the City provided that Developer completes the construction of said proposed sanitary sewer main.

ATTEST:

CITY OF EVANS SEAL COLORADO

Kim Betz, City Clerk

CITY OF EVANS

Sherry Melby, Mayor

APPROVED AS TO FORM:

R. Russell Anson, City Attorney

APPROVED AS TO SUBSTANCE:

Bruce Eisenhauer, City Manager

ASHCROFT DRAW SANITARY SEWER JOINT VENTURE

Luckeroth Development Company, LLC., Joint Venturer

Authorized Signatory

By: Adam Luckeroth, Member and Manager

ASHCROFT DRAW SANITARY SEWER JOINT VENTURE

Meyer Farm Development, Inc., Joint Venturer

Authorized Signatory

By: David J. Calvin, President

CITY OF EVANS

RESOLUTION NO. 27-2003

A RESOLUTION ACCEPTING COMPLETED PUBLIC IMPROVEMENTS FOR THE ASHCROFT DRAW SANITARY SEWER MAIN, CITY OF EVANS, COUNTY OF WELD, STATE OF COLORADO

WHEREAS, Ordinance No. 025-00 of the City of Evans, Colorado, provides a reimbursement procedure for water, sewer, and storm sewer systems, and

WHEREAS, the City and the Ashcroft Draw Sanitary Sewer Joint Venture entered into a reimbursement agreement that provided for the construction of a sanitary sewer main that serves the Ashcroft Draw drainage basin, and

WHEREAS, Ordinance No. 025-00 and the reimbursement agreement allows for the addition of an interest component to be applied to the reimbursement costs with said interest component effective as of the date of final approval by the City Council.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF EVANS, COLORADO:

A. Based upon final inspections by the City's Public Works Department, the Ashcroft Draw Sanitary Sewer Main is hereby initially accepted as per the terms of initial acceptance within the City's Standard Specifications for Water Distribution and Wastewater Collection Systems.

B. The interest rate to be applied to the initial ten year period of the reimbursement agreements shall be 3.9%, which is the current ten year U.S. Treasury Bill rate.

THEREFORE, the City Council of the City of Evans accepts such public improvements and establishes the interest rate at 3.9%.

PASSED, APPROVED AND ADOPTED at a regular meeting of the Council of the City of Evans on this 18th day of March, 2003.

ATTEST:

Kim Bety
City Clerk

CITY OF EVANS, COLORADO

By: Sherry Nelsky
Mayor

CITY OF EVANS, COLORADO

RESOLUTION NO. 18-2012

A RESOLUTION APPROVING A FIVE YEAR EXTENSION TO THE ASHCROFT DRAW SANITARY SEWER REIMBURSEMENT AGREEMENT

WHEREAS, per Chapter 13.28 of the Evans Municipal Code, a reimbursement procedure has been established to provide an incentive for developers of private property to pay for the initial construction of water, sanitary sewer, and storm sewer systems; and

WHEREAS, the City has established a process by which developers of private property can recoup a portion of the initial cost of water, sanitary sewer, and storm sewer mains brought to the site from some distance offsite; and

WHEREAS, the City entered into one such agreement on December 3, 2002, with developers who constructed the Ashcroft Draw Sanitary Sewer Main; and

WHEREAS, the initial ten year term of the reimbursement agreement is scheduled to expire on December 3, 2012; and

WHEREAS, Chapter 13.28 allows for the extension of the initial ten year term of reimbursement agreements if the developer has made such request prior to the expiration of the initial ten year period; and

WHEREAS, the Water and Sewer Board has reviewed the request for an extension and recommends that City Council approve a five year extension.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF EVANS, COLORADO, that the decision of the Water and Sewer Board is hereby upheld and a 5-year extension to the Ashcroft Draw Sanitary Sewer Reimbursement agreement is hereby granted.

1) The Ashcroft Draw Sanitary Sewer Reimbursement Agreement is hereby extended for an additional five year term.
2) The expiration date of the Ashcroft Draw Sanitary Sewer Reimbursement Agreement is therefore December 3, 2017.

PASSED, APPROVED, AND ADOPTED at a regular meeting of the City Council of the City of Evans on this 15th day of May, 2012.

ATTEST: CITY OF EVANS, COLORADO

Jessica Scheppe
City Clerk

By: _____
Mayor

CITY OF EVANS SEAL COLORADO

CITY OF EVANS, COLORADO

RESOLUTION NO. 07-2018

A RESOLUTION APPROVING A FIVE-YEAR EXTENSION TO THE ASHCROFT DRAW SANITARY SEWER REIMBURSEMENT AGREEMENT

WHEREAS, the City Council of the City of Evans, Colorado, (the "City Council") pursuant to Colorado statute and the Evans City Charter, is vested with the authority of administering the affairs of the City of Evans, Colorado (the "City"); and

WHEREAS, Chapter 13.28 of the Evans Municipal Code establishes a reimbursement procedure to provide an incentive for developers of private property to pay for the initial construction of water, sanitary sewer, and storm water systems; and

WHEREAS, the City has established a process by which developers of private property can recoup a portion of the initial cost of water, sanitary sewer, and storm sewer mains brought to the site from some distance offsite; and

WHEREAS, the City entered into one such agreement on December 3, 2002, with developers who constructed the Ashcroft Draw Sanitary Sewer Main (the "Agreement"); and

WHEREAS, Chapter 13.28 of the Evans Municipal Code allows for the extension of the initial ten-year term of reimbursement agreements if the developer has made such request prior to the expiration of the initial ten-year period; and

WHEREAS, the Water and Sewer Board has received and reviewed the request for an extension and recommends that the City Council approve an additional five-year extension.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF EVANS, COLORADO AS FOLLOWS:

1. The City Council upholds the decision of the Water and Sewer Board and a five-year extension to the Ashcroft Draw Sanitary Sewer Reimbursement Agreement is hereby granted.

2. The expiration date of the Ashcroft Draw Sanitary Sewer Reimbursement Agreement is therefore December 3, 2022.

3. Severability. If any article, section, paragraph, sentence, clause, or phrase of this Resolution is held to be unconstitutional or invalid for any reason such decision shall not affect the validity or constitutionality of the remaining portions of this Resolution. The City Council hereby declares that it would have passed this resolution and each part or parts thereof irrespective of the fact that any one part or parts be declared unconstitutional or invalid.

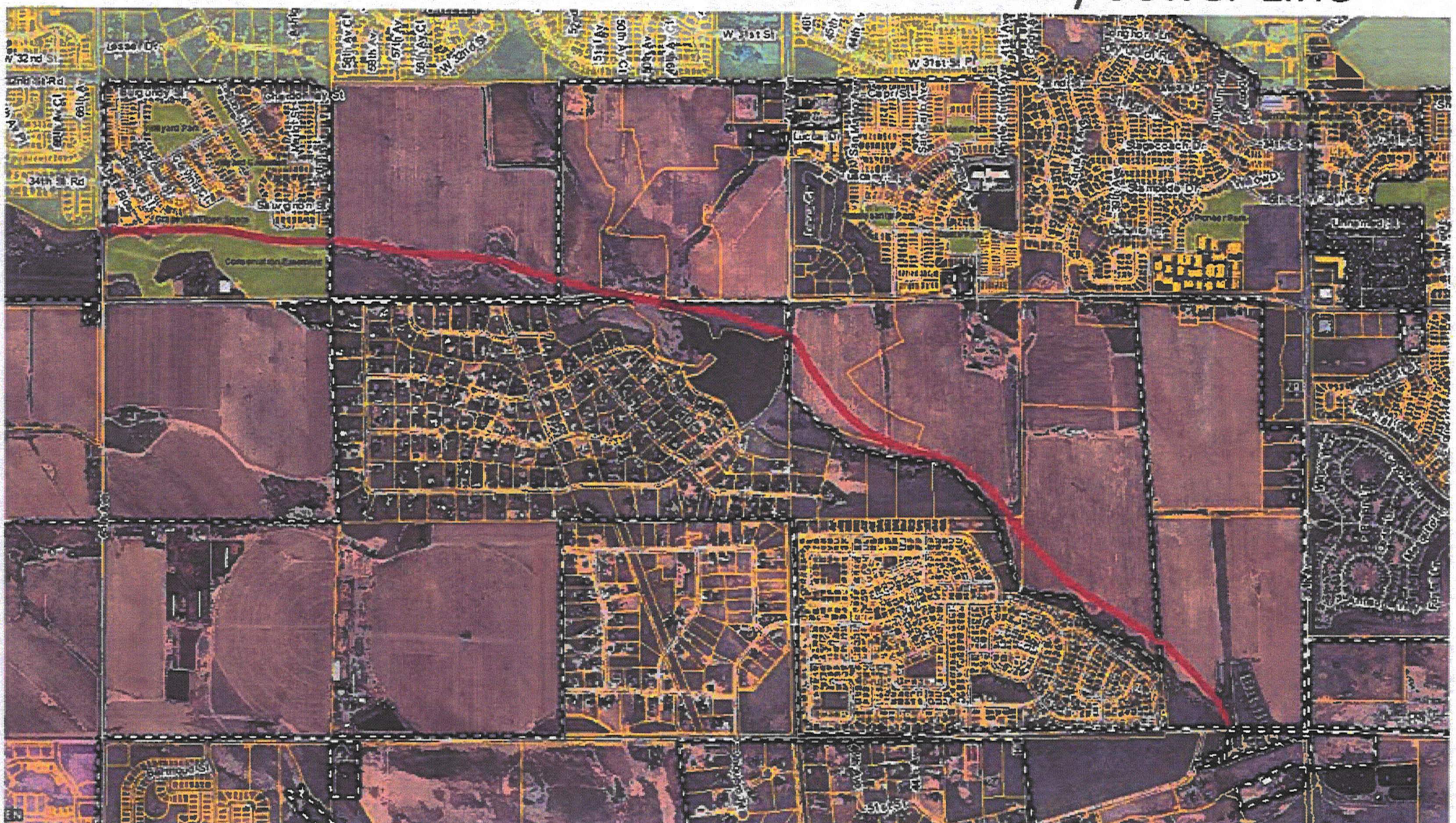
PASSED AND ADOPTED AT A REGULAR MEETING OF THE CITY COUNCIL OF THE CITY OF EVANS ON THIS 6TH DAY OF FEBRUARY, 2018.

ATTEST: CITY OF EVANS, COLORADO

CITY OF EVANS SEAL COLORADO

Raegan Robb, City Clerk BY: John L. Morris, Mayor

General Location of Ashcroft Draw Sanitary Sewer Line



PEAKVIEW

A Planned Unit Development

Preliminary Development Guidelines

Evans, Colorado

Initial Submittal: September 28, 2018

REVISION DATES
November 7, 2018
December 20, 2018
December 27, 2018
February 8, 2019
February 27, 2019
July 18, 2019
November 7, 2019
November 13, 2019
November 15, 2019

OWNER: SOLSTICE HOLDINGS LLC
DEVELOPER: SOLISTICE DEVELOPMENT LLC
1225 17th Street - Suite 2200
Denver, Colorado 80202

PREPARED BY:
LAI Design Group
88 Inverness Circle East, Suite J-101
Englewood, Colorado 80112
Attn: Jennifer Carpenter
jcarpenter@laidesigngroup.com
(303) 734-1777

Job No. 171096

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1.0 STATEMENT OF INTENT

Peakview is a proposed Planned Unit Development (PUD) located in Evans, Colorado at the southeast corner of 37th Street and Two Rivers Parkway while extending east to 65th Avenue. This location serves as a gateway to the City of Evans from the west. The +/-225.430-acre site proposes a neighborhood commercial center, a variety of housing types, a community center with pool, neighborhood parks and a network of trails. The project is located adjacent to Prairie Heights Middle School and a future city park to be developed by the City of Evans.

The proposed variety of housing types may include: condominiums, apartments, townhomes, and a diversity of single family attached and/or detached housing types. This selection will provide quality housing for a range of lifestyles and income levels, while encouraging a community for generational living. Clusters of housing types are mixed throughout the community creating inviting streetscapes and multiple enclaves for residents to choose from. A neighborhood commercial center is proposed for northwest corner and will feature; but not limited to a medium grocer, small retail shops and food establishments.

The development has great access to and from Interstate 25 along 37th Street. A "spine" or a public collector road will intersect at 37th Street and run south through the site. A network of collector and local public streets connect to the spine and link in both directions to the residential areas of the community. This collector road will be stubbed at the south edge of the site for future expansion as development occurs south of the Peakview community. The east west collectors will tie to the west at Two Rivers Parkway and to the east at 65th Avenue.

In addition to the network of required walks provided on the tree-lined streets throughout the community, the development will also provide trail corridors throughout. The trail system will connect across the site through planning areas, to the community center, to the neighborhood commercial center and to the future city park and existing school.

As part of the Planned Unit Development (PUD) process, variances from the City of Evans' Development Standards of the Land Use Code were accepted. These variances will be specifically called out. Otherwise, the Land Use Code and Development Standards Prevail.

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1.1 WELD COUNTY RIGHT TO FARM STATEMENT

Weld County is one of the most productive agricultural counties in the United States, typically ranking in the top ten counties in the country in total market value of agricultural products sold. The rural areas of Weld County may be open and spacious, but they are intensively used for agriculture. Persons moving into a rural area must recognize and accept there are drawbacks, including conflicts with long-standing agricultural practices and a lower level of services than in town. Along with the drawbacks come the incentives which attract urban dwellers to relocate to rural areas: open views, spaciousness, wildlife, lack of city noise and congestion, and the rural atmosphere and way of life. Without neighboring farms, those features which attract urban dwellers to rural Weld County would quickly be gone forever.

Agricultural users of the land should not be expected to change their long-established agricultural practices to accommodate the intrusions of urban users into a rural area. Well-run agricultural activities will generate off-site impacts, including noise from tractors and equipment; slow-moving farm vehicles on rural roads; dust from animal pens, field work, harvest and gravel roads; odor from animal confinement, silage and manure; smoke from ditch burning; flies and mosquitoes; hunting and trapping activities; shooting sports, legal hazing of nuisance wildlife; and the use of pesticides and fertilizers in the fields, including the use of aerial spraying. It is common practice for agricultural producers to utilize an accumulation of agricultural machinery and supplies to assist in their agricultural operations. A concentration of miscellaneous agricultural materials often produces a visual disparity between rural and urban areas of the County. Section 35-3.5-102, C.R.S., provides that an agricultural operation shall not be found to be a public or private nuisance if the agricultural operation alleged to be a nuisance employs methods or practices that are commonly or reasonably associated with agricultural production.

Water has been, and continues to be, the lifeline for the agricultural community. It is unrealistic to assume that ditches and reservoirs may simply be moved "out of the way" of residential development. When moving to the County, property owners and residents must realize they cannot take water from irrigation ditches, lakes or other structures, unless they have an adjudicated right to the water.

Weld County covers a land area of approximately four thousand (4,000) square miles in size (twice the size of the State of Delaware) with more than three thousand seven hundred (3,700) miles of state and County roads outside of municipalities. The sheer magnitude of the area to be served stretches available resources. Law enforcement is based on responses to complaints more than on patrols of the County, and the distances which must be traveled may delay all emergency responses, including law enforcement, ambulance and fire. Fire protection is usually provided by volunteers who must leave their jobs and families to respond to emergencies. County gravel roads, no matter how often they are bladed, will not provide the same kind of surface expected from a paved road. Snow removal priorities mean that roads from subdivisions to arterials may not be cleared for several days after a major snowstorm. Services in rural areas, in many cases, will not be equivalent to municipal services. Rural dwellers must, by necessity, be more self-sufficient than urban dwellers.

People are exposed to different hazards in the County than in an urban or suburban setting. Farm equipment and oil field equipment, ponds and irrigation ditches, electrical power for pumps and center pivot operations, high-speed traffic, sand burs, puncture vines, territorial farm dogs and livestock and open burning present real threats. Controlling children's activities is important, not only for their safety, but also for the protection of the farmer's livelihood.

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2.0 PUD SPECIFIC STANDARDS (VARIANCE FROM THE CITY OF EVANS CODE)

Section 18.07.070 - Landscaping

Homeowners and builders are strongly encouraged to plant trees along adjacent parkways within two (2) years of the date of the original occupancy certificate for any single- or two-family dwelling in accordance with the following provisions: Such trees shall be shade trees.

Variance from Code

Where front setbacks are less than 20' an ornamental tree shall be required within that front setback. If a landscape tract is proposed between the front lot line and the Right-of Way, the City of Evans Design Standards for such application shall be followed.

Justification for Variance

Shallow front yards, that are a result of creating residential lots with attainable housing products, do not leave adequate space for shade tree growth. Required street trees that meet right-of-way landscape requirements will create a continuous and beautiful streetscape.

Section 18.07.040 - Architectural Standards

All Residential Design shall follow City of Evans Design Standards with the exception of the following changes. The following words and phrases shall be defined as follows:

Section 18.07.040 Stone or brick wainscot means that at least the lowest two (2) feet of siding on the front façade, including a two-foot wraparound to the side façade is covered with stone or brick.

Variance from Code

Stone or brick wainscot means that at least the lowest three (3) feet of siding on the front façade, including a two-foot wraparound to the side façade is covered with stone or brick.

Justification for Variance

This deviation allows for maximum flexibility of multiple builders and changing market trends.

Section 18.07.040 Three-foot offset from adjacent houses means the plane of the structure nearest the front property line is at least three (3) feet closer to or farther from the front property line than the structures nearest the front property lines on either adjacent lot.

Variance from Code

Three-foot offset from adjacent house is not required. which would mean the plane of the structure nearest the front property line is at least three (3) feet closer to or farther from the front property line than the structures nearest the front property lines on either adjacent lot.

Justification for Variance

This deviation allows for maximum flexibility of multiple builders and changing market trends.

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3.0 ARCHITECTURAL DESIGN REVIEW PROCESS

Site plan approval for properties and projects within this approved P.U.D. are required, unless a development agreement states otherwise, to ensure that the approved design standards within this P.U.D. are met. The builder review process for architecture and site plans within an approved P.U.D. shall follow the steps below. This process shall not be a substitute or supersede the City of Evans Site Plan Review Process (Section 18.25.050 B and B.1), but in addition to.

SUBMITTAL NO. 1 TO THE DESIGN REVIEW BOARD (DRB) PART OF THE METRO DISTRICT

Concept Design Phase (within 45 days of contract execution)

1. Concept Floor Plans
    - Square footage (standard and optional)
    - Bedroom count
    - Garage type
    - 2 sets on 11 x 17 paper
2. Exterior Elevations (All Four Sides)
    - Preliminary material call-outs
    - Color palettes
3. Landscape Plans
4. Digital Copies

The Design Review Board (DRB) will review within two weeks of submittal to ensure the architecture, materials, and colors meet the intent and quality of the Design Guidelines. If appropriate, a meeting will be set up to review comments in person.

SUBMITTAL NO. 2 TO THE DESIGN REVIEW BOARD (DRB) PART OF THE METRO DISTRICT

Construction Document Phase: Before submitting for a building permit, the builder will be required to have approval from the DRB.

1. Full Set of Construction Documents
    - 2 sets on 11 x 17 paper (building & landscape)
2. Final Set of Exterior Color and Materials, Including the Location of each
3. Enhanced Elevations as Required
4. Digital Copies

The Design Review Board (DRB) will review within two weeks of submittal to ensure the architecture, materials, and colors meet the intent and quality of the Design Guidelines. If appropriate, a meeting will be set up to review comments in person.

Note:

1. Design Review Board approval is required prior to submitting a building permit to the City of Evans.
2. Prior to 50% build-out of Phase 1, the Metro District shall provide evidence to the City of Evans that a request for an U.S. Army Corps of Engineers permit for the expansion of Two Rivers Parkway, Freedom Parkway, and the emergency access between Two Rivers Parkway and Luminance Street within Wetland Area 1 has been made. (See Section 8.3 for wetland map.)
3. No building permits shall be issued for Filing 3 until the U.S. Army Corps of Engineers has provided authorization for impact to Wetland Area 4

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4.0 USE STANDARDS

Listed below are permitted and prohibited uses for the PUD. Any uses not specifically listed below as permitted or prohibited would be a special use for the P.U.D. and require review and approval by the City of Evans. Any uses permitted below that require special licenses will still be required to obtain any city or state permits or licenses in addition to any review required by the City of Evans.

4.1 PERMITTED USES

A. Residential Zone Districts	B. Commercial Zone Districts
1. Accessory Building/Structure*	1. Accessory Use
2. Accessory Uses*	2. Community Facilities
3. Community Facilities	3. Detention or Retention Facilities
4. Detention or Retention Facilities	4. Multifamily Dwellings*
5. Single-Family Dwellings	5. Townhome Dwellings*
6. Two-Family Dwellings	6. Condominium Dwellings*
7. Multifamily Dwellings**	7. Apartments*
8. Townhome Dwellings**	8. Kennel
9. Condominium Dwellings**	9. Mini Storage Units
10. Home Occupation	10. Office and Financial Use
11. Park, Open Space, and Pedestrian Trails	11. Parking Lot, Off-Street*
	12. Personal Service Establishments
	13. Park, Open Space, and Pedestrian Trails
**Special exception to be made by the Design Review Board (DRB) with City Approval.*	14. Retail Uses
	15. Retail Uses, Intensive, Small-scale
	16. Theater*
***Accessory structures/buildings will be prohibited with these uses*	*Accessory use to Primary Commercial Use

Note: Accessory uses, structures or buildings shall not be established prior to a principal use, except in the AG zone district, nor shall an accessory use be permitted without an associated principal use on the same lot.

4.2 PROHIBITED USES

1. Adult Business	11. Group Homes	20. Recreational Vehicle Storage
2. Auction Yard	12. Hospital	21. RV Park/Campground
3. Car Wash Facilities (Stand Alone)	13. Salvage Yard	22. Repair Shop
4. Cemetery	14. Manufacturing/Assembly Plant	23. Research Laboratory
5. Commercial Residence	15. Mobile Home	24. Security Residence
6. Congregate Residence	16. Mortuary or Funeral Home	25. Staff Supervised Residential Facilities
7. Crematorium	17. Motor Vehicle, Recreational, or Utility, Private Sales of	26. Transportation Facility
8. Factory-Built Housing	18. Outdoor Sales Lot	27. Vocational School
9. Flammable Liquid & Gas Storage	19. Pawn Broker	28. Warehouse
10. Flea Market		

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The following uses are not specifically defined in Section 19 of the City Zoning Code; however, they are prohibited in this P.U.D:

29. Animal shelter. Any business which collects stray, abandoned or owner-surrendered pet animals for redemption, adoption, sale or disposal.
30. Body art establishment. A commercial establishment where the practice of physical body adornment is performed by artists utilizing techniques, including but not limited to body piercing and tattooing; for the purposes of this PUD, ear piercing does not constitute body piercing.
31. Gambling premises. Any building, house, room, enclosure, vehicle, vessel or other place, whether open or enclosed, used or intended to be used for professional gambling.
32. Dispensary/ Marijuana establishment. Any equipment, products, or materials of any kind which are used, intended for use or designed for use in planting, propagating, cultivating, growing, harvesting, composting, manufacturing, compounding, converting, producing, processing, preparing, testing, analyzing, packaging, repacking, storing, vaporizing, or containing marijuana, or for ingesting, inhaling or otherwise introducing marijuana into the human body.

5.0 SITE DESIGN STANDARDS

P.U.D. Site plan must meet the following standards in this P.U.D. in addition to the City's code. Where conflict occurs, the standards in this P.U.D. supersede.

A. Neighborhood Identity Features – By code, the number of features required for this size of a development is four (4). The following features count towards that requirement:
   - Pocket Parks
   - Trail Systems
   - Community Facilities
   - Picnic/Barbeque Areas
   - Playground Areas

B. Variety of Lot Sizes - This PUD will have at a minimum of 5 lot sizes within the R-1 and R-2 underlying zone districts. Each planning area will have no less than 2 lot sizes to provide a mixture of residential lot types in order to avoid monotonous streetscapes. There will be no set percentage of each lot type per planning area, but an intention to have equally distributed lots within each.

C. Residential Articulation (Supportive of Variance located in Section 2.0):
   - Front façades. Each single-family and two-family dwelling on any lot platted after July 16, 2002, shall incorporate a total of sixteen (16) points worth of architectural features from the table located in 18.07.040 - Architectural Standards.
   - A minimum of three (3) roof colors for each planning area will be required
   - A minimum of five (5) different exterior color schemes will be required
   - A minimum of three (3) different floor plans with three (3) different elevations per floor plan will be offered
   - The same elevation shall not be built adjacent to or directly across from one another
   - No more than two (2) of the same floor plan shall be adjacent to each other
   - Enhanced elevations will be required on lots that side an arterial, collector or local street; as well as open space. Additional details would be continuing or incorporating credits earned for the front facades (of 16 points) listed in the City of Evans Design Standards and Code.

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D. Density Transfer - As development of the subject property progresses over time, the maximum density in each planning area may or may not be realized due to changes in builder product and the subsequent final plating of land. This approved P.U.D. allows the developer to increase the maximum density in any village by as much as 25% so long as the aggregate maximum density of the entire property does not exceed 1,097 residential units (avg. project total of 5 DU/AC). This encompasses the residential unit counts that occur within each Residential Planning Areas: 1, 2, 4, 6, 7, 8, 12, 14.

Below is a summary of the Equivalent Residential Requirements (EQRs):
Total Site EQRs = 763
EQRs required for maximum lots (1097 lots) potable needs = 468
EQRs required for irrigation system = 153
EQRs remaining for commercial potable needs = 143
*If the commercial EQR needs are less than 143, then additional water is not necessary.

E. Community Facilities - The community facilities, to include a clubhouse and pool, will be cohesively designed to invoke an inherent feeling of rustic farm and charm with a contemporary twist. Masonry elements shall be the same color and texture throughout the community while form may vary. Walls, fences, site furniture, lighting and landscape around each community facility shall follow the Design Guidelines listed within and supported by the City Code to create a unified community. The community facility is anticipated to start construction with Filing 1 Phase 1B (2020).

5.1 RESIDENTIAL BUILDING SETBACKS

Planning Area	Setback (From Lot Lines)				
	Residential	Front	Side	Corner	Rear
PA-1,2,3,4,6	Single Family Detached				
	Front-Loaded Garages	20’	5’	20’	20’
	Alley-Loaded Garages	10’ (5’ Porch)	5’	10’	4’
PA-1,7,8,12	Townhomes	10’ (5’ Porch)	0’/5’	10’	4’
PA-14	Apartments				
	From Arterial Street	25’	20’	20’	20’
	From Collector Street	20’	15’	15’	20’
	From Local Street	20’	15’	15’	20’

Residential Building Setback Notes:
1. Minimum setbacks are from public Right-of-Ways unless otherwise noted.
2. Residential lots are prohibited to have direct access to arterial or collector Right-of-Ways. Residential lots may side all Right of Ways with proper landscape buffers and setbacks.
3. Minimum open space for condo and apartment require 20% open space.
4. Right-of-Ways and lot lines to be determined by Plat.

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5.2 RESIDENTIAL LOT STANDARDS

Use	Lot Width	Minimum Lot Depth	Minimum Lot Size
Single-Family Detached	52’ & 62’	110’	5,720 SF & 6,820 SF
Single-Family Detached	40’ & 50’	110’	4,400 SF & 5,500 SF
Single-Family Detached	35’	90’	3,150 SF
Townhomes	24’	75’	1,800 SF
Condos/Apartments	N/A	N/A	N/A

Note: Articulate features of the residential structures to be used to substantiate the variance and prohibit a ‘row’ effect.

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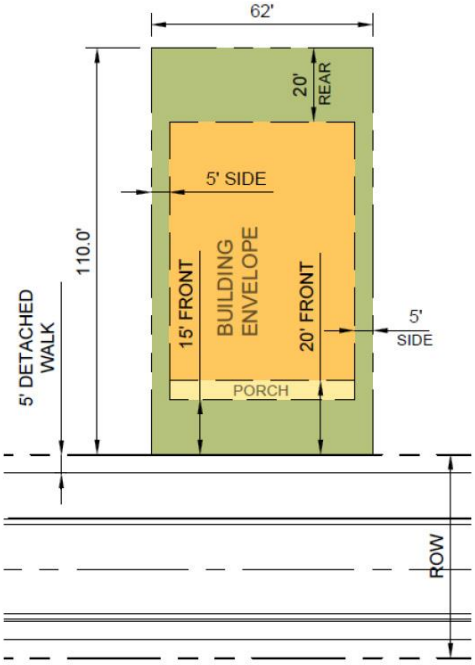
5.2 a 62' x 110' Lot *(For Illustration only)*

Building Envelope: 52' x 70'

Maximum Building Coverage = 53%

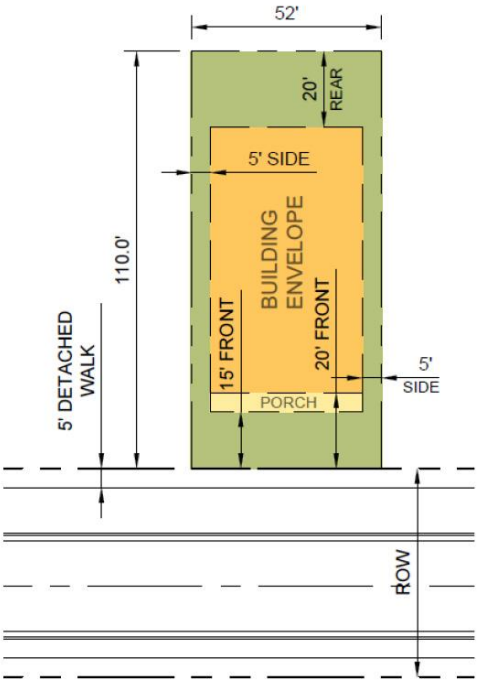


Conceptual Elevations

5.2 b 52' x 110' Lot *(For Illustration only)*

Building Envelope:42' x 70'

Maximum Building Coverage = 51%



Conceptual Elevations

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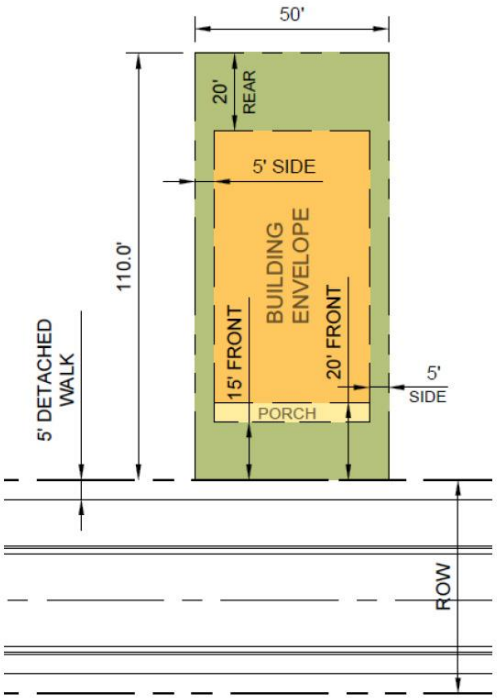
5.2 c 50' x 110' Lot *(For Illustration only)*

Building Envelope: 40' x 70'

Maximum Building Coverage = 51%

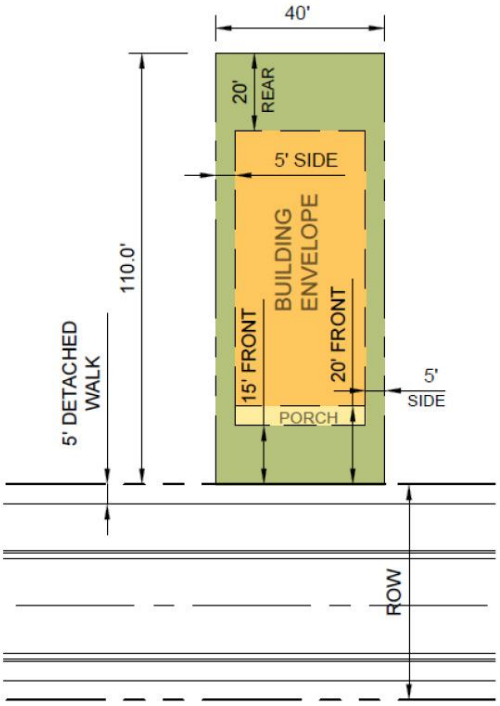


Conceptual Elevations

5.2 d 40' x 110' Lot *(For Illustration only)*

Building Envelope:30' x 70'

Maximum Building Coverage = 48%



Conceptual Elevations

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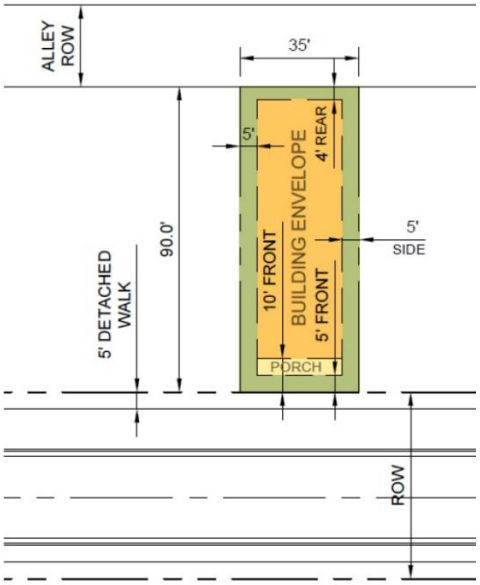
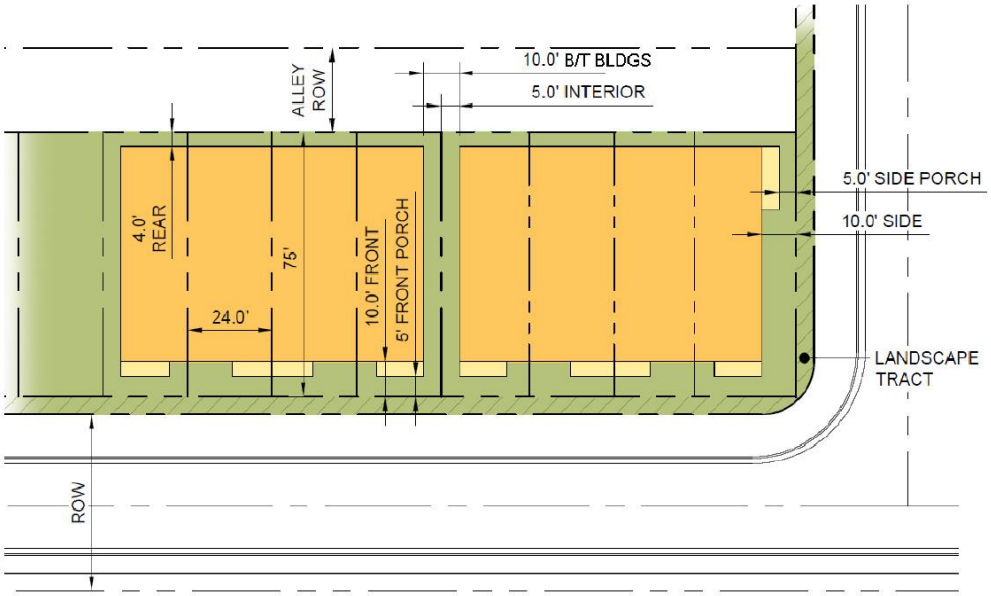
5.2 e 35' x 90' Lot (Alley-Loaded) *(For Illustration only)*

Building Envelope: 25' x 76'
Maximum Building Coverage = 60%



Conceptual Elevations

5.2 f Townhome Lots (Alley-Loaded) *(For Illustration only)*



Conceptual Elevations

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5.3 LANDSCAPING COMPLETION:

A. Landscaping on single family and duplex lots will be completed within 90 days (3 months) of closing, weather permitting.

B. Landscaping on multi-family and commercial properties shall be completed within 90 days (3 months) of closing, weather permitting.

5.4 COMMERCIAL BUILDING SETBACKS

Planning Area	Setbacks (From Lot Lines)	
PA-11	Residential Commercial	
	Min. Front	25’
	Min. Side	5’/30’ Adj. Residential
	Min. Side Street	25’
	Min. Rear	5’/30’ Adj. Residential
	Max. Lot Coverage	80%
	Min. Open Space	N/A
	Max. Building Height	35’

Commercial Building Setback Notes:

1. Minimum setbacks are from public Right-of-Ways unless otherwise noted.
2. Residential dwellings located in commercial lot will follow the 4.1 Residential Building Setbacks and Architectural Design Standards

5.5 COMMERCIAL LOT STANDARDS

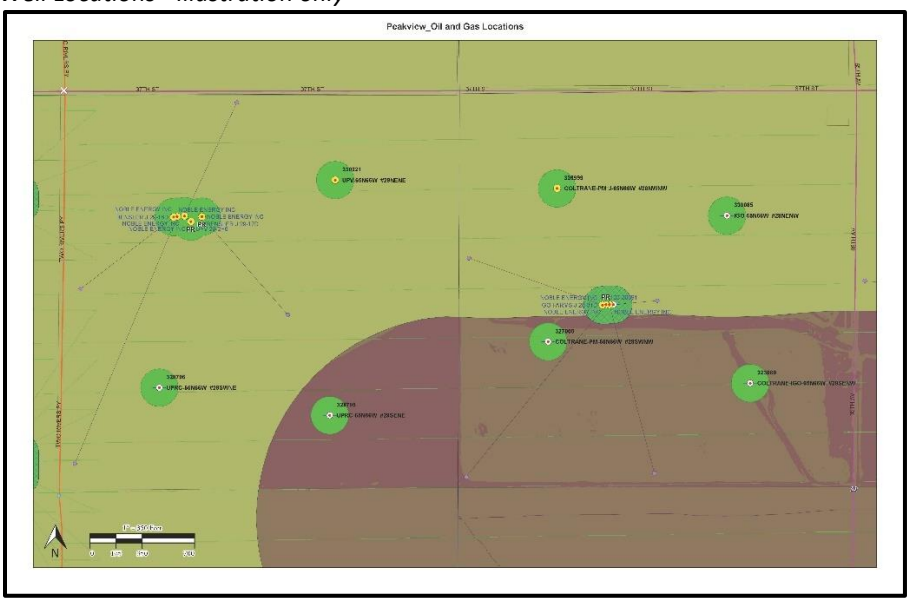
A. All commercial lots shall comply with the City of Evans Design Standards.

5.6 OIL AND GAS FACILITY REQUIREMENTS

A. Treatment for all existing oil and gas facilities shall comply with the approved Surface Use Agreements between Lessees and Surface Owner/Developer.

B. No habitable construction shall occur on top of an abandoned well.

Well Locations - Illustration only



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5.7 EASEMENTS

A. A 15' utility easement shall be located at the back of all lots for the use of irrigation and other dry utilities within the covenant. The Metro District shall have access to repair and maintain the non-potable water mainline located within this easement. The homeowner is prohibited from installing landscaping, sheds, fences (except along the property line), or anything other than sod within this easement.

6.0 OPEN SPACE REQUIREMENTS

Site plans must meet the following standards in City's code and where conflict occurs, the standards in this P.U.D. supersedes.

INTENT: The open space and trail network for the development will follow the natural drainageways of the site, follow along public easements and right of ways, as well as connect planning areas to each other. Open space and trails shall be responsive to the site's opportunities and constraints. Wayfinding signage and landscape shall clearly highlight trail access for safety and convenience. Landscape along the trail will frame view corridors, buffer adjacent land uses and create a sense of direction and purpose. Local trails will have a slight variation in scale and materials within residential parcels while being complementary to the entire system. The variation should signal that these nodes are part of the overall trail system but lead somewhere specific and imply a specific purpose.

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A. Open Space Features and Uses

Includes, but not limited to:

1. Drainage/irrigation channels and/or ditches with trails and other site amenities
2. Detention/Irrigation Ponds and other Stormwater Management Ponds with trails, landscape features or other site enhancements
3. Trail System
4. Landscape Buffers
5. Landscape Tracts
6. Oil & Gas Facilities, Easements and Buffers
7. Parks (Neighborhood and Community)
8. Playgrounds

B. Maintenance & Ownership - Open space tracts within P.U.D. will be owned and maintained by the Metropolitan District.

PARKS AND OPEN SPACE

Park Requirement Formula:
Neighborhood Park = 1097 Dwelling Units x 0.010 acres/unit
Community Park = 1097 Dwelling Units x 0.0080 acres/unit

Total Park Acreage Required	19.60 AC.
Neighborhood Park	
Required	10.97 AC (1,097 x 0.010)
Community Park	
Required	8.76 AC (1,097 x 0.008)
Neighborhood + Community Park Provided	24.05 AC.
Neighborhood Park	
Planning Area - 3	2.76 AC
Planning Area - 5	6.81 AC
Planning Area - 15	5.36 AC
Total Neighborhood Park Provided (Required)	14.93 AC (10.97 AC)
Community Park	
Planning Area-10	3.63 AC
Planning Area-13	5.49 AC
Total Community Park Provided (Required)	9.12 AC (8.76 AC)
Open Space Provided	25.74 AC
Parks & Open Space Total	49.79 AC

Note:
1. The total required park space will be satisfied while the distribution of acreage per each park category spread across various planning areas.
2. All parks will be dedicated to a Metro District for construction and maintenance.

*See Section 7.0 Planned Unit Development for Planning Area locations

Trail Corridors

Typical Ditch Crossings

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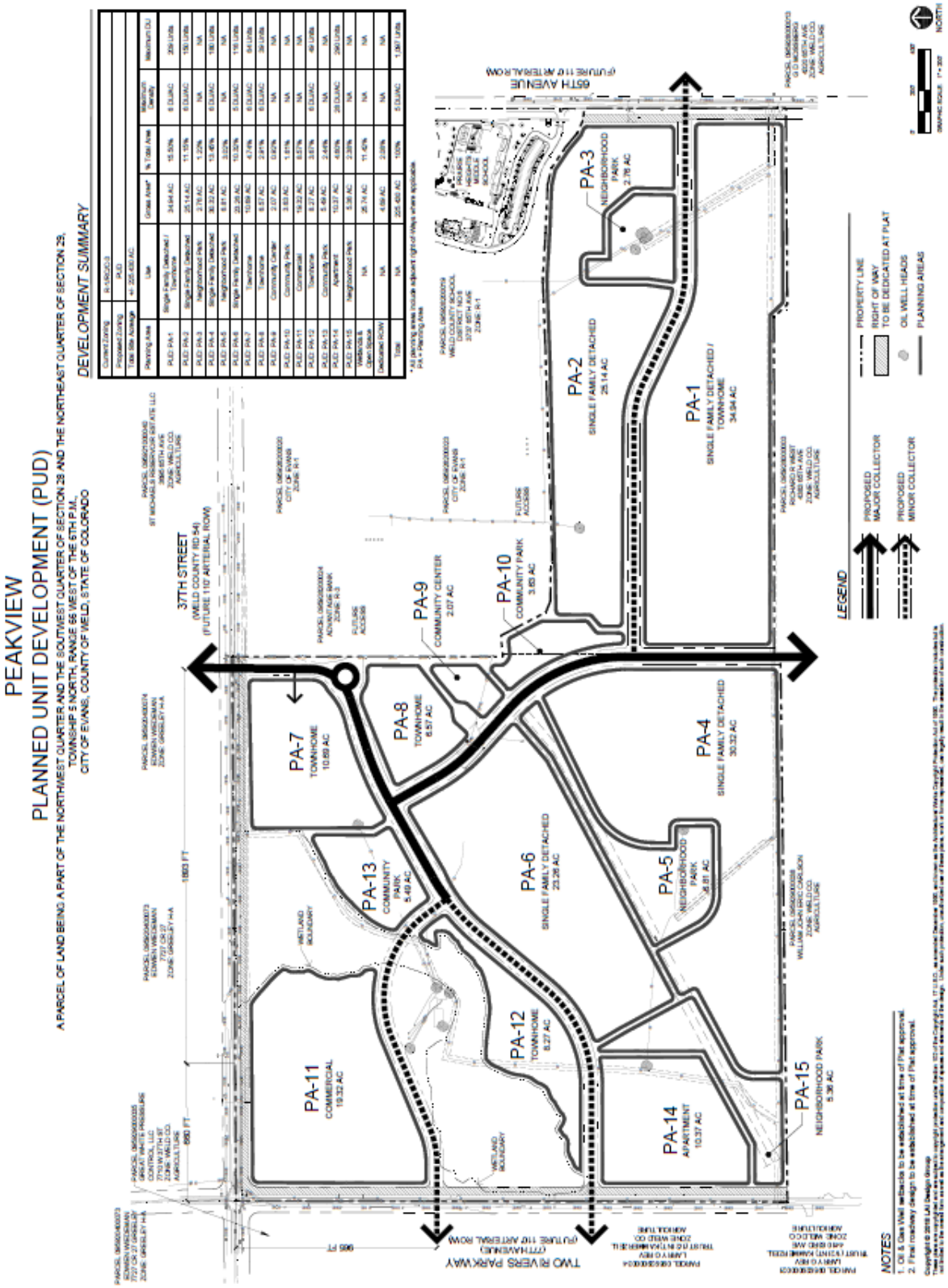
7.0 PLANNED UNIT DEVELOPMENT

**Planning Areas for reference only.*



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8.0 LANDSCAPE REQUIREMENTS

All landscape requirements shall follow City of Evans Design Standards with the exception of the following changes:

A. Single Family Residential Landscape Design Standards

Section 18.07.070 - Landscaping

Homeowners and builders are strongly encouraged to plant trees along adjacent parkways within two (2) years of the date of the original occupancy certificate for any single- or two-family dwelling in accordance with the following provisions: Such trees shall be shade trees.

Variance from Code

Where front setbacks are less than 20' an ornamental tree shall be required within that front setback. If a landscape tract is proposed between the front lot line and the Right-of Way, the City of Evans Design Standards for such application shall be followed.

Justification for Variance

Shallow front yards, that are a result of creating residential lots with attainable housing products, do not leave adequate space for shade tree growth. Required street trees that meet right-of-way landscape requirements will create a continuous and beautiful streetscape.

*Note: Trees located within the Right-of-Way, adjacent to the sidewalk will be planted and maintained by the homeowner, and shall be the property of the Metro District.

B. Multi-Family Residential Landscape Design Standards

1. Multi-family landscape requirements shall follow City of Evans Design Standards.

C. Non-Residential Landscape Design Standards

1. Non-Residential landscape requirements shall follow City of Evans Design Standards.

D. Streetscape and/or Non-Residential

1. If a landscape tract is proposed between the front lot line and the Right-of-Way the City of Evans Design Standards for such application shall be followed.

E. Minimum Plant Sizes

1. Minimum plant sizes shall follow City of Evans Design Standards.

F. Plants

1. All species of required plantings shall be selected from the planting list provided by the Parks and Recreation Department, unless otherwise approved by the City Forester.

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Ornamental Grass Plantings

Xeric and Seasonal Plantings

Typical Landscape Intent

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8.1 BUFFERS

Buffer or landscape tracts shall mean a landscape area located along the perimeter of a lot intended to screen or separate land uses from one another or from a public street.

Landscape buffers shall be used throughout the development to provide screening and separation between different land uses. A combination of trees and shrubs shall be planted per the City of Evans Standard Buffer Widths table. Parks, open space, and drainage areas shall utilize buffer areas where possible. Buffers shall be used between individual residential lots and between parcels of different housing types as specified in the City of Evans Standards. Landscape buffers will also be used around mechanical and trash enclosures in regard to screen walls and landscape material.

Illustrative Parking Lot Buffer

Note: Maintenance & Ownership – Buffers or landscape tracts within P.U.D. will be owned and maintained by the Metropolitan District.

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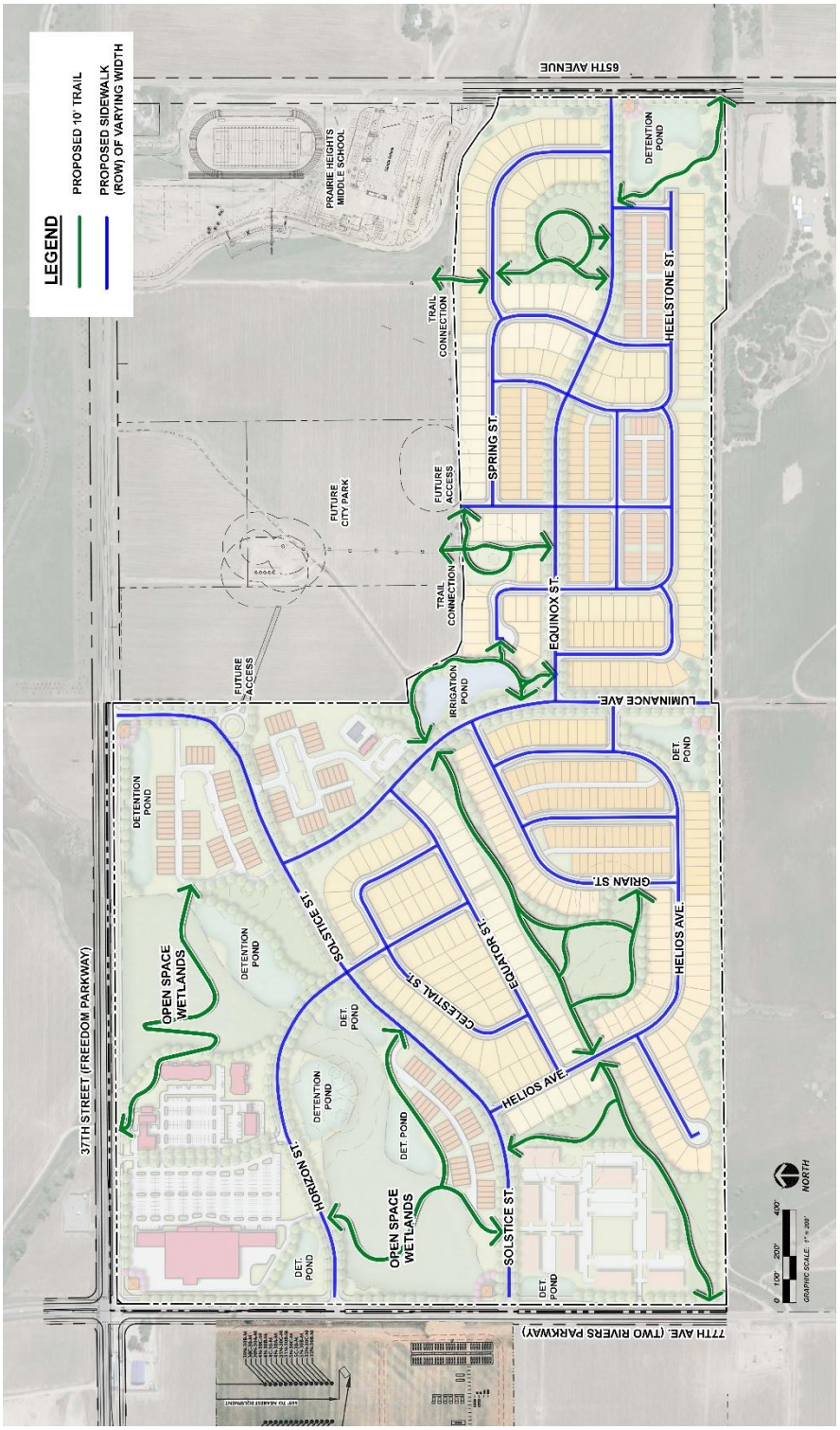
8.2 TRAILS / SIDEWALKS

Trails and sidewalks shall be used throughout the development to provide access to dedicated open space. All trails shall meet City of Evans Design Standards.



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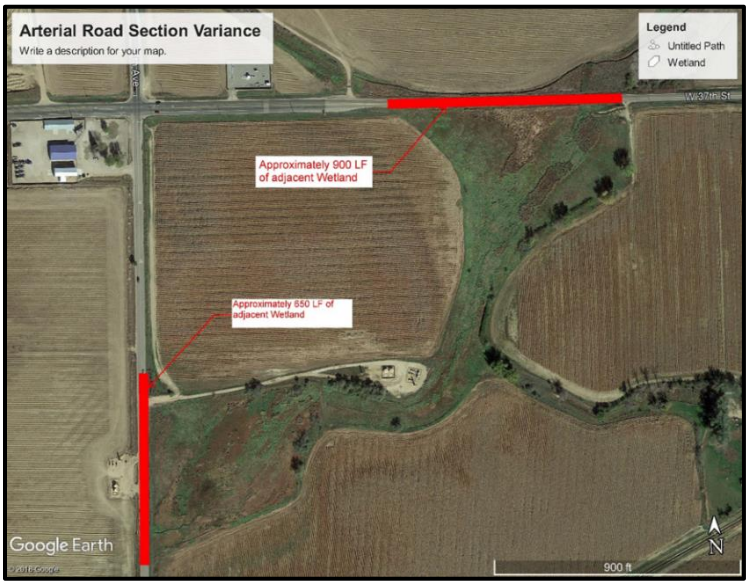
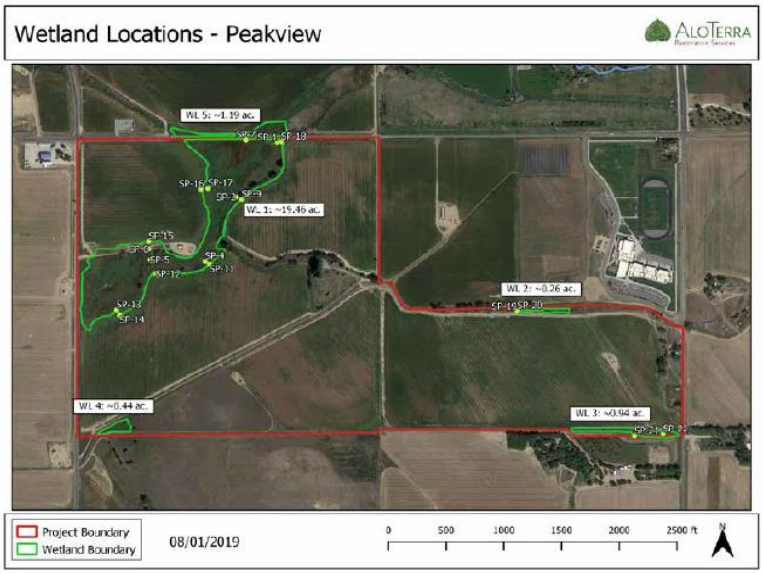
8.3 WETLANDS

Compensatory wetland mitigation will follow USACE mitigation requirements and the City of Evans Design Standards except where Variance is requested within.



(For Illustration only)

Disturbance in Wetlands three and four will be required for full buildout of all phases. At this time, a request has been made to the U.S. Army Corps of Engineers. Upon authorization, an individual permit will be issued and a grading plan will be attached.



Note: <u>Maintenance & Ownership</u> - Wetlands within P.U.D. will be owned and maintained by the Metropolitan District, who will be responsible for long-term maintenance to ensure USACE mitigation requirements and performance criteria are met.

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8.3 A – VARIANCE REQUEST

**Approved by Mark Oberschmidt on Thursday, October 3, 2019*

NORTHERN ENGINEERING

November 14, 2018

City of Evans Public Works Director

Ken Martin, PE
1100 37th Street
Evans, CO 80620-2036
(970) 475-1160

Project # 1123-002

RE: Variance Request for Section 18.32 of the City Code concerning Arterial Road Cross-sections.

Mr. Martin,

This letter serves as a variance request to the above-mentioned section of the City Code and street design standards.

Attached is a map of the Peakview Subdivision property with 77th Avenue and 37th Street shown. These roads are intended to be arterials per the standard section according to the City Staff. 37th Street (AKA. Freedom Parkway) has a section that was agreed to by the City based upon intergovernmental agreements.

The site contains jurisdictional wetlands that abut both 77th Avenue and 37th Street. Due to the limited area where mitigation of disturbance is available, we propose a modification to both of these sections to reduce the natural area disturbance. The attached exhibit shows the intended modification from the Freedom Parkway cross-section for 37th Street. We are requesting to reduce the width of the center median and be allowed to pave the center median where less than 8′ width. This reduction is assumed to only occur where not impacting intended queuing for left turn lanes. The section is also modified to attach the 10′ sidewalk and allow for a retaining wall, located 3′ from the back of walk. The right of way dedication will remain consistent through the wetland area.

We also propose to make a similar modification to the City of Evans Arterial Road Section and all roads directly adjacent to wetlands, by attaching the walk and allowing walls located 3′ behind the walk, were prudent to minimize wetland disturbance. This concept will only apply where wetlands would otherwise be disturbed for this variance request.

We believe these modifications benefit the community by maintain additional natural/wetland habitat area that would need to be re-established elsewhere on the site including within the intended area designated for commercial development. We feel that these modifications are based on sound

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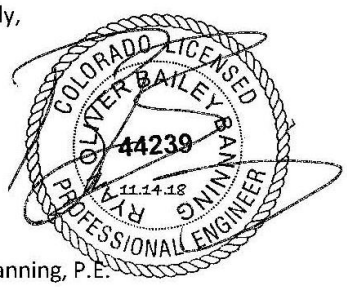
ecological and engineering principles and we request that they be allowed by the City for the subdivision currently known as the Peakview Subdivision, submitted for Preliminary plat approval. We do not believe that these modifications will cause additional cost to the City, reduce the design life of the improvements or be detrimental to the public health, safety and welfare. As such we believe that the proposed modifications will provide equal service to the public and residence of this community.

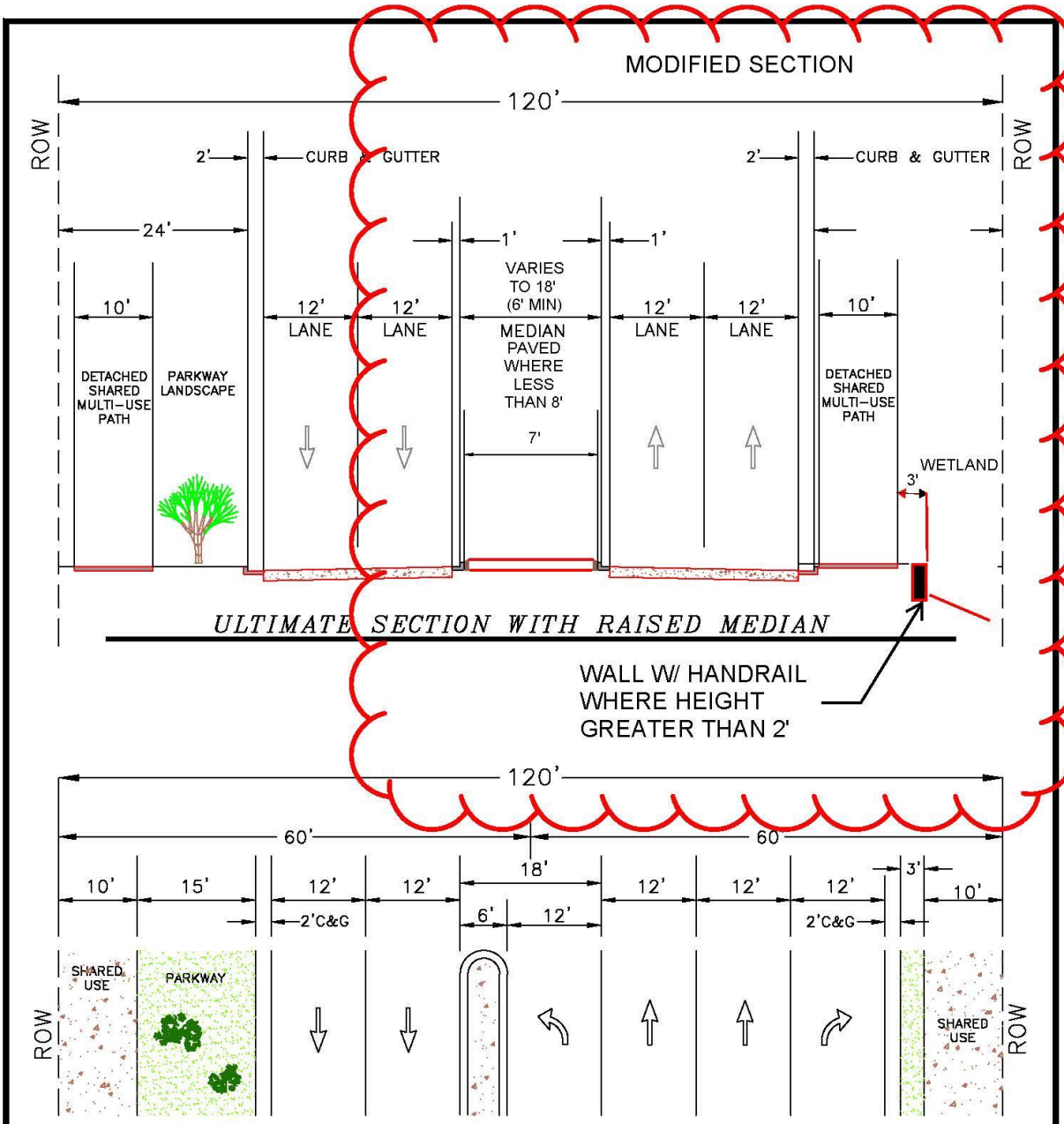
Please call if you have any questions.

Sincerely,



Ryan Banning, P.E.

Project Manager



PLAN VIEW AT INTERSECTIONS

—NOTES—

1. INSTALLATION OF STREET TREES, SHRUBS, AND GROUNDCOVER IN THE PARKWAY AND MEDIAN IS ENCOURAGED.
2. "NO PARKING" SIGNS REQUIRED ON BOTH SIDES OF STREET.

FREEDOM PARKWAY ULTIMATE CROSS-SECTION

M/DH—JHB/2009/TYPICALCOUNTYX—SECTIONS NOT TO SCALE JHB – 8/17/17

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8.4 DETENTION AREAS

Detention areas will follow State Regulations and City of Evans Design Standards.

INTENT: Detention areas shall be aesthetically pleasing with the use of native riparian and/or adaptable plant materials that enhance these areas and provide water quality if necessary. Landscape is required at the base and on all terraces created to soften them. Treatments may include the use of slope stabilization techniques and natural stone or equivalent materials as retaining walls. Areas in closer proximity to trail corridors, common areas, or special uses shall have enhanced buffers that tie in with the overall landscape concept. No trees should be implemented within 5' of the wall foundation or in areas that would compromise retaining wall geo-grid and integrity.

Note: Maintenance & Ownership - Detention areas within P.U.D. will be owned and maintained by the Metropolitan District.

Wall stagger shall be a min. of 36" wide and plantings between each wall soften the wall. Retaining walls shall comply with the City of Evans standards and shall reflect the character of the monumentations and other landscape walls. Walls, either or retaining or freestanding at such locations of bridges, detention areas and along slopes shall be in similar material to signage, architecture and/or natural features of the site.

9.0 FENCE & SCREENING REQUIREMENTS

All fence and screening requirements shall follow City of Evans Design Standards and finalized with Final Plat.

INTENT: The common area fencing is a unifying element of the community. Accordingly, one shall not alter, add, deconstruct or change the common area fencing without prior approval from the DRB and the City of Evans. Wood composite, cedar or PVC fencing will be used throughout the development. Painted metal fencing with masonry columns is permitted at Multi-Family Developments and at the Community Center or Facilities. Chain-link fencing is prohibited.

Residential lot fencing, of wood composite, cedar or PVC, shall be installed along the public Right-of-Ways and between individual lots. All open rail fences will be allowed to use 2" x 2" or 2" x 4" welded wire fabric mesh that is provided on the residential side of the fence. The wire mesh must be fastened with clear zip ties and steel edging fastening pins to secure the wire mesh along the ground. Dog runs must be made of similar fencing material and approved through the Design Review Board (DRB).

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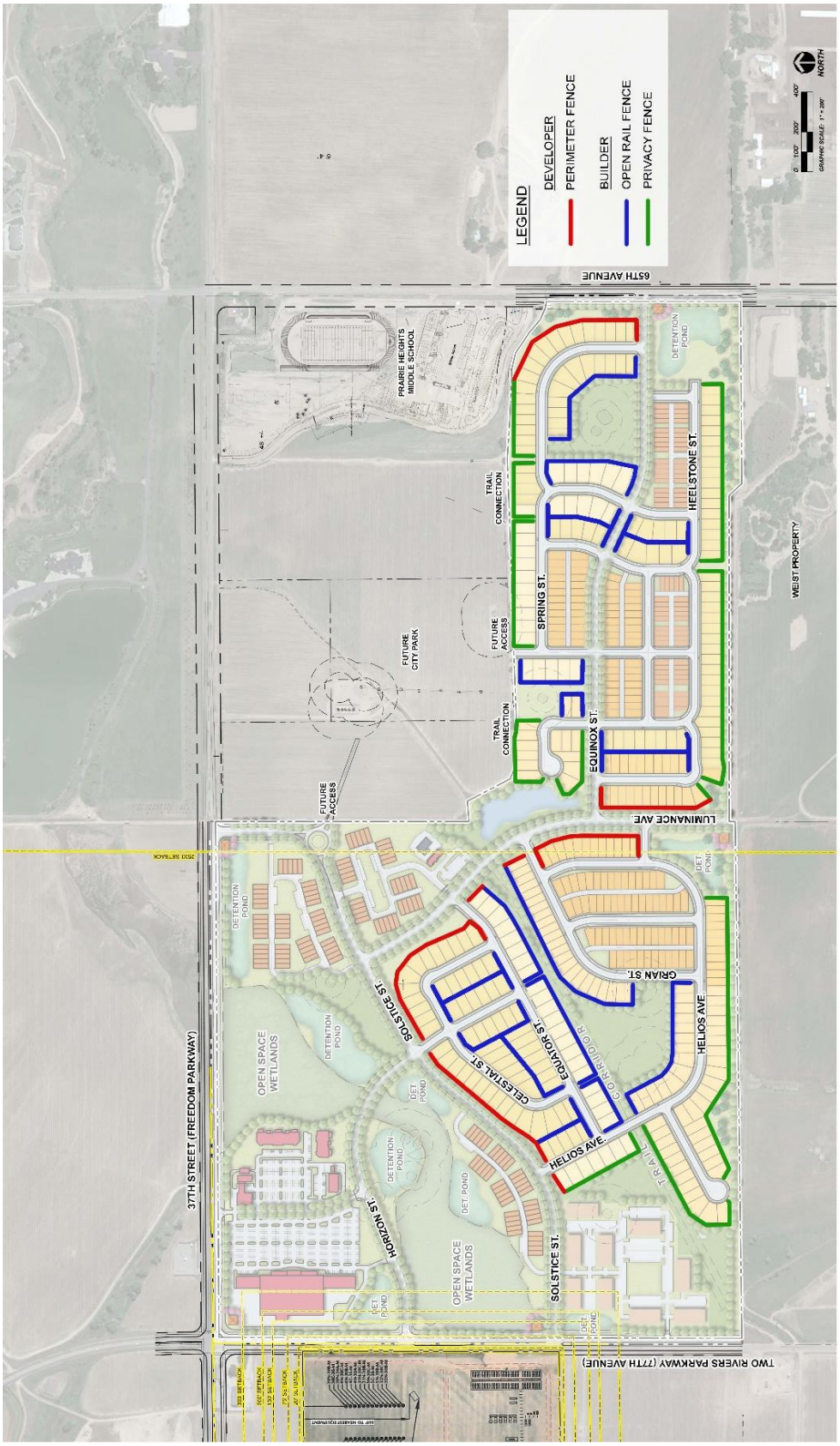
Illustrative Fence Plan



(For Illustration only)

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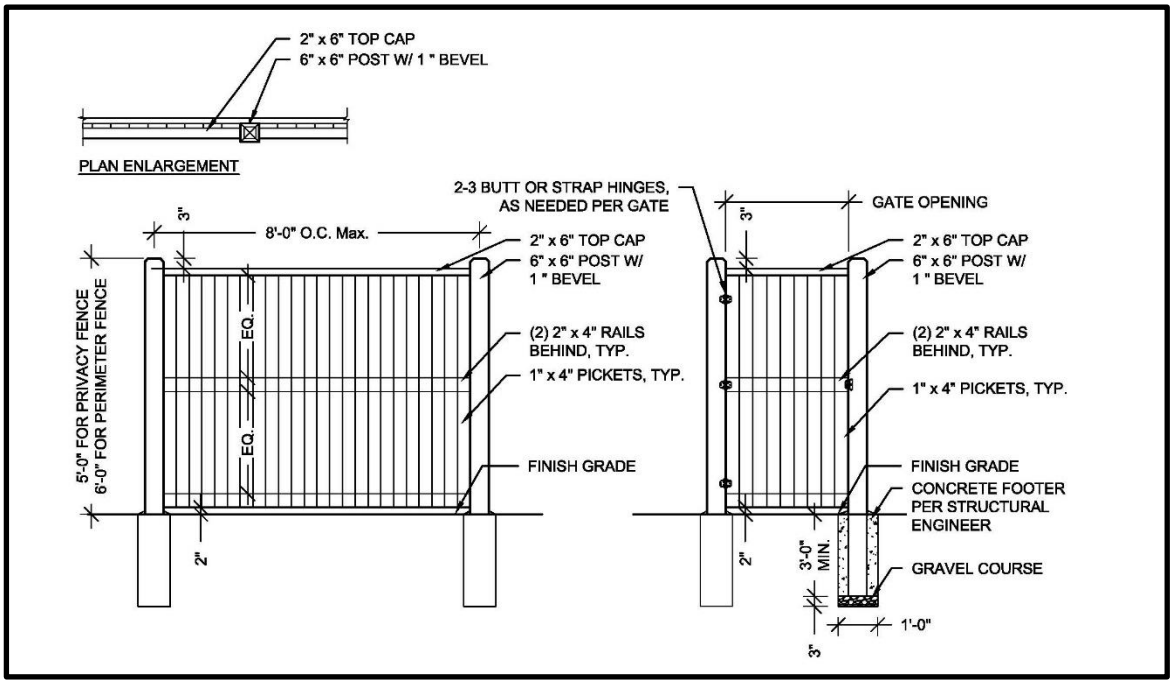
Privacy Fence (5') and Gate Detail



(For Illustration only)

Illustrative Perimeter Privacy Fence (6') Section

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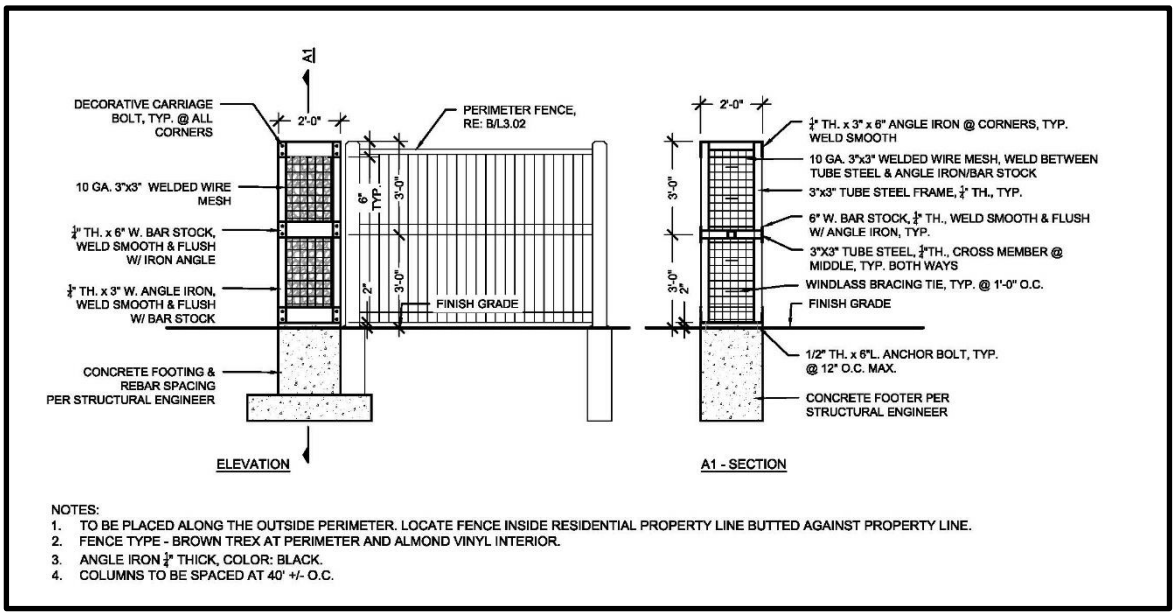
Perimeter Fence (6') with Columns Detail

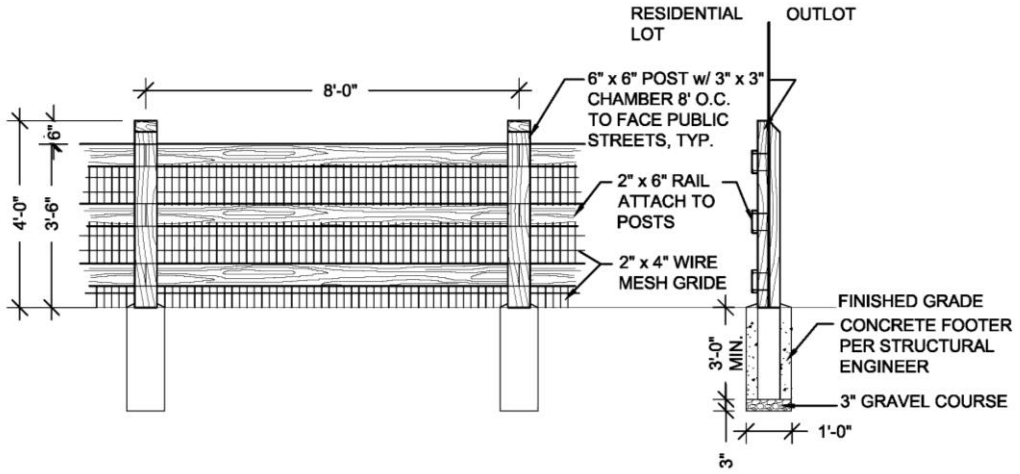


NOTES:
1. TO BE PLACED ALONG THE OUTSIDE PERIMETER. LOCATE FENCE INSIDE RESIDENTIAL PROPERTY LINE BUTTED AGAINST PROPERTY LINE.
2. FENCE TYPE - BROWN TREX AT PERIMETER AND ALMOND VINYL INTERIOR.
3. ANGLE IRON ¼" THICK, COLOR: BLACK.
4. COLUMNS TO BE SPACED AT 40' +/- O.C.

(For Illustration only)

Open Rail Fence (4') Detail

NOTES:
1. ALL FENCES SHALL BE PLACED ON PROPERTY LINES. FENCING IS SHOWN OFFSET ON PLANS FOR LEGIBILITY.
2. MATERIAL IS STAINED CEDAR.
3. WING FENCES (LOCATION AND TYPE) ARE INDIVIDUAL TO EACH LOT AND CONTRACTOR SHALL REFER TO PLANS.
4. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE INSTALLATION OF PERIMETER/COMMUNITY OPEN RAIL FENCE.
5. THE HOA SHALL BE RESPONSIBLE FOR THE MAINTENANCE.
6. WIRE MESH MAY BE PROVIDED ON RESIDENTIAL SIDE OF FENCE BY HOMEOWNER.



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Illustrative Open Rail Fence (4')

(For Illustration only)

10.0 OFF-STREET PARKING

All off-street parking requirements shall follow City of Evans Design Standards with the exception of the following changes:

A. Single Family Residential Parking Requirements
   1. All Single Family Detached and Attached Dwellings Parking shall follow City of Evans Design Standards.

B. Multi-Family Residential (3 or more units)
   1. All Multi-Family Dwellings Parking shall follow City of Evans Design Standards.
   2. Parking Setback (Refer to Min. Landscape Buffers for minimums)
   3. Garages are to be used to park vehicles that are in working order and not as storage.

C. Commercial Parking Requirements
   1. All Commercial Parking shall follow City of Evans Design Standards.
   2. Shared parking is allowed if peak hours of use between the different buildings is different, subject to development agreements.
   3. Parking Setback (Refer to Min. Landscape Buffers minimums)

D. Bicycle Parking
   1. All Bicycle Parking shall follow the City of Evans Design Standards

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11.0 SITE FURNISHING

INTENT: Street furniture elements are appropriate in areas where pedestrian traffic is anticipated. Site furnishings shall be made of high quality materials and will complement the materials used throughout the community. Site furnishings shall not impede the required clear width of the pedestrian walkway or realm. Permanent seating shall be placed to serve parks, community facilities and dedicated open space. Seating shall be located in an aesthetically pleasing environment receiving good natural light and adequate air flow. Trash receptacles shall be placed convenient to seating areas, but not directly against any individual seat. Bike racks shall be near entrances to special amenities, community facilities and commercial nodes. Bus stops and mail box kiosk are necessary elements of this development and have been identified on the landscape construction documents that are a part of the Final Plat.

The following furnishings shall be coordinated in color, style, material and finish to provide a consistent appearance throughout the entire P.U.D. site:

1. Benches and outdoor seating
2. Trash receptacles
3. Bike racks
4. Lighting
5. Signage
6. Monuments
7. Railings / Handrails
8. Fencing / Gates
9. Shade structures
10. Walls

Bench

Trash Receptacle

Bike Rack

11.1 LIGHTING

All lighting fixtures shall be of uniform design and comply with the requirements of the City of Evans Design Standards.

INTENT: Lighting (chosen from electrical provider catalog and approved by Developer and Architect with City Coordination) will direct vehicular traffic along Right-of-Ways, accent pedestrian areas, enhance neighborhood entrances and community facilities. All lighting mounted on buildings or poles shall be downcast and without drop lenses. Avoid lighting open space and natural areas. Parking lot lighting shall only be bright enough to meet security standards and not create excess light pollution. Lighting levels for pedestrian lighting shall be designated to limit glare into adjacent properties and surrounding neighborhoods as well as avoid extreme contrasts between light and shadow.

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11.2 SIGNAGE

All signage requirements shall comply with the City of Evans Design Standards

INTENT: Monuments, at key access points, can be comprised of a variety of materials: brick, stone veneer, and/or precast concrete with decorative detailing. Logos and lettering to follow City of Evans signage standards. Signage is expected to enhance and extend the spirit of the landscape for the overall development and clearly express the name. Monuments can also be located at each internal neighborhood, community facility and commercial node and will replicate similar and/or complimentary materials at different scales.

Directional / Wayfinding signage shall complement themes used by monumentations to show direction for streets, mail kiosks, trails, parking and other required direction signage.

Note: Animated signs are prohibited per the Peakview PUD.

Illustrative Monument Sign

12.0 ARCHITECTURAL STANDARDS

The purpose of these Architectural Design Guidelines is to promote product quality and community diversity within an integrated land plan. Builders are encouraged to expand and explore a range of detailing within the selected architectural styles without sacrificing quality of the design.

The goal of the guidelines is to establish Peakview as a neighborhood that is a model of excellence for integrated site planning, architectural design, and landscape design. The guidelines are intended to communicate "the spirit of design vision" as much or more than the "letter of the law," and encourage a total planning approach - one that requires great attention to detail. Providing architects and homebuilders with a set of parameters for their designs and specifications, allowing Peakview to be known for high standards of architecture and community design.

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All homebuilders will need to obtain approval from the Design Review Board (DRB) for architectural and landscape plans before beginning construction to ensure that all requirements of the guidelines are met or exceeded.

Each homebuilder will provide a minimum of 3 separate and distinct architectural styles. These styles will be chosen to emphasize variety while creating a familiar architectural theme in the community. Each builder product is presented per the lot size dimensions as images on the following pages. The images are meant to spur builders to take pride in the quality of their architecture. All maps, images, and renderings are conceptual and are not to scale.

The Design Review Board in conjunction with the Metro District reserve the right to make changes or modifications to plans, elevations, specifications, materials, features, colors, and other guidelines.

No homebuilder, homeowner, or other party is entitled to rely solely on the contents of these guidelines hereof as a representation or warranty by Solstice Development, LLC. that such will be built or developed, and Solstice Development, LLC. disclaims any such representations or warranties. Further, Solstice Development, LLC. disclaims any other representations or warranties regarding any depictions or statements contained herein.

12.1 PEAKVIEW CHARACTER

Peakview's location in Evans, Colorado ensures that this new neighborhood will provide a high quality and amenity-based master planned community to its future residents. Housing choices include a variety of single family homes, townhomes, condominiums and apartment home living that includes a community center and pool with neighboring commercial and retail shops.

Neighborhood amenities abound, which include parks, walking paths, trails, passive and active open spaces, a community center, as well as, beautifully landscaped public spaces and tree lined streets. The arrangement of streets, open spaces, parks, commercial development and community center will provide a system of amenities that promotes residential living at its finest. The master plan replicates the noteworthy attributes of community living complete with tree lined streets along with major views and vistas that sightline on to the Front Range.

The proximity to existing schools, shopping, dining, as well as direct access to highways will make it a highly sought-after community in the Greeley/Evans area. Peakview will be a favorite among new homebuyers and is within easy reach for its diverse offerings and financial attainability within northern Colorado.

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12.2 RESIDENTIAL DESIGN STANDARDS

Residential Design Standards maybe modified by the City Manager based on individual circumstances and supported by the DRB (Design Review Board).

A. Single Family Housing Products
   1. A minimum of three (3) roof colors for each planning area will be required.
   2. A minimum of five (5) different exterior color schemes will be required.
   3. A minimum of three (3) different floor plans with three (3) different elevations per floor plan will be offered.
   4. The same elevation shall not be built within 2 lots of each other or directly across from one another. In addition, no more than two of the same floor plan shall be adjacent to each other.
   5. Enhanced elevations will be required on lots that side an arterial, collector or local street; as well as public open space. Additional details would be continuing or incorporating credits earned for the front facades (of 16 points) listed in the City Code.

B. All Residential Design shall follow City of Evans Design Standards; except where listed below:

Section 18.07.040 - Architectural Standards

All Residential Design shall follow City of Evans Design Standards with the exception of the following changes. The following words and phrases shall be defined as follows:

Section 18.07.040 Stone or brick wainscot means that at least the lowest two (2) feet of siding on the front façade, including a two-foot wraparound to the side façade is covered with stone or brick.

Variance from Code
Stone or brick wainscot means that at least the lowest three (3) feet of siding on the front façade, including a two-foot wraparound to the side façade is covered with stone or brick.

Justification for Variance
This deviation allows for maximum flexibility of multiple builders and changing market trends

Section 18.07.040 Three-foot offset from adjacent houses means the plane of the structure nearest the front property line is at least three (3) feet closer to or farther from the front property line than the structures nearest the front property lines on either adjacent lot.

Variance from Code
Three-foot offset from adjacent house is not required. which would mean the plane of the structure nearest the front property line is at least three (3) feet closer to or farther from the front property line than the structures nearest the front property lines on either adjacent lot.

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Justification for Variance
This deviation allows for maximum flexibility of multiple builders and changing market trends.

C. Residential Articulation (Supportive of Variance located in Section 2.0)
Single-Family and Two-Family Dwelling Architectural Design Standards.

Each single-family and two-family dwelling on any lot platted after July 16, 2002, shall incorporate a total of sixteen (16) points worth of architectural features from the table located in 18.07.040 - Architectural Standards.

Where a single-family or two-family dwelling is the principal use, such dwelling shall comply with all of the following criteria prior to issuance of a certificate of occupancy:

1. The primary entrance to a dwelling unit or units shall face the adjacent public street to the maximum extent possible.
2. A minimum of three (3) roof colors for each planning area will be required
3. A minimum of five (5) different exterior color schemes will be required
4. A minimum of three (3) different floor plans with three (3) different elevations per floor plan will be offered
5. The same elevation shall not be built adjacent to or directly across from one another
6. No more than two (2) of the same floor plan shall be adjacent to each other
7. Enhanced elevations will be required on lots that side an arterial, collector or local street; as well as open space.
8. All pitched roofs shall have a minimum pitch of 4:12.
9. All pitched roofs shall have a minimum of twelve-inch eaves.
10. All vents and vent piping shall be painted to match the principal structure.
11. All doors and windows not bordered by brick or stone material shall have minimum three-inch trim.
12. No more than the lowest twelve (12) inches of a foundation wall shall be exposed to view on any side of a house.
13. The façade facing a side street property line on a corner lot shall have at least one (1) window and/or break in the plane of the façade of at least two (2) feet.

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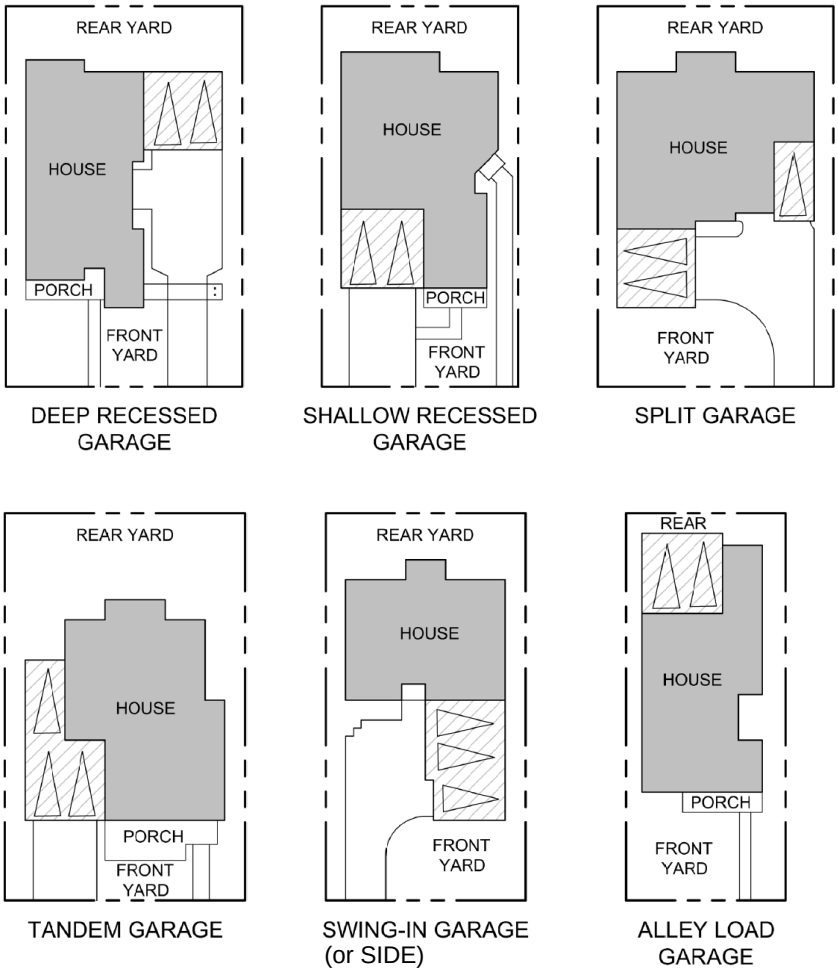
12.2 a Diagrams of Garage Configurations



12.3 COMMERCIAL DESIGN INTENT

A. *Building Location and Orientation General Criteria*

1. To reinforce the character and quality of public streets with buildings that provide consistent siting, pedestrian orientation and access to the street.
2. To ensure that major streets are treated as development frontage.
3. To ensure fully developed 360-degree architecture including quality finishes, detail, and fenestration on all street facing building facades.
4. To discourage any development from orienting service areas toward a public street and highway.

B. Architectural Design Form and Scale

1. To encourage varied building form and profile within large structures or building groups that will help to break up the mass of large buildings when seen in the broad, open context of the Evans prairie environment.
6. To encourage building forms that provide human scale, interest and orientation as well as reinforce the spatial definition to public spaces, including streets.

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7. To encourage buildings whose forms are responsive to the surrounding context.
8. To encourage original building design.

C. Building Entries
1. To provide convenient access to buildings and pedestrian active uses from the street.
2. To clearly articulate and create a visual hierarchy of building entrances as an aid in way-finding.
3. To locate building entrances in a way that activates streetscapes, enhances gateways and building corners and invigorates public open spaces.

D. Minimum Glazing
1. To provide human scale and visible activity within those portions of buildings that are intended to serve as prominent features of the arterial parkways.

E. Material Quality and Detail
1. To establish consistent levels of material quality and detail.
2. To encourage material palettes that are complementary to the large scale open landscape and natural surroundings.
3. To provide materials of a quality and durability appropriate to the use and long-term value of the development.
4. To incorporate scale in material quality and detail that complements pedestrian activity and contact.
5. To use masonry in a manner that enhances its traditional appearance as a substantial material that provides structure, closure and detail.

12.4 COMMERCIAL DESIGN STANDARDS

Commercial Design Standards maybe modified by the City Manager and supported by the DRB (Design Review Board) based on individual circumstances. Residential uses within RC - Residential Commercial will follow Residential Design Standards. The following standards shall apply to all structures built in commercial zoning districts.

A. Elevations, Materials and Colors
1. Exterior architecture elevations including proposed roof style and pitch, window and door detail, materials and colors shall be compatible with the character of the surrounding area if there is an established character. Colors shall be chosen from the Benjamin Moore "Historical Colors" color palette, or an approved color palette provided or made available by the City for viewing.
2. All sides of any commercial or institutional building shall include a combination of durable materials such as stucco, brick, stone, marble and granite; colored and textured concrete and decorative masonry block; glass or acrylic block; and hardwood and pressure-treated wood. Accent and decorative components may also include steel, copper and aluminum; heavy timber; and terracotta. Other materials may be approved on a case-by-case basis. Materials shall be indicated on elevation illustrations.
3. Front and street side elevations shall have a minimum of twenty-five (25) percent of the wall area as window and/or glass door area.

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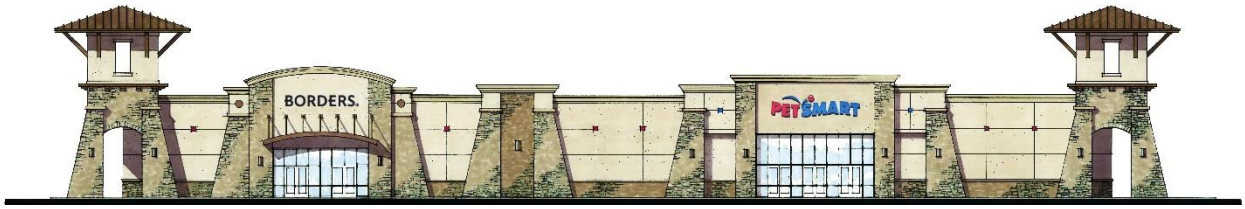
4. Every elevation shall be broken up through the use of decorative architectural features such as change in plane; molding, columns, cornice, frieze or arches; rigid awnings or canopy; color and texture variations; recessed windows or doors, bay windows, window sills, window boxes or false windows; decks and covered patios; and exposed structural elements like steel or timber beams.
5. Building entrances shall be identified and directly accessible from a public sidewalk or sidewalk internal to the site.
6. Windows and doors shall have at least three-inch exterior trim, unless otherwise enhanced with approved decorative features.
7. Windows and glazing shall not be highly reflective.



Illustrative Commercial Architecture Elevations

B. Roofs
   1. Roofs shall be gable, gambrel, hipped or otherwise broken up through varying planes. Flat roofs with varying planes shall be considered on a case-by-case basis when appropriate to the architectural character of the building.
   2. Roofs shall be constructed of asphalt, fiberglass, nonreflective metal shake or wood shake shingle; clay, concrete, fiber cement or non-reflective metal tile; slate; or nonreflective metal standing seam. Other materials may be considered on a case-by-case basis. Roof material shall be indicated on the elevation illustrations.

C. Screening and Service Areas
   1. Uses that generate noise and glare (including outdoor vending machines) shall not be located in areas of the site that are visible or audible from any residential land uses.
   2. Service and loading areas shall be fully screened, through the use of landscaping and/or fencing, from adjacent residentially zoned properties, internal parking lot driveways and public and private rights-of-way. Service and loading areas shall not be placed on the front or street side of a building, but rather at the rear or side of the building.
   3. Trash receptacles shall be fully screened on all sides with minimum six-foot-tall

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privacy fences or walls constructed of materials consistent with the commercial building.

4. Exterior mechanical units, whether ground or rooftop, shall be fully screened from view. The location of exterior mechanical units shall be indicated on the site plan.

Typical Trash Enclosure

D. Site Design
   1. Individual commercial buildings, whether on one (1) or more lots, that share common access driveways and parking spaces, shall be arranged to enclose and frame common areas, which may include parking areas with designated pedestrian crosswalks, pedestrian plazas and gathering areas, landscaping and similar common areas. Commercial developments between five (5) and fifteen (15) acres shall include a minimum of one (1) public street or private drive, with detached sidewalks and six-foot landscaped planting strips that is continuous through the site and connects to a public street on either end (referred to as a "through-access drive").
   2. Commercial developments greater than fifteen (15) acres shall include a minimum of two (2) through-access drives with detached sidewalks and six-foot landscaped planting strips.

E. PVREA and XCEL Energy standard light fixture shall be installed on public and private streets. Adequate pedestrian lighting shall be supplied throughout the development and may be in the form of low-glare pole or wall-mount fixtures, bollards or other acceptable type. The placement and type of fixtures shall be indicated on the site plan, for review and approval of the Director of Public Works/Planning in conjunction with PVREA and XCEL Energy.

F. Parking
   1. Parking lot striping shall be an approved, reflective, white paint.
   2. Required parking stalls and driveways shall be paved with asphalt, concrete or a similar material upon approval of the Director of Public Works.
   3. Minimum six-inch-high curbs shall delineate parking areas from pedestrian areas.

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13.0 STREET DESIGN STANDARDS

General street design standards in Section 18.32 of the City Code are to be followed except where noted and modified below:

A. Cul-de-sacs. Cul-de-sac bulb to have a right-of-way radius of 45 feet, with a flowline radius of 55 feet. Cul-de-sac radius at tie-in to standard street right-of-way to be 25 feet, with a 35-foot radius at flowline.

B. Angle of street intersections. Where possible streets should intersect at 90-degree angles. Angles of +/-10 degree from 90 are acceptable. Turning radius at flowline may need to increase to accommodate emergency vehicles.

C. Centerlines of intersecting streets. Two (2) streets meeting a third street from opposite sides shall meet at the same point, or their centerlines shall be offset a least one hundred fifty (150) feet for local streets connecting with local streets and two hundred (200) feet for local or collector streets connecting to collector streets.

D. Streets horizontal alignment Minimum centerline radii are as follows:
   a. 60-foot local streets require a minimum centerline radius of 100 feet (per AASHTO Standards);
   b. Minor collector streets require a minimum centerline radius of 450 feet;
   c. Major collector streets require a minimum centerline radius of 745 feet;

E. Minimum tangent between curves are as follows:
   a. 60-foot local streets require a minimum 50 feet tangent center line between all radius;
   b. Minor collector streets require a minimum 150 feet tangent center line between all radius;
   c. Major collector streets require a minimum 250 feet tangent center line between all radius;
   d. 50 feet minimum tangent between a curve and street intersection for local streets intersecting with collector streets.

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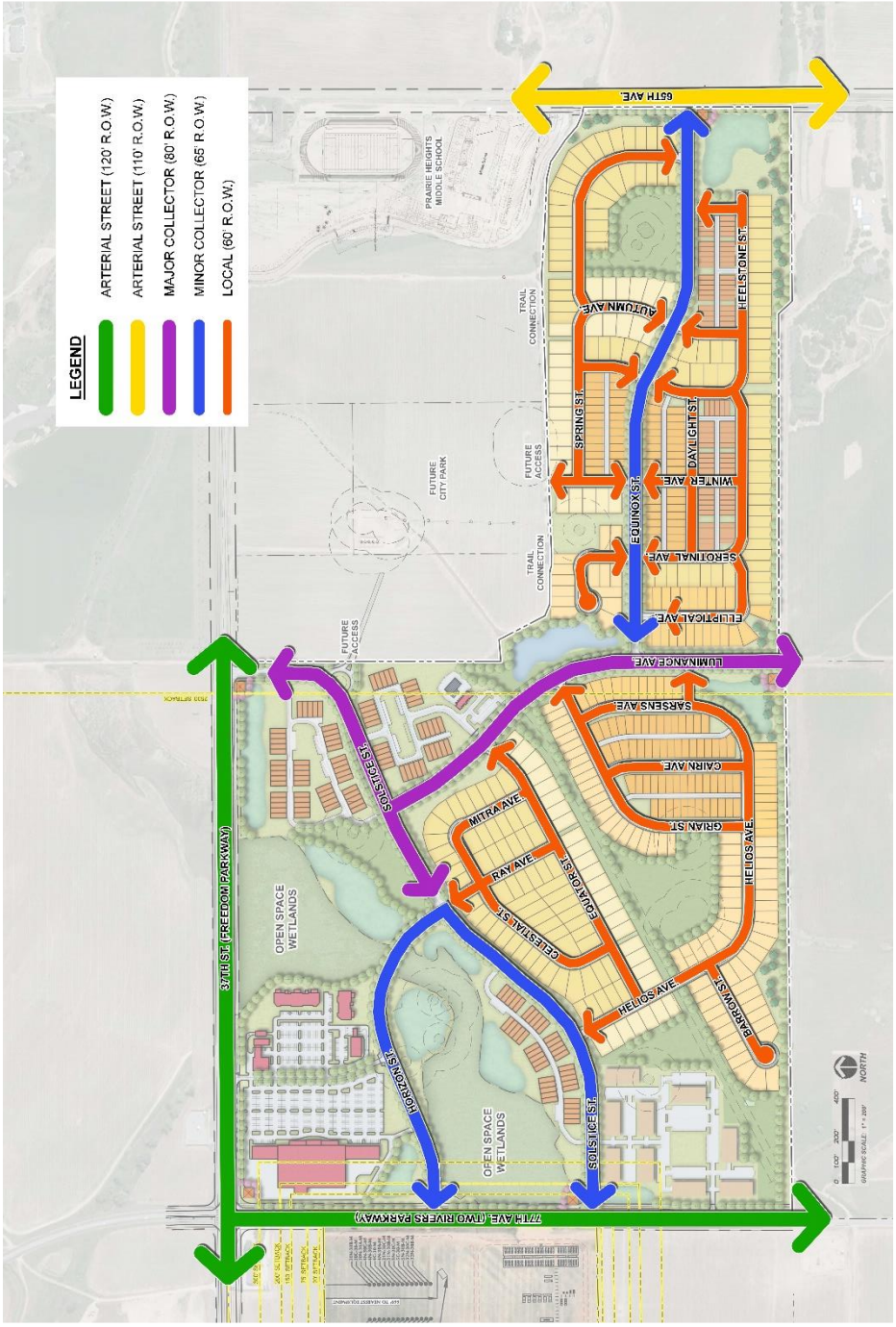
13.1 STREET CROSS SECTIONS & DETAILS

The following street standards are to be used for site design in this PUD. Additional City street standards may be used, except where noted below as modified. Standards marked as modified are City street standards that have been altered to provide the look and feel desired in this P.U.D.

Illustrative Street Plan



(For Illustration only)

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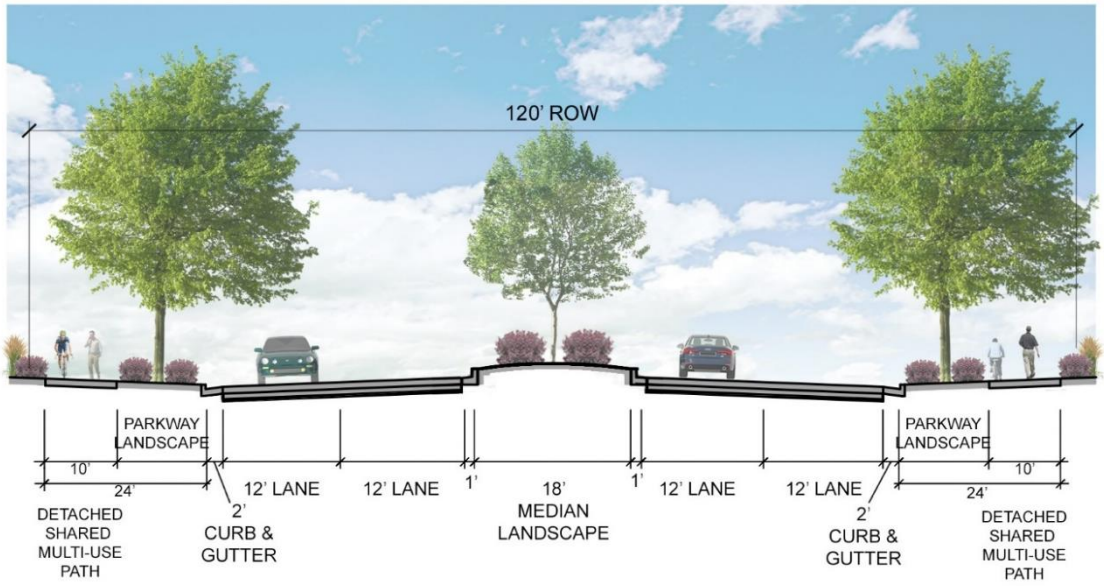
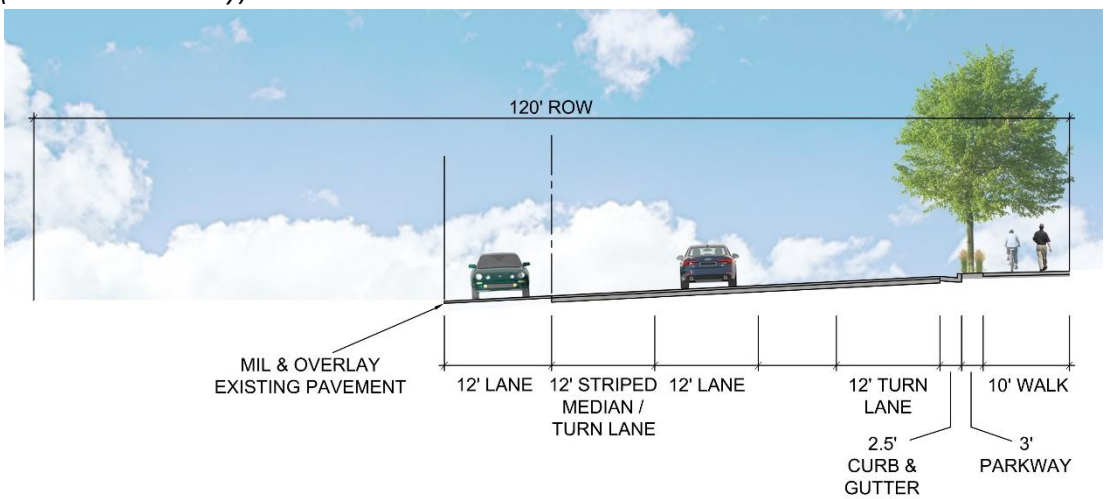
13.1 a - 120 FT ROW FREEDOM PARKWAY *(per the Regional Freedom Parkway Regulations)*
(For illustration only)



120 FT ROW (Interim) FREEDOM PARKWAY *(per the Regional Freedom Parkway Regulations)*
(For illustration only)



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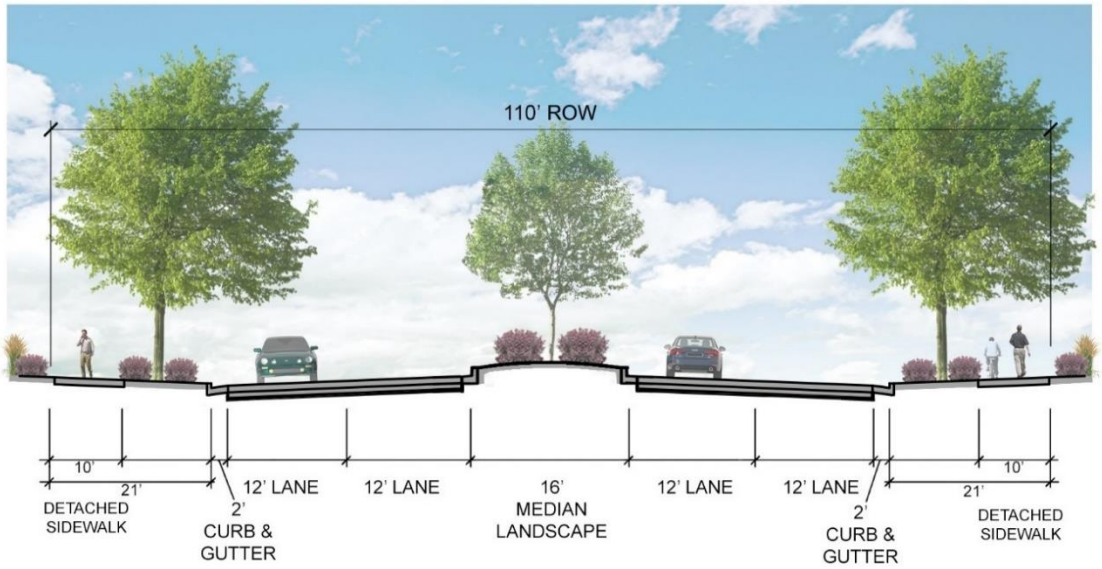
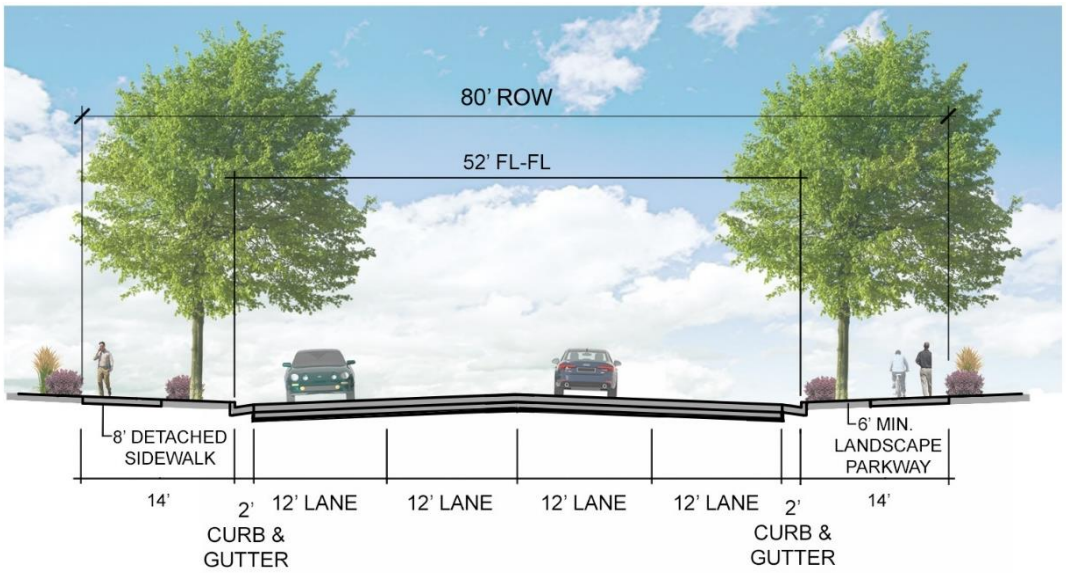
13.1 b - 110 FT ROW ARTERIAL STREET *(per City of Evans)*
65TH AVENUE
(For illustration only)



13.1 c - 80 FT ROW MAJOR COLLECTOR STREET *(per City of Evans)*
SOLSTICE STREET
LUMINANCE AVENUE
(For illustration only)



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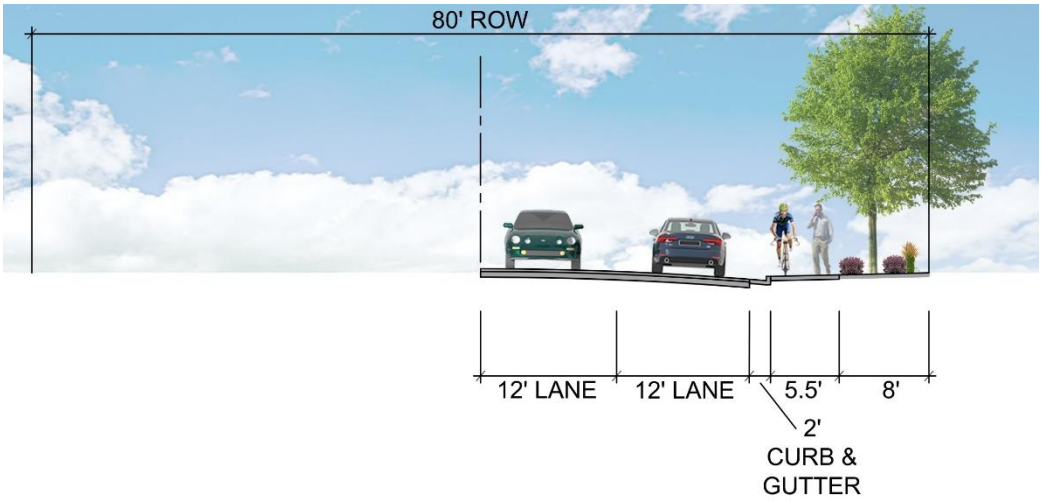
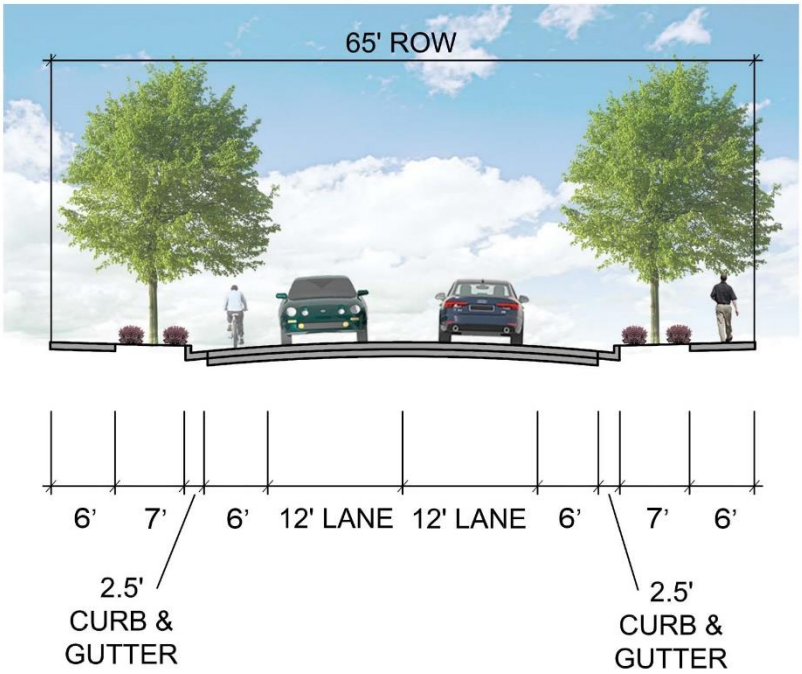
13.1 - 80 FT ROW (Interim) MAJOR COLLECTOR STREET *(per City of Evans)*
(For illustration only)



13.1 d - 65 FT MINOR COLLECTOR STREET *(per City of Evans)*
EQUINOX STREET
SOLSTICE STREET
HORIZON STREET
(For illustration only)



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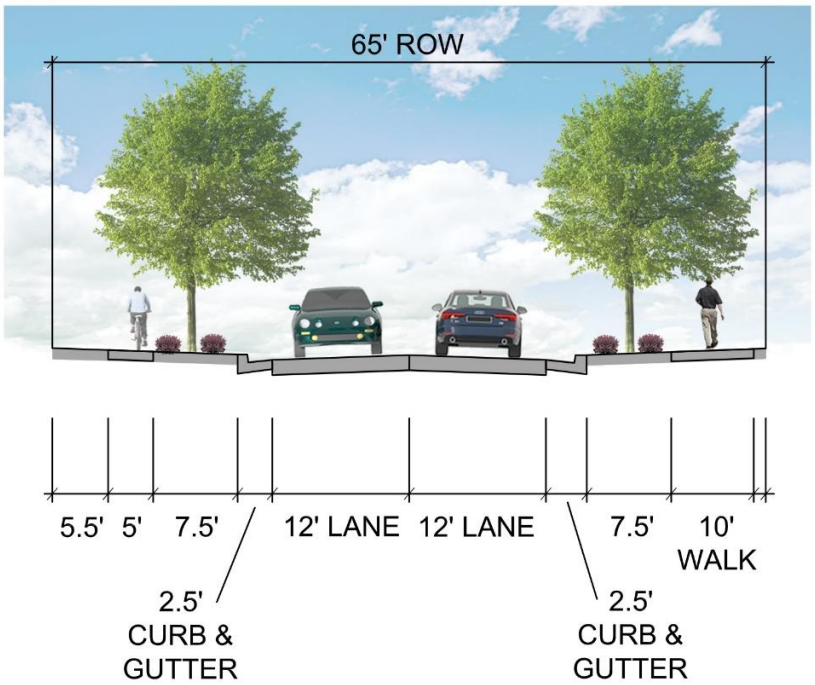
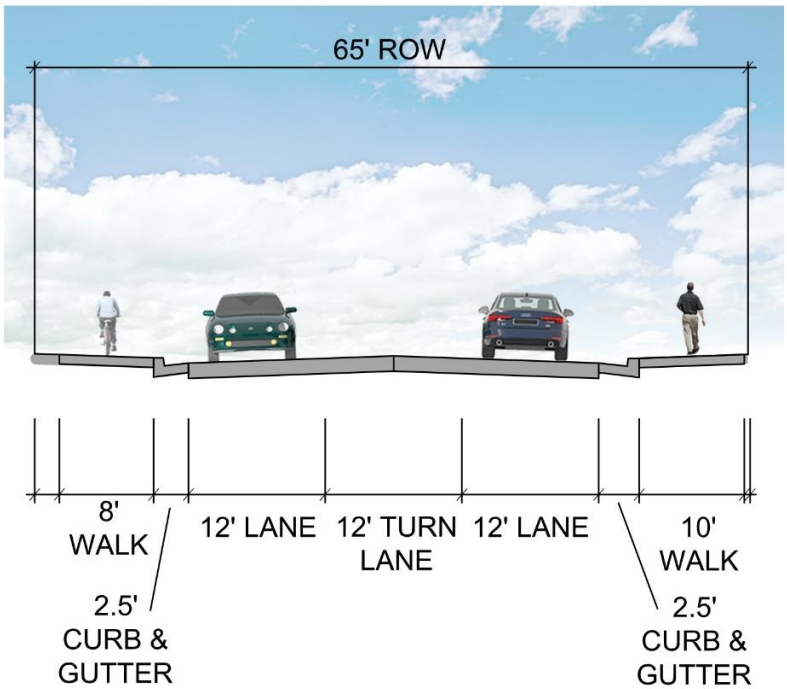
13.1 - 65 FT MINOR COLLECTOR STREET *(per City of Evans)*
(For illustration only)





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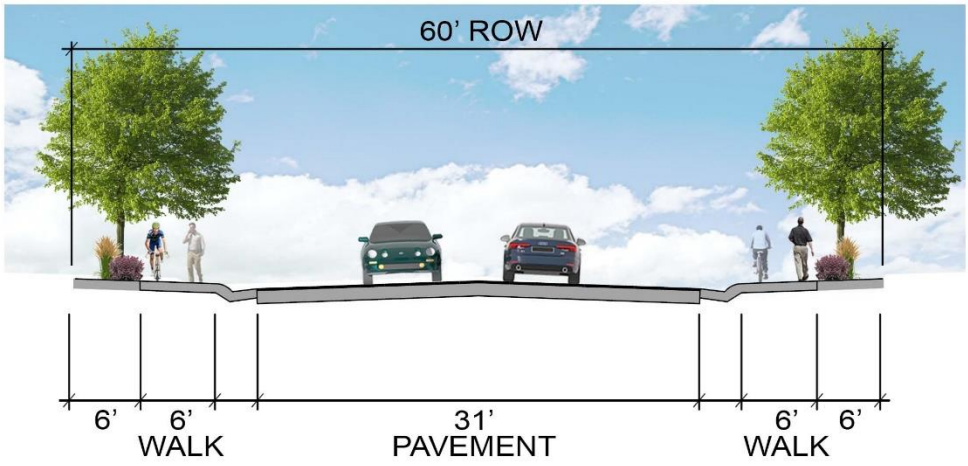
13.1 e - 60 FT RESIDENTIAL STREET *(per City of Evans)*

RAY AVENUE
CELESTIAL STREET
MITRA AVENUE
EQUATOR STREET
BARROW STREET
HELIOS AVENUE
DAYLIGHT STREET
HEELSTONE STREET
GRIAN STREET
CAIRN AVENUE
SARSENS AVENUE
ELLIPTICAL AVENUE
SEROTINAL AVENUE
WINTER AVENUE
SPRING STREET
AUTUMN AVENUE

(For illustration only)



13.1 f- 24 FT ROW ALLEY *(per City of Evans)*

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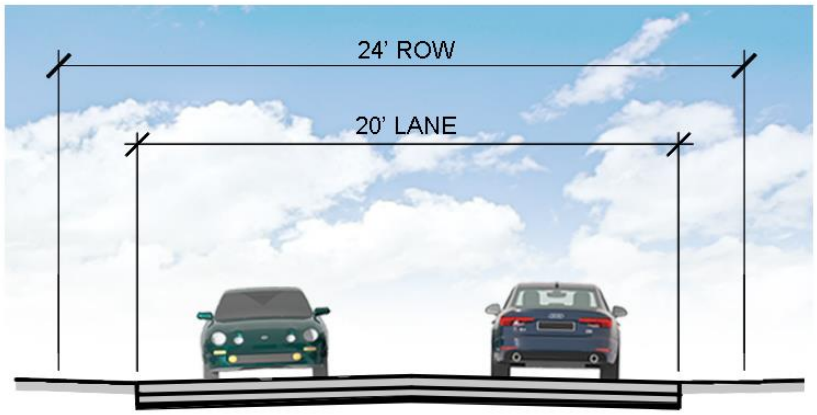

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13.1 g - CUL-DE-SAC *(per City of Evans)*
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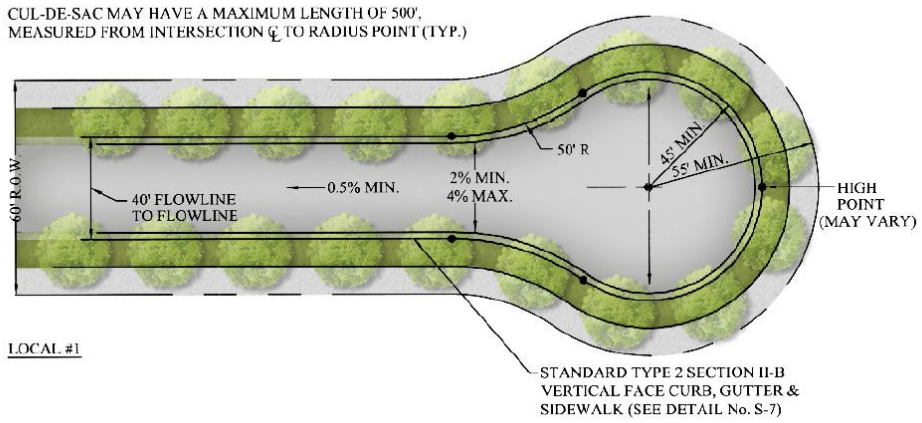

13.1 h - LOCAL STREET MINIMUM RADII EXHIBIT *(per AASHTO Standards)*
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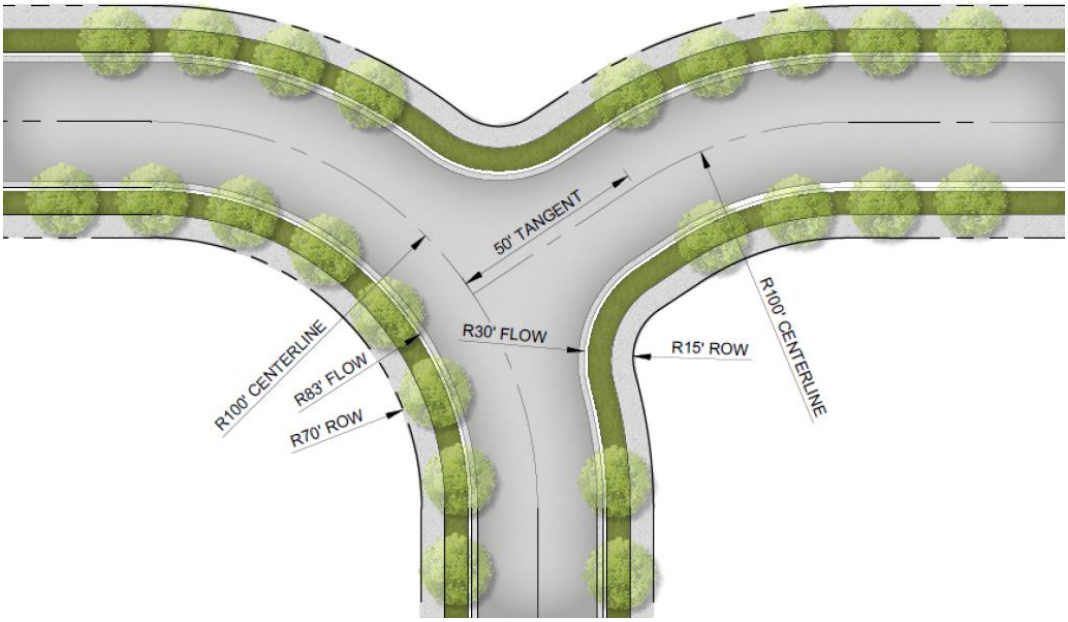

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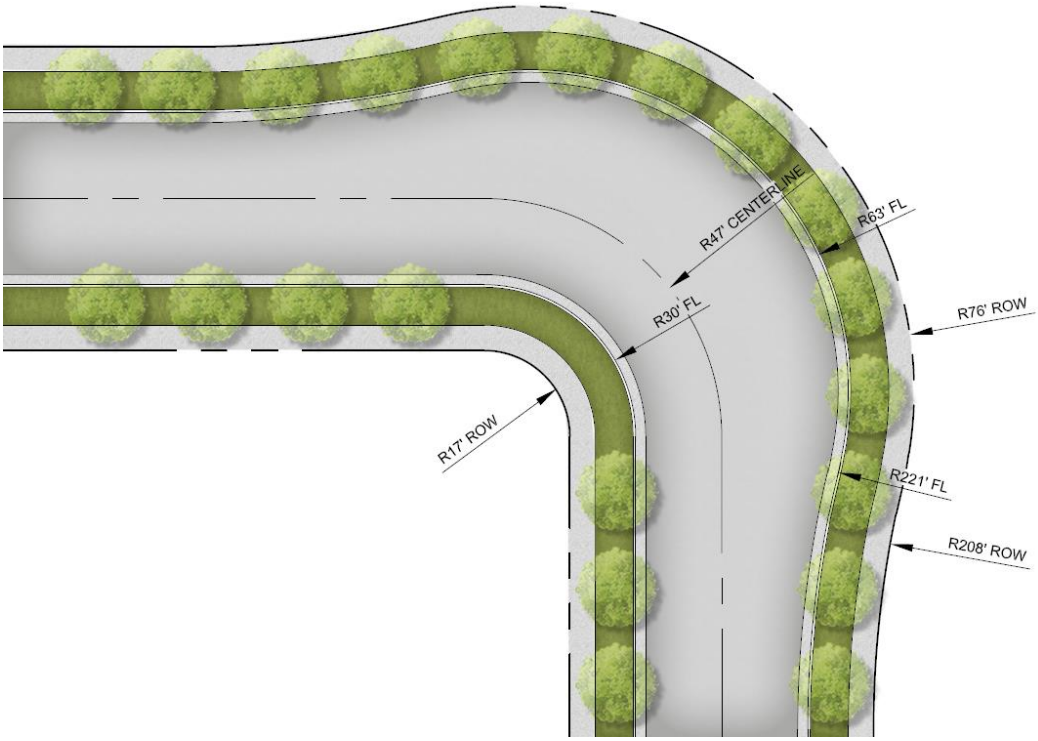
13.1 i - LOCAL STREET KNUCKLE *(PUD Specific)*

(For illustration only)



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13.2 WAIVER REQUEST

**Approved by Mark Oberschmidt Thursday, October 3, 2019*

NORTHERN ENGINEERING

November 14, 2018

City of Evans Public Works Director

Ken Martin, PE
1100 37th Street
Evans, CO 80620-2036
(970) 475-1160

Project # 1123-002

RE: Variance Request for Section 18.32 of the City Code concerning street design details.

Mr. Martin,

This letter serves as a variance request to the above-mentioned section of the City Code and street design standards.

The attached exhibit dated November 7th, 2018 by LAI Design Group, describes the requested variances from design standards, additional details requested for approval and current design standards that we wish to be held regardless of future standards modifications. We feel that these modifications and additions are based on sound engineering principles and we request that they be allowed by the City for the subdivision currently known as the Peakview Subdivision, submitted for Preliminary plat approval. We do not believe that these modifications and additional will cause additional cost to the City, reduce the design life of the improvements or be detrimental to the public health, safety and welfare. As such we believe that the proposed modifications and additions will provide equal service to the public and residence of this community.

Please call if you have any questions.

Sincerely,

COLORADO LICENSED
OLIVER BAILEY BANNING
44239
11.14.18
RYAN
PROFESSIONAL ENGINEER

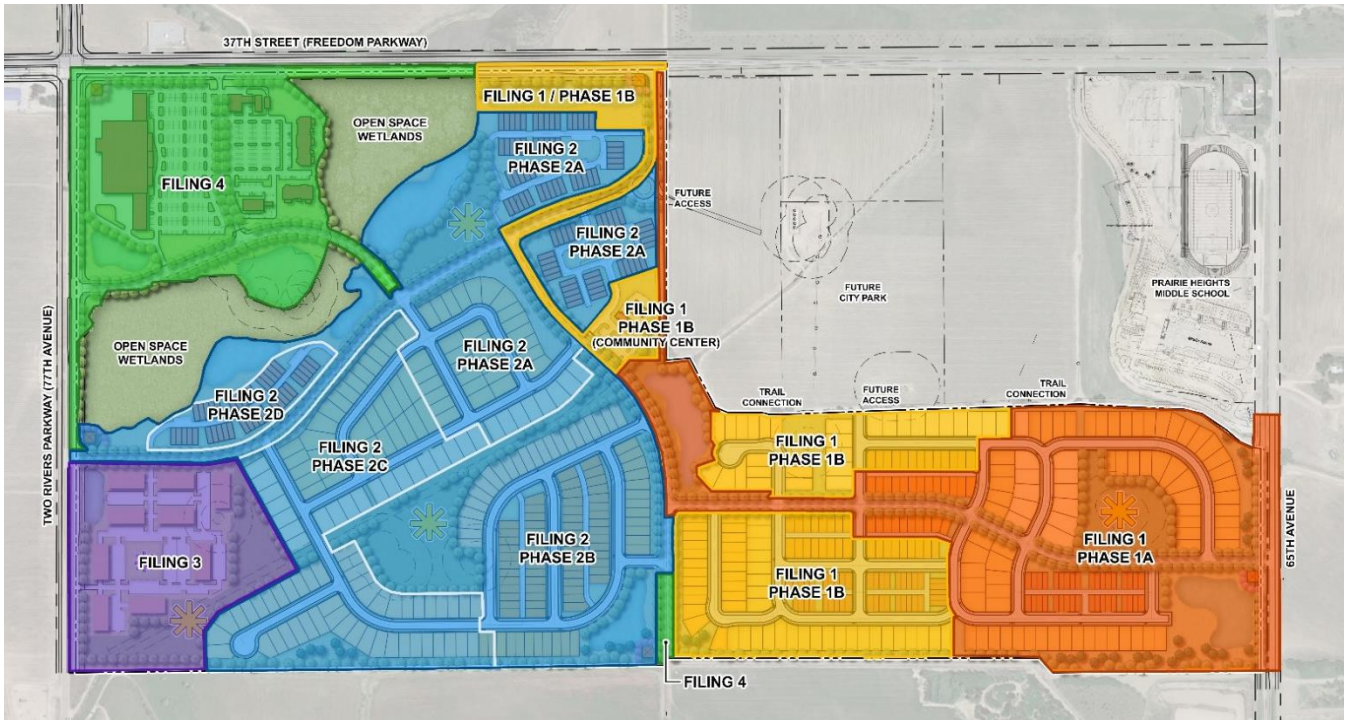
Ryan Banning, P.E.

Project Manager

14.0 PHASING PLAN

The property is divided into 4 phases for release of construction.

- Filing 1 Phase 1A Winter 2020
- Filing 1 Phase 1B Fall 2020
- Filing 2 All Phases Spring 2021
- Filing 3 Fall 2022
- Filing 4 Fall 2023



(For Illustration only)

14.1 TRACT OWNERSHIP & MAINTENANCE

Description	Ownership	Maintenance Responsibility	Means of Dedication
Parks & Open Space	Private	Metro DIstrIct	Final Plat
Landscape Tracts	Private	Metro District	Final Plat
Community Center	Private	Metro District	Final Plat
DedIcated RIght of Ways	Public	City of Evans	FInal Plat

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14.2 Offsite Improvements (Preliminary Schedule)

The table below is based on a Fall 2019 start schedule for Phase 1A and continuing thru Phase 4 in 2023. It is anticipated that phases will be completed approximately 12-18 months apart. Development approvals, funding and market conditions will have impacts on this schedule. At the present time, the plans lack specificity for improvements associated with the later phases. As plans evolve and construction commences on early phases the costs and schedule will be refined accordingly.

Phase 1 A	**Start**	**End**
OFF SITE IMPROVEMENTS	Winter, 2019	Fall, 2020
Sewer		
Water 37th Street		
Demo 65th Avenue		
Earthwork 65th Avenue		
Curb Gutter		
Paving		

Phase 1 B	**Start**	**End**
OFF SITE IMPROVEMENTS	Fall, 2020	Spring, 2022
Sewer 37th Street		
37th Street Turn Lanes		
Demo		
Earthwork		
Curb Gutter		
Paving		

Phase 2	**Start**	**End**
OFF SITE IMPROVEMENTS	Spring, 2022	Spring, 2022
Connect to Two Rivers Parkway		

Phase 3	**Start**	**End**
OFF SITE IMPROVEMENTS	N/A	N/A
N/A		

Phase 4	**Start**	**End**
OFF SITE IMPROVEMENTS	Fall, 2023	Winter, 2023
Two Rivers Parkway Access		
37th Street Access		

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PEAKVIEW
TRANSPORTATION IMPACT STUDY

EVANS, COLORADO

FEBRUARY 2019

Prepared for:

ROI Land Investments, LTD
1002 Rue Sherbrooke West, Suite 1430
Montreal, Quebec, Canada, H3A 3L6

Prepared by:

DELICH ASSOCIATES
2272 Glen Haven Drive
Loveland, CO 80538
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FAX: 970-669-5034

COLORADO LICENSED
JOSEPH M. DELICH
39306
2/26/19
PROFESSIONAL ENGINEER

Project #1810

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I. Mid Range (2023) Background Peak Hour Operation
J. Long Range (2040) Total Peak Hour Operation

I. INTRODUCTION

This Transportation Impact Study (TIS) addresses the capacity, geometric, and control requirements for the proposed Peakview development. The proposed Peakview development is located south of 37th Street, between 65th Avenue and Two Rivers Parkway in Evans, Colorado.

During the course of the analysis, numerous contacts were made with the project developer (ROI Land Investments), project planning consultant (LAI), the project civil engineer (Northern Engineering), and the City of Evans. This study generally conforms to the format set forth in the Evans Street Specifications. A scoping discussion was held with the Evans City Engineer. The Base Assumptions Form and related information is provided in Appendix A. The study involved the following steps:

- Collect physical, traffic, and development data;
- Perform trip generation, trip distribution, and trip assignment;
- Determine peak hour traffic volumes;
- Conduct capacity and operational level of service analyses on key intersections;
- Analyze signal warrants;
- Conduct evaluation of pedestrian, bicycle, and transit modes of transportation.

This TIS is a revision of the "Peakview Transportation Impact Study" dated July 2018. It addresses a change in access location, number of residential units, and the size of the commercial.

II. EXISTING CONDITIONS

The location of the Peakview development is shown in Figure 1. It is important that a thorough understanding of the existing conditions be presented.

Land Use

Land uses in the area are residential, institutional, and open/agricultural. There are residential uses to the north of the site. The Prairie Heights Middle School is to the east of the site. The Peakview site is currently vacant. The center of Evans lies to the east of the proposed Peakview site.

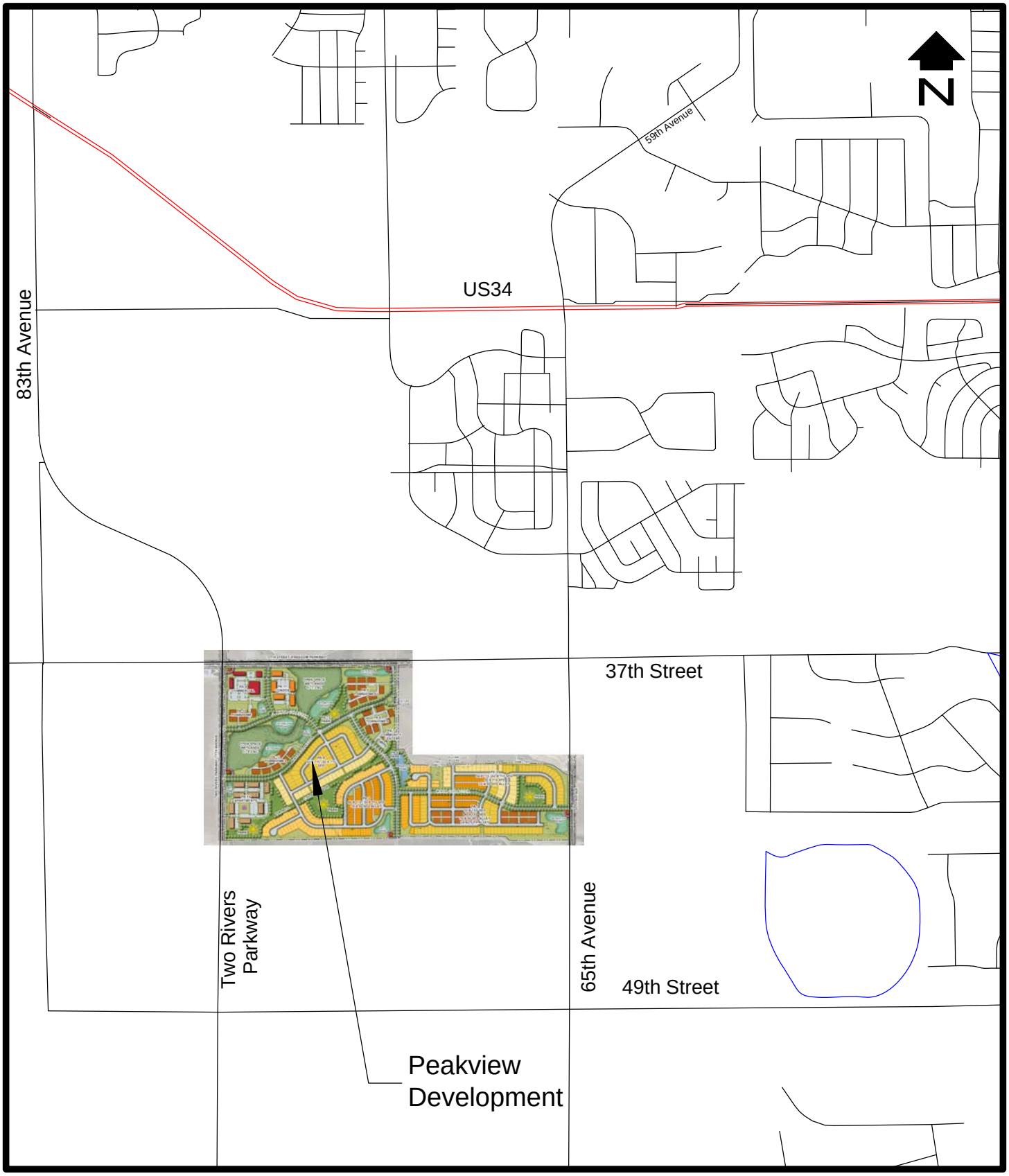
Streets

The primary streets in the area of the Peakview development are 37th Street, 65th Avenue, and Two Rivers Parkway. The existing geometry at the key existing intersections is shown in Figure 2.

Thirty-Seventh Street is an east/west street classified as a four-lane arterial on the Evans Master Street Plan. A portion of 37th Street is within Greeley. Currently, 37th Street has a two-lane cross section. The existing speed limit is 50 mph in this area. At the 37th Street/65th Avenue intersection, 37th Street has an eastbound and westbound left-turn lane and a through/right-turn lane in each direction. The 37th Street/65th Avenue intersection has signal control. At the 37th Street/Two River Parkway intersection, 37th Street has an eastbound and westbound left-turn lane, a through lane in each direction, an eastbound right-turn lane, and an eastbound right-turn acceleration lane. The 37th Street/Two rivers Parkway intersection has stop sign control on Two Rivers Parkway.

Sixty-Fifth Avenue is a north/south street classified as a four-lane arterial on the Evans Master Street Plan. North of 37th Street, 65th Avenue is within Greeley. Currently, 65th Avenue has a four-lane cross section, north of 37th Street, and a two-lane cross section, south of 37th Street. The existing speed limit is 45 mph, north of 37th Street, and 50 mph, south of 37th Street. At the 37th Street/65th Avenue intersection, 65th Avenue has a southbound left-turn lane, a southbound through lane, a southbound right-turn lane, a northbound left-turn/through lane, and a northbound right-turn lane.

Two Rivers Parkway is a north/south street classified as a four-lane arterial on the Evans Master Street Plan. North of 37th Street, Two Rivers Parkway is within Greeley. Currently, Two Rivers Parkway has a two-lane cross section. The existing speed limit is 55 mph in this area. At the 37th Street/Two Rivers Parkway intersection, Two Rivers Parkway has southbound and northbound movements combined into single lanes.



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SITE LOCATION

Figure 1

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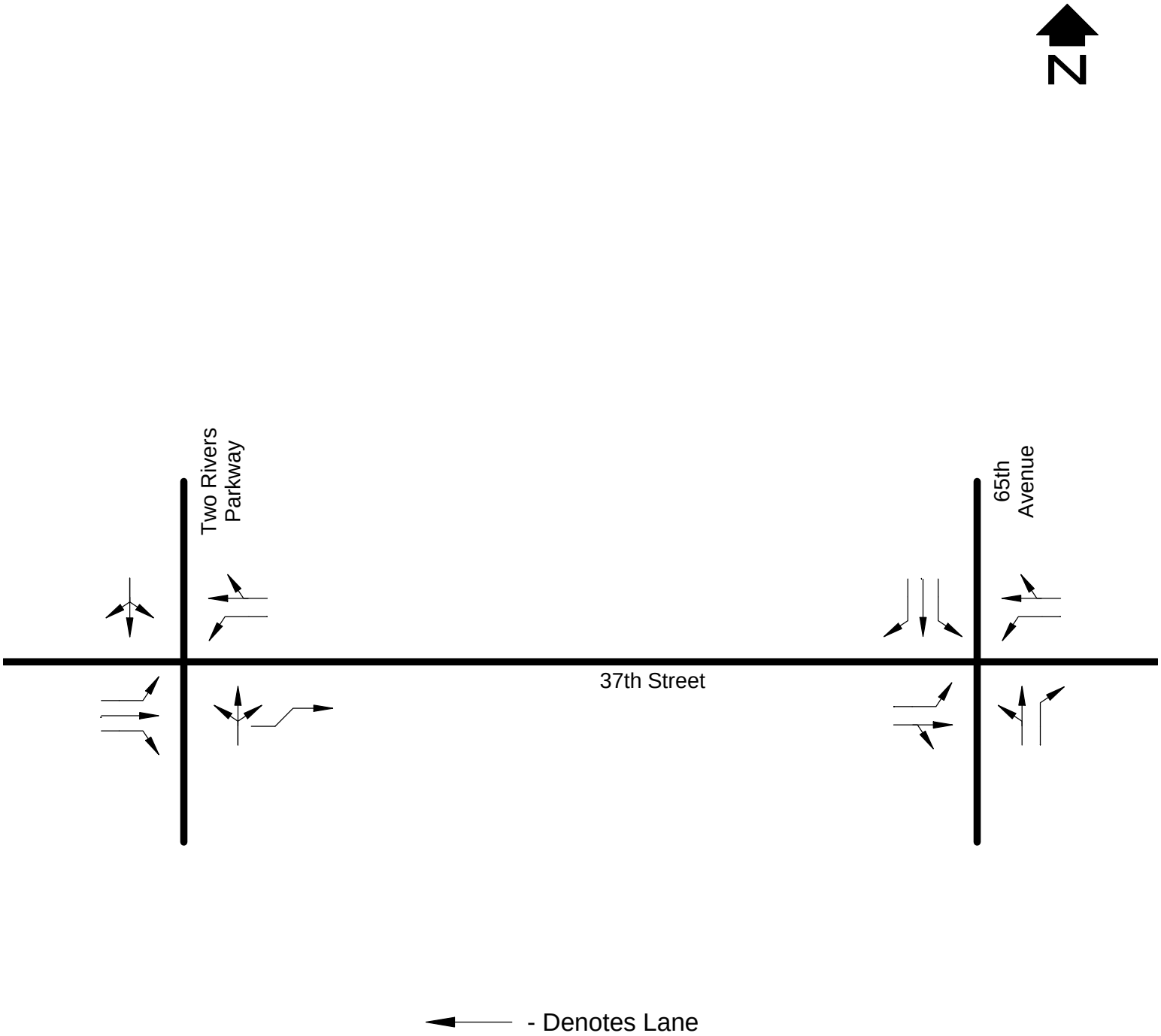


EXISTING GEOEMETRY

Figure 2

Existing Traffic

Recent morning and afternoon peak hour traffic volumes at the 37th Street/65th Avenue and 37th Street/Two Rivers Parkway intersections are shown in Figure 3. The counts at the key intersections were obtained in February 2018. Raw traffic count data is provided in Appendix B.

Existing Operation

The 37th Street/65th Avenue and 37th Street/Two Rivers Parkway intersections were evaluated using techniques provided in the 2010 Highway Capacity Manual. Using the morning and afternoon peak hour traffic shown in Figure 3, the peak hour operation is shown in Table 1. Calculation forms are provided in Appendix C. The key intersections are currently operating acceptably with existing control and geometry in the morning and afternoon peak hours. A description of level of service for signalized and unsignalized intersections from the 2010 Highway Capacity Manual and a table showing the Greeley Motor Vehicle LOS Standards (Intersections) are also provided in Appendix C. The Peakview site is in an area termed "mixed use." In areas termed "mixed use," acceptable operation at signalized intersection during the peaks is defined as level of service E or better for the overall intersection, and level of service E or better for any leg or movement. At arterial/collector or local unsignalized intersections, acceptable operation is defined as level of service F. At arterial/arterial or collector/local unsignalized intersections, acceptable operation is defined as level of service F.

Pedestrian Facilities

Currently, there are no pedestrian facilities along 37th Street, 65th Avenue, and Two Rivers Parkway. As future development occurs in the area, it is assumed that the future developments will build adjacent streets in accordance with Evans Standards and will include sidewalks.

Bicycle Facilities

There are bicycle lanes on Two Rivers Parkway, north of 37th Street.

Transit Facilities

Currently, this area of Evans is not served by the Greeley-Evans Transit (GET).

RECENT PEAK HOUR TRAFFIC

Figure 3

TABLE 1 Current Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T/RT	A	B
	EB APPROACH	A	B
	WB LT	B	B
	WB T/RT	B	B
	WB APPROACH	B	B
	NB LT/T	B	B
	NB RT	A	B
	NB APPROACH	B	B
	SB LT	B	B
	SB T	B	B
	SB RT	A	A
	SB APPROACH	B	B
	OVERALL	B	B
37th Street/Two Rivers Parkway (stop sign)	EB LT	A	A
	WB LT	A	A
	NB LT/T/RT	D	F
	SB LT/T/RT	E	F
	OVERALL	B	C

III. PROPOSED DEVELOPMENT

The Peakview development is a mixed-use development, located south of 37th Street, between 65th Avenue and Two Rivers Parkway in Evans. Figure 4 shows a site plan of the Peakview site. The Peakview development is proposed as 1097 dwelling units and 83,000 square feet of commercial uses. Phase 1 includes 219 single family homes and 78 Townhomes. Phase 2 includes 242 single family homes and 85 townhomes. Phase 3 includes 65 townhomes, 408 apartment/condo units, and 55,000 square feet of commercial. Phase 1 will likely be built in the next year or so following approval. The short range (2020) future includes Phase 1 of the Peakview development and an appropriate increase in the background traffic due to normal growth in the area. The mid range (2023) and long range (2040) futures includes full development of the Peakview site and an appropriate increase in background traffic due to normal growth and other potential developments in the area. In phase 1 the Peakview development will have access to/from 65th Avenue and 37th Street. With full development, the site plan shows that the Peakview development will have access to/from 65th Street, 37th Street, and Two Rivers Parkway.

Trip Generation

Trip generation is important in considering the impact of a development such as this upon the existing and proposed street system. Trip generation information contain in Trip Generation, 10th Edition, ITE was used to estimate trips that would be generated by a proposed/expected uses at the Peakview. A trip is defined as a one-way vehicle movement from origin to destination. Table 2 shows the expected trip generation on a daily and peak hour basis. Phase 1 of the Peakview development will generate approximately 2,638 daily trip ends, 198 morning peak hour trip ends, and 260 afternoon peak hour trip ends. At full development of the Peakview development will generate approximately 14,954 daily trip ends, 1,027 morning peak hour trip ends, and 1,167 afternoon peak hour trip ends. Passby for the commercial was based on data in the Trip Generation Handbook, 3rd Edition, ITE.

Trip Distribution

Trip distribution for Peakview development was estimated using the existing/future travel patterns, land uses in the area, consideration of trip attractions/productions in the area, and engineering judgment. Figure 5 shows the trip distribution for the short range (2020), mid range (2023) and long range (2040) futures.

Background Traffic Projections

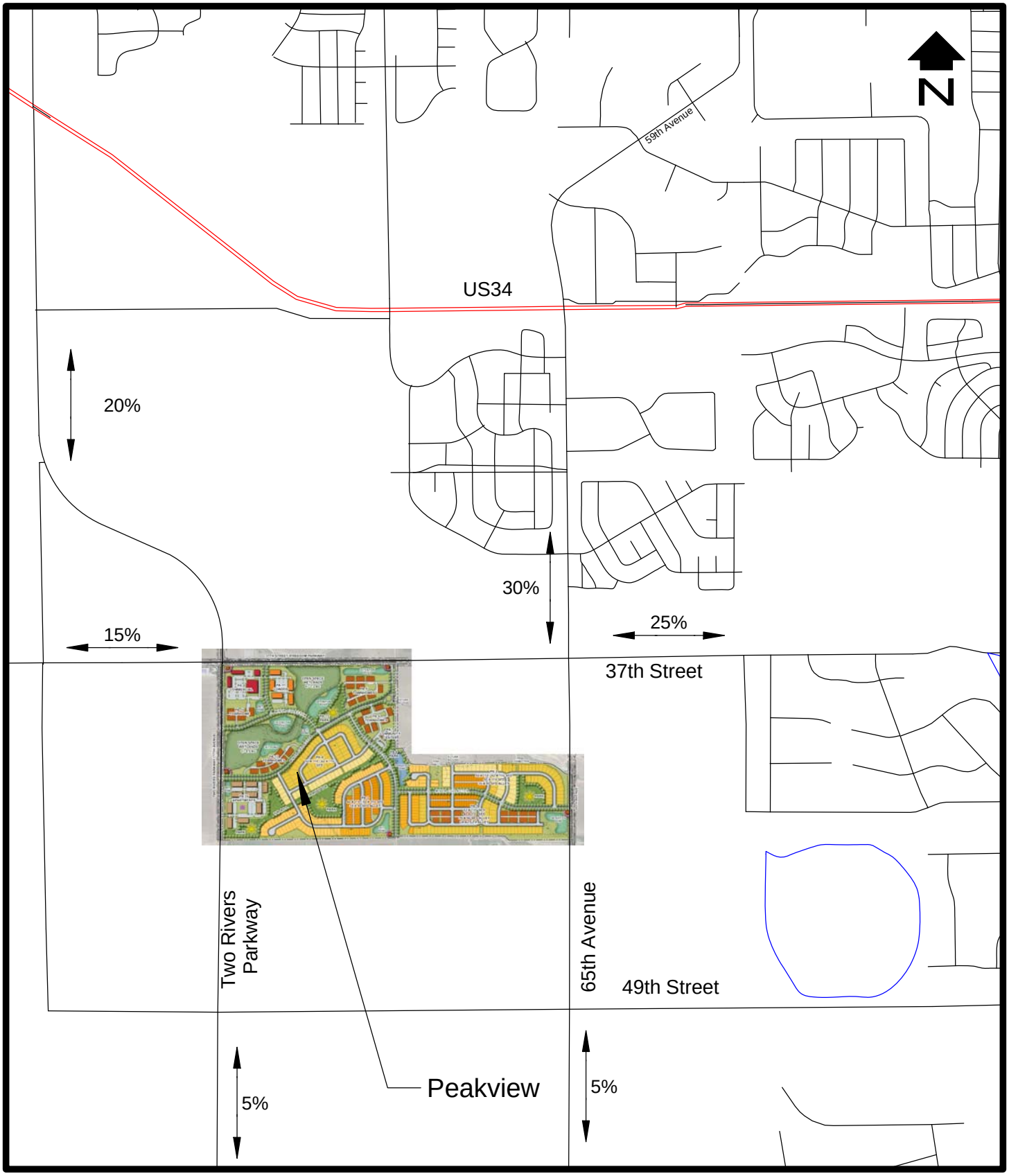
Figure 6 shows the short range (2020) background traffic projections. Background traffic projections for the short range (2020) future horizon were calculated by increasing the traffic volumes by two percent per year.

SITE PLAN

Figure 4

DELICH ASSOCIATES

TABLE 2 Trip Generation												
Code	Use	Size	AWDTE		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	In	Rate	Out	Rate	In	Rate	Out
Phase 1												
210	Single Family	219 D.U.	9.44	2068	0.19	42	0.55	120	0.62	136	0.37	81
220	Multifamily	78 D.U.	7.32	570	0.11	9	0.35	27	0.35	27	0.21	16
Phase 1 Total				2638		51		147		163		97
Phase 2												
210	Single Family	242 D.U.	9.44	2284	0.19	46	0.55	133	0.62	150	0.37	90
220	Multifamily	85 D.U.	7.32	622	0.11	9	0.35	30	0.35	30	0.21	18
Phase 2 Total				2906		55		163		180		108
Phase 3												
220	Multifamily	65 D.U.	7.32	476	0.11	7	0.35	23	0.35	23	0.21	14
221	Multifamily	408 D.U.	5.44	2220	0.09	37	0.27	110	0.27	110	0.17	69
Phase 3 Total				2696		44		133		133		83
Residential Subtotal				8240		150		443		476		288
Internal Capture				412		7		25		39		22
Residential Assigned				7828		143		418		437		266
Commercial (Phase 3)												
850	Supermarket	25.0 KSF	106.78	2670	2.29	57	1.53	38	4.71	118	4.53	113
Passby (17%/34%)				454		10		10		40		40
820	Shopping Center	20.0 KSF	37.75	756	0.58	12	0.36	7	1.83	37	1.98	40
Passby (17%/34%)				128		2		2		13		13
934	Fast-Food Restaurant	10.0 KSF	470.95	4710	20.5	205	19.6	197	16.9	170	15.6	157
Passby (49%/50%)				2308		100		100		85		85
Commercial Subtotal				8136		274		242		325		310
Internal Capture				1010		34		16		77		94
Commercial Passby				2890		112		112		138		138
Commercial Assigned				4236		128		114		110		78
External Total				14954		383		644		685		482
Total Passby				2890		112		112		138		138
Total Assigned				12064		271		532		547		344



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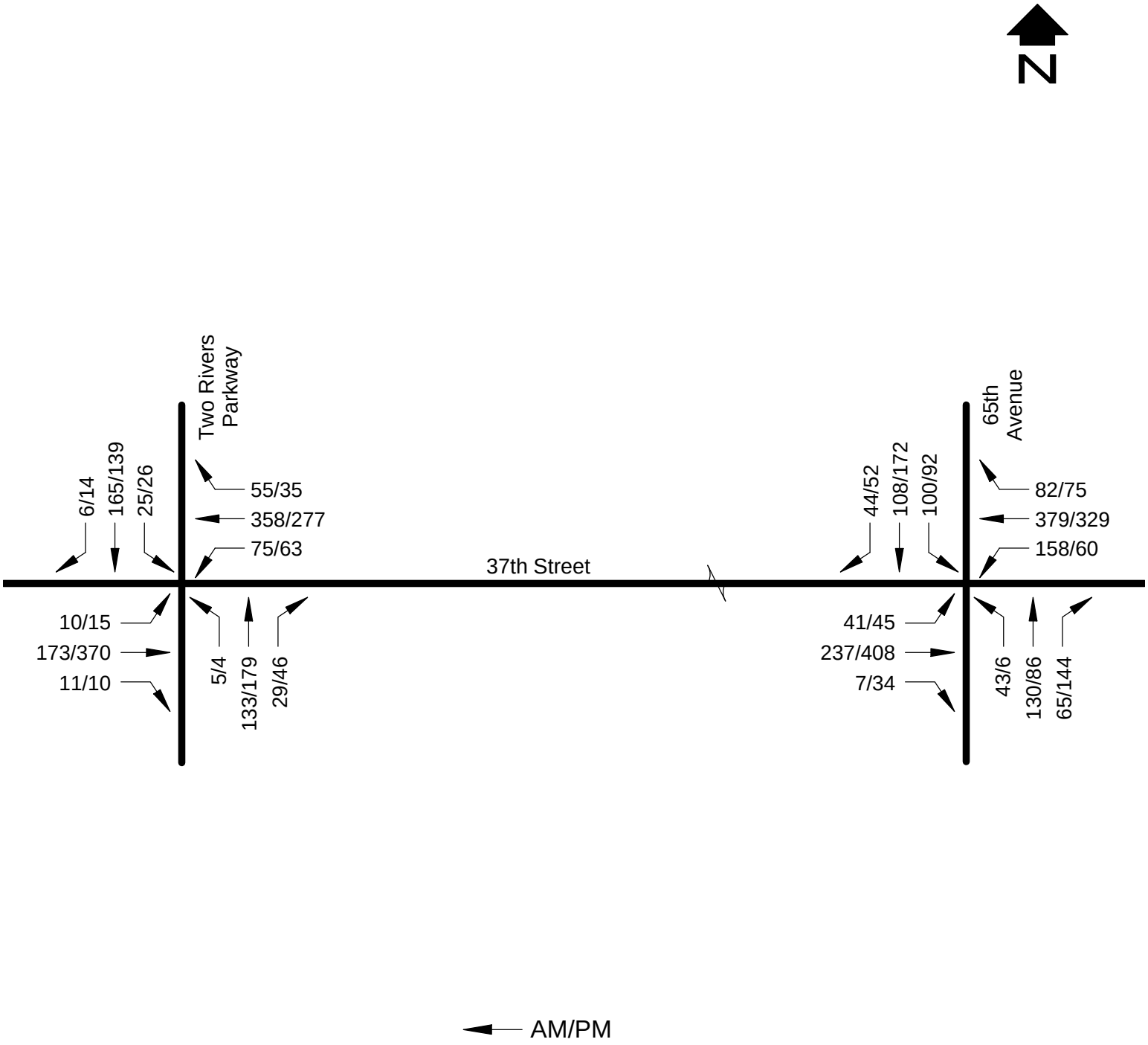
TRIP DISTRIBUTION

Figure 5

DELICH ASSOCIATES



SHORT RANGE (2020) BACKGROUND
PEAK HOUR TRAFFIC

Figure 6

Figure 7 shows the mid range (2023) background traffic projections. Background traffic projections for the mid range (2023) future horizon were calculated by increasing the traffic volumes by two percent per year.

Figure 8 shows the long range (2040) background traffic projections. Background traffic projections for the long range (2040) future horizon were calculated by increasing the traffic volumes by two percent per year. It was assumed that all vacant parcels in the Peakview area would be developed by/before the long range (2040) future. It was also assumed that the street network would be fully constructed in the Peakview area. The completed street network would provide numerous routes for the travelling public.

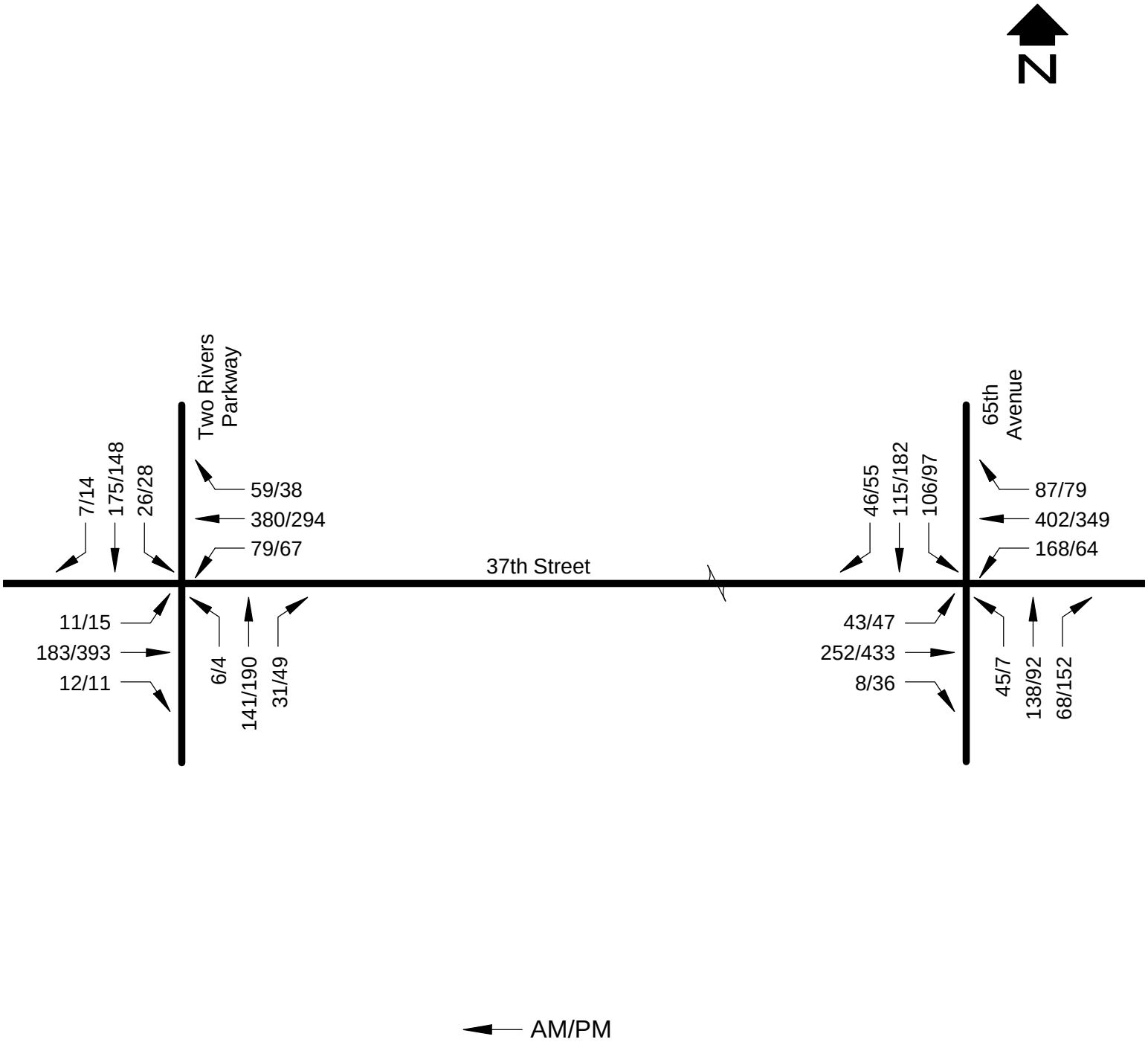
Trip Assignment

Trip assignment is how the generated and distributed trips are expected to be loaded on the street system. The assigned trips are the resultant of the trip distribution process. Figure 9 shows the Phase 1 site generated morning and afternoon peak hour traffic at the key intersections. Figure 10 shows the site generated (full development) morning and afternoon peak hour traffic at the key intersections. Figure 11 shows the short range (2020) total (phase 1 site plus background) peak hour traffic at the key intersections. Figure 12 shows the mid range (2023) total (site plus background) peak hour traffic at the key intersections. Figure 13 shows the long range (2040) total (site plus background) peak hour traffic at the key intersections.

Signal Warrants

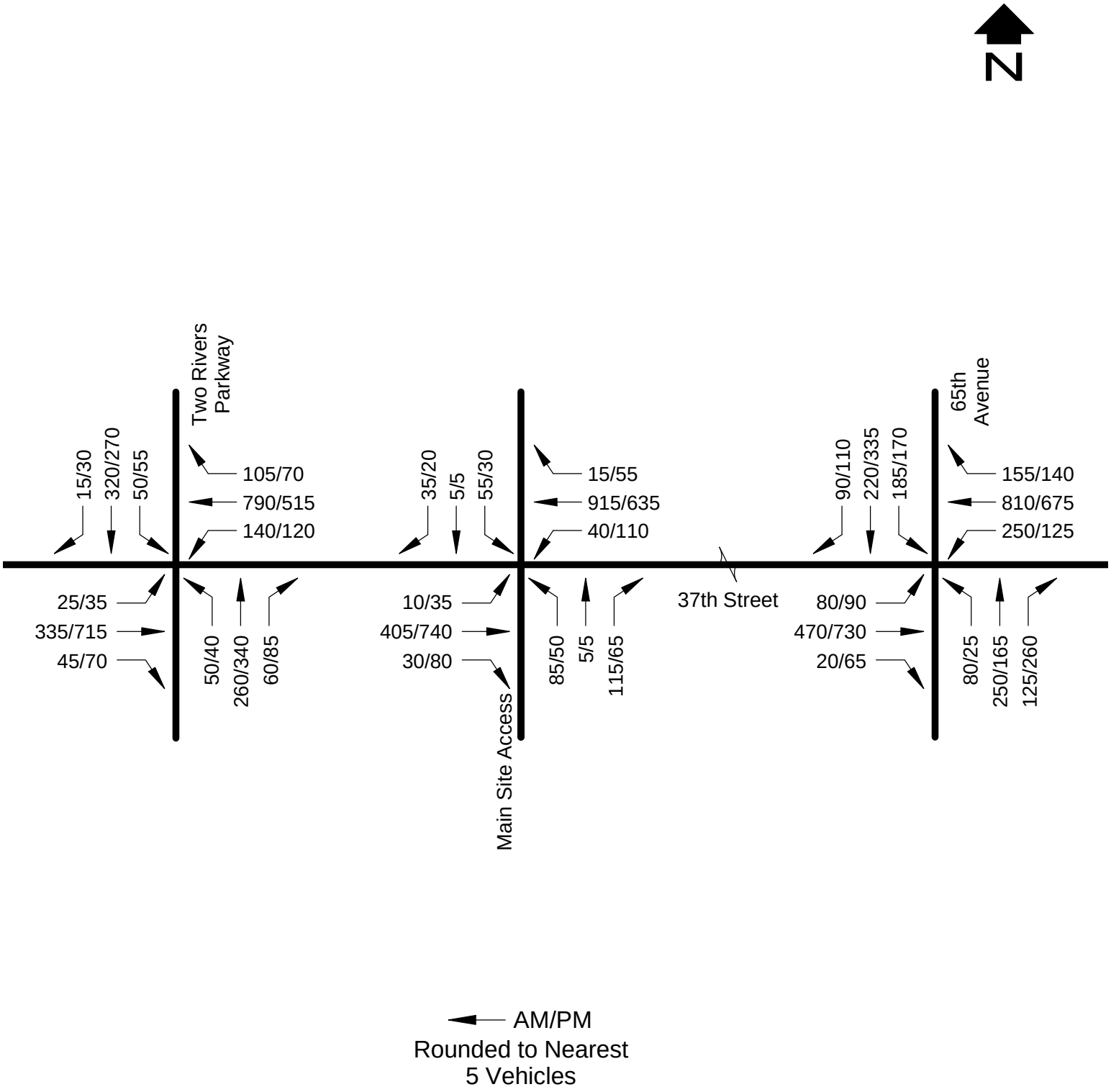
As a matter of policy, traffic signals are not installed at any location unless warrants are met according to the Manual on Uniform Traffic Control Devices. For the roads in the vicinity of the Peakview development, four hour and/or eight hour signal warrants are applicable. These warrants require much data and are applied when the traffic is actually on the area road system. It is acknowledged that peak hour signal warrants should not be applied, but since the peak hour forecasts are readily available in a traffic impact study, it is reasonable to use them to get an idea whether other signal warrants may be met. If peak hour signal warrants will not be met at a given intersection, it is reasonable to conclude that it is not likely that other signal warrants would be met. If peak hour signal warrants are met, it merely indicates that further evaluation should occur in the future as the development occurs. However, a judgment can be made that some intersections will likely meet other signal warrants. The 37th Street/65th Avenue intersection is currently signalized.

Using the short range (2020) total peak hour traffic (Figure 11), the peak hour signal warrant will be met in the morning and afternoon peak hour at the 37th Street/Two Rivers Parkway intersection. However, other signal warrants may or may not be met. Therefore, the short range (2020) future was analyzed with and without a signal at the 37th Street/Two Rivers Parkway intersection.



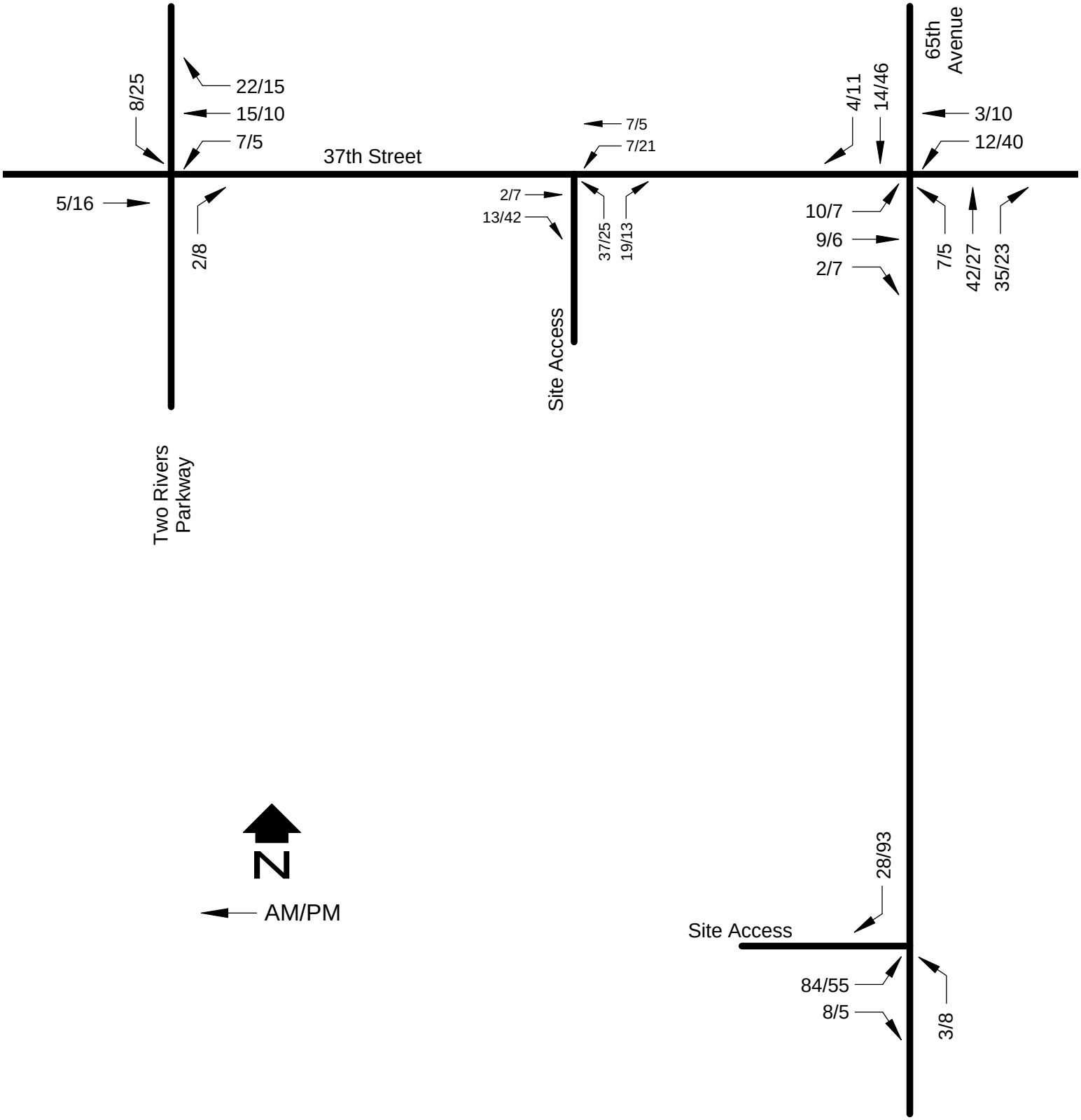
MID RANGE (2023) BACKGROUND
PEAK HOUR TRAFFIC

Figure 7



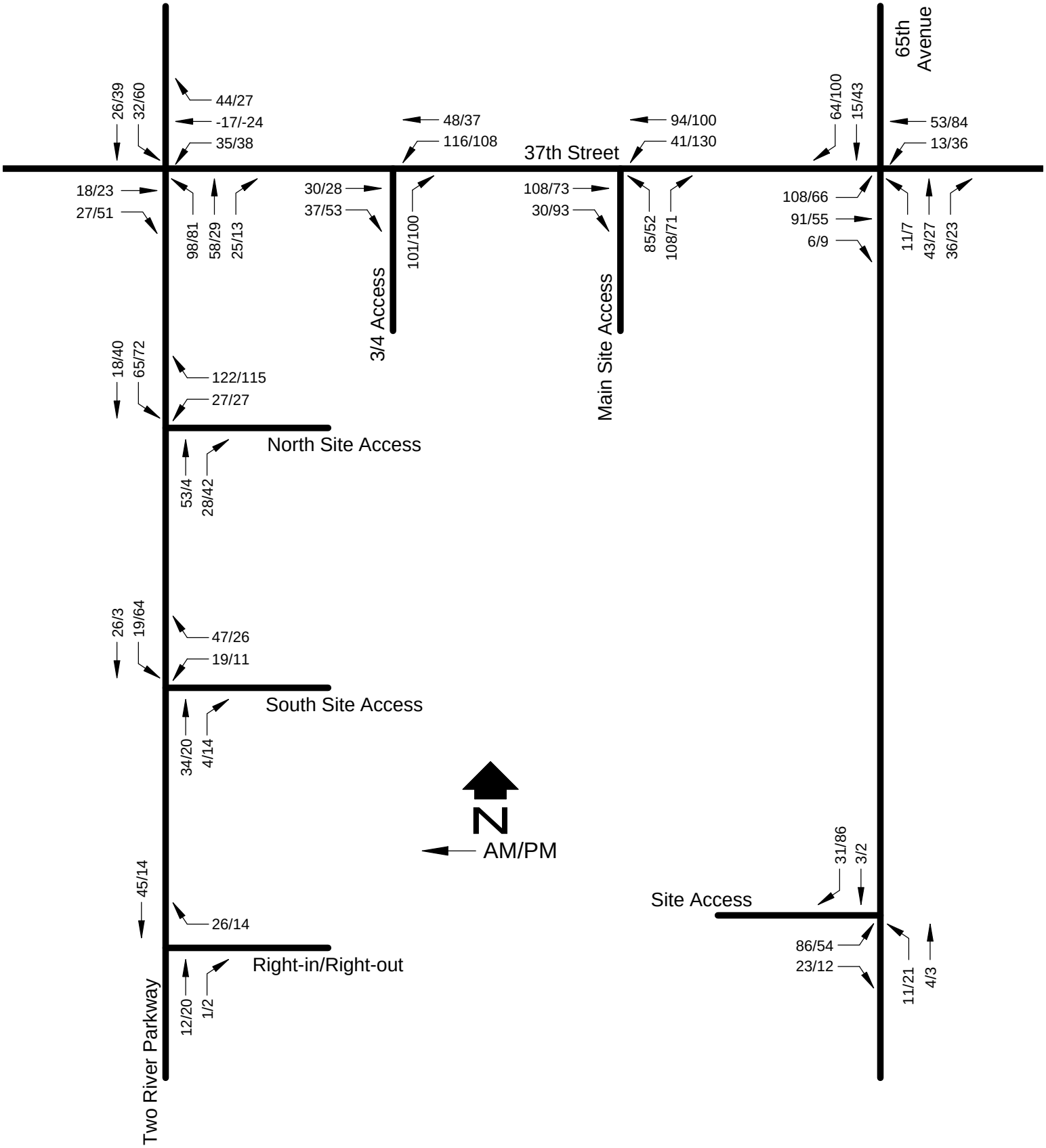
LONG RANGE (2040) BACKGROUND PEAK HOUR TRAFFIC

Figure 8



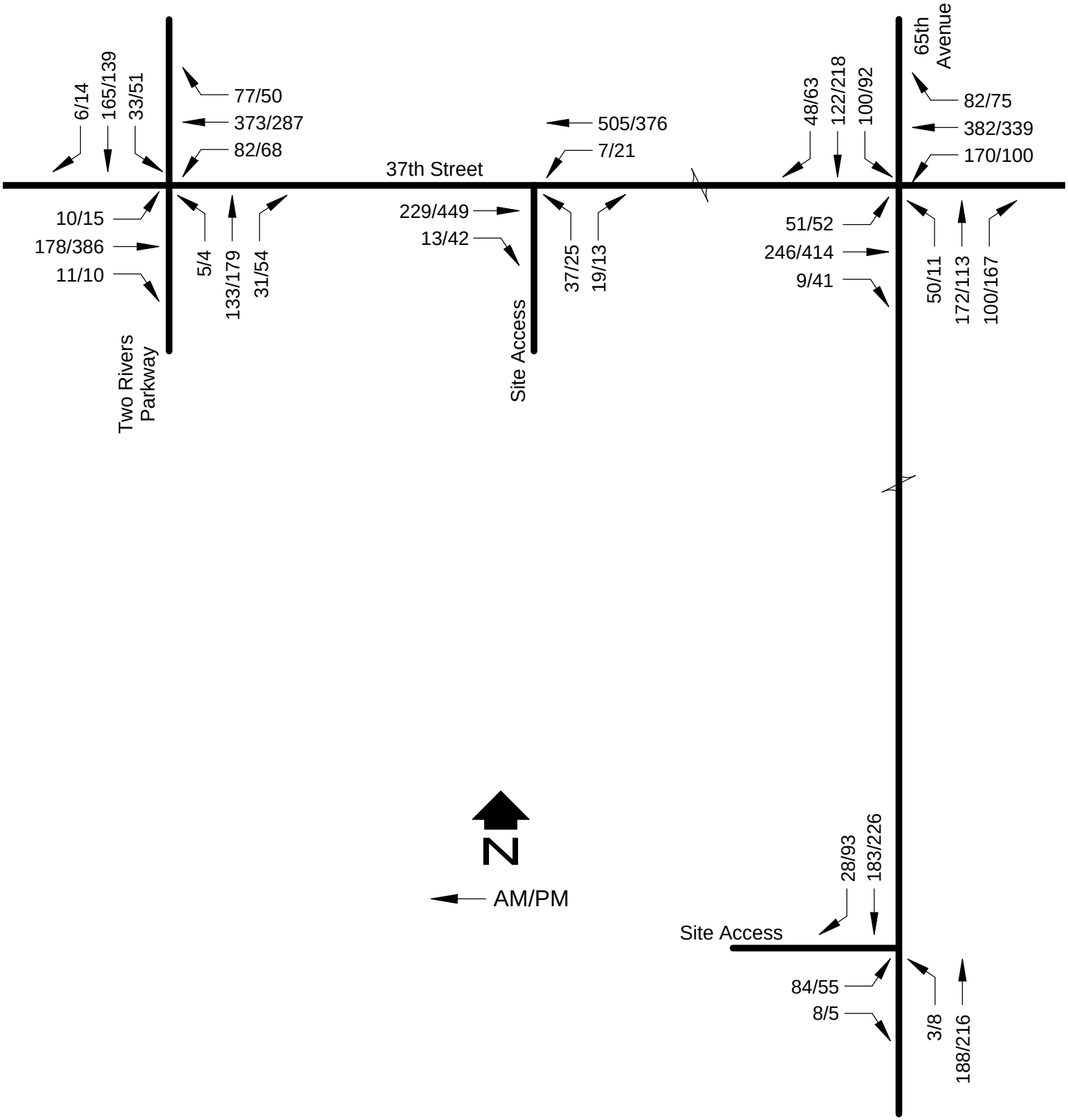
PHASE 1 SITE GENERATED
PEAK HOUR TRAFFIC

Figure 9



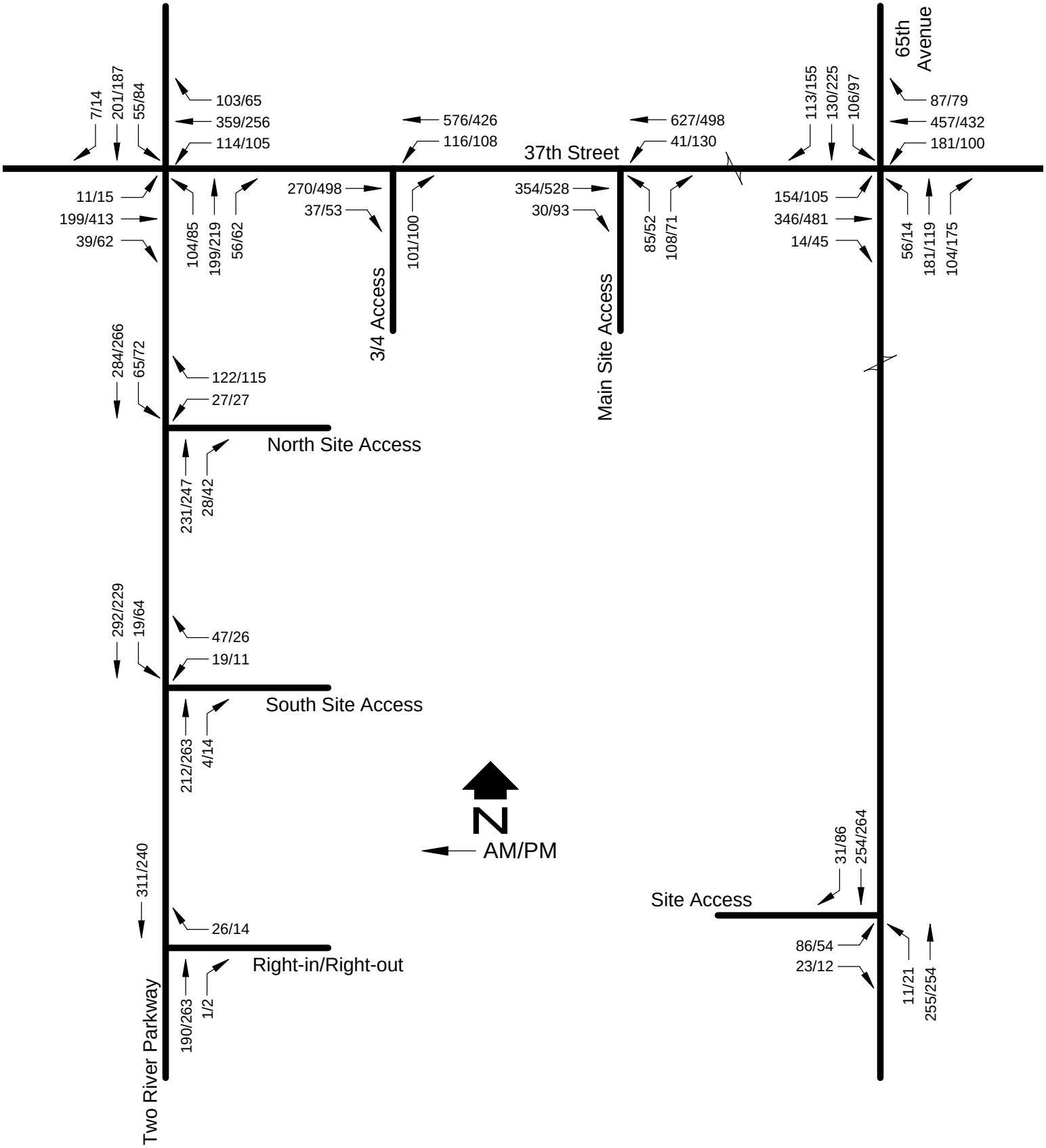
FULL DEVELOPMENT SITE GENERATED PEAK HOUR TRAFFIC

Figure 10



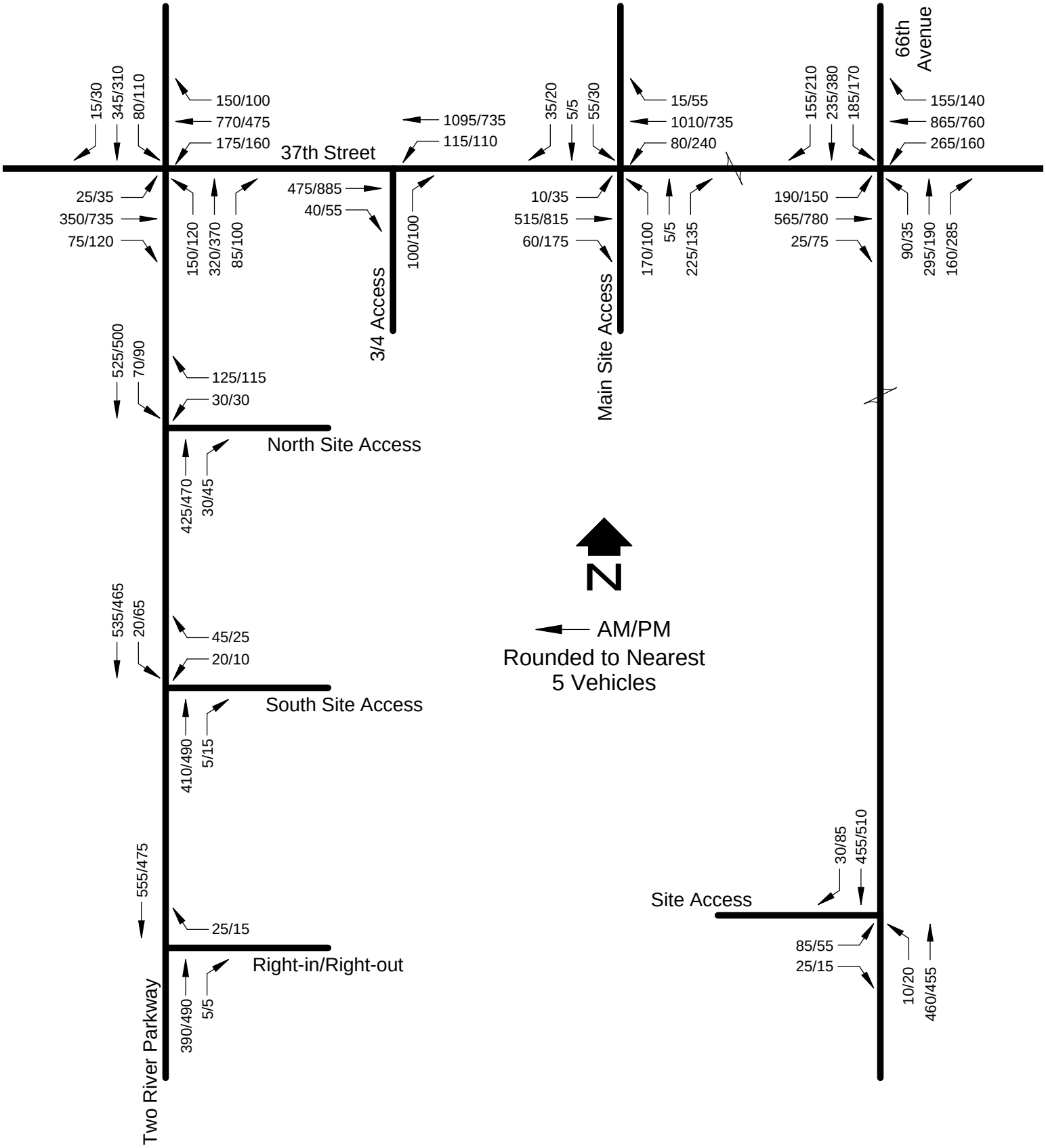
SHORT RANGE (2020) TOTAL PEAK HOUR TRAFFIC

Figure 11



MID RANGE (2023) TOTAL PEAK HOUR TRAFFIC

Figure 12



LONG RANGE (2040) TOTAL PEAK HOUR TRAFFIC

Figure 13

Using the mid range (2023) total peak hour traffic (Figure 12), the peak hour signal warrant will be met in the morning and afternoon peak hour at the 37th Street/Two Rivers Parkway intersection. It is likely that other signal warrants will be met. The 37th Street/Site Access intersection will not meet the lower threshold for the minor street in the mid range (2023) future.

Using the long range (2040) total peak hour traffic (Figure 13), the peak hour signal warrant will be met in the morning and afternoon peak hour at the 37th Street/Site Access intersection. It is likely that other signal warrants will be met. The peak hour signal warrant analyses are provided in Appendix D.

Geometry

Figure 14 shows a schematic of the short range (2020) intersection geometry. At the 37th Street/65th Avenue intersection, a northbound left-turn lane is required based on existing traffic volumes. At the 37th Street/Site Access intersection, a westbound left-turn lane is required. At the 65th Avenue/Site Access intersection, a northbound left-turn lane and southbound right-turn lane are required. At the 37th Street/Two Rivers Parkway intersection, northbound and southbound left-turn lanes are required based on the arterial classification.

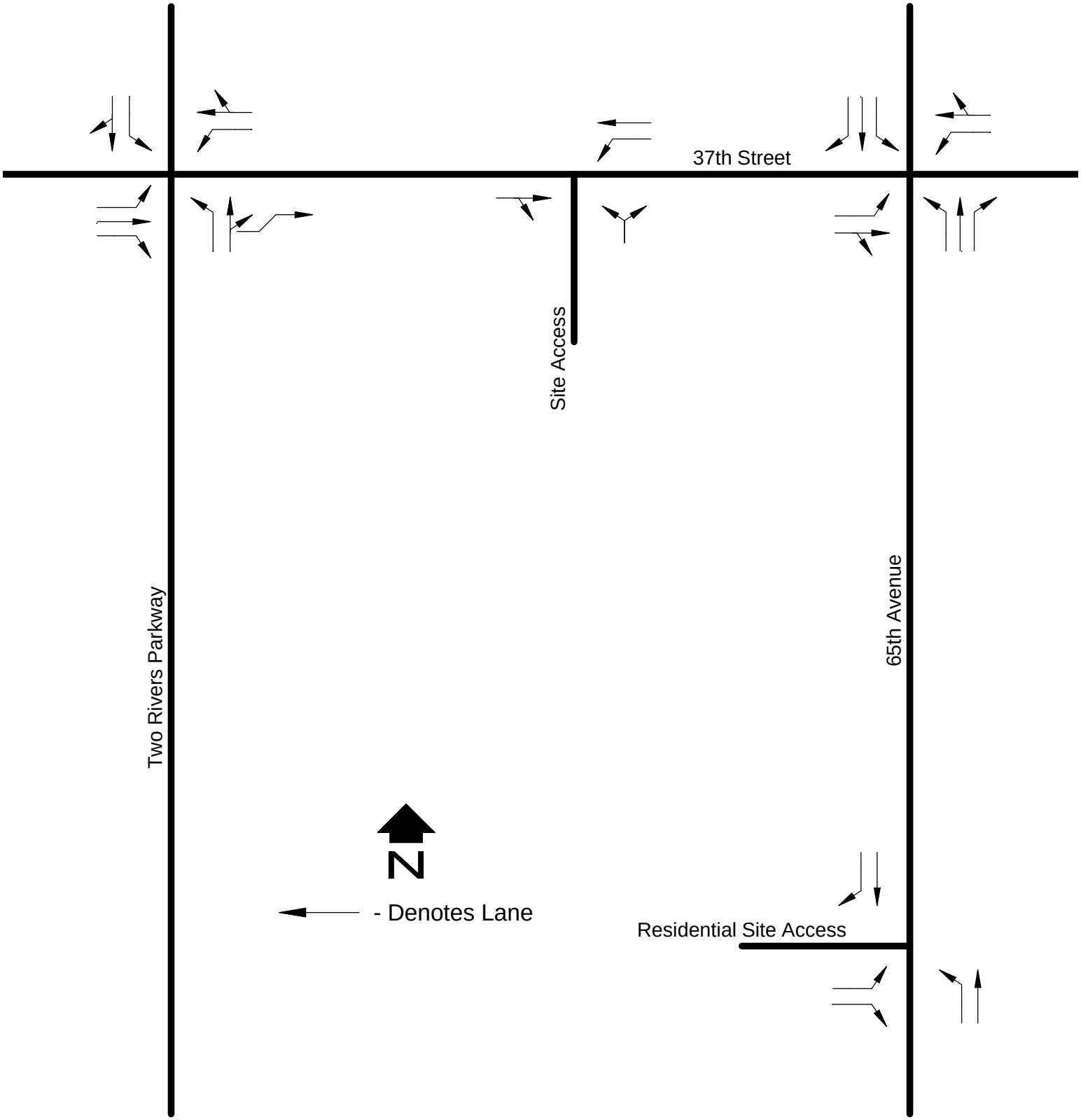
Figure 15 shows a schematic of the mid range (2023) intersection geometry. Left-turn lanes are required at all intersections based on the arterial classification. Right-turn lanes are required at all intersections, except the Two Rivers/Right-in Right-out and Two Rivers/South Site Access intersections.

Figure 16 shows a schematic of the long range (2040) intersection geometry. It is assumed that 37th Street, 65th Avenue, and Two Rivers Parkway will have two through lanes in each direction in the long range (2040) future. However, they may not be needed based on the forecasted traffic volumes.

Operation Analysis

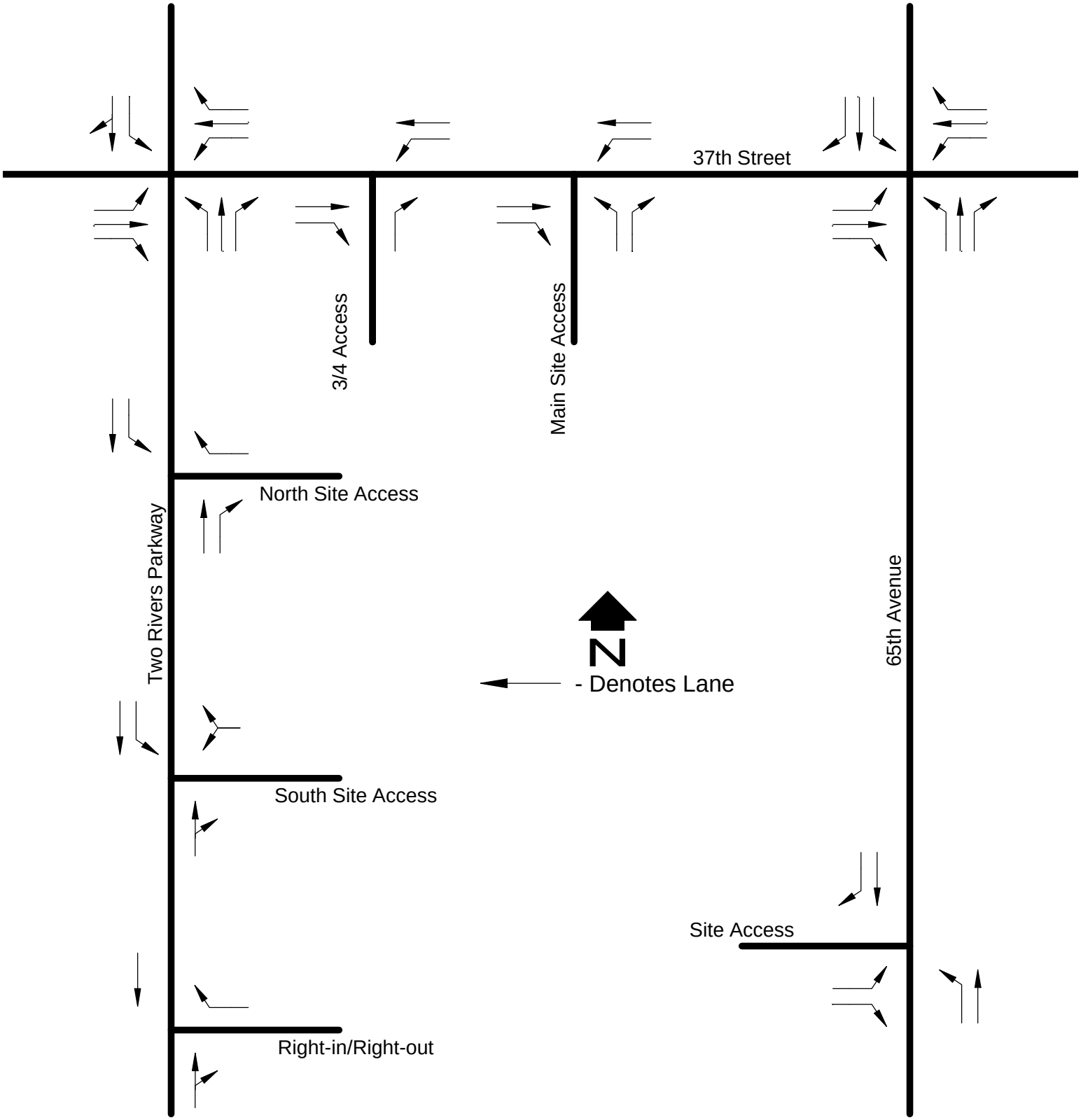
Operation analyses were performed at the 37th Street/65th Avenue, 37th Street/Site Access, 37th Street/ ¾ Access, 37th Street/Two Rivers Parkway, 65th Avenue/Site Access, Two Rivers/North Site Access, Two Rivers/South Site Access, and Two Rivers/Right-in Right-out intersections. The operations analyses were conducted for the short range future, reflecting a year 2020 condition; mid range future, reflecting a year 2023 condition; and long range future, reflecting a year 2040 condition.

Using the short range (2020) background peak hour traffic volumes (Figure 6), the 37th Street/65th Avenue and 37th Street/Two Rivers Parkway intersections operate as indicated in Table 3. Calculation forms for these analyses are provided in Appendix E. The key intersections will operate acceptably. At the 37th Street/Two Rivers Parkway intersection, the calculated delay for the afternoon approaches was commensurate with level of service E and F with stop sign control.



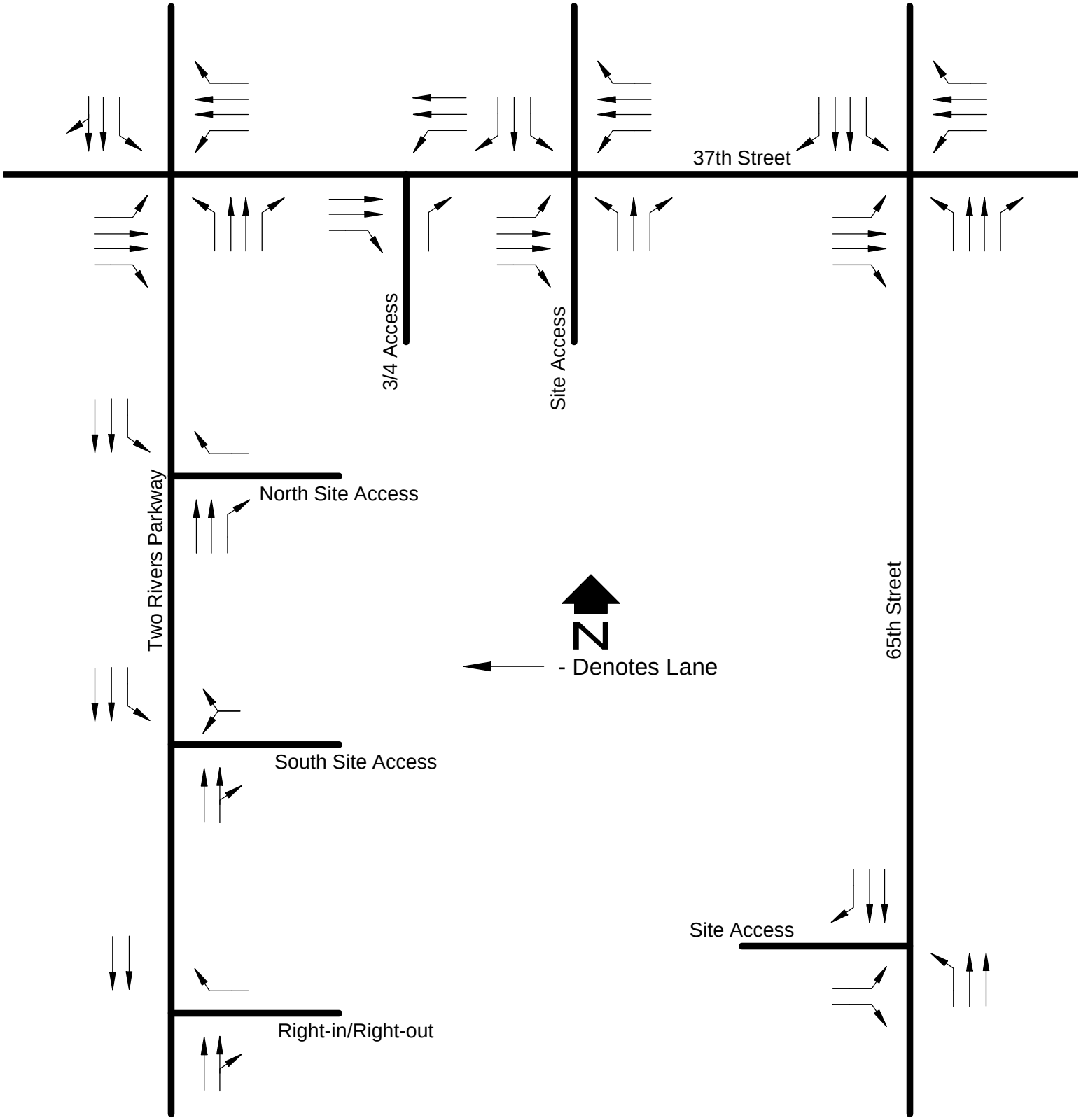
SHORT RANGE (2020) GEOMETRY

Figure 14



MID RANGE (2023) GEOMETRY

Figure 15



LONG RANGE (2040) GEOMETRY

Figure 16

TABLE 3 Short Range (2020) Background Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T/RT	B	B
	EB APPROACH	B	B
	WB LT	B	B
	WB T/RT	B	B
	WB APPROACH	B	B
	NB LT	B	B
	NB T	C	C
	NB RT	A	A
	NB APPROACH	C	C
	SB LT	B	B
	SB T	C	C
	SB RT	A	A
	SB APPROACH	B	C
	OVERALL	B	B
37th Street/Two Rivers Parkway (stop sign)	EB LT	A	A
	WB LT	A	A
	NB LT	D	E
	NB T/RT	D	F
	NB APPROACH	D	F
	SB LT	D	F
	SB T/RT	D	E
	SB APPROACH	D	E
	OVERALL	B	C
37th Street/Two Rivers Parkway (signal)	EB LT	B	B
	EB T/RT	B	B
	EB APPROACH	B	B
	WB LT	B	B
	WB T/RT	B	B
	WB APPROACH	B	B
	NB LT	A	A
	NB T	A	A
	NB RT	A	A
	NB APPROACH	A	A
	SB LT	A	A
	SB T/RT	A	A
	SB APPROACH	A	A
	OVERALL	B	B

Using the mid range (2023) background peak hour traffic volumes (Figure 7), the 37th Street/65th Avenue and 37th Street/Two Rivers Parkway intersections operate as indicated in Table 4. Calculation forms for these analyses are provided in Appendix F. The key intersections will operate acceptably.

Using the long range (2040) background peak hour traffic volumes (Figure 8), the 37th Street/65th Street, 37th Street/Site Access, and 37th Street/Two Rivers Parkway intersections operate as indicated in Table 5. Calculation forms for these analyses are provided in Appendix G. The key intersections will operate acceptably.

Using the short range (2020) total peak hour traffic volumes (Figure 11), the 37th Street/65th Avenue, 37th Street/Site Access, 37th Street/Two Rivers Parkway, and 65th Avenue/Site Access intersections operate as indicated in Table 6. Calculation forms for these analyses are provided in Appendix H. The key intersections will operate acceptably. At the 37th Street/Two Rivers Parkway intersection, the calculated delay for the afternoon approaches was commensurate with level of service E and F with stop sign control.

Using the mid range (2023) total peak hour traffic volumes (Figure 12), the 37th Street/65th Avenue, 37th Street/Site Access, 37th Street/ ¾ Access, 37th Street/Two Rivers Parkway, 65th Avenue/Site Access, Two Rivers/North Site Access, Two Rivers/South Site Access, and Two Rivers/Right-in Right-out intersections operate as indicated in Table 7. Calculation forms for these analyses are provided in Appendix I. The key intersections will operate acceptably.

Using the long range (2040) total peak hour traffic volumes (Figure 13), the 37th Street/65th Avenue, 37th Street/Site Access, 37th Street/ ¾ Access, 37th Street/Two Rivers Parkway, 65th Avenue/Site Access, Two Rivers/North Site Access, Two Rivers/South Site Access, and Two Rivers/Right-in Right-out intersections operate as indicated in Table 8. Calculation forms for these analyses are provided in Appendix J. The key intersections will operate acceptably.

TABLE 4 Mid Range (2023) Background Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T	B	B
	EB RT	A	A
	EB APPROACH	B	B
	WB LT	B	B
	WB T	B	B
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	B	B
	NB T	C	C
	NB RT	A	A
	NB APPROACH	B	C
	SB LT	B	B
	SB T	C	C
	SB RT	A	A
	SB APPROACH	B	C
	OVERALL	B	B
37th Street/Two Rivers Parkway (signal)	EB LT	B	B
	EB T	B	B
	EB RT	A	A
	EB APPROACH	B	B
	WB LT	B	B
	WB T	B	B
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	A	A
	NB T	A	A
	NB RT	A	A
	NB APPROACH	A	A
	SB LT	A	B
	SB T/RT	A	A
	SB APPROACH	A	A
	OVERALL	B	B

TABLE 5 Long Range (2040) Background Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	A
	EB T	C	A
	EB RT	A	A
	EB APPROACH	B	A
	WB LT	B	A
	WB T	B	B
	WB RT	B	B
	WB APPROACH	B	B
	NB LT	C	C
	NB T	D	D
	NB RT	A	D
	NB APPROACH	D	D
	SB LT	C	C
	SB T	C	D
	SB RT	A	A
	SB APPROACH	C	C
	OVERALL	C	B
37th Street/Two Rivers Parkway (signal)	EB LT	C	C
	EB T	C	C
	EB RT	A	A
	EB APPROACH	C	C
	WB LT	C	C
	WB T	B	B
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	B	B
	NB T	B	B
	NB RT	A	A
	NB APPROACH	B	B
	SB LT	B	B
	SB T/RT	B	B
	SB APPROACH	B	B
	OVERALL	B	C

TABLE 6 Short Range (2020) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T/RT	B	C
	EB APPROACH	B	B
	WB LT	B	B
	WB T/RT	B	B
	WB APPROACH	B	B
	NB LT	B	B
	NB T	C	C
	NB RT	A	B
	NB APPROACH	C	C
	SB LT	B	B
	SB T	C	C
	SB RT	A	A
	SB APPROACH	B	C
	OVERALL	B	B
37th Street/Site Access (stop sign)	WB LT	A	A
	NB LT/RT	B	C
	OVERALL	A	A
37th Street/Two Rivers Parkway (stop sign)	EB LT	A	A
	WB LT	A	A
	NB LT	E	E
	NB T/RT	D	F
	NB APPROACH	D	F
	SB LT	E	F
	SB T/RT	E	E
	SB APPROACH	E	F
	OVERALL	B	D
37th Street/Two Rivers Parkway (signal)	EB LT	B	B
	EB T/RT	B	B
	EB APPROACH	B	B
	WB LT	B	B
	WB T/RT	B	B
	WB APPROACH	B	B
	NB LT	A	A
	NB T	A	A
	NB RT	A	A
	NB APPROACH	A	A
	SB LT	A	A
	SB T/RT	A	A
	SB APPROACH	A	A
	OVERALL	B	B
65th Avenue/Site Access (stop sign)	EB LT	B	B
	EB RT	A	A
	EB APPROACH	B	B
	NB LT	A	A
	OVERALL	A	A

TABLE 7 Mid Range (2023) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T	B	C
	EB RT	A	A
	EB APPROACH	B	C
	WB LT	B	B
	WB T	B	C
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	B	B
	NB T	C	C
	NB RT	A	C
	NB APPROACH	C	C
	SB LT	B	B
	SB T	C	C
	SB RT	C	C
	SB APPROACH	C	C
	OVERALL	B	C
37th Street/Site Access (stop sign)	WB LT	A	A
	NB LT	D	E
	NB RT	B	B
	NB APPROACH	C	C
	OVERALL	A	A
37th Street/ ¾ Site Access (stop sign)	WB LT	A	A
	NB RT	B	B
	OVERALL	A	A

Continued on next page

Continued from previous page

TABLE 7 Mid Range (2023) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/Two Rivers Parkway (signal)	EB LT	B	B
	EB T	B	B
	EB RT	B	A
	EB APPROACH	B	B
	WB LT	B	B
	WB T	B	B
	WB RT	B	A
	WB APPROACH	B	B
	NB LT	A	B
	NB T	A	B
	NB RT	A	A
	NB APPROACH	A	B
	SB LT	A	B
	SB T/RT	A	B
	SB APPROACH	A	B
	OVERALL	B	B
65th Avenue/Site Access (stop sign)	EB LT	B	B
	EB RT	A	A
	EB APPROACH	B	B
	NB LT	A	A
	OVERALL	A	A
Two Rivers Parkway/North Site Access (stop sign)	WB LT	C	C
	WB RT	B	B
	WB APPROACH	B	B
	SB LT	A	A
	OVERALL	A	A
Two Rivers Parkway/North Site Access (stop sign)	WB LT	B	B
	SB LT	A	A
	OVERALL	A	A
Two Rivers Pkwy/Right-in Right-out (stop sign)	EB LT	A	A
	OVERALL	A	A

TABLE 8 Long Range (2040) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T	C	A
	EB RT	A	A
	EB APPROACH	C	A
	WB LT	B	B
	WB T	B	B
	WB RT	B	B
	WB APPROACH	B	B
	NB LT	C	C
	NB T	D	D
	NB RT	C	D
	NB APPROACH	D	D
	SB LT	C	C
	SB T	C	D
	SB RT	C	C
	SB APPROACH	C	C
	OVERALL	C	B
8th Street/71st Avenue (signAL	EB T	B	C
	EB RT	B	B
	EB APPROACH	B	C
	WB LT	B	B
	WB T	A	A
	WB APPROACH	A	A
	NB LT	B	B
	NB RT	B	B
	NB APPROACH	B	B
	OVERALL	B	B
37TH Street/ ¾ Access (stop sign)	WB LT	B	B
	NB RT	A	B
	OVERALL	A	B

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Continued from previous page

TABLE 8 Long Range (2040) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/Two Rivers Parkway (signal)	EB LT	C	C
	EB T	C	C
	EB RT	A	A
	EB APPROACH	C	C
	WB LT	C	C
	WB T	B	B
	WB RT	B	A
	WB APPROACH	B	B
	NB LT	B	B
	NB T	B	C
	NB RT	A	A
	NB APPROACH	B	C
	SB LT	B	B
	SB T/RT	B	C
	SB APPROACH	B	C
	OVERALL	C	C
65th Avenue/Site Access (stop sign)	EB LT	C	C
	EB RT	B	B
	EB APPROACH	C	C
	NB LT	A	A
	OVERALL	A	A
Two Rivers Parkway/North Site Access (stop sign)	WB LT	C	C
	WB RT	B	B
	WB APPROACH	B	B
	SB LT	A	A
	OVERALL	A	A
Two Rivers Parkway/North Site Access (stop sign)	WB LT	B	B
	SB LT	A	A
	OVERALL	A	A
Two Rivers Pkwy/Right-in Right-out (stop sign)	EB LT	A	B
	OVERALL	A	A

IV. CONCLUSIONS

This study assessed the impacts of the Peakview development on the street system in the vicinity of the proposed development in the short range (2020), mid range (2023), and long range (2040) futures. As a result of this analysis, the following is concluded:

- The Peakview development is feasible from a traffic engineering standpoint. Phase 1 of the Peakview development will generate approximately 2,646 daily trip ends, 199 morning peak hour trip ends, and 262 afternoon peak hour trip ends. At full development of the Peakview development will generate approximately 17,660 daily trip ends, 1,177 morning peak hour trip ends, and 1,662 afternoon peak hour trip ends.

- Currently, the 37th Street/65th Avenue and 37th Street/Two Rivers Parkway intersections operate acceptably with existing control and geometry. At the 37th Street/Two Rivers Parkway intersection, the calculated delay for the northbound and southbound approaches was commensurate with level of service F in the afternoon peak hour.

- The 37th Street/65th Avenue intersection is currently signalized. The 37th Street/Two Rivers Parkway intersection will meet peak hour signal warrants in the short range (2020) future. However, other signal warrants may or may not be met. In the mid range (2023) future, the peak hour signal warrant will be met in the morning and afternoon peak hour at the 37th Street/Two Rivers Parkway intersection. It is likely that other signal warrants will be met. In the long range (2040) future, the peak hour signal warrant will be met in the morning and afternoon peak hour at the 37th Street/Site Access intersection.

- In the short range (2020) future, given development of Phase 1 of the Peakview site and an increase in background traffic, the key intersections will operate acceptably with the recommended geometry. At the 37th Street/Two Rivers Parkway intersection, the calculated delay for the afternoon approaches was commensurate with level of service E and F with stop sign control.

- In the mid range (2023) future, given full development of the Peakview site and an increase in background traffic, the key intersections will operate acceptably with the recommended geometry and a signal at the 37th Street/Two Rivers Parkway intersection.

- In the long range (2040) future, given full development of the Peakview site and an increase in background traffic, the key intersections will operate acceptably with a signal at the 37th Street/Two Rivers Parkway and 37th Street/Site Access intersections.

- The short range (2020), mid range (2023), and long range (2040) geometry is shown in Figures 14, 15 and 16, respectively.

APPENDIX A

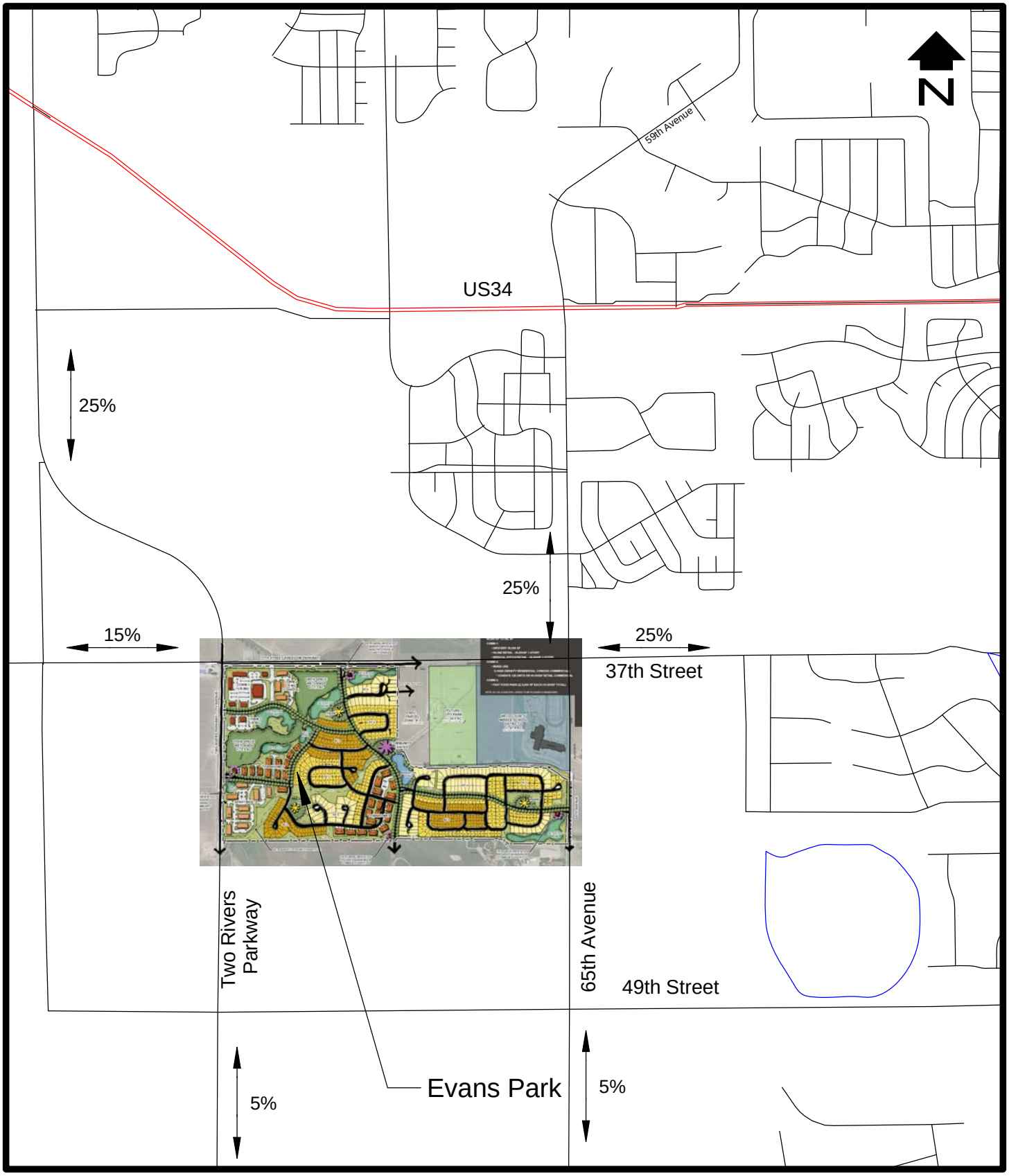
Attachment "A"
Transportation Impact Study
Base Assumptions Form

Project Information				
Project Name: Evans Park				
Project Location: South of 37th Street between 65th Avenue and Two Rivers Parkway				
TIS Assumptions				
Type of Study	Memo:	Intermediate:	Full: Yes	
Study Area Boundaries	North: 37th Street		South: Site Access	
	East: 65th Avenue		West: Two Rivers Parkway	
Study Years	Short Range: 2023		Long Range: 2040	
Future Traffic Growth Rate	Short term: 2%/year		Long term: 2%/year	
Study Intersections	1. All access drives		5.	
	2. 37th Street/ 65th Avenue		6.	
	3. 37th Street/Two Rivers		7.	
	4. Site Access intersections		8.	
Time Period for Study	AM: 7:00-9:00	PM: 4:00-6:00	Sat:	
Trip Generation Rates (see attached)	Per ITE			
Trip Adjustment Factors	Passby: N/A		Captive Market: N/A	
Trip Distribution (see attached)	North: 50%	South: 10%	East: 15%	West: 25%
Mode Split Assumptions	N/A			
Other Traffic Studies				
Active Modes Analysis				
Other Areas Requiring Special Study				

Date: March 28, 2018

Traffic Engineer: Delich Associates

City of Evans Engineer: _____

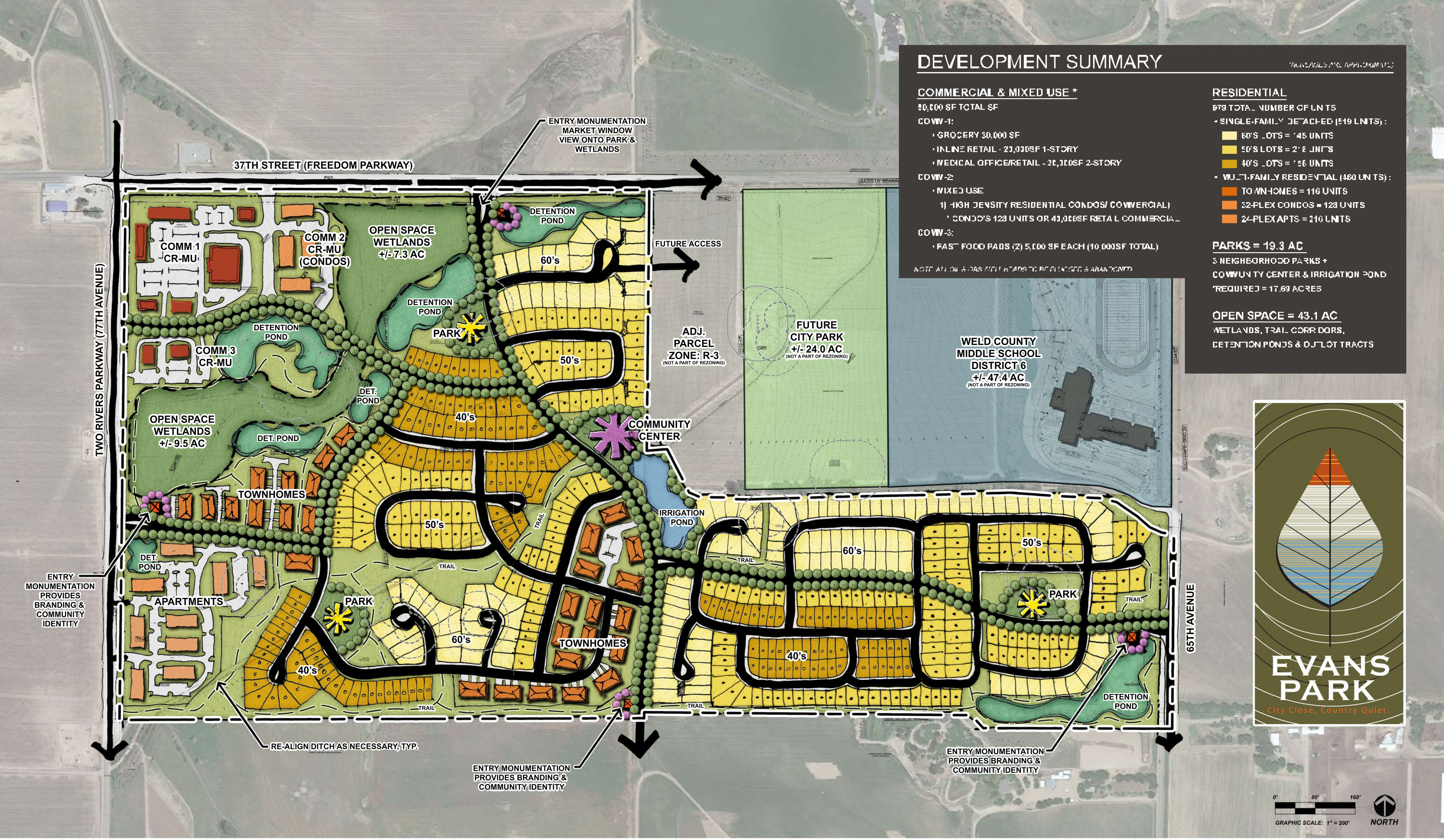


SCALE: 1"=2000'

SITE LOCATION/TRIP DISTRIBUTION

Figure 5

DELICH ASSOCIATES



DEVELOPMENT SUMMARY

TOTALS ARE APPROXIMATE

COMMERCIAL & MIXED USE *

80,000 SF TOTAL SF

COMM-1:

- GROCERY 30,000 SF
- INLINE RETAIL - 20,000SF 1-STORY
- MEDICAL OFFICE/RETAIL - 20,000SF 2-STORY

COMM-2:

- MIXED USE
  1) HIGH DENSITY RESIDENTIAL CONDOS/ COMMERCIAL
     - CONDOS 128 UNITS OR 41,000SF RETAIL COMMERCIAL

COMM-3:

- FAST FOOD PADS (2) 5,000 SF EACH (10,000SF TOTAL)

NOTE: ALL OUTPARCELS ARE TO BE PLATTED & BRANDED

RESIDENTIAL

979 TOTAL NUMBER OF UNITS

- SINGLE-FAMILY DETACHED (519 UNITS):
  - 60'S LOTS = 145 UNITS
  - 50'S LOTS = 216 UNITS
  - 40'S LOTS = 158 UNITS
- MULTI-FAMILY RESIDENTIAL (460 UNITS):
  - TOWNHOMES = 116 UNITS
  - 32-PLEX CONDOS = 128 UNITS
  - 24-PLEX APTS = 216 UNITS

PARKS = 19.3 AC

3 NEIGHBORHOOD PARKS +
COMMUNITY CENTER & IRRIGATION POND
REQUIRED = 17.69 ACRES

OPEN SPACE = 43.1 AC

WETLANDS, TRAIL CORRIDORS,
DETENTION PONDS & OUTLOT TRACTS

Evans Park Master Plan

Evans, CO
ROI Land Investments. Ltd.
March 21, 2018
Project #171096

LAI Design Group
www.LAIdesigngroup.com | 303.734.1777 - Corporate
Denver | Houston

Architecture ■ Planning & Entitlements ■ Visual Media ■ Landscape Architecture ■ Real Estate Advisory

TABLE 2 Trip Generation												
Code	Use	Size	AWDTE		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	In	Rate	Out	Rate	In	Rate	Out
Commercial												
850	Supermarket	30.0 KSF	106.78	3204	2.29	69	1.53	46	4.71	141	4.53	136
Passby (17%/34%)				544		10		10		47		47
820	Shopping Center	80.0 KSF	37.75	3020	0.58	46	0.36	29	1.83	146	1.98	158
Passby (17%/34%)				514		6		6		52		52
934	Fast-Food Restaurant	10.0 KSF	470.95	4710	20.5	205	19.6	196	16.9	169	15.6	156
Passby (49%/50%)				2308		98		98		81		81
Commercial Subtotal				10934		320		271		456		450
Commercial Passby				3366		114		114		180		180
Commercial Assigned				7568		206		157		276		270
Single Family												
210	Single Family	519 D.U.	9.11	4730	0.18	93	0.54	280	0.60	311	0.35	183
Multi-Family												
220	Multifamily	460 D.U.	7.26	3438	0.11	47	0.36	156	0.36	145	0.21	85
Residential Subtotal				8168		140		436		456		268
Total				19102		460		707		912		718
Total Passby				7568		114		114		180		180
Total Assigned				11534		346		593		732		538

APPENDIX B

DELICH ASSOCIATES
2272 GLEN HAVEN DRIVE
LOVELAND, CO 80538
Phone: (970) 669-2061

TABULAR SUMMARY OF VEHICLE COUNTS

Date: 2/7/2018 Observer: Vickie
Day: Tuesday Jurisdiction: Evans

Intersection: 37th Street/65th Avenue

R = right turn
S = straight
L = left turn

Time	Northbound: 65th Avenue				Southbound: 65th Avenue				Total	Eastbound: 37th Street				Westbound: 37th Street				Total	Total
Begins	L	S	R	Total	L	S	R	Total	north/south	L	S	R	Total	L	S	R	Total	east/west	All
7:00	13	33	12	58	31	22	8	61	119	5	49	1	55	25	84	25	134	189	308
7:15	14	34	12	60	38	24	10	72	132	6	55	1	62	25	85	25	135	197	329
7:30	13	40	21	74	31	22	9	62	136	8	64	1	73	25	117	22	164	237	373
7:45	6	28	18	52	18	27	10	55	107	9	44	0	53	42	102	20	164	217	324
8:00	8	23	11	42	9	31	13	53	95	16	65	5	86	60	60	12	132	218	313
8:15	5	16	12	33	8	33	7	48	81	9	93	3	105	59	51	10	120	225	306
8:30	2	14	14	30	17	9	7	33	63	8	44	3	55	13	40	10	63	118	181
8:45	1	14	13	28	12	10	7	29	57	7	45	3	55	10	38	10	58	113	170
7:15-8:15	41	125	62	228	96	104	42	242	470	39	228	7	274	152	364	79	595	869	1339
PHF	0.73	0.78	0.74	0.77	0.63	0.84	0.81	0.84	0.86	0.61	0.88	0.35	0.8	0.63	0.78	0.79	0.91	0.92	0.9
4:00	4	21	23	48	22	22	9	53	101	11	83	7	101	15	50	17	82	183	284
4:15	5	25	26	56	27	22	11	60	116	12	86	7	105	18	52	18	88	193	309
4:30	4	22	21	47	19	26	14	59	106	12	72	7	91	21	73	27	121	212	318
4:45	5	26	24	55	9	32	10	51	106	10	82	3	95	17	90	19	126	221	327
5:00	1	23	39	63	23	41	10	74	137	13	95	9	117	13	68	15	96	213	350
5:15	0	30	37	67	34	41	13	88	155	9	102	9	120	16	92	26	134	254	409
5:30	3	15	32	50	16	43	14	73	123	11	101	8	120	14	80	16	110	230	353
5:45	2	15	30	47	15	40	13	68	115	10	94	7	111	15	76	15	106	217	332
5:00-6:00	6	83	138	227	88	165	50	303	530	43	392	33	468	58	316	72	446	914	1444
PHF	0.5	0.69	0.88	0.85	0.65	0.96	0.89	0.86	0.85	0.83	0.96	0.92	0.98	0.91	0.86	0.69	0.83	0.9	0.88

DELICH ASSOCIATES
2272 GLEN HAVEN DRIVE
LOVELAND, CO 80538
Phone: (970) 669-2061

TABULAR SUMMARY OF VEHICLE COUNTS

Date: 2/8/2018 Observer: Vickie
Day: Thursday Jurisdiction: Evans

Intersection: 37th Street/Two Rivers

R = right turn
S = straight
L = left turn

Time	Northbound:			Two Rivers	Southbound:			Two Rivers	Total	Eastbound:			37th Street	Westbound:			37th Street	Total	Total
Begins	L	S	R	Total	L	S	R	Total	north/south	L	S	R	Total	L	S	R	Total	east/west	All
7:00	1	32	5	38	5	39	1	45	83	1	38	2	41	14	81	11	106	147	230
7:15	0	36	6	42	5	46	1	52	94	1	41	4	46	17	87	16	120	166	260
7:30	2	31	11	44	7	37	1	45	89	5	45	2	52	27	96	10	133	185	274
7:45	2	29	6	37	7	37	3	47	84	3	42	3	48	14	80	16	110	158	242
8:00	8	33	4	45	8	32	0	40	85	0	31	5	36	14	59	10	83	119	204
8:15	1	21	9	31	4	21	1	26	57	1	36	0	37	11	43	10	64	101	158
8:30	0	18	8	26	3	10	0	13	39	1	38	1	40	12	47	4	63	103	142
8:45	1	18	7	26	3	11	1	15	41	1	36	1	38	10	44	4	58	96	137
7:00-8:00	5	128	28	161	24	159	6	189	350	10	166	11	187	72	344	53	469	656	1006
PHF	0.63	0.89	0.64	0.91	0.86	0.86	0.5	0.91	0.93	0.5	0.92	0.69	0.9	0.67	0.9	0.83	0.88	0.89	0.92
4:00	1	32	11	44	11	25	1	37	81	1	82	2	85	12	49	6	67	152	233
4:15	0	34	15	49	13	27	0	40	89	0	85	3	88	11	50	8	69	157	246
4:30	1	35	7	43	4	34	5	43	86	2	82	1	85	13	57	6	76	161	247
4:45	2	42	12	56	9	28	2	39	95	6	91	2	99	17	60	12	89	188	283
5:00	1	44	9	54	9	39	2	50	104	2	95	4	101	11	63	7	81	182	286
5:15	0	51	16	67	3	33	4	40	107	4	88	3	95	20	86	9	115	210	317
5:30	0	46	17	63	7	26	1	34	97	4	71	1	76	12	52	9	73	149	246
5:45	1	44	15	60	6	25	2	33	93	4	71	2	77	13	51	9	73	150	243
4:30-5:30	4	172	44	220	25	134	13	172	392	14	356	10	380	61	266	34	361	741	1133
PHF	0.5	0.84	0.69	0.82	0.69	0.86	0.65	0.86	0.92	0.58	0.94	0.63	0.94	0.76	0.77	0.71	0.78	0.88	0.89

APPENDIX C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	228	7	152	364	79	41	125	62	96	104	42
Future Volume (veh/h)	39	228	7	152	364	79	41	125	62	96	104	42
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	42	248	7	165	396	76	45	136	0	104	113	0
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	744	21	524	627	120	71	214	246	212	223	189
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.16	0.16	0.00	0.12	0.12	0.00
Sat Flow, veh/h	918	1803	51	1120	1520	292	457	1382	1583	1774	1863	1583
Grp Volume(v), veh/h	42	0	255	165	0	472	181	0	0	104	113	0
Grp Sat Flow(s),veh/h/ln	918	0	1854	1120	0	1811	1840	0	1583	1774	1863	1583
Q Serve(g_s), s	1.6	0.0	4.0	5.1	0.0	8.9	4.0	0.0	0.0	2.4	2.5	0.0
Cycle Q Clear(g_c), s	10.6	0.0	4.0	9.1	0.0	8.9	4.0	0.0	0.0	2.4	2.5	0.0
Prop In Lane	1.00		0.03	1.00		0.16	0.25		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	0	765	524	0	748	285	0	246	212	223	189
V/C Ratio(X)	0.12	0.00	0.33	0.31	0.00	0.63	0.63	0.00	0.00	0.49	0.51	0.00
Avail Cap(c_a), veh/h	603	0	1266	826	0	1237	788	0	678	760	798	678
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.3	0.0	8.6	11.7	0.0	10.1	17.1	0.0	0.0	17.8	17.8	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.3	0.0	0.9	2.3	0.0	0.0	1.7	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.1	1.6	0.0	4.5	2.2	0.0	0.0	1.3	1.4	0.0
LnGrp Delay(d),s/veh	14.4	0.0	8.9	12.1	0.0	11.0	19.4	0.0	0.0	19.5	19.6	0.0
LnGrp LOS	B		A	B		B	B			B	B	
Approach Vol, veh/h		297			637			181			217	
Approach Delay, s/veh		9.7			11.3			19.4			19.6	
Approach LOS		A			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		22.3		9.7		22.3		11.2
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		29.5		18.5		29.5		18.5
Max Q Clear Time (g_c+I1), s		12.6		4.5		11.1		6.0
Green Ext Time (p_c), s		5.2		0.7		5.4		0.7

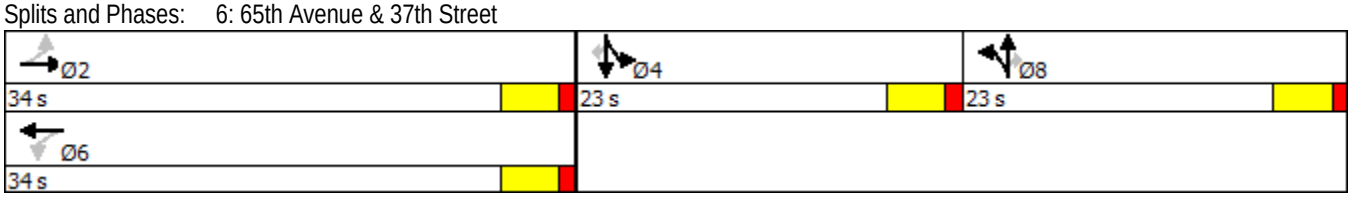
Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Phase Number	2	4	6	8
Movement	EBTL	SBTL	WBTL	NBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	34	23	34	23
Maximum Split (%)	42.5%	28.8%	42.5%	28.8%
Minimum Split (s)	22.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	7
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	34	0	57
End Time (s)	34	57	34	0
Yield/Force Off (s)	29.5	52.5	29.5	75.5
Yield/Force Off 170(s)	18.5	52.5	18.5	75.5
Local Start Time (s)	0	34	0	57
Local Yield (s)	29.5	52.5	29.5	75.5
Local Yield 170(s)	18.5	52.5	18.5	75.5

Intersection Summary

Cycle Length	80
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	392	33	58	316	72	6	83	138	88	165	50
Future Volume (veh/h)	43	392	33	58	316	72	6	83	138	88	165	50
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	47	426	32	63	343	67	7	90	13	96	179	0
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	411	725	54	379	641	125	15	195	179	279	293	249
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.11	0.11	0.11	0.16	0.16	0.00
Sat Flow, veh/h	972	1711	129	930	1515	296	134	1722	1583	1774	1863	1583
Grp Volume(v), veh/h	47	0	458	63	0	410	97	0	13	96	179	0
Grp Sat Flow(s),veh/h/ln	972	0	1840	930	0	1811	1856	0	1583	1774	1863	1583
Q Serve(g_s), s	1.7	0.0	8.4	2.5	0.0	7.4	2.2	0.0	0.3	2.1	4.0	0.0
Cycle Q Clear(g_c), s	9.1	0.0	8.4	10.9	0.0	7.4	2.2	0.0	0.3	2.1	4.0	0.0
Prop In Lane	1.00		0.07	1.00		0.16	0.07		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	411	0	779	379	0	767	210	0	179	279	293	249
V/C Ratio(X)	0.11	0.00	0.59	0.17	0.00	0.53	0.46	0.00	0.07	0.34	0.61	0.00
Avail Cap(c_a), veh/h	649	0	1231	607	0	1211	778	0	664	744	781	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.9	0.0	9.8	13.9	0.0	9.5	18.3	0.0	17.5	16.6	17.3	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.7	0.2	0.0	0.6	1.6	0.0	0.2	0.7	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	4.4	0.7	0.0	3.8	1.2	0.0	0.1	1.1	2.2	0.0
LnGrp Delay(d),s/veh	13.0	0.0	10.5	14.1	0.0	10.1	19.9	0.0	17.6	17.3	19.4	0.0
LnGrp LOS	B		B	B		B	B		B	B	B	
Approach Vol, veh/h		505			473			110			275	
Approach Delay, s/veh		10.7			10.6			19.6			18.7	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		23.2		11.4		23.2		9.5
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		29.5		18.5		29.5		18.5
Max Q Clear Time (g_c+I1), s		11.1		6.0		12.9		4.2
Green Ext Time (p_c), s		6.1		1.0		5.8		0.4

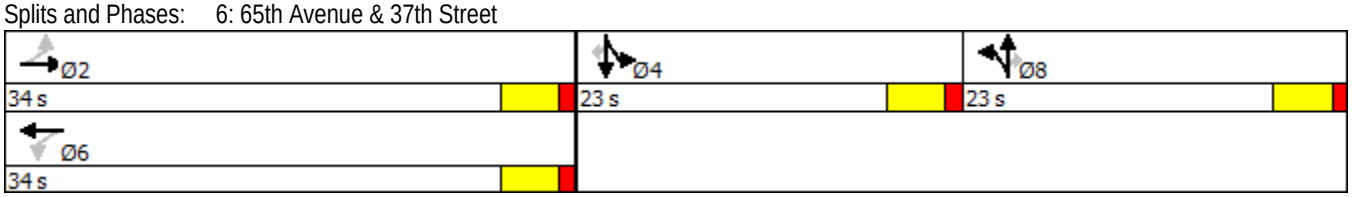
Intersection Summary	
HCM 2010 Ctrl Delay	13.0
HCM 2010 LOS	B

Phase Number	2	4	6	8
Movement	EBTL	SBTL	WBTL	NBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	34	23	34	23
Maximum Split (%)	42.5%	28.8%	42.5%	28.8%
Minimum Split (s)	22.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	7
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	34	0	57
End Time (s)	34	57	34	0
Yield/Force Off (s)	29.5	52.5	29.5	75.5
Yield/Force Off 170(s)	18.5	52.5	18.5	75.5
Local Start Time (s)	0	34	0	57
Local Yield (s)	29.5	52.5	29.5	75.5
Local Yield 170(s)	18.5	52.5	18.5	75.5

Intersection Summary

Cycle Length	80
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 6: 65th Avenue & 37th Street



Intersection	
Int Delay, s/veh	13.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	166	11	72	344	53	5	128	28	24	159	6
Future Vol, veh/h	10	166	11	72	344	53	5	128	28	24	159	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	180	12	78	374	58	5	139	30	26	173	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	432	0	0	180	0	0	851	790	180	846	761	403
Stage 1	-	-	-	-	-	-	202	202	-	559	559	-
Stage 2	-	-	-	-	-	-	649	588	-	287	202	-
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	1128	-	-	1396	-	-	280	322	863	282	335	647
Stage 1	-	-	-	-	-	-	800	734	-	513	511	-
Stage 2	-	-	-	-	-	-	458	496	-	720	734	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1128	-	-	1396	-	-	149	301	863	166	313	647
Mov Cap-2 Maneuver	-	-	-	-	-	-	149	301	-	166	313	-
Stage 1	-	-	-	-	-	-	792	727	-	508	482	-
Stage 2	-	-	-	-	-	-	275	468	-	556	727	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.2	27.9	44.1
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	328	1128	-	-	1396	-	-	286
HCM Lane V/C Ratio	0.534	0.01	-	-	0.056	-	-	0.718
HCM Control Delay (s)	27.9	8.2	-	-	7.7	-	-	44.1
HCM Lane LOS	D	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	3	0	-	-	0.2	-	-	5.1

Intersection												
Int Delay, s/veh	22											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	356	10	61	266	34	4	172	44	25	134	13
Future Vol, veh/h	14	356	10	61	266	34	4	172	44	25	134	13
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	150	-	150	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	387	11	66	289	37	4	187	48	27	146	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	326	0	0	387	0	0	937	876	387	975	857	308
Stage 1	-	-	-	-	-	-	417	417	-	440	440	-
Stage 2	-	-	-	-	-	-	520	459	-	535	417	-
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	1234	-	-	1171	-	-	245	287	661	231	295	732
Stage 1	-	-	-	-	-	-	613	591	-	596	578	-
Stage 2	-	-	-	-	-	-	539	566	-	529	591	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1234	-	-	1171	-	-	133	268	661	89	275	732
Mov Cap-2 Maneuver	-	-	-	-	-	-	133	268	-	89	275	-
Stage 1	-	-	-	-	-	-	606	584	-	589	545	-
Stage 2	-	-	-	-	-	-	365	534	-	330	584	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.4	52.2	74.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	298	1234	-	-	1171	-	-	219
HCM Lane V/C Ratio	0.802	0.012	-	-	0.057	-	-	0.854
HCM Control Delay (s)	52.2	8	-	-	8.3	-	-	74.5
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	6.5	0	-	-	0.2	-	-	6.6

UNSIGNALIZED INTERSECTIONS

Level-of-Service	Average Total Delay sec/veh
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

SIGNALIZED INTERSECTIONS

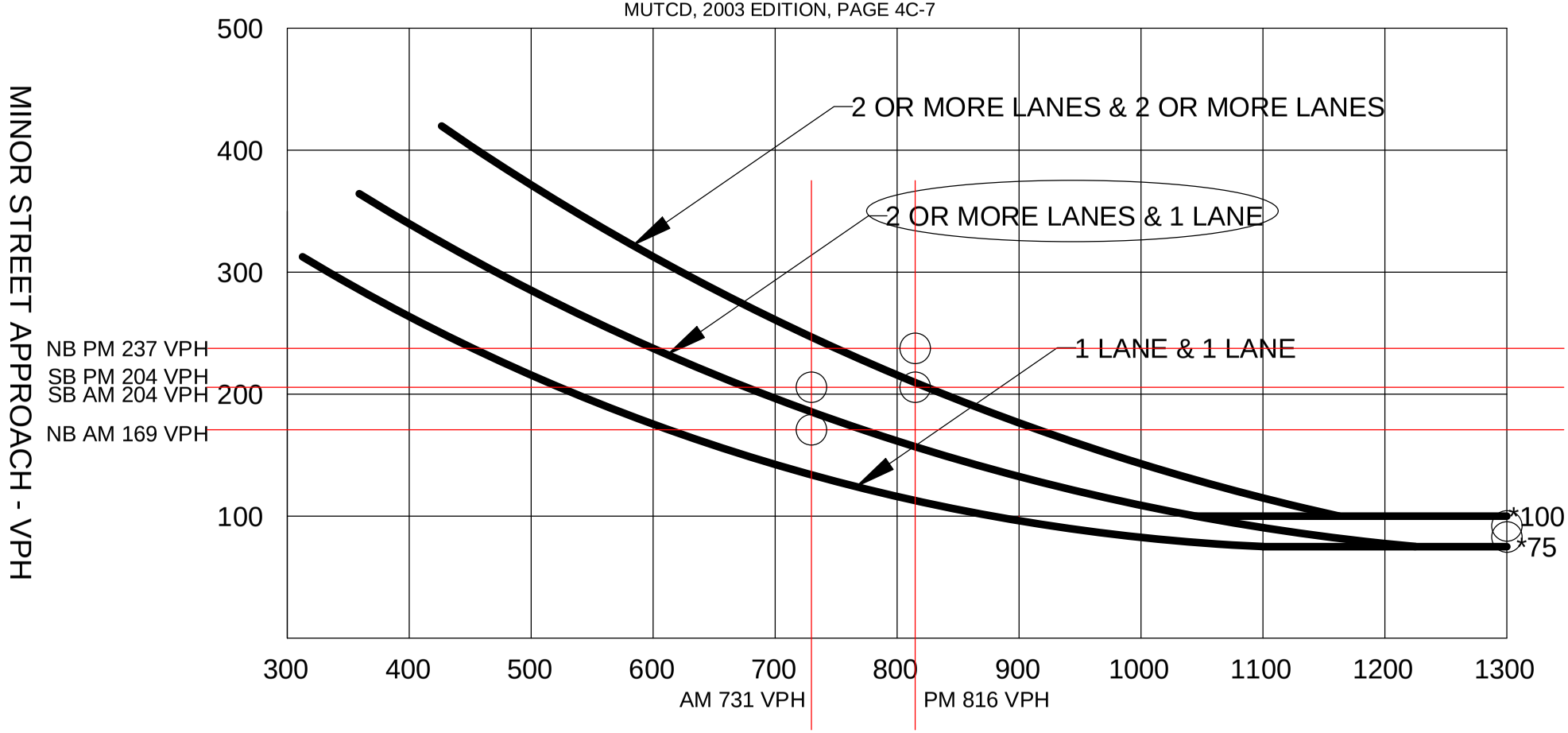
Level-of-Service	Average Total Delay sec/veh
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

APPENDIX D

FIGURE 4C-4. WARRANT 3, PEAK HOUR (70% FACTOR)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 KM/H (40 MPH) ON MAJOR STREET)

MUTCD, 2003 EDITION, PAGE 4C-7



MAJOR STREET - TOTAL OF BOTH APPROACH - VEHICLES PER HOUR (VPH)

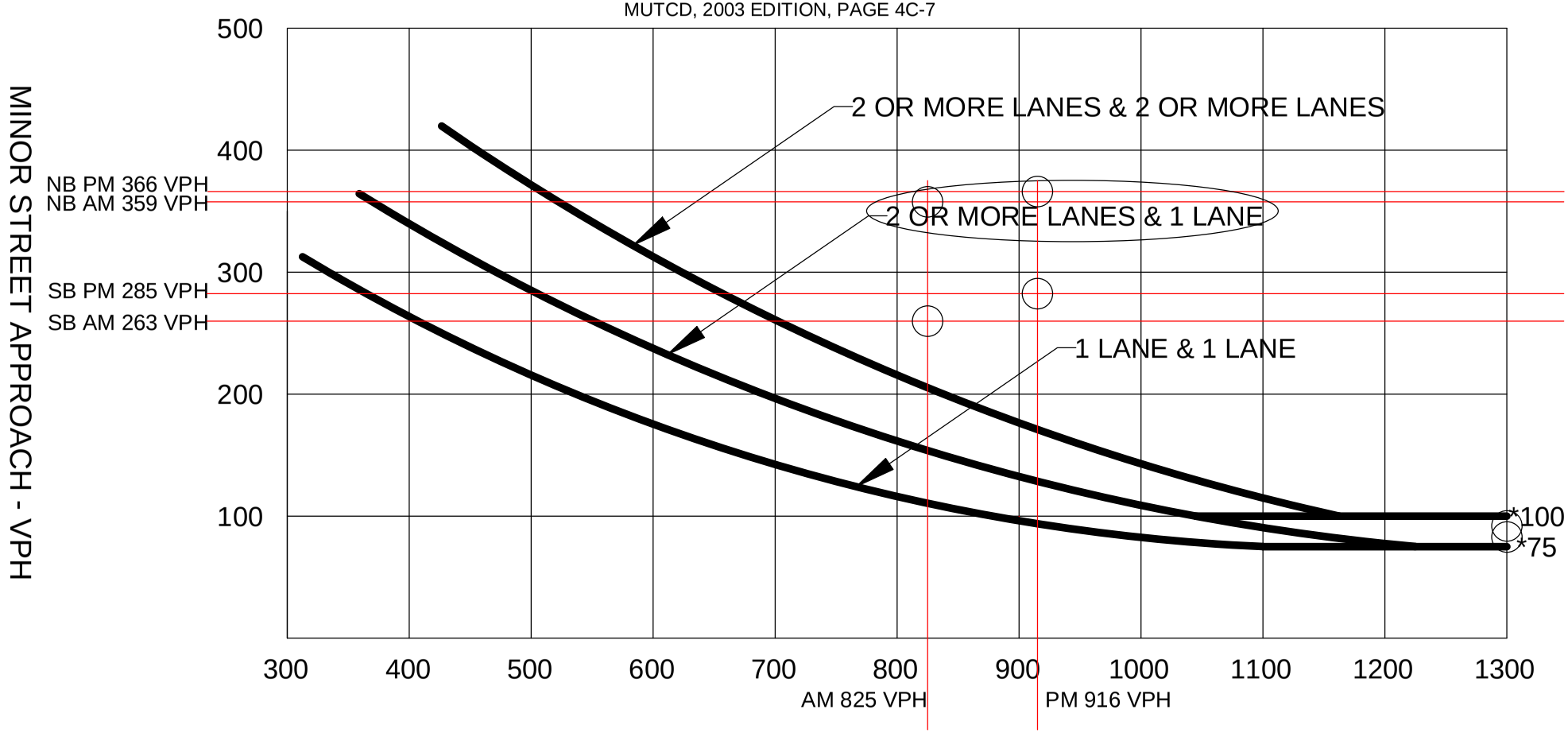
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

SHORT RANGE (2020) TOTAL PEAK HOUR WARRANT AT 37TH STREET/TWO RIVERS PARKWAY

FIGURE 4C-4. WARRANT 3, PEAK HOUR (70% FACTOR)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 KM/H (40 MPH) ON MAJOR STREET)

MUTCD, 2003 EDITION, PAGE 4C-7



MAJOR STREET - TOTAL OF BOTH APPROACH - VEHICLES PER HOUR (VPH)

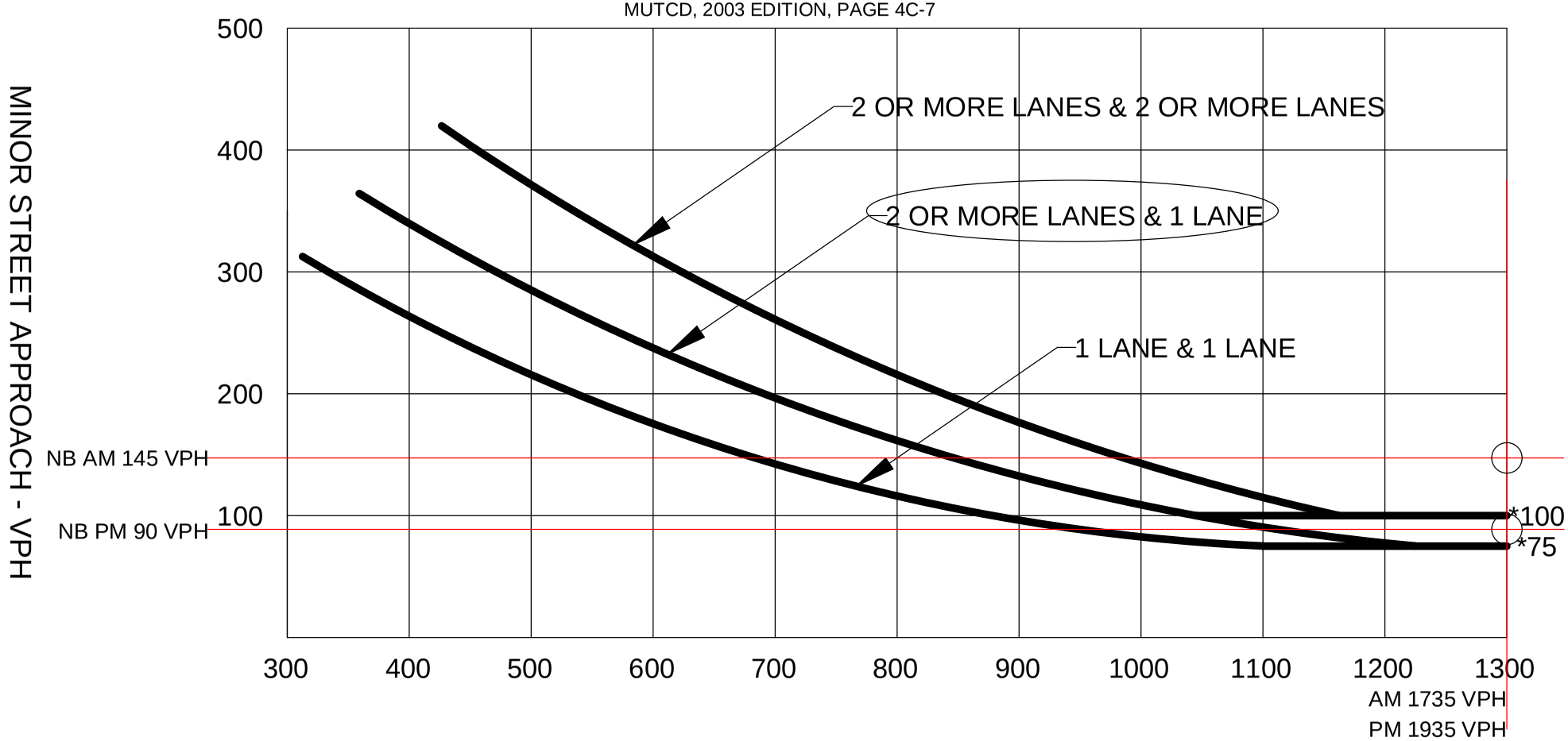
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

MID RANGE (2023) TOTAL PEAK HOUR WARRANT AT 37TH STREET/TWO RIVERS PARKWAY

FIGURE 4C-4. WARRANT 3, PEAK HOUR (70% FACTOR)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 KM/H (40 MPH) ON MAJOR STREET)

MUTCD, 2003 EDITION, PAGE 4C-7



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

LONG RANGE (2040) TOTAL PEAK HOUR WARRANT AT 37TH STREET/SITE ACCESS

APPENDIX E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	237	7	158	379	82	43	130	65	100	108	44
Future Volume (veh/h)	41	237	7	158	379	82	43	130	65	100	108	44
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	45	258	7	172	412	79	47	141	0	109	117	0
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	341	566	15	537	555	106	413	247	210	395	247	210
Arrive On Green	0.05	0.31	0.31	0.10	0.37	0.37	0.10	0.13	0.00	0.10	0.13	0.00
Sat Flow, veh/h	1774	1805	49	1774	1520	291	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	45	0	265	172	0	491	47	141	0	109	117	0
Grp Sat Flow(s),veh/h/ln	1774	0	1854	1774	0	1811	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.8	0.0	5.8	3.2	0.0	11.9	1.1	3.6	0.0	2.5	2.9	0.0
Cycle Q Clear(g_c), s	0.8	0.0	5.8	3.2	0.0	11.9	1.1	3.6	0.0	2.5	2.9	0.0
Prop In Lane	1.00		0.03	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	341	0	582	537	0	661	413	247	210	395	247	210
V/C Ratio(X)	0.13	0.00	0.46	0.32	0.00	0.74	0.11	0.57	0.00	0.28	0.47	0.00
Avail Cap(c_a), veh/h	452	0	901	768	0	1095	853	683	581	835	683	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.5	0.0	13.9	10.0	0.0	14.0	15.4	20.5	0.0	16.0	20.2	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.6	0.3	0.0	1.7	0.1	2.1	0.0	0.4	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	3.0	1.5	0.0	6.2	0.5	2.0	0.0	1.3	1.6	0.0
LnGrp Delay(d),s/veh	11.7	0.0	14.4	10.4	0.0	15.6	15.5	22.6	0.0	16.4	21.7	0.0
LnGrp LOS	B		B	B		B	B	C		B	C	
Approach Vol, veh/h		310			663			188			226	
Approach Delay, s/veh		14.0			14.3			20.8			19.1	
Approach LOS		B			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	20.3	9.5	11.2	6.8	22.9	9.5	11.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	24.5	17.5	18.5	5.5	30.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	5.2	7.8	3.1	4.9	2.8	13.9	4.5	5.6
Green Ext Time (p_c), s	0.2	4.5	0.1	1.1	0.0	4.5	0.2	1.1

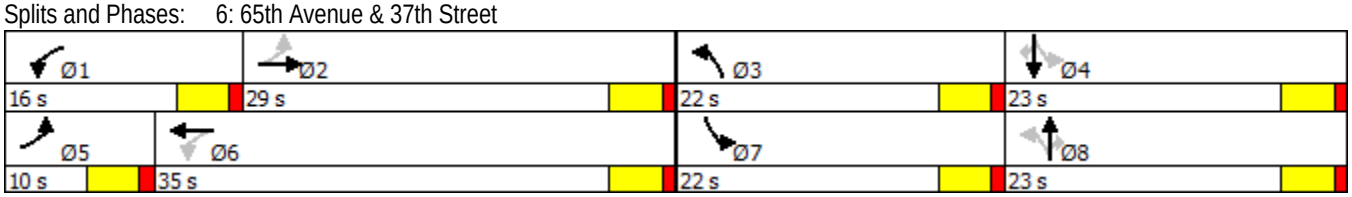
Intersection Summary	
HCM 2010 Ctrl Delay	15.9
HCM 2010 LOS	B

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	Min	None	None	Min	Min
Maximum Split (s)	16	29	22	23	10	35	22	23
Maximum Split (%)	17.8%	32.2%	24.4%	25.6%	11.1%	38.9%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	45	67	0	10	45	67
End Time (s)	16	45	67	0	10	45	67	0
Yield/Force Off (s)	11.5	40.5	62.5	85.5	5.5	40.5	62.5	85.5
Yield/Force Off 170(s)	11.5	29.5	62.5	85.5	5.5	29.5	62.5	85.5
Local Start Time (s)	74	0	29	51	74	84	29	51
Local Yield (s)	85.5	24.5	46.5	69.5	79.5	24.5	46.5	69.5
Local Yield 170(s)	85.5	13.5	46.5	69.5	79.5	13.5	46.5	69.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	408	34	60	329	75	6	86	144	92	172	52
Future Volume (veh/h)	45	408	34	60	329	75	6	86	144	92	172	52
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	49	443	34	65	358	72	7	93	-5	100	187	-11
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	374	595	46	351	539	108	379	288	245	450	288	245
Arrive On Green	0.05	0.35	0.35	0.06	0.36	0.36	0.10	0.15	0.00	0.10	0.15	0.00
Sat Flow, veh/h	1774	1708	131	1774	1506	303	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	49	0	477	65	0	430	7	93	-5	100	187	-11
Grp Sat Flow(s),veh/h/ln	1774	0	1840	1774	0	1809	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.9	0.0	12.0	1.2	0.0	10.5	0.2	2.3	0.0	2.3	4.9	0.0
Cycle Q Clear(g_c), s	0.9	0.0	12.0	1.2	0.0	10.5	0.2	2.3	0.0	2.3	4.9	0.0
Prop In Lane	1.00		0.07	1.00		0.17	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	374	0	640	351	0	648	379	288	245	450	288	245
V/C Ratio(X)	0.13	0.00	0.74	0.19	0.00	0.66	0.02	0.32	-0.02	0.22	0.65	-0.04
Avail Cap(c_a), veh/h	474	0	860	636	0	1053	802	658	559	873	658	559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.8	0.0	15.0	11.0	0.0	14.2	15.0	19.7	0.0	15.7	20.8	0.0
Incr Delay (d2), s/veh	0.2	0.0	2.4	0.3	0.0	1.2	0.0	0.6	0.0	0.2	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	6.4	0.6	0.0	5.3	0.1	1.2	0.0	1.1	2.7	0.0
LnGrp Delay(d),s/veh	11.0	0.0	17.5	11.3	0.0	15.4	15.1	20.4	0.0	15.9	23.3	0.0
LnGrp LOS	B		B	B		B	B	C		B	C	
Approach Vol, veh/h		526			495			95			276	
Approach Delay, s/veh		16.8			14.8			21.0			21.5	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	22.7	9.5	12.6	7.0	23.3	9.5	12.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	24.5	17.5	18.5	5.5	30.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	3.2	14.0	2.2	6.9	2.9	12.5	4.3	4.3
Green Ext Time (p_c), s	0.1	4.3	0.0	1.2	0.0	5.7	0.2	1.3

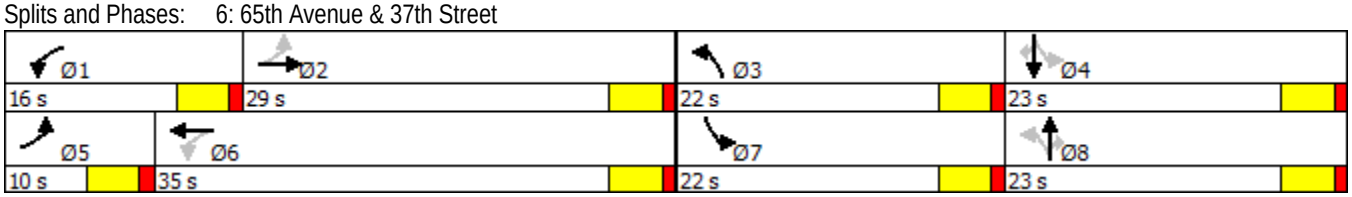
Intersection Summary	
HCM 2010 Ctrl Delay	17.3
HCM 2010 LOS	B

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	Min	None	None	Min	Min
Maximum Split (s)	16	29	22	23	10	35	22	23
Maximum Split (%)	17.8%	32.2%	24.4%	25.6%	11.1%	38.9%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	45	67	0	10	45	67
End Time (s)	16	45	67	0	10	45	67	0
Yield/Force Off (s)	11.5	40.5	62.5	85.5	5.5	40.5	62.5	85.5
Yield/Force Off 170(s)	11.5	29.5	62.5	85.5	5.5	29.5	62.5	85.5
Local Start Time (s)	74	0	29	51	74	84	29	51
Local Yield (s)	85.5	24.5	46.5	69.5	79.5	24.5	46.5	69.5
Local Yield 170(s)	85.5	13.5	46.5	69.5	79.5	13.5	46.5	69.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 6: 65th Avenue & 37th Street



Intersection												
Int Delay, s/veh	11.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	173	11	75	358	55	5	133	29	25	165	6
Future Vol, veh/h	10	173	11	75	358	55	5	133	29	25	165	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	188	12	82	389	60	5	145	32	27	179	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	449	0	0	188	0	0	885	822	188	880	792	419
Stage 1	-	-	-	-	-	-	210	210	-	582	582	-
Stage 2	-	-	-	-	-	-	675	612	-	298	210	-
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	1111	-	-	1386	-	-	266	309	854	268	322	634
Stage 1	-	-	-	-	-	-	792	728	-	499	499	-
Stage 2	-	-	-	-	-	-	444	484	-	711	728	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1111	-	-	1386	-	-	132	288	854	149	300	634
Mov Cap-2 Maneuver	-	-	-	-	-	-	132	288	-	149	300	-
Stage 1	-	-	-	-	-	-	784	721	-	494	469	-
Stage 2	-	-	-	-	-	-	255	455	-	542	721	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.2	28.3	33.5
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	132	327	1111	-	-	1386	-	-	149	306
HCM Lane V/C Ratio	0.041	0.538	0.01	-	-	0.059	-	-	0.182	0.607
HCM Control Delay (s)	33.4	28.1	8.3	-	-	7.8	-	-	34.5	33.4
HCM Lane LOS	D	D	A	-	-	A	-	-	D	D
HCM 95th %tile Q(veh)	0.1	3	0	-	-	0.2	-	-	0.6	3.7

Intersection												
Int Delay, s/veh	18.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	370	10	63	277	35	4	179	46	26	139	14
Future Vol, veh/h	15	370	10	63	277	35	4	179	46	26	139	14
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	150	-	150	150	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	402	11	68	301	38	4	195	50	28	151	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	339	0	0	402	0	0	975	911	402	1014	892	320
Stage 1	-	-	-	-	-	-	435	435	-	457	457	-
Stage 2	-	-	-	-	-	-	540	476	-	557	435	-
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	1220	-	-	1157	-	-	231	274	648	217	281	721
Stage 1	-	-	-	-	-	-	600	580	-	583	568	-
Stage 2	-	-	-	-	-	-	526	557	-	515	580	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1220	-	-	1157	-	-	116	255	648	71	261	721
Mov Cap-2 Maneuver	-	-	-	-	-	-	116	255	-	71	261	-
Stage 1	-	-	-	-	-	-	592	572	-	575	535	-
Stage 2	-	-	-	-	-	-	348	524	-	309	572	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.4	58.3	43.1
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	116	291	1220	-	-	1157	-	-	71	277
HCM Lane V/C Ratio	0.037	0.84	0.013	-	-	0.059	-	-	0.398	0.6
HCM Control Delay (s)	37.2	58.7	8	-	-	8.3	-	-	85.9	35.8
HCM Lane LOS	E	F	A	-	-	A	-	-	F	E
HCM 95th %tile Q(veh)	0.1	7.1	0	-	-	0.2	-	-	1.5	3.6

APPENDIX F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	252	8	168	402	87	45	138	68	106	115	46
Future Volume (veh/h)	43	252	8	168	402	87	45	138	68	106	115	46
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	47	274	0	183	437	0	49	150	0	115	125	0
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	357	515	438	503	621	528	434	263	224	415	263	224
Arrive On Green	0.05	0.28	0.00	0.11	0.33	0.00	0.10	0.14	0.00	0.10	0.14	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	47	274	0	183	437	0	49	150	0	115	125	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.9	6.0	0.0	3.4	9.9	0.0	1.0	3.6	0.0	2.5	3.0	0.0
Cycle Q Clear(g_c), s	0.9	6.0	0.0	3.4	9.9	0.0	1.0	3.6	0.0	2.5	3.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	357	515	438	503	621	528	434	263	224	415	263	224
V/C Ratio(X)	0.13	0.53	0.00	0.36	0.70	0.00	0.11	0.57	0.00	0.28	0.47	0.00
Avail Cap(c_a), veh/h	510	1062	903	629	1139	969	894	715	607	875	715	607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.8	14.8	0.0	10.6	14.0	0.0	14.2	19.3	0.0	14.8	19.1	0.0
Incr Delay (d2), s/veh	0.2	0.9	0.0	0.4	1.5	0.0	0.1	1.9	0.0	0.4	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.2	0.0	1.7	5.2	0.0	0.5	2.0	0.0	1.3	1.6	0.0
LnGrp Delay(d),s/veh	12.0	15.7	0.0	11.1	15.5	0.0	14.3	21.3	0.0	15.2	20.4	0.0
LnGrp LOS	B	B		B	B		B	C		B	C	
Approach Vol, veh/h		321			620			199			240	
Approach Delay, s/veh		15.1			14.2			19.6			17.9	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	17.8	9.5	11.3	6.8	20.6	9.5	11.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	27.5	17.5	18.5	6.5	29.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	5.4	8.0	3.0	5.0	2.9	11.9	4.5	5.6
Green Ext Time (p_c), s	0.1	4.4	0.1	1.2	0.0	4.2	0.2	1.2

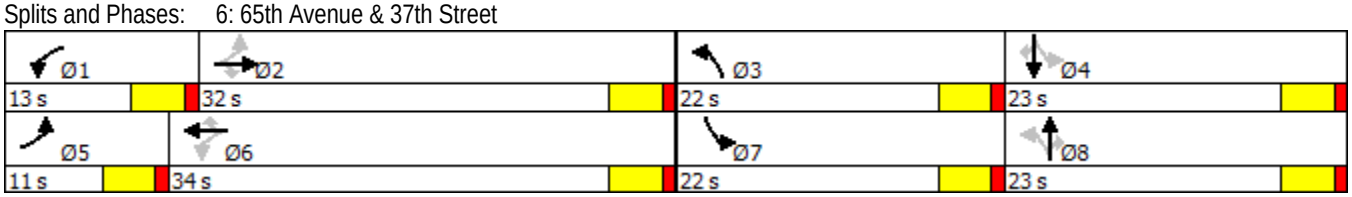
Intersection Summary	
HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	Min	None	None	Min	Min
Maximum Split (s)	13	32	22	23	11	34	22	23
Maximum Split (%)	14.4%	35.6%	24.4%	25.6%	12.2%	37.8%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	13	45	67	0	11	45	67
End Time (s)	13	45	67	0	11	45	67	0
Yield/Force Off (s)	8.5	40.5	62.5	85.5	6.5	40.5	62.5	85.5
Yield/Force Off 170(s)	8.5	29.5	62.5	85.5	6.5	29.5	62.5	85.5
Local Start Time (s)	77	0	32	54	77	88	32	54
Local Yield (s)	85.5	27.5	49.5	72.5	83.5	27.5	49.5	72.5
Local Yield 170(s)	85.5	16.5	49.5	72.5	83.5	16.5	49.5	72.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	433	36	64	349	79	7	92	152	97	182	55
Future Volume (veh/h)	47	433	36	64	349	79	7	92	152	97	182	55
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	51	471	0	70	379	0	8	100	0	105	198	0
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	416	644	547	357	664	565	374	299	254	448	299	254
Arrive On Green	0.05	0.35	0.00	0.06	0.36	0.00	0.09	0.16	0.00	0.09	0.16	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	51	471	0	70	379	0	8	100	0	105	198	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.0	11.8	0.0	1.3	8.7	0.0	0.2	2.5	0.0	2.5	5.3	0.0
Cycle Q Clear(g_c), s	1.0	11.8	0.0	1.3	8.7	0.0	0.2	2.5	0.0	2.5	5.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	416	644	547	357	664	565	374	299	254	448	299	254
V/C Ratio(X)	0.12	0.73	0.00	0.20	0.57	0.00	0.02	0.33	0.00	0.23	0.66	0.00
Avail Cap(c_a), veh/h	545	965	820	534	1035	880	792	649	552	866	649	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.7	15.2	0.0	11.2	13.8	0.0	15.1	19.8	0.0	15.7	20.9	0.0
Incr Delay (d2), s/veh	0.1	1.6	0.0	0.3	0.8	0.0	0.0	0.7	0.0	0.3	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	6.3	0.0	0.6	4.6	0.0	0.1	1.4	0.0	1.2	2.9	0.0
LnGrp Delay(d),s/veh	10.8	16.8	0.0	11.4	14.6	0.0	15.1	20.4	0.0	16.0	23.4	0.0
LnGrp LOS	B	B		B	B		B	C		B	C	
Approach Vol, veh/h		522			449			108			303	
Approach Delay, s/veh		16.2			14.1			20.0			20.9	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	22.9	9.5	13.0	7.1	23.4	9.5	13.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	27.5	17.5	18.5	6.5	29.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	3.3	13.8	2.2	7.3	3.0	10.7	4.5	4.5
Green Ext Time (p_c), s	0.1	4.6	0.0	1.2	0.0	5.3	0.2	1.4

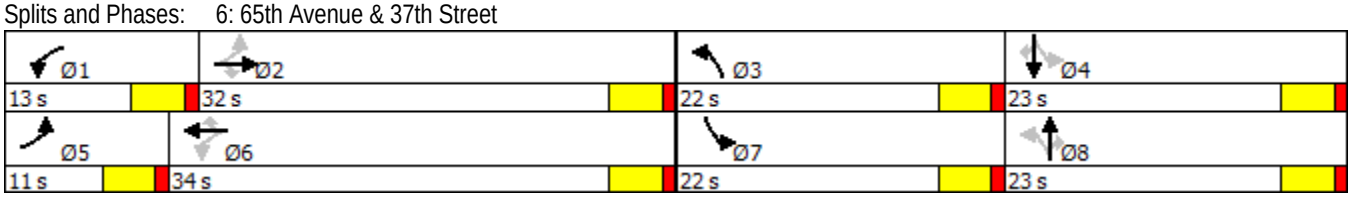
Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	Min	None	None	Min	Min
Maximum Split (s)	13	32	22	23	11	34	22	23
Maximum Split (%)	14.4%	35.6%	24.4%	25.6%	12.2%	37.8%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	13	45	67	0	11	45	67
End Time (s)	13	45	67	0	11	45	67	0
Yield/Force Off (s)	8.5	40.5	62.5	85.5	6.5	40.5	62.5	85.5
Yield/Force Off 170(s)	8.5	29.5	62.5	85.5	6.5	29.5	62.5	85.5
Local Start Time (s)	77	0	32	54	77	88	32	54
Local Yield (s)	85.5	27.5	49.5	72.5	83.5	27.5	49.5	72.5
Local Yield 170(s)	85.5	16.5	49.5	72.5	83.5	16.5	49.5	72.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	183	12	79	380	59	6	141	31	26	175	7
Future Volume (veh/h)	11	183	12	79	380	59	6	141	31	26	175	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	12	199	0	86	413	0	7	153	0	28	190	6
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	603	512	436	603	512	656	911	774	695	878	28
Arrive On Green	0.32	0.32	0.00	0.32	0.32	0.00	0.49	0.49	0.00	0.49	0.49	0.49
Sat Flow, veh/h	969	1863	1583	1179	1863	1583	1182	1863	1583	1229	1796	57
Grp Volume(v), veh/h	12	199	0	86	413	0	7	153	0	28	0	196
Grp Sat Flow(s),veh/h/ln	969	1863	1583	1179	1863	1583	1182	1863	1583	1229	0	1853
Q Serve(g_s), s	0.5	3.9	0.0	2.9	9.3	0.0	0.2	2.2	0.0	0.6	0.0	2.9
Cycle Q Clear(g_c), s	9.8	3.9	0.0	6.8	9.3	0.0	3.1	2.2	0.0	2.8	0.0	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	277	603	512	436	603	512	656	911	774	695	0	906
V/C Ratio(X)	0.04	0.33	0.00	0.20	0.69	0.00	0.01	0.17	0.00	0.04	0.00	0.22
Avail Cap(c_a), veh/h	518	1066	906	729	1066	906	656	911	774	695	0	906
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.4	12.3	0.0	14.9	14.1	0.0	7.9	6.8	0.0	7.6	0.0	7.0
Incr Delay (d2), s/veh	0.1	0.3	0.0	0.2	1.4	0.0	0.0	0.4	0.0	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.0	0.0	1.0	4.9	0.0	0.1	1.2	0.0	0.2	0.0	1.6
LnGrp Delay(d),s/veh	18.4	12.6	0.0	15.1	15.5	0.0	7.9	7.2	0.0	7.7	0.0	7.6
LnGrp LOS	B	B		B	B		A	A		A		A
Approach Vol, veh/h		211			499			160			224	
Approach Delay, s/veh		13.0			15.4			7.3			7.6	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.0		20.0		28.0		20.0
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		23.5		27.5		23.5		27.5
Max Q Clear Time (g_c+I1), s		5.1		11.8		4.9		11.3
Green Ext Time (p_c), s		2.0		3.8		2.0		3.8

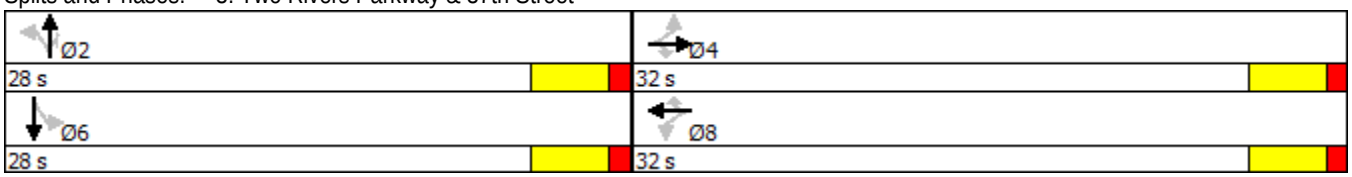
Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	28	32	28	32
Maximum Split (%)	46.7%	53.3%	46.7%	53.3%
Minimum Split (s)	22.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	7
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	28	0	28
End Time (s)	28	0	28	0
Yield/Force Off (s)	23.5	55.5	23.5	55.5
Yield/Force Off 170(s)	12.5	44.5	12.5	44.5
Local Start Time (s)	0	28	0	28
Local Yield (s)	23.5	55.5	23.5	55.5
Local Yield 170(s)	12.5	44.5	12.5	44.5

Intersection Summary

Cycle Length	60
Control Type	Semi Act-Uncoord
Natural Cycle	45

Splits and Phases: 3: Two Rivers Parkway & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	393	11	67	294	38	4	190	49	28	148	14
Future Volume (veh/h)	15	393	11	67	294	38	4	190	49	28	148	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	16	427	0	73	320	0	4	207	14	30	161	11
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	405	704	598	326	704	598	610	828	704	576	766	52
Arrive On Green	0.38	0.38	0.00	0.38	0.38	0.00	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	1055	1863	1583	957	1863	1583	1208	1863	1583	1155	1724	118
Grp Volume(v), veh/h	16	427	0	73	320	0	4	207	14	30	0	172
Grp Sat Flow(s),veh/h/ln	1055	1863	1583	957	1863	1583	1208	1863	1583	1155	0	1842
Q Serve(g_s), s	0.6	9.4	0.0	3.4	6.5	0.0	0.1	3.5	0.3	0.8	0.0	2.9
Cycle Q Clear(g_c), s	7.1	9.4	0.0	12.7	6.5	0.0	3.0	3.5	0.3	4.4	0.0	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	405	704	598	326	704	598	610	828	704	576	0	819
V/C Ratio(X)	0.04	0.61	0.00	0.22	0.45	0.00	0.01	0.25	0.02	0.05	0.00	0.21
Avail Cap(c_a), veh/h	600	1049	892	504	1049	892	610	828	704	576	0	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.5	12.7	0.0	17.9	11.8	0.0	9.5	8.8	7.9	10.1	0.0	8.6
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.3	0.5	0.0	0.0	0.7	0.1	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.9	0.0	0.9	3.4	0.0	0.0	1.9	0.1	0.3	0.0	1.6
LnGrp Delay(d),s/veh	14.5	13.6	0.0	18.2	12.3	0.0	9.6	9.5	7.9	10.3	0.0	9.2
LnGrp LOS	B	B		B	B		A	A	A	B		A
Approach Vol, veh/h		443			393			225			202	
Approach Delay, s/veh		13.6			13.4			9.4			9.4	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		27.0		23.6		27.0		23.6
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		22.5		28.5		22.5		28.5
Max Q Clear Time (g_c+I1), s		5.5		11.4		6.4		14.7
Green Ext Time (p_c), s		2.2		4.8		2.1		4.4

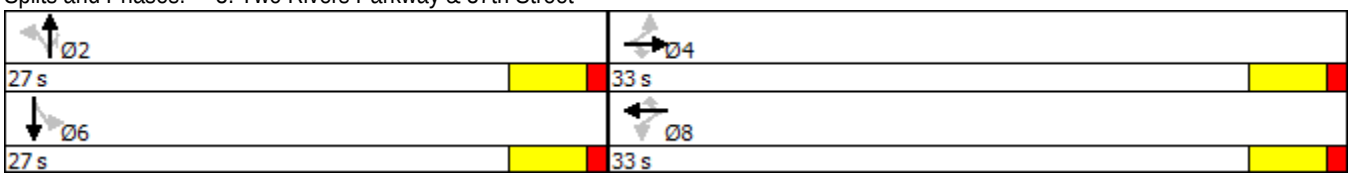
Intersection Summary	
HCM 2010 Ctrl Delay	12.1
HCM 2010 LOS	B

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	27	33	27	33
Maximum Split (%)	45.0%	55.0%	45.0%	55.0%
Minimum Split (s)	22.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	7
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	27	0	27
End Time (s)	27	0	27	0
Yield/Force Off (s)	22.5	55.5	22.5	55.5
Yield/Force Off 170(s)	11.5	44.5	11.5	44.5
Local Start Time (s)	0	27	0	27
Local Yield (s)	22.5	55.5	22.5	55.5
Local Yield 170(s)	11.5	44.5	11.5	44.5

Intersection Summary

Cycle Length	60
Control Type	Semi Act-Uncoord
Natural Cycle	45

Splits and Phases: 3: Two Rivers Parkway & 37th Street



APPENDIX G

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	470	20	250	810	155	80	250	125	185	220	90
Future Volume (veh/h)	80	470	20	250	810	155	80	250	125	185	220	90
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	87	511	0	272	880	52	87	272	0	201	239	0
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	375	1644	736	561	1804	807	328	429	192	345	621	278
Arrive On Green	0.03	0.31	0.00	0.09	0.51	0.51	0.07	0.12	0.00	0.12	0.18	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	87	511	0	272	880	52	87	272	0	201	239	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.3	9.9	0.0	6.9	14.6	1.5	3.8	6.6	0.0	8.5	5.4	0.0
Cycle Q Clear(g_c), s	2.3	9.9	0.0	6.9	14.6	1.5	3.8	6.6	0.0	8.5	5.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	375	1644	736	561	1804	807	328	429	192	345	621	278
V/C Ratio(X)	0.23	0.31	0.00	0.48	0.49	0.06	0.27	0.63	0.00	0.58	0.39	0.00
Avail Cap(c_a), veh/h	416	1644	736	561	1804	807	556	728	325	478	728	325
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.1	20.0	0.0	10.6	14.4	11.2	31.3	37.6	0.0	28.1	32.8	0.0
Incr Delay (d2), s/veh	0.3	0.5	0.0	0.6	0.9	0.2	0.4	1.6	0.0	1.6	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.0	0.0	3.4	7.3	0.7	1.9	3.3	0.0	4.2	2.7	0.0
LnGrp Delay(d),s/veh	12.4	20.5	0.0	11.2	15.3	11.3	31.7	39.2	0.0	29.6	33.2	0.0
LnGrp LOS	B	C		B	B	B	C	D		C	C	
Approach Vol, veh/h		598			1204			359			440	
Approach Delay, s/veh		19.3			14.2			37.4			31.6	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	46.3	10.4	20.3	8.9	50.4	15.3	15.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	27.5	17.5	18.5	6.5	29.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	8.9	11.9	5.8	7.4	4.3	16.6	10.5	8.6
Green Ext Time (p_c), s	0.0	8.7	0.1	2.5	0.0	7.7	0.3	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	21.5
HCM 2010 LOS	C

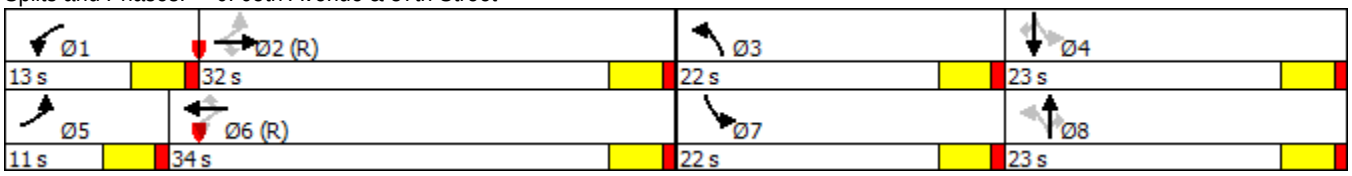
Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	Min	Min	None	C-Max	Min	Min
Maximum Split (s)	13	32	22	23	11	34	22	23
Maximum Split (%)	14.4%	35.6%	24.4%	25.6%	12.2%	37.8%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	13	45	67	0	11	45	67
End Time (s)	13	45	67	0	11	45	67	0
Yield/Force Off (s)	8.5	40.5	62.5	85.5	6.5	40.5	62.5	85.5
Yield/Force Off 170(s)	8.5	29.5	62.5	85.5	6.5	29.5	62.5	85.5
Local Start Time (s)	77	0	32	54	77	88	32	54
Local Yield (s)	85.5	27.5	49.5	72.5	83.5	27.5	49.5	72.5
Local Yield 170(s)	85.5	16.5	49.5	72.5	83.5	16.5	49.5	72.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 13 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	730	65	125	675	140	25	165	280	170	335	110
Future Volume (veh/h)	90	730	65	125	675	140	25	165	280	170	335	110
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	98	793	0	136	734	56	27	179	11	185	364	0
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	452	1872	837	475	1890	845	243	357	160	346	565	253
Arrive On Green	0.07	0.70	0.00	0.06	0.53	0.53	0.06	0.10	0.10	0.11	0.16	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	98	793	0	136	734	56	27	179	11	185	364	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.2	8.5	0.0	3.1	11.0	1.5	1.2	4.3	0.6	8.0	8.7	0.0
Cycle Q Clear(g_c), s	2.2	8.5	0.0	3.1	11.0	1.5	1.2	4.3	0.6	8.0	8.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	452	1872	837	475	1890	845	243	357	160	346	565	253
V/C Ratio(X)	0.22	0.42	0.00	0.29	0.39	0.07	0.11	0.50	0.07	0.53	0.64	0.00
Avail Cap(c_a), veh/h	529	1872	837	551	1890	845	499	708	317	498	708	317
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.0	7.6	0.0	8.9	12.3	10.1	32.6	38.3	36.6	29.5	35.4	0.0
Incr Delay (d2), s/veh	0.2	0.5	0.0	0.3	0.6	0.2	0.2	1.1	0.2	1.3	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.2	0.0	1.6	5.5	0.7	0.6	2.2	0.3	4.0	4.4	0.0
LnGrp Delay(d),s/veh	9.1	8.0	0.0	9.2	12.9	10.3	32.8	39.4	36.8	30.8	36.8	0.0
LnGrp LOS	A	A		A	B	B	C	D	D	C	D	
Approach Vol, veh/h		891			926			217			549	
Approach Delay, s/veh		8.2			12.2			38.4			34.8	
Approach LOS		A			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	52.1	9.5	18.9	9.1	52.6	14.8	13.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.9	27.1	18.0	18.0	8.5	27.5	18.0	18.0
Max Q Clear Time (g_c+I1), s	5.1	10.5	3.2	10.7	4.2	13.0	10.0	6.3
Green Ext Time (p_c), s	0.1	9.8	0.0	2.1	0.1	9.0	0.3	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	17.8
HCM 2010 LOS	B

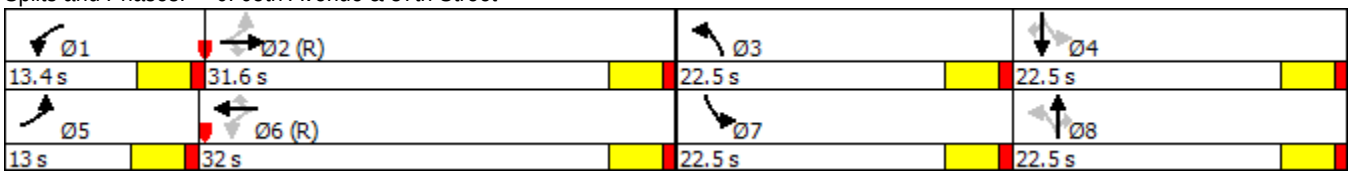
Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	Min	Min	None	C-Max	Min	Min
Maximum Split (s)	13.4	31.6	22.5	22.5	13	32	22.5	22.5
Maximum Split (%)	14.9%	35.1%	25.0%	25.0%	14.4%	35.6%	25.0%	25.0%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	89.6	13	44.6	67.1	89.6	12.6	44.6	67.1
End Time (s)	13	44.6	67.1	89.6	12.6	44.6	67.1	89.6
Yield/Force Off (s)	8.5	40.1	62.6	85.1	8.1	40.1	62.6	85.1
Yield/Force Off 170(s)	8.5	29.1	62.6	85.1	8.1	29.1	62.6	85.1
Local Start Time (s)	76.6	0	31.6	54.1	76.6	89.6	31.6	54.1
Local Yield (s)	85.5	27.1	49.6	72.1	85.1	27.1	49.6	72.1
Local Yield 170(s)	85.5	16.1	49.6	72.1	85.1	16.1	49.6	72.1

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 13 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	405	30	40	915	15	85	5	115	55	5	35
Future Volume (veh/h)	10	405	30	40	915	15	85	5	115	55	5	35
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	11	440	0	43	995	16	92	5	11	60	5	38
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	346	2135	955	633	2202	985	374	328	279	344	287	244
Arrive On Green	0.01	0.60	0.00	0.03	0.62	0.62	0.06	0.18	0.18	0.04	0.15	0.15
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	11	440	0	43	995	16	92	5	11	60	5	38
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.3	6.8	0.0	1.1	17.7	0.5	5.1	0.3	0.7	3.4	0.3	2.5
Cycle Q Clear(g_c), s	0.3	6.8	0.0	1.1	17.7	0.5	5.1	0.3	0.7	3.4	0.3	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	346	2135	955	633	2202	985	374	328	279	344	287	244
V/C Ratio(X)	0.03	0.21	0.00	0.07	0.45	0.02	0.25	0.02	0.04	0.17	0.02	0.16
Avail Cap(c_a), veh/h	405	2135	955	658	2202	985	555	473	402	385	287	244
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.00	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.9	10.8	0.0	8.4	11.9	8.6	38.9	40.8	41.0	40.4	43.0	44.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.1	0.0	0.3	0.0	0.1	0.2	0.1	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.4	0.0	0.5	8.6	0.2	2.5	0.1	0.3	1.7	0.1	1.2
LnGrp Delay(d),s/veh	9.9	11.0	0.0	8.4	12.0	8.7	39.2	40.9	41.1	40.7	43.2	45.3
LnGrp LOS	A	B		A	B	A	D	D	D	D	D	D
Approach Vol, veh/h		451			1054			108			103	
Approach Delay, s/veh		11.0			11.8			39.5			42.5	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	76.9	11.8	23.0	6.0	79.2	9.2	25.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	58.5	19.5	18.5	5.5	58.5	7.5	30.5
Max Q Clear Time (g_c+I1), s	3.1	8.8	7.1	4.5	2.3	19.7	5.4	2.7
Green Ext Time (p_c), s	0.0	15.0	0.1	0.1	0.0	14.0	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

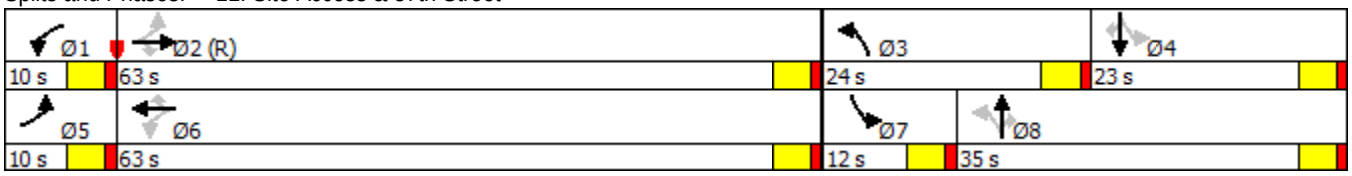
Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	Min	Max	None	None	None	Min
Maximum Split (s)	10	63	24	23	10	63	12	35
Maximum Split (%)	8.3%	52.5%	20.0%	19.2%	8.3%	52.5%	10.0%	29.2%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7		7
Flash Dont Walk (s)		11	11	11		11		11
Dual Entry	No	Yes	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	40	50	113	17	40	50	113	5
End Time (s)	50	113	17	40	50	113	5	40
Yield/Force Off (s)	45.5	108.5	12.5	35.5	45.5	108.5	0.5	35.5
Yield/Force Off 170(s)	45.5	97.5	12.5	24.5	45.5	97.5	0.5	35.5
Local Start Time (s)	110	0	63	87	110	0	63	75
Local Yield (s)	115.5	58.5	82.5	105.5	115.5	58.5	70.5	105.5
Local Yield 170(s)	115.5	47.5	82.5	94.5	115.5	47.5	70.5	105.5

Intersection Summary

Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 50 (42%), Referenced to phase 2:EBTL, Start of Green

Splits and Phases: 11: Site Access & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	740	80	110	635	55	50	5	65	30	5	20
Future Volume (veh/h)	35	740	80	110	635	55	50	5	65	30	5	20
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	38	804	5	120	690	60	54	5	0	33	5	22
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	491	2162	967	469	2206	987	345	315	267	326	287	244
Arrive On Green	0.03	0.61	0.61	0.04	0.62	0.62	0.04	0.17	0.00	0.03	0.15	0.15
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	38	804	5	120	690	60	54	5	0	33	5	22
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.9	13.7	0.1	3.0	10.9	1.8	3.0	0.3	0.0	1.9	0.3	1.4
Cycle Q Clear(g_c), s	0.9	13.7	0.1	3.0	10.9	1.8	3.0	0.3	0.0	1.9	0.3	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	491	2162	967	469	2206	987	345	315	267	326	287	244
V/C Ratio(X)	0.08	0.37	0.01	0.26	0.31	0.06	0.16	0.02	0.00	0.10	0.02	0.09
Avail Cap(c_a), veh/h	534	2162	967	593	2206	987	558	489	416	373	287	244
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	0.92	0.92	0.92	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.3	11.8	9.1	8.7	10.6	8.8	39.9	41.6	0.0	40.9	43.0	43.5
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.3	0.1	0.0	0.2	0.0	0.0	0.1	0.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	6.8	0.1	1.5	5.3	0.8	1.5	0.1	0.0	0.9	0.1	0.7
LnGrp Delay(d),s/veh	8.4	12.1	9.1	9.0	10.6	8.9	40.1	41.6	0.0	41.0	43.2	44.3
LnGrp LOS	A	B	A	A	B	A	D	D		D	D	D
Approach Vol, veh/h		847			870			59			60	
Approach Delay, s/veh		11.9			10.3			40.3			42.4	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	77.8	9.6	23.0	8.1	79.3	7.8	24.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	50.5	19.5	18.5	6.5	57.5	6.5	31.5
Max Q Clear Time (g_c+I1), s	5.0	15.7	5.0	3.4	2.9	12.9	3.9	2.3
Green Ext Time (p_c), s	0.2	14.3	0.1	0.0	0.0	15.5	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

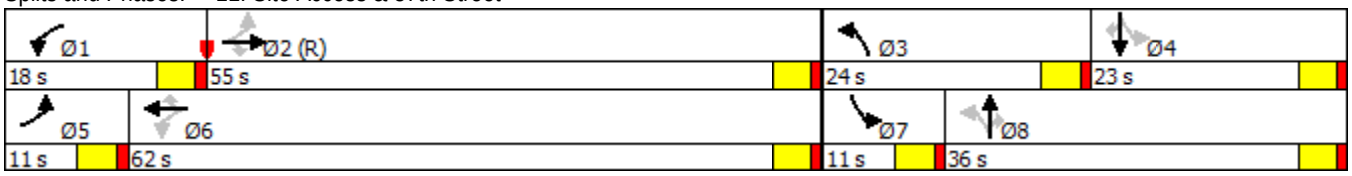
Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	Min	Max	None	None	None	Min
Maximum Split (s)	18	55	24	23	11	62	11	36
Maximum Split (%)	15.0%	45.8%	20.0%	19.2%	9.2%	51.7%	9.2%	30.0%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7		7
Flash Dont Walk (s)		11	11	11		11		11
Dual Entry	No	Yes	Yes	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	102	0	55	79	102	113	55	66
End Time (s)	0	55	79	102	113	55	66	102
Yield/Force Off (s)	115.5	50.5	74.5	97.5	108.5	50.5	61.5	97.5
Yield/Force Off 170(s)	115.5	39.5	74.5	86.5	108.5	39.5	61.5	97.5
Local Start Time (s)	102	0	55	79	102	113	55	66
Local Yield (s)	115.5	50.5	74.5	97.5	108.5	50.5	61.5	97.5
Local Yield 170(s)	115.5	39.5	74.5	86.5	108.5	39.5	61.5	97.5

Intersection Summary

Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Splits and Phases: 11: Site Access & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	335	45	140	790	105	50	260	60	50	320	15
Future Volume (veh/h)	25	335	45	140	790	105	50	260	60	50	320	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	27	364	0	152	859	0	54	283	0	54	348	12
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	193	845	378	381	1043	467	534	1546	692	576	1525	52
Arrive On Green	0.03	0.24	0.00	0.17	0.59	0.00	0.04	0.44	0.00	0.04	0.44	0.44
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3491	120
Grp Volume(v), veh/h	27	364	0	152	859	0	54	283	0	54	176	184
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1842
Q Serve(g_s), s	1.0	7.9	0.0	5.5	17.4	0.0	1.5	4.4	0.0	1.5	5.6	5.6
Cycle Q Clear(g_c), s	1.0	7.9	0.0	5.5	17.4	0.0	1.5	4.4	0.0	1.5	5.6	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	193	845	378	381	1043	467	534	1546	692	576	773	804
V/C Ratio(X)	0.14	0.43	0.00	0.40	0.82	0.00	0.10	0.18	0.00	0.09	0.23	0.23
Avail Cap(c_a), veh/h	253	1081	484	460	1317	589	687	1546	692	632	773	804
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.71	0.71	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	29.1	0.0	19.8	16.6	0.0	12.8	15.5	0.0	12.8	15.9	15.9
Incr Delay (d2), s/veh	0.3	0.3	0.0	0.5	2.5	0.0	0.1	0.3	0.0	0.1	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.9	0.0	2.7	8.5	0.0	0.7	2.2	0.0	0.7	2.9	3.0
LnGrp Delay(d),s/veh	25.8	29.4	0.0	20.3	19.1	0.0	12.9	15.8	0.0	12.8	16.5	16.5
LnGrp LOS	C	C		C	B		B	B		B	B	B
Approach Vol, veh/h		391			1011			337			414	
Approach Delay, s/veh		29.2			19.3			15.3			16.0	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	43.8	12.0	26.0	8.2	43.8	7.0	31.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	26.5	11.5	27.5	11.5	21.5	5.5	33.5
Max Q Clear Time (g_c+I1), s	3.5	6.4	7.5	9.9	3.5	7.6	3.0	19.4
Green Ext Time (p_c), s	0.0	3.9	0.1	8.1	0.0	3.4	0.0	7.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.8
HCM 2010 LOS	B

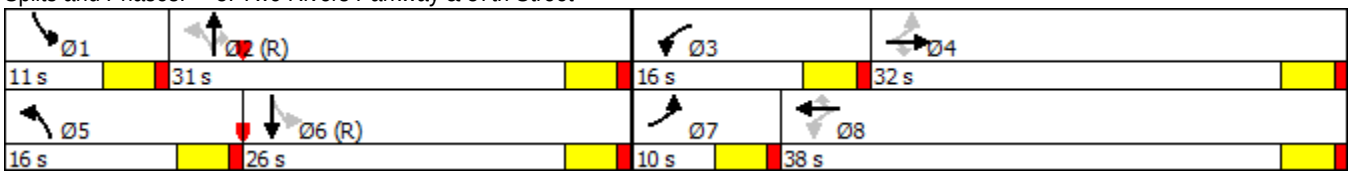
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	11	31	16	32	16	26	10	38
Maximum Split (%)	12.2%	34.4%	17.8%	35.6%	17.8%	28.9%	11.1%	42.2%
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	11	42	58	0	16	42	52
End Time (s)	11	42	58	0	16	42	52	0
Yield/Force Off (s)	6.5	37.5	53.5	85.5	11.5	37.5	47.5	85.5
Yield/Force Off 170(s)	6.5	26.5	53.5	74.5	11.5	26.5	47.5	74.5
Local Start Time (s)	74	85	26	42	74	0	26	36
Local Yield (s)	80.5	21.5	37.5	69.5	85.5	21.5	31.5	69.5
Local Yield 170(s)	80.5	10.5	37.5	58.5	85.5	10.5	31.5	58.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	65

Offset: 16 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: Two Rivers Parkway & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	715	70	120	515	70	40	340	85	55	270	30
Future Volume (veh/h)	35	715	70	120	515	70	40	340	85	55	270	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	38	777	0	130	560	0	43	370	0	60	293	24
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	346	1016	455	266	1147	513	512	1411	631	488	1343	109
Arrive On Green	0.03	0.29	0.00	0.14	0.65	0.00	0.04	0.40	0.00	0.04	0.41	0.41
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3315	270
Grp Volume(v), veh/h	38	777	0	130	560	0	43	370	0	60	156	161
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1815
Q Serve(g_s), s	1.3	18.0	0.0	4.5	7.3	0.0	1.3	6.3	0.0	1.8	5.2	5.2
Cycle Q Clear(g_c), s	1.3	18.0	0.0	4.5	7.3	0.0	1.3	6.3	0.0	1.8	5.2	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	346	1016	455	266	1147	513	512	1411	631	488	717	735
V/C Ratio(X)	0.11	0.76	0.00	0.49	0.49	0.00	0.08	0.26	0.00	0.12	0.22	0.22
Avail Cap(c_a), veh/h	386	1160	519	386	1451	649	619	1411	631	559	717	735
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.89	0.89	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.3	29.3	0.0	20.2	12.0	0.0	14.8	18.2	0.0	14.8	17.5	17.5
Incr Delay (d2), s/veh	0.1	2.7	0.0	1.2	0.3	0.0	0.1	0.5	0.0	0.1	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	9.1	0.0	2.2	3.5	0.0	0.6	3.2	0.0	0.9	2.6	2.7
LnGrp Delay(d),s/veh	21.4	32.0	0.0	21.4	12.3	0.0	14.9	18.6	0.0	14.9	18.2	18.2
LnGrp LOS	C	C		C	B		B	B		B	B	B
Approach Vol, veh/h		815			690			413			377	
Approach Delay, s/veh		31.5			14.0			18.2			17.6	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	40.4	10.9	30.3	7.8	41.0	7.6	33.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	22.5	12.5	29.5	8.7	21.3	5.1	36.9
Max Q Clear Time (g_c+I1), s	3.8	8.3	6.5	20.0	3.3	7.2	3.3	9.3
Green Ext Time (p_c), s	0.0	3.7	0.1	5.8	0.0	3.7	0.0	11.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.6
HCM 2010 LOS	C

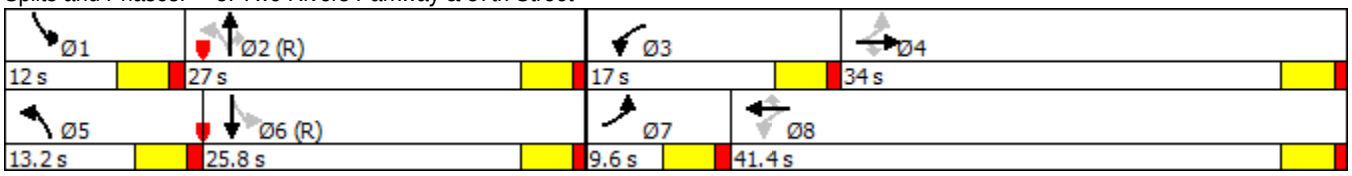
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	12	27	17	34	13.2	25.8	9.6	41.4
Maximum Split (%)	13.3%	30.0%	18.9%	37.8%	14.7%	28.7%	10.7%	46.0%
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	2.8	14.8	41.8	58.8	2.8	16	41.8	51.4
End Time (s)	14.8	41.8	58.8	2.8	16	41.8	51.4	2.8
Yield/Force Off (s)	10.3	37.3	54.3	88.3	11.5	37.3	46.9	88.3
Yield/Force Off 170(s)	10.3	26.3	54.3	77.3	11.5	26.3	46.9	77.3
Local Start Time (s)	76.8	88.8	25.8	42.8	76.8	0	25.8	35.4
Local Yield (s)	84.3	21.3	38.3	72.3	85.5	21.3	30.9	72.3
Local Yield 170(s)	84.3	10.3	38.3	61.3	85.5	10.3	30.9	61.3

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	65

Offset: 16 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: Two Rivers Parkway & 37th Street



APPENDIX H

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	246	9	170	382	82	50	172	100	100	122	48
Future Volume (veh/h)	51	246	9	170	382	82	50	172	100	100	122	48
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	55	267	9	185	415	79	54	187	0	109	133	0
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	336	556	19	525	549	105	416	292	248	375	292	248
Arrive On Green	0.05	0.31	0.31	0.10	0.36	0.36	0.09	0.16	0.00	0.09	0.16	0.00
Sat Flow, veh/h	1774	1792	60	1774	1522	290	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	55	0	276	185	0	494	54	187	0	109	133	0
Grp Sat Flow(s),veh/h/ln	1774	0	1852	1774	0	1812	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.1	0.0	6.5	3.6	0.0	12.8	1.3	5.0	0.0	2.6	3.5	0.0
Cycle Q Clear(g_c), s	1.1	0.0	6.5	3.6	0.0	12.8	1.3	5.0	0.0	2.6	3.5	0.0
Prop In Lane	1.00		0.03	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	336	0	575	525	0	654	416	292	248	375	292	248
V/C Ratio(X)	0.16	0.00	0.48	0.35	0.00	0.76	0.13	0.64	0.00	0.29	0.46	0.00
Avail Cap(c_a), veh/h	426	0	849	724	0	1033	830	645	548	790	645	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.2	0.0	14.9	10.6	0.0	15.0	15.6	21.1	0.0	16.3	20.5	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.6	0.4	0.0	1.8	0.1	2.3	0.0	0.4	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	3.4	1.8	0.0	6.6	0.6	2.8	0.0	1.3	1.9	0.0
LnGrp Delay(d),s/veh	12.5	0.0	15.6	11.1	0.0	16.8	15.8	23.5	0.0	16.7	21.6	0.0
LnGrp LOS	B		B	B		B	B	C		B	C	
Approach Vol, veh/h		331			679			241			242	
Approach Delay, s/veh		15.0			15.3			21.7			19.4	
Approach LOS		B			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	21.1	9.5	12.9	7.3	23.8	9.5	12.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	24.5	17.5	18.5	5.5	30.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	5.6	8.5	3.3	5.5	3.1	14.8	4.6	7.0
Green Ext Time (p_c), s	0.2	4.5	0.1	1.4	0.0	4.5	0.2	1.4

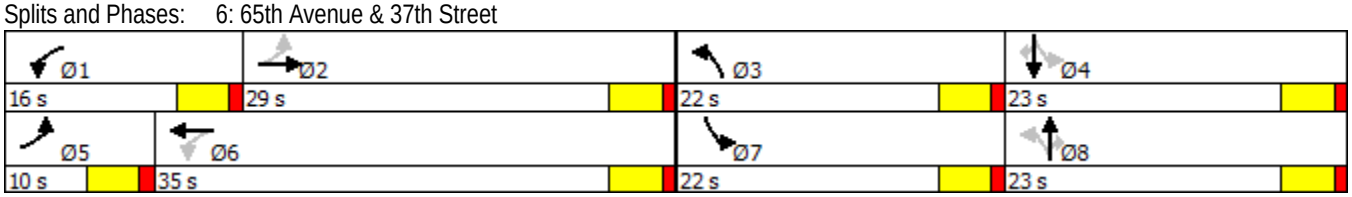
Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	Min	None	None	Min	Min
Maximum Split (s)	16	29	22	23	10	35	22	23
Maximum Split (%)	17.8%	32.2%	24.4%	25.6%	11.1%	38.9%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	45	67	0	10	45	67
End Time (s)	16	45	67	0	10	45	67	0
Yield/Force Off (s)	11.5	40.5	62.5	85.5	5.5	40.5	62.5	85.5
Yield/Force Off 170(s)	11.5	29.5	62.5	85.5	5.5	29.5	62.5	85.5
Local Start Time (s)	74	0	29	51	74	84	29	51
Local Yield (s)	85.5	24.5	46.5	69.5	79.5	24.5	46.5	69.5
Local Yield 170(s)	85.5	13.5	46.5	69.5	79.5	13.5	46.5	69.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	414	41	100	339	75	11	113	167	92	218	63
Future Volume (veh/h)	52	414	41	100	339	75	11	113	167	92	218	63
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	450	42	109	368	72	12	123	20	100	237	0
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	370	578	54	348	551	108	351	336	286	434	336	286
Arrive On Green	0.05	0.34	0.34	0.07	0.36	0.36	0.09	0.18	0.18	0.09	0.18	0.00
Sat Flow, veh/h	1774	1678	157	1774	1514	296	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	57	0	492	109	0	440	12	123	20	100	237	0
Grp Sat Flow(s),veh/h/ln	1774	0	1835	1774	0	1810	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.1	0.0	13.7	2.2	0.0	11.6	0.3	3.3	0.6	2.5	6.8	0.0
Cycle Q Clear(g_c), s	1.1	0.0	13.7	2.2	0.0	11.6	0.3	3.3	0.6	2.5	6.8	0.0
Prop In Lane	1.00		0.09	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	370	0	631	348	0	659	351	336	286	434	336	286
V/C Ratio(X)	0.15	0.00	0.78	0.31	0.00	0.67	0.03	0.37	0.07	0.23	0.71	0.00
Avail Cap(c_a), veh/h	449	0	789	578	0	968	740	604	514	823	604	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.8	0.0	16.8	12.2	0.0	15.2	15.8	20.5	19.4	16.3	21.9	0.0
Incr Delay (d2), s/veh	0.2	0.0	4.0	0.5	0.0	1.2	0.0	0.7	0.1	0.3	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	7.5	1.1	0.0	6.0	0.1	1.8	0.3	1.2	3.7	0.0
LnGrp Delay(d),s/veh	12.0	0.0	20.7	12.7	0.0	16.4	15.8	21.2	19.5	16.6	24.7	0.0
LnGrp LOS	B		C	B		B	B	C	B	B	C	
Approach Vol, veh/h		549			549			155			337	
Approach Delay, s/veh		19.8			15.7			20.5			22.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	24.1	9.5	14.8	7.5	25.3	9.5	14.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	24.5	17.5	18.5	5.5	30.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	4.2	15.7	2.3	8.8	3.1	13.6	4.5	5.3
Green Ext Time (p_c), s	0.1	3.9	0.0	1.5	0.0	5.7	0.2	1.7

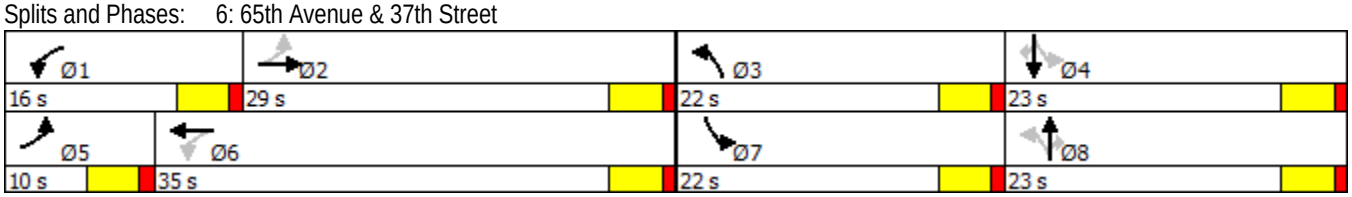
Intersection Summary	
HCM 2010 Ctrl Delay	19.0
HCM 2010 LOS	B

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	Min	None	None	Min	Min
Maximum Split (s)	16	29	22	23	10	35	22	23
Maximum Split (%)	17.8%	32.2%	24.4%	25.6%	11.1%	38.9%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	45	67	0	10	45	67
End Time (s)	16	45	67	0	10	45	67	0
Yield/Force Off (s)	11.5	40.5	62.5	85.5	5.5	40.5	62.5	85.5
Yield/Force Off 170(s)	11.5	29.5	62.5	85.5	5.5	29.5	62.5	85.5
Local Start Time (s)	74	0	29	51	74	84	29	51
Local Yield (s)	85.5	24.5	46.5	69.5	79.5	24.5	46.5	69.5
Local Yield 170(s)	85.5	13.5	46.5	69.5	79.5	13.5	46.5	69.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 6: 65th Avenue & 37th Street



Intersection						
Int Delay, s/veh	1.1					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	229	13	7	505	37	19
Future Vol, veh/h	229	13	7	505	37	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	400	-	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	249	14	8	549	40	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	263	0	820	256
Stage 1	-	-	-	-	256	-
Stage 2	-	-	-	-	564	-
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	-	-	1301	-	345	783
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	569	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1301	-	343	783
Mov Cap-2 Maneuver	-	-	-	-	343	-
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	566	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	14.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	424	-	-	1301	-
HCM Lane V/C Ratio	0.144	-	-	0.006	-
HCM Control Delay (s)	14.9	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	449	42	21	376	25	13
Future Vol, veh/h	449	42	21	376	25	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	400	-	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	488	46	23	409	27	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	534	0	965	511
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	454	-
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	-	-	1034	-	283	563
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	640	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1034	-	277	563
Mov Cap-2 Maneuver	-	-	-	-	277	-
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	626	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	17.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	335	-	-	1034	-
HCM Lane V/C Ratio	0.123	-	-	0.022	-
HCM Control Delay (s)	17.3	-	-	8.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	12.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	178	11	82	373	77	5	133	31	33	165	6
Future Vol, veh/h	10	178	11	82	373	77	5	133	31	33	165	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	193	12	89	405	84	5	145	34	36	179	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	489	0	0	193	0	0	933	882	193	930	841	447
Stage 1	-	-	-	-	-	-	215	215	-	626	626	-
Stage 2	-	-	-	-	-	-	718	667	-	304	215	-
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	1074	-	-	1380	-	-	246	285	849	248	301	612
Stage 1	-	-	-	-	-	-	787	725	-	472	477	-
Stage 2	-	-	-	-	-	-	420	457	-	705	725	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1074	-	-	1380	-	-	112	264	849	128	279	612
Mov Cap-2 Maneuver	-	-	-	-	-	-	112	264	-	128	279	-
Stage 1	-	-	-	-	-	-	779	718	-	467	446	-
Stage 2	-	-	-	-	-	-	232	428	-	535	718	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.2	32.5	39.6
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	112	304	1074	-	-	1380	-	-	128	284
HCM Lane V/C Ratio	0.049	0.586	0.01	-	-	0.065	-	-	0.28	0.654
HCM Control Delay (s)	38.8	32.3	8.4	-	-	7.8	-	-	43.7	38.8
HCM Lane LOS	E	D	A	-	-	A	-	-	E	E
HCM 95th %tile Q(veh)	0.2	3.5	0	-	-	0.2	-	-	1.1	4.2

Intersection	
Int Delay, s/veh	30.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	386	10	68	287	50	4	179	54	51	139	14
Future Vol, veh/h	15	386	10	68	287	50	4	179	54	51	139	14
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	150	-	150	150	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	420	11	74	312	54	4	195	59	55	151	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	366	0	0	420	0	0	1022	966	420	1066	939	339
Stage 1	-	-	-	-	-	-	452	452	-	487	487	-
Stage 2	-	-	-	-	-	-	570	514	-	579	452	-
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	1193	-	-	1139	-	-	214	255	633	200	264	703
Stage 1	-	-	-	-	-	-	587	570	-	562	550	-
Stage 2	-	-	-	-	-	-	506	535	-	501	570	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1193	-	-	1139	-	-	100	235	633	~ 53	244	703
Mov Cap-2 Maneuver	-	-	-	-	-	-	100	235	-	~ 53	244	-
Stage 1	-	-	-	-	-	-	579	562	-	554	514	-
Stage 2	-	-	-	-	-	-	327	500	-	293	562	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.4	75.5	96
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	100	275	1193	-	-	1139	-	-	53	260
HCM Lane V/C Ratio	0.043	0.921	0.014	-	-	0.065	-	-	1.046	0.64
HCM Control Delay (s)	42.6	76.1	8.1	-	-	8.4	-	-	262.4	40.5
HCM Lane LOS	E	F	A	-	-	A	-	-	F	E
HCM 95th %tile Q(veh)	0.1	8.5	0	-	-	0.2	-	-	4.7	4

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	2.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	84	8	3	188	183	28
Future Vol, veh/h	84	8	3	188	183	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	400	-	-	400
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	91	9	3	204	199	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	410	199	199	0	-	0
Stage 1	199	-	-	-	-	-
Stage 2	211	-	-	-	-	-
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	598	842	1373	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	824	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	597	842	1373	-	-	-
Mov Cap-2 Maneuver	597	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	822	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1373	-	597	842	-	-
HCM Lane V/C Ratio	0.002	-	0.153	0.01	-	-
HCM Control Delay (s)	7.6	-	12.1	9.3	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.5	0	-	-

Intersection						
Int Delay, s/veh	1.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	5	8	216	226	93
Future Vol, veh/h	55	5	8	216	226	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	400	-	-	400
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	60	5	9	235	246	101

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	498	246	246	0	-	0
Stage 1	246	-	-	-	-	-
Stage 2	252	-	-	-	-	-
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	532	793	1320	-	-	-
Stage 1	795	-	-	-	-	-
Stage 2	790	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	528	793	1320	-	-	-
Mov Cap-2 Maneuver	528	-	-	-	-	-
Stage 1	795	-	-	-	-	-
Stage 2	785	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1320	-	528	793	-	-
HCM Lane V/C Ratio	0.007	-	0.113	0.007	-	-
HCM Control Delay (s)	7.7	-	12.7	9.6	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	0	-	-

APPENDIX I

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	346	14	181	457	87	56	181	104	106	130	113
Future Volume (veh/h)	154	346	14	181	457	87	56	181	104	106	130	113
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	167	376	0	197	497	0	61	197	0	115	141	12
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	386	631	536	477	656	558	393	295	251	354	303	257
Arrive On Green	0.09	0.34	0.00	0.10	0.35	0.00	0.09	0.16	0.00	0.09	0.16	0.16
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	167	376	0	197	497	0	61	197	0	115	141	12
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	3.5	9.7	0.0	4.0	13.7	0.0	1.6	5.8	0.0	3.0	4.0	0.4
Cycle Q Clear(g_c), s	3.5	9.7	0.0	4.0	13.7	0.0	1.6	5.8	0.0	3.0	4.0	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	386	631	536	477	656	558	393	295	251	354	303	257
V/C Ratio(X)	0.43	0.60	0.00	0.41	0.76	0.00	0.16	0.67	0.00	0.33	0.47	0.05
Avail Cap(c_a), veh/h	428	884	751	556	948	806	775	595	505	730	595	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.3	15.9	0.0	11.2	16.6	0.0	17.2	22.9	0.0	17.8	22.0	20.5
Incr Delay (d2), s/veh	0.8	0.9	0.0	0.6	2.1	0.0	0.2	2.6	0.0	0.5	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	5.1	0.0	2.0	7.3	0.0	0.8	3.2	0.0	1.5	2.1	0.2
LnGrp Delay(d),s/veh	13.0	16.8	0.0	11.8	18.7	0.0	17.4	25.5	0.0	18.3	23.1	20.6
LnGrp LOS	B	B		B	B		B	C		B	C	C
Approach Vol, veh/h		543			694			258			268	
Approach Delay, s/veh		15.6			16.7			23.6			20.9	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	24.1	9.5	13.9	9.6	24.9	9.7	13.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	27.5	17.5	18.5	6.5	29.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	6.0	11.7	3.6	6.0	5.5	15.7	5.0	7.8
Green Ext Time (p_c), s	0.1	5.1	0.1	1.5	0.0	4.8	0.2	1.4

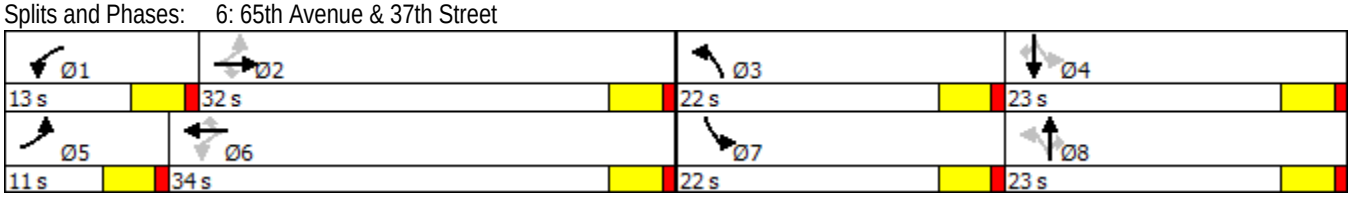
Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	Min	None	None	Min	Min
Maximum Split (s)	13	32	22	23	11	34	22	23
Maximum Split (%)	14.4%	35.6%	24.4%	25.6%	12.2%	37.8%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	13	45	67	0	11	45	67
End Time (s)	13	45	67	0	11	45	67	0
Yield/Force Off (s)	8.5	40.5	62.5	85.5	6.5	40.5	62.5	85.5
Yield/Force Off 170(s)	8.5	29.5	62.5	85.5	6.5	29.5	62.5	85.5
Local Start Time (s)	77	0	32	54	77	88	32	54
Local Yield (s)	85.5	27.5	49.5	72.5	83.5	27.5	49.5	72.5
Local Yield 170(s)	85.5	16.5	49.5	72.5	83.5	16.5	49.5	72.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	413	62	105	256	65	85	219	62	84	187	14
Future Volume (veh/h)	15	413	62	105	256	65	85	219	62	84	187	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	16	449	19	114	278	21	92	238	28	91	203	11
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	464	763	649	340	763	649	537	785	668	509	738	40
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	1076	1863	1583	921	1863	1583	1163	1863	1583	1109	1751	95
Grp Volume(v), veh/h	16	449	19	114	278	21	92	238	28	91	0	214
Grp Sat Flow(s),veh/h/ln	1076	1863	1583	921	1863	1583	1163	1863	1583	1109	0	1846
Q Serve(g_s), s	0.6	10.0	0.4	5.9	5.5	0.4	3.0	4.5	0.6	3.2	0.0	4.0
Cycle Q Clear(g_c), s	6.1	10.0	0.4	15.9	5.5	0.4	7.0	4.5	0.6	7.7	0.0	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	464	763	649	340	763	649	537	785	668	509	0	778
V/C Ratio(X)	0.03	0.59	0.03	0.34	0.36	0.03	0.17	0.30	0.04	0.18	0.00	0.27
Avail Cap(c_a), veh/h	598	995	846	454	995	846	537	785	668	509	0	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.0	12.3	9.4	18.4	10.9	9.4	12.4	10.2	9.1	12.8	0.0	10.1
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.6	0.3	0.0	0.7	1.0	0.1	0.8	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.3	0.2	1.5	2.8	0.2	1.0	2.5	0.3	1.1	0.0	2.2
LnGrp Delay(d),s/veh	13.1	13.0	9.4	19.0	11.2	9.4	13.1	11.2	9.2	13.5	0.0	11.0
LnGrp LOS	B	B	A	B	B	A	B	B	A	B		B
Approach Vol, veh/h		484			413			358			305	
Approach Delay, s/veh		12.8			13.3			11.5			11.7	
Approach LOS		B			B			B			B	

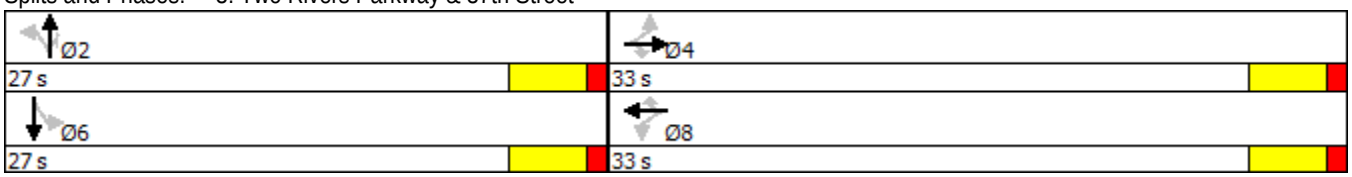
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		27.0		26.4		27.0		26.4
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		22.5		28.5		22.5		28.5
Max Q Clear Time (g_c+I1), s		9.0		12.0		9.7		17.9
Green Ext Time (p_c), s		3.0		5.0		2.9		4.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	27	33	27	33
Maximum Split (%)	45.0%	55.0%	45.0%	55.0%
Minimum Split (s)	22.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	7
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	27	0	27
End Time (s)	27	0	27	0
Yield/Force Off (s)	22.5	55.5	22.5	55.5
Yield/Force Off 170(s)	11.5	44.5	11.5	44.5
Local Start Time (s)	0	27	0	27
Local Yield (s)	22.5	55.5	22.5	55.5
Local Yield 170(s)	11.5	44.5	11.5	44.5

Intersection Summary	
Cycle Length	60
Control Type	Semi Act-Uncoord
Natural Cycle	45

Splits and Phases: 3: Two Rivers Parkway & 37th Street



Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	354	25	34	627	72	97
Future Vol, veh/h	354	25	34	627	72	97
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	400	400	-	100	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	385	27	37	682	78	105

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	385	0	1140	385
Stage 1	-	-	-	-	385	-
Stage 2	-	-	-	-	755	-
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	-	-	1173	-	222	663
Stage 1	-	-	-	-	688	-
Stage 2	-	-	-	-	464	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1173	-	215	663
Mov Cap-2 Maneuver	-	-	-	-	215	-
Stage 1	-	-	-	-	688	-
Stage 2	-	-	-	-	449	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	19.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	215	663	-	-	1173	-
HCM Lane V/C Ratio	0.364	0.159	-	-	0.032	-
HCM Control Delay (s)	31	11.5	-	-	8.2	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	1.6	0.6	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	528	70	91	498	45	57
Future Vol, veh/h	528	70	91	498	45	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	400	400	-	100	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	574	76	99	541	49	62

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	574	0	1313	574
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	739	-
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	-	-	999	-	175	518
Stage 1	-	-	-	-	563	-
Stage 2	-	-	-	-	472	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	999	-	158	518
Mov Cap-2 Maneuver	-	-	-	-	158	-
Stage 1	-	-	-	-	563	-
Stage 2	-	-	-	-	425	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	23.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	158	518	-	-	999	-
HCM Lane V/C Ratio	0.31	0.12	-	-	0.099	-
HCM Control Delay (s)	37.7	12.9	-	-	9	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	1.2	0.4	-	-	0.3	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑		↱
Traffic Vol, veh/h	270	40	123	576	0	109
Future Vol, veh/h	270	40	123	576	0	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	400	400	-	-	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	293	43	134	626	0	118

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	293	0	-	293
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.12	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.218	-	-	3.318
Pot Cap-1 Maneuver	-	-	1269	-	0	746
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1269	-	-	746
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	746	-	-	1269	-
HCM Lane V/C Ratio	0.159	-	-	0.105	-
HCM Control Delay (s)	10.7	-	-	8.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.4	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑		↱
Traffic Vol, veh/h	498	61	117	426	0	100
Future Vol, veh/h	498	61	117	426	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	400	400	-	-	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	541	66	127	463	0	109

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	541	0	-	541
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.12	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.218	-	-	3.318
Pot Cap-1 Maneuver	-	-	1028	-	0	541
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1028	-	-	541
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	13.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	541	-	-	1028	-
HCM Lane V/C Ratio	0.201	-	-	0.124	-
HCM Control Delay (s)	13.3	-	-	9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0.4	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	199	39	114	359	103	104	199	56	55	201	7
Future Volume (veh/h)	11	199	39	114	359	103	104	199	56	55	201	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	12	216	12	124	390	30	113	216	26	60	218	6
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	594	505	414	594	505	638	918	780	634	889	24
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	963	1863	1583	1148	1863	1583	1152	1863	1583	1133	1804	50
Grp Volume(v), veh/h	12	216	12	124	390	30	113	216	26	60	0	224
Grp Sat Flow(s),veh/h/ln	963	1863	1583	1148	1863	1583	1152	1863	1583	1133	0	1854
Q Serve(g_s), s	0.5	4.3	0.2	4.5	8.6	0.6	3.0	3.2	0.4	1.5	0.0	3.3
Cycle Q Clear(g_c), s	9.1	4.3	0.2	8.7	8.6	0.6	6.3	3.2	0.4	4.7	0.0	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	284	594	505	414	594	505	638	918	780	634	0	913
V/C Ratio(X)	0.04	0.36	0.02	0.30	0.66	0.06	0.18	0.24	0.03	0.09	0.00	0.25
Avail Cap(c_a), veh/h	532	1074	913	710	1074	913	638	918	780	634	0	913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.9	12.5	11.2	15.9	14.0	11.3	8.8	6.9	6.2	8.3	0.0	7.0
Incr Delay (d2), s/veh	0.1	0.4	0.0	0.4	1.2	0.0	0.6	0.6	0.1	0.3	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.2	0.1	1.5	4.5	0.3	1.0	1.8	0.2	0.5	0.0	1.8
LnGrp Delay(d),s/veh	18.0	12.9	11.2	16.3	15.2	11.3	9.4	7.6	6.3	8.6	0.0	7.6
LnGrp LOS	B	B	B	B	B	B	A	A	A	A		A
Approach Vol, veh/h		240			544			355			284	
Approach Delay, s/veh		13.1			15.3			8.1			7.8	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.0		19.7		28.0		19.7
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		23.5		27.5		23.5		27.5
Max Q Clear Time (g_c+I1), s		8.3		11.1		6.7		10.7
Green Ext Time (p_c), s		3.0		4.1		3.1		4.1

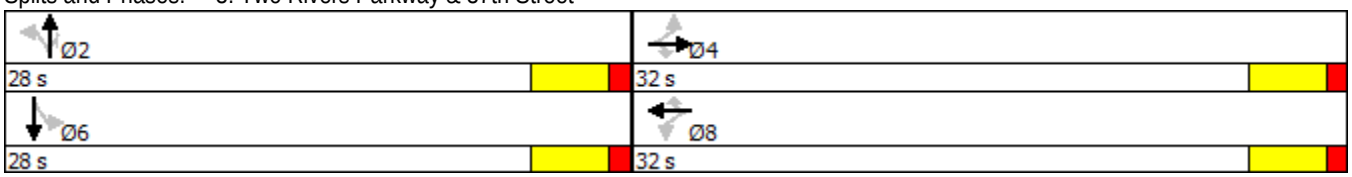
Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	28	32	28	32
Maximum Split (%)	46.7%	53.3%	46.7%	53.3%
Minimum Split (s)	22.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	7
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	28	0	28
End Time (s)	28	0	28	0
Yield/Force Off (s)	23.5	55.5	23.5	55.5
Yield/Force Off 170(s)	12.5	44.5	12.5	44.5
Local Start Time (s)	0	28	0	28
Local Yield (s)	23.5	55.5	23.5	55.5
Local Yield 170(s)	12.5	44.5	12.5	44.5

Intersection Summary

Cycle Length	60
Control Type	Semi Act-Uncoord
Natural Cycle	45

Splits and Phases: 3: Two Rivers Parkway & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	481	45	100	432	79	14	119	175	97	225	155
Future Volume (veh/h)	105	481	45	100	432	79	14	119	175	97	225	155
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	114	523	48	109	470	78	15	129	18	105	245	22
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	648	59	326	599	99	318	332	282	404	335	285
Arrive On Green	0.07	0.39	0.39	0.07	0.38	0.38	0.08	0.18	0.18	0.08	0.18	0.18
Sat Flow, veh/h	1774	1681	154	1774	1558	259	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	114	0	571	109	0	548	15	129	18	105	245	22
Grp Sat Flow(s),veh/h/ln	1774	0	1836	1774	0	1817	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.4	0.0	17.4	2.2	0.0	16.7	0.4	3.8	0.6	2.9	7.8	0.7
Cycle Q Clear(g_c), s	2.4	0.0	17.4	2.2	0.0	16.7	0.4	3.8	0.6	2.9	7.8	0.7
Prop In Lane	1.00		0.08	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	338	0	708	326	0	699	318	332	282	404	335	285
V/C Ratio(X)	0.34	0.00	0.81	0.33	0.00	0.78	0.05	0.39	0.06	0.26	0.73	0.08
Avail Cap(c_a), veh/h	400	0	805	446	0	855	672	550	467	755	550	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.6	0.0	17.2	12.8	0.0	17.0	17.9	22.7	21.4	18.4	24.3	21.4
Incr Delay (d2), s/veh	0.6	0.0	5.4	0.6	0.0	3.9	0.1	0.7	0.1	0.3	3.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	9.8	1.1	0.0	9.0	0.2	2.0	0.3	1.4	4.3	0.3
LnGrp Delay(d),s/veh	13.2	0.0	22.6	13.4	0.0	20.9	17.9	23.5	21.5	18.7	27.4	21.5
LnGrp LOS	B		C	B		C	B	C	C	B	C	C
Approach Vol, veh/h		685			657			162			372	
Approach Delay, s/veh		21.1			19.7			22.8			24.6	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	28.7	9.5	15.8	8.8	28.6	9.6	15.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	27.5	17.5	18.5	6.5	29.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	4.2	19.4	2.4	9.8	4.4	18.7	4.9	5.8
Green Ext Time (p_c), s	0.1	4.4	0.0	1.5	0.0	5.4	0.2	1.8

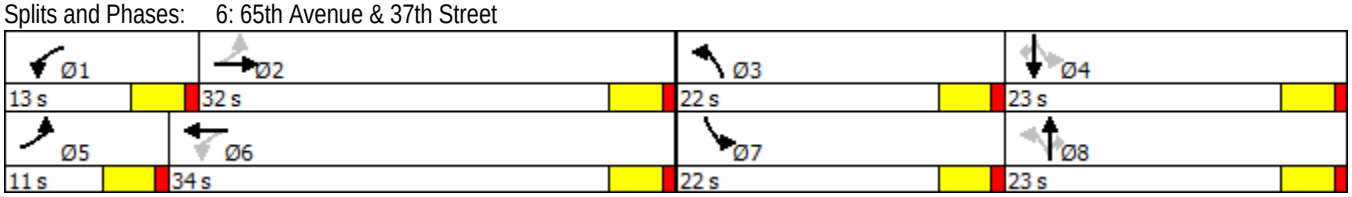
Intersection Summary	
HCM 2010 Ctrl Delay	21.4
HCM 2010 LOS	C

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Min	Min	None	None	Min	Min
Maximum Split (s)	13	32	22	23	11	34	22	23
Maximum Split (%)	14.4%	35.6%	24.4%	25.6%	12.2%	37.8%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	13	45	67	0	11	45	67
End Time (s)	13	45	67	0	11	45	67	0
Yield/Force Off (s)	8.5	40.5	62.5	85.5	6.5	40.5	62.5	85.5
Yield/Force Off 170(s)	8.5	29.5	62.5	85.5	6.5	29.5	62.5	85.5
Local Start Time (s)	77	0	32	54	77	88	32	54
Local Yield (s)	85.5	27.5	49.5	72.5	83.5	27.5	49.5	72.5
Local Yield 170(s)	85.5	16.5	49.5	72.5	83.5	16.5	49.5	72.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 6: 65th Avenue & 37th Street



Intersection						
Int Delay, s/veh	2.4					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	86	23	11	255	254	31
Future Vol, veh/h	86	23	11	255	254	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	400	-	-	400
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	93	25	12	277	276	34

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	577	276	276	0	-	0
Stage 1	276	-	-	-	-	-
Stage 2	301	-	-	-	-	-
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	478	763	1287	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	751	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	474	763	1287	-	-	-
Mov Cap-2 Maneuver	474	-	-	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	744	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.5	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1287	-	474	763	-	-
HCM Lane V/C Ratio	0.009	-	0.197	0.033	-	-
HCM Control Delay (s)	7.8	-	14.5	9.9	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.7	0.1	-	-

Intersection						
Int Delay, s/veh	1.5					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	12	21	254	264	86
Future Vol, veh/h	54	12	21	254	264	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	400	-	-	400
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	59	13	23	276	287	93

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	609	287	287	0	-	0
Stage 1	287	-	-	-	-	-
Stage 2	322	-	-	-	-	-
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	458	752	1275	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	450	752	1275	-	-	-
Mov Cap-2 Maneuver	450	-	-	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	722	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1275	-	450	752	-	-
HCM Lane V/C Ratio	0.018	-	0.13	0.017	-	-
HCM Control Delay (s)	7.9	-	14.2	9.9	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	0.1	-	-

Intersection						
Int Delay, s/veh	3.1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	128	231	28	70	284
Future Vol, veh/h	27	128	231	28	70	284
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	400	-
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	29	139	251	30	76	309

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	727	266	0	0	282	0
Stage 1	266	-	-	-	-	-
Stage 2	461	-	-	-	-	-
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	391	773	-	-	1280	-
Stage 1	779	-	-	-	-	-
Stage 2	635	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	368	773	-	-	1280	-
Mov Cap-2 Maneuver	368	-	-	-	-	-
Stage 1	779	-	-	-	-	-
Stage 2	597	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	368	773	1280	-
HCM Lane V/C Ratio	-	-	0.08	0.18	0.059	-
HCM Control Delay (s)	-	-	15.6	10.7	8	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.7	0.2	-

Intersection						
Int Delay, s/veh	3.1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	119	247	42	88	266
Future Vol, veh/h	27	119	247	42	88	266
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	400	-
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	29	129	268	46	96	289

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	771	291	0	0	314	0
Stage 1	291	-	-	-	-	-
Stage 2	480	-	-	-	-	-
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	368	748	-	-	1246	-
Stage 1	759	-	-	-	-	-
Stage 2	622	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	340	748	-	-	1246	-
Mov Cap-2 Maneuver	340	-	-	-	-	-
Stage 1	759	-	-	-	-	-
Stage 2	574	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	340	748	1246	-
HCM Lane V/C Ratio	-	-	0.086	0.173	0.077	-
HCM Control Delay (s)	-	-	16.6	10.8	8.1	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.6	0.2	-

Intersection						
Int Delay, s/veh	1.5					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	47	212	4	19	292
Future Vol, veh/h	19	47	212	4	19	292
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	-	-	-	200	-
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	21	51	230	4	21	317

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	592	233	0	0	235	0
Stage 1	233	-	-	-	-	-
Stage 2	359	-	-	-	-	-
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	469	806	-	-	1332	-
Stage 1	806	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	462	806	-	-	1332	-
Mov Cap-2 Maneuver	462	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	696	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	664	1332	-
HCM Lane V/C Ratio	-	-	0.108	0.016	-
HCM Control Delay (s)	-	-	11.1	7.7	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection						
Int Delay, s/veh	1.6					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	26	263	14	64	229
Future Vol, veh/h	11	26	263	14	64	229
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	-	-	-	200	-
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	12	28	286	15	70	249

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	681	293	0	0	301	0
Stage 1	293	-	-	-	-	-
Stage 2	388	-	-	-	-	-
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	416	746	-	-	1260	-
Stage 1	757	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	393	746	-	-	1260	-
Mov Cap-2 Maneuver	393	-	-	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	648	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	589	1260	-
HCM Lane V/C Ratio	-	-	0.068	0.055	-
HCM Control Delay (s)	-	-	11.6	8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	26	190	1	0	311
Future Vol, veh/h	0	26	190	1	0	311
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	28	207	1	0	338

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	207	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	833	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	833	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	833	-
HCM Lane V/C Ratio	-	-	0.034	-
HCM Control Delay (s)	-	-	9.5	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	14	263	2	0	240
Future Vol, veh/h	0	14	263	2	0	240
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	15	286	2	0	261

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	287	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	752	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	752	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	752	-
HCM Lane V/C Ratio	-	-	0.02	-
HCM Control Delay (s)	-	-	9.9	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.1	-

APPENDIX J

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	565	25	265	865	155	90	295	160	185	235	155
Future Volume (veh/h)	190	565	25	265	865	155	90	295	160	185	235	155
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	207	614	0	288	940	52	98	321	15	201	255	23
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	368	1595	714	484	1674	749	338	484	216	342	653	292
Arrive On Green	0.02	0.15	0.00	0.09	0.47	0.47	0.07	0.14	0.14	0.12	0.18	0.18
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	207	614	0	288	940	52	98	321	15	201	255	23
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.5	14.1	0.0	7.9	17.2	1.6	4.2	7.8	0.7	8.3	5.7	1.1
Cycle Q Clear(g_c), s	5.5	14.1	0.0	7.9	17.2	1.6	4.2	7.8	0.7	8.3	5.7	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	368	1595	714	484	1674	749	338	484	216	342	653	292
V/C Ratio(X)	0.56	0.38	0.00	0.59	0.56	0.07	0.29	0.66	0.07	0.59	0.39	0.08
Avail Cap(c_a), veh/h	368	1595	714	484	1674	749	558	728	325	477	728	325
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.3	27.0	0.0	12.8	17.0	12.9	30.0	36.9	33.9	27.3	32.2	30.4
Incr Delay (d2), s/veh	1.8	0.6	0.0	2.0	1.4	0.2	0.5	1.6	0.1	1.6	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	7.1	0.0	4.1	8.7	0.7	2.1	3.9	0.3	4.2	2.8	0.5
LnGrp Delay(d),s/veh	16.1	27.7	0.0	14.8	18.4	13.1	30.4	38.5	34.0	28.9	32.6	30.5
LnGrp LOS	B	C		B	B	B	C	D	C	C	C	C
Approach Vol, veh/h		821			1280			434			479	
Approach Delay, s/veh		24.8			17.4			36.5			31.0	
Approach LOS		C			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	45.1	10.8	21.1	11.0	47.1	15.1	16.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	27.5	17.5	18.5	6.5	29.5	17.5	18.5
Max Q Clear Time (g_c+I1), s	9.9	16.1	6.2	7.7	7.5	19.2	10.3	9.8
Green Ext Time (p_c), s	0.0	7.6	0.2	2.9	0.0	7.1	0.3	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	24.3
HCM 2010 LOS	C

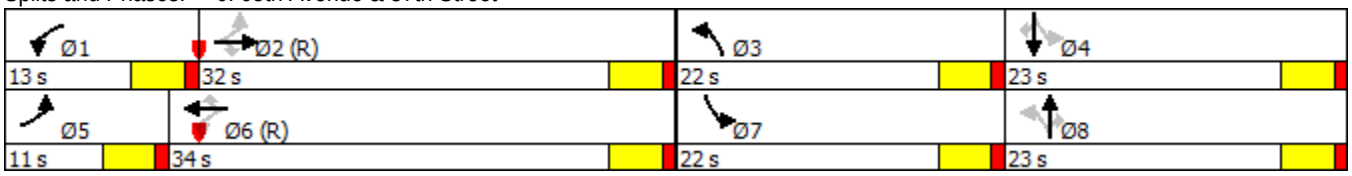
Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	Min	Min	None	C-Max	Min	Min
Maximum Split (s)	13	32	22	23	11	34	22	23
Maximum Split (%)	14.4%	35.6%	24.4%	25.6%	12.2%	37.8%	24.4%	25.6%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	13	45	67	0	11	45	67
End Time (s)	13	45	67	0	11	45	67	0
Yield/Force Off (s)	8.5	40.5	62.5	85.5	6.5	40.5	62.5	85.5
Yield/Force Off 170(s)	8.5	29.5	62.5	85.5	6.5	29.5	62.5	85.5
Local Start Time (s)	77	0	32	54	77	88	32	54
Local Yield (s)	85.5	27.5	49.5	72.5	83.5	27.5	49.5	72.5
Local Yield 170(s)	85.5	16.5	49.5	72.5	83.5	16.5	49.5	72.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	90

Offset: 13 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	780	75	160	760	140	35	190	285	170	380	210
Future Volume (veh/h)	150	780	75	160	760	140	35	190	285	170	380	210
Number	5	2	12	1	6	16	3	8	18	7	4	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	163	848	2	174	826	56	38	207	17	185	413	30
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	422	1788	800	454	1798	804	236	399	179	347	603	270
Arrive On Green	0.09	0.67	0.67	0.07	0.51	0.51	0.06	0.11	0.11	0.11	0.17	0.17
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	163	848	2	174	826	56	38	207	17	185	413	30
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.9	10.4	0.0	4.2	13.5	1.6	1.6	5.0	0.9	7.9	9.9	1.4
Cycle Q Clear(g_c), s	3.9	10.4	0.0	4.2	13.5	1.6	1.6	5.0	0.9	7.9	9.9	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	422	1788	800	454	1798	804	236	399	179	347	603	270
V/C Ratio(X)	0.39	0.47	0.00	0.38	0.46	0.07	0.16	0.52	0.10	0.53	0.68	0.11
Avail Cap(c_a), veh/h	472	1788	800	507	1798	804	492	708	317	501	708	317
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.2	9.0	7.3	9.9	14.2	11.3	31.9	37.6	35.8	28.7	35.1	31.6
Incr Delay (d2), s/veh	0.4	0.6	0.0	0.5	0.8	0.2	0.3	1.0	0.2	1.3	2.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	5.1	0.0	2.0	6.8	0.7	0.8	2.5	0.4	3.9	5.0	0.6
LnGrp Delay(d),s/veh	10.6	9.7	7.3	10.4	15.1	11.5	32.2	38.7	36.0	30.0	37.3	31.8
LnGrp LOS	B	A	A	B	B	B	C	D	D	C	D	C
Approach Vol, veh/h		1013			1056			262			628	
Approach Delay, s/veh		9.8			14.1			37.6			34.9	
Approach LOS		A			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	50.0	9.5	19.8	10.4	50.2	14.7	14.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.9	27.1	18.0	18.0	8.5	27.5	18.0	18.0
Max Q Clear Time (g_c+I1), s	6.2	12.4	3.6	11.9	5.9	15.5	9.9	7.0
Green Ext Time (p_c), s	0.1	9.8	0.0	2.2	0.1	8.4	0.3	3.2

Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B

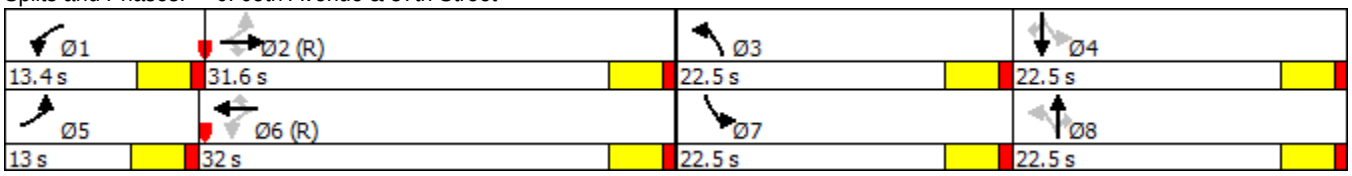
Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBTL	NBL	SBTL	EBL	WBTL	SBL	NBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	Min	Min	None	C-Max	Min	Min
Maximum Split (s)	13.4	31.6	22.5	22.5	13	32	22.5	22.5
Maximum Split (%)	14.9%	35.1%	25.0%	25.0%	14.4%	35.6%	25.0%	25.0%
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7	7	7		7	7	7
Flash Dont Walk (s)		11	11	11		11	11	11
Dual Entry	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	89.6	13	44.6	67.1	89.6	12.6	44.6	67.1
End Time (s)	13	44.6	67.1	89.6	12.6	44.6	67.1	89.6
Yield/Force Off (s)	8.5	40.1	62.6	85.1	8.1	40.1	62.6	85.1
Yield/Force Off 170(s)	8.5	29.1	62.6	85.1	8.1	29.1	62.6	85.1
Local Start Time (s)	76.6	0	31.6	54.1	76.6	89.6	31.6	54.1
Local Yield (s)	85.5	27.1	49.6	72.1	85.1	27.1	49.6	72.1
Local Yield 170(s)	85.5	16.1	49.6	72.1	85.1	16.1	49.6	72.1

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 13 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Splits and Phases: 6: 65th Avenue & 37th Street



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	530	55	75	1075	145	200
Future Volume (veh/h)	530	55	75	1075	145	200
Number	4	14	3	8	5	12
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	576	18	82	1168	158	82
Adj No. of Lanes	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1084	485	340	1432	879	784
Arrive On Green	0.61	0.61	0.10	0.81	0.50	0.50
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583
Grp Volume(v), veh/h	576	18	82	1168	158	82
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583
Q Serve(g_s), s	8.4	0.4	2.7	16.7	4.4	2.5
Cycle Q Clear(g_c), s	8.4	0.4	2.7	16.7	4.4	2.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1084	485	340	1432	879	784
V/C Ratio(X)	0.53	0.04	0.24	0.82	0.18	0.10
Avail Cap(c_a), veh/h	1632	730	422	2143	879	784
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.72	0.72	1.00	1.00
Uniform Delay (d), s/veh	13.7	12.2	18.0	6.7	12.6	12.1
Incr Delay (d2), s/veh	0.4	0.0	0.3	1.1	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.2	1.3	7.7	2.3	1.1
LnGrp Delay(d),s/veh	14.1	12.2	18.3	7.8	13.0	12.4
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	594			1250	240	
Approach Delay, s/veh	14.1			8.5	12.8	
Approach LOS	B			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		49.1	8.9	32.1				40.9
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5
Max Green Setting (Gmax), s		26.5	8.5	41.5				54.5
Max Q Clear Time (g_c+I1), s		6.4	4.7	10.4				18.7
Green Ext Time (p_c), s		0.7	0.0	16.5				17.8

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

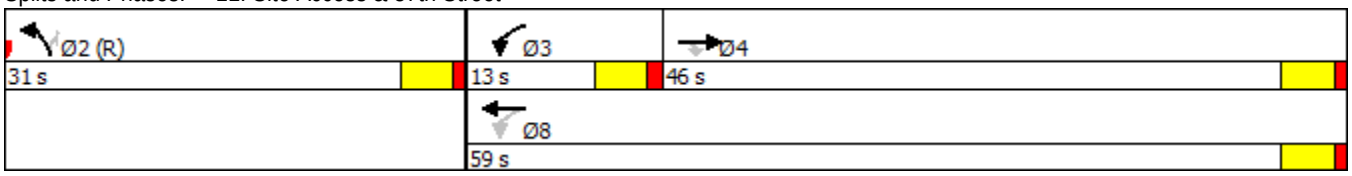
Phase Number	2	3	4	8
Movement	NBL	WBL	EBT	WBTL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize		Yes	Yes	
Recall Mode	C-Min	None	None	None
Maximum Split (s)	31	13	46	59
Maximum Split (%)	34.4%	14.4%	51.1%	65.6%
Minimum Split (s)	22.5	9.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7		7	7
Flash Dont Walk (s)	11		11	11
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	31	44	31
End Time (s)	31	44	0	0
Yield/Force Off (s)	26.5	39.5	85.5	85.5
Yield/Force Off 170(s)	15.5	39.5	74.5	74.5
Local Start Time (s)	0	31	44	31
Local Yield (s)	26.5	39.5	85.5	85.5
Local Yield 170(s)	15.5	39.5	74.5	74.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	55

Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green

Splits and Phases: 11: Site Access & 37th Street



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	840	145	185	765	90	125
Future Volume (veh/h)	840	145	185	765	90	125
Number	4	14	3	8	5	12
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	913	48	201	832	98	43
Adj No. of Lanes	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1267	567	335	1776	706	630
Arrive On Green	0.48	0.48	0.19	1.00	0.40	0.40
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583
Grp Volume(v), veh/h	913	48	201	832	98	43
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583
Q Serve(g_s), s	18.5	1.5	6.2	0.0	3.2	1.5
Cycle Q Clear(g_c), s	18.5	1.5	6.2	0.0	3.2	1.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1267	567	335	1776	706	630
V/C Ratio(X)	0.72	0.08	0.60	0.47	0.14	0.07
Avail Cap(c_a), veh/h	1514	677	454	2261	706	630
HCM Platoon Ratio	1.33	1.33	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.84	0.84	1.00	1.00
Uniform Delay (d), s/veh	20.0	15.5	15.7	0.0	17.3	16.8
Incr Delay (d2), s/veh	1.4	0.1	1.5	0.2	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	0.7	3.1	0.0	1.6	0.7
LnGrp Delay(d),s/veh	21.4	15.6	17.1	0.2	17.7	17.0
LnGrp LOS	C	B	B	A	B	B
Approach Vol, veh/h	961			1033	141	
Approach Delay, s/veh	21.1			3.5	17.4	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		40.3	12.9	36.7				49.7
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5
Max Green Setting (Gmax), s		23.5	14.5	38.5				57.5
Max Q Clear Time (g_c+I1), s		5.2	8.2	20.5				2.0
Green Ext Time (p_c), s		0.3	0.3	11.7				20.9

Intersection Summary	
HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B

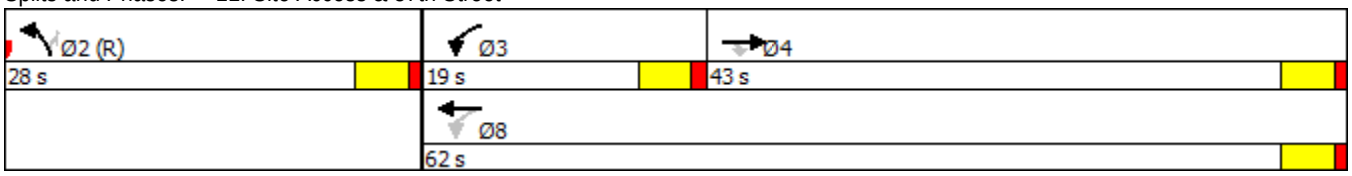
Phase Number	2	3	4	8
Movement	NBL	WBL	EBT	WBTL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize		Yes	Yes	
Recall Mode	C-Min	None	None	None
Maximum Split (s)	28	19	43	62
Maximum Split (%)	31.1%	21.1%	47.8%	68.9%
Minimum Split (s)	22.5	9.5	22.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7		7	7
Flash Dont Walk (s)	11		11	11
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	28	47	28
End Time (s)	28	47	0	0
Yield/Force Off (s)	23.5	42.5	85.5	85.5
Yield/Force Off 170(s)	12.5	42.5	74.5	74.5
Local Start Time (s)	0	28	47	28
Local Yield (s)	23.5	42.5	85.5	85.5
Local Yield 170(s)	12.5	42.5	74.5	74.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	55

Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green

Splits and Phases: 11: Site Access & 37th Street



Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	475	40	125	1095	0	110
Future Vol, veh/h	475	40	125	1095	0	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	400	400	-	-	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	516	43	136	1190	0	120

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	516	0	-	258
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	1046	-	0	741
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1046	-	-	741
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	741	-	-	1046	-
HCM Lane V/C Ratio	0.161	-	-	0.13	-
HCM Control Delay (s)	10.8	-	-	9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.4	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱	↰	↑↑		↱
Traffic Vol, veh/h	885	60	120	735	0	100
Future Vol, veh/h	885	60	120	735	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	400	400	-	-	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	962	65	130	799	0	109

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	962	0	-	481
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	711	-	0	531
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	711	-	-	531
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	13.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	531	-	-	711	-
HCM Lane V/C Ratio	0.205	-	-	0.183	-
HCM Control Delay (s)	13.5	-	-	11.2	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.8	-	-	0.7	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	350	75	175	770	150	150	320	85	80	345	15
Future Volume (veh/h)	25	350	75	175	770	150	150	320	85	80	345	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	27	380	0	190	837	37	163	348	0	87	375	12
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	765	342	383	1031	461	546	1530	684	548	1422	45
Arrive On Green	0.03	0.22	0.00	0.20	0.58	0.58	0.08	0.43	0.00	0.05	0.41	0.41
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3501	112
Grp Volume(v), veh/h	27	380	0	190	837	37	163	348	0	87	189	198
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1843
Q Serve(g_s), s	1.1	8.5	0.0	7.2	16.9	0.9	4.7	5.6	0.0	2.5	6.4	6.4
Cycle Q Clear(g_c), s	1.1	8.5	0.0	7.2	16.9	0.9	4.7	5.6	0.0	2.5	6.4	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	194	765	342	383	1031	461	546	1530	684	548	719	749
V/C Ratio(X)	0.14	0.50	0.00	0.50	0.81	0.08	0.30	0.23	0.00	0.16	0.26	0.26
Avail Cap(c_a), veh/h	254	1081	484	429	1317	589	639	1530	684	589	719	749
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	31.0	0.0	20.1	16.8	13.5	13.6	16.1	0.0	14.1	17.8	17.8
Incr Delay (d2), s/veh	0.3	0.5	0.0	1.0	3.1	0.1	0.3	0.3	0.0	0.1	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.2	0.0	3.5	8.4	0.4	2.3	2.8	0.0	1.3	3.3	3.4
LnGrp Delay(d),s/veh	27.1	31.5	0.0	21.1	20.0	13.6	13.9	16.4	0.0	14.2	18.7	18.6
LnGrp LOS	C	C		C	B	B	B	B		B	B	B
Approach Vol, veh/h		407			1064			511			474	
Approach Delay, s/veh		31.2			19.9			15.6			17.8	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	43.4	13.7	24.0	11.3	41.1	7.0	30.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	26.5	11.5	27.5	11.5	21.5	5.5	33.5
Max Q Clear Time (g_c+I1), s	4.5	7.6	9.2	10.5	6.7	8.4	3.1	18.9
Green Ext Time (p_c), s	0.0	4.5	0.1	8.0	0.2	3.8	0.0	7.3

Intersection Summary	
HCM 2010 Ctrl Delay	20.5
HCM 2010 LOS	C

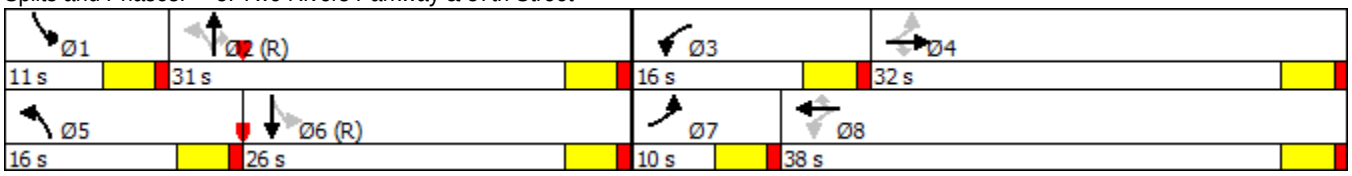
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	11	31	16	32	16	26	10	38
Maximum Split (%)	12.2%	34.4%	17.8%	35.6%	17.8%	28.9%	11.1%	42.2%
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	11	42	58	0	16	42	52
End Time (s)	11	42	58	0	16	42	52	0
Yield/Force Off (s)	6.5	37.5	53.5	85.5	11.5	37.5	47.5	85.5
Yield/Force Off 170(s)	6.5	26.5	53.5	74.5	11.5	26.5	47.5	74.5
Local Start Time (s)	74	85	26	42	74	0	26	36
Local Yield (s)	80.5	21.5	37.5	69.5	85.5	21.5	31.5	69.5
Local Yield 170(s)	80.5	10.5	37.5	58.5	85.5	10.5	31.5	58.5

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	65

Offset: 16 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: Two Rivers Parkway & 37th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	735	120	160	475	100	120	370	100	110	310	30
Future Volume (veh/h)	35	735	120	160	475	100	120	370	100	110	310	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	38	799	0	174	516	26	130	402	0	120	337	24
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	383	1027	460	294	1222	547	484	1270	568	461	1189	84
Arrive On Green	0.03	0.29	0.00	0.18	0.69	0.69	0.07	0.36	0.00	0.06	0.35	0.35
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	3353	238
Grp Volume(v), veh/h	38	799	0	174	516	26	130	402	0	120	177	184
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1770	1821
Q Serve(g_s), s	1.3	18.6	0.0	5.9	5.7	0.5	4.1	7.4	0.0	3.8	6.5	6.5
Cycle Q Clear(g_c), s	1.3	18.6	0.0	5.9	5.7	0.5	4.1	7.4	0.0	3.8	6.5	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	383	1027	460	294	1222	547	484	1270	568	461	628	646
V/C Ratio(X)	0.10	0.78	0.00	0.59	0.42	0.05	0.27	0.32	0.00	0.26	0.28	0.28
Avail Cap(c_a), veh/h	423	1160	519	383	1451	649	538	1270	568	499	628	646
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	29.3	0.0	18.9	10.0	9.2	16.6	20.9	0.0	16.7	20.8	20.9
Incr Delay (d2), s/veh	0.1	3.0	0.0	1.9	0.2	0.0	0.3	0.7	0.0	0.3	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	9.5	0.0	2.9	2.8	0.2	2.0	3.7	0.0	1.9	3.3	3.5
LnGrp Delay(d),s/veh	21.1	32.3	0.0	20.8	10.2	9.2	16.9	21.5	0.0	17.0	22.0	22.0
LnGrp LOS	C	C		C	B	A	B	C		B	C	C
Approach Vol, veh/h		837			716			532			481	
Approach Delay, s/veh		31.8			12.8			20.4			20.7	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	36.8	12.5	30.6	10.5	36.4	7.6	35.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	22.5	12.5	29.5	8.7	21.3	5.1	36.9
Max Q Clear Time (g_c+I1), s	5.8	9.4	7.9	20.6	6.1	8.5	3.3	7.7
Green Ext Time (p_c), s	0.0	4.0	0.2	5.5	0.1	3.9	0.0	11.2

Intersection Summary	
HCM 2010 Ctrl Delay	22.1
HCM 2010 LOS	C

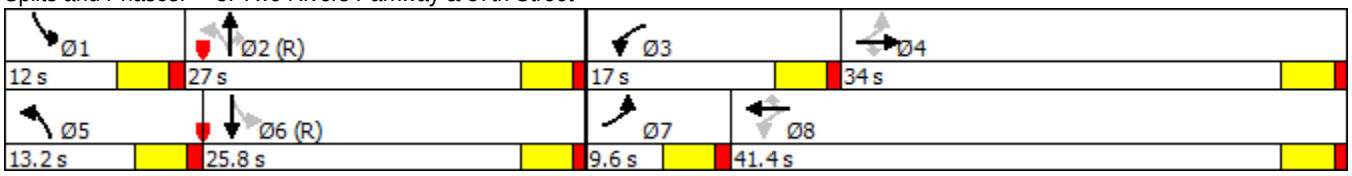
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	12	27	17	34	13.2	25.8	9.6	41.4
Maximum Split (%)	13.3%	30.0%	18.9%	37.8%	14.7%	28.7%	10.7%	46.0%
Minimum Split (s)	9.5	22.5	9.5	22.5	9.5	22.5	9.5	22.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1	1	1	1	1	1	1	1
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	2.8	14.8	41.8	58.8	2.8	16	41.8	51.4
End Time (s)	14.8	41.8	58.8	2.8	16	41.8	51.4	2.8
Yield/Force Off (s)	10.3	37.3	54.3	88.3	11.5	37.3	46.9	88.3
Yield/Force Off 170(s)	10.3	26.3	54.3	77.3	11.5	26.3	46.9	77.3
Local Start Time (s)	76.8	88.8	25.8	42.8	76.8	0	25.8	35.4
Local Yield (s)	84.3	21.3	38.3	72.3	85.5	21.3	30.9	72.3
Local Yield 170(s)	84.3	10.3	38.3	61.3	85.5	10.3	30.9	61.3

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	65

Offset: 16 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: Two Rivers Parkway & 37th Street



Intersection						
Int Delay, s/veh	1.9					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	85	25	10	460	455	30
Future Vol, veh/h	85	25	10	460	455	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	400	-	-	400
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	92	27	11	500	495	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	767	247	495	0	-	0
Stage 1	495	-	-	-	-	-
Stage 2	272	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	339	753	1065	-	-	-
Stage 1	578	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	335	753	1065	-	-	-
Mov Cap-2 Maneuver	335	-	-	-	-	-
Stage 1	578	-	-	-	-	-
Stage 2	741	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.6	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1065	-	335	753	-	-
HCM Lane V/C Ratio	0.01	-	0.276	0.036	-	-
HCM Control Delay (s)	8.4	-	19.8	10	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	1.1	0.1	-	-

Intersection						
Int Delay, s/veh	1.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	15	20	455	510	85
Future Vol, veh/h	55	15	20	455	510	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	400	-	-	400
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	60	16	22	495	554	92

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	845	277	554	0	-	0
Stage 1	554	-	-	-	-	-
Stage 2	291	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	302	720	1012	-	-	-
Stage 1	539	-	-	-	-	-
Stage 2	733	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	295	720	1012	-	-	-
Mov Cap-2 Maneuver	295	-	-	-	-	-
Stage 1	539	-	-	-	-	-
Stage 2	717	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.1	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1012	-	295	720	-	-
HCM Lane V/C Ratio	0.021	-	0.203	0.023	-	-
HCM Control Delay (s)	8.6	-	20.3	10.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	0.1	-	-

Intersection						
Int Delay, s/veh	2.2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	130	425	30	70	525
Future Vol, veh/h	30	130	425	30	70	525
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	200	400	-
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	33	141	462	33	76	571

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	900	231	0	0	462	0
Stage 1	462	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	278	771	-	-	1095	-
Stage 1	601	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	259	771	-	-	1095	-
Mov Cap-2 Maneuver	259	-	-	-	-	-
Stage 1	601	-	-	-	-	-
Stage 2	575	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	259	771	1095	-
HCM Lane V/C Ratio	-	-	0.126	0.183	0.069	-
HCM Control Delay (s)	-	-	20.9	10.7	8.5	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.7	0.2	-

Intersection						
Int Delay, s/veh	2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	120	470	45	90	500
Future Vol, veh/h	20	120	470	45	90	500
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	200	400	-
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	22	130	511	49	98	543

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	978	255	0	0	511	0
Stage 1	511	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	248	744	-	-	1050	-
Stage 1	567	-	-	-	-	-
Stage 2	597	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	225	744	-	-	1050	-
Mov Cap-2 Maneuver	225	-	-	-	-	-
Stage 1	567	-	-	-	-	-
Stage 2	541	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	225	744	1050	-
HCM Lane V/C Ratio	-	-	0.097	0.175	0.093	-
HCM Control Delay (s)	-	-	22.7	10.9	8.8	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.6	0.3	-

Intersection						
Int Delay, s/veh	1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	45	410	5	20	535
Future Vol, veh/h	20	45	410	5	20	535
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	-	-	-	200	-
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	22	49	446	5	22	582

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	782	226	0	0	451	0
Stage 1	448	-	-	-	-	-
Stage 2	334	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	331	777	-	-	1106	-
Stage 1	611	-	-	-	-	-
Stage 2	697	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	324	777	-	-	1106	-
Mov Cap-2 Maneuver	324	-	-	-	-	-
Stage 1	611	-	-	-	-	-
Stage 2	683	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	543	1106	-
HCM Lane V/C Ratio	-	-	0.13	0.02	-
HCM Control Delay (s)	-	-	12.6	8.3	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection						
Int Delay, s/veh	1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	25	490	15	65	465
Future Vol, veh/h	10	25	490	15	65	465
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	-	-	-	200	-
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	27	533	16	71	505

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	935	274	0	0	549	0
Stage 1	541	-	-	-	-	-
Stage 2	394	-	-	-	-	-
Critical Hdwy	7.54	6.94	-	-	4.14	-
Critical Hdwy Stg 1	6.54	-	-	-	-	-
Critical Hdwy Stg 2	6.54	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	220	724	-	-	1017	-
Stage 1	493	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	208	724	-	-	1017	-
Mov Cap-2 Maneuver	208	-	-	-	-	-
Stage 1	493	-	-	-	-	-
Stage 2	560	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	424	1017	-
HCM Lane V/C Ratio	-	-	0.09	0.069	-
HCM Control Delay (s)	-	-	14.3	8.8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-

Intersection						
Int Delay, s/veh	0.2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	25	390	5	0	555
Future Vol, veh/h	0	25	390	5	0	555
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	27	424	5	0	603

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	215	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	790	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	790	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	790	-
HCM Lane V/C Ratio	-	-	0.034	-
HCM Control Delay (s)	-	-	9.7	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	15	490	5	0	475
Future Vol, veh/h	0	15	490	5	0	475
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	16	533	5	0	516

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	269	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	729	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	729	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	729	-
HCM Lane V/C Ratio	-	-	0.022	-
HCM Control Delay (s)	-	-	10.1	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

DELICH ASSOCIATES Traffic & Transportation Engineering
2272 Glen Haven Drive Loveland, Colorado 80538
Phone: (970) 669-2061 Fax: (970) 669-5034

MEMORANDUM

TO: Marc-Andre Levesque, ROI Land Investments, LTD.

FROM: Joseph Delich

DATE: October 11, 2018

SUBJECT: Peakview Development – Impact on the south leg of the 37th Street/Site Access Intersection
(File: 1810ME01)

This memorandum is to determine how much traffic each development in the area impacts the south leg of the 37th Street/Site Access intersection. The revised 'Peakview Transportation Impact Study' (TIS), dated September 27, 2018 was recently submitted. Since the roadway on the south leg is all on the Peakview property, it was requested that we determine how much of the traffic each property contributes to the total daily traffic on the south leg.

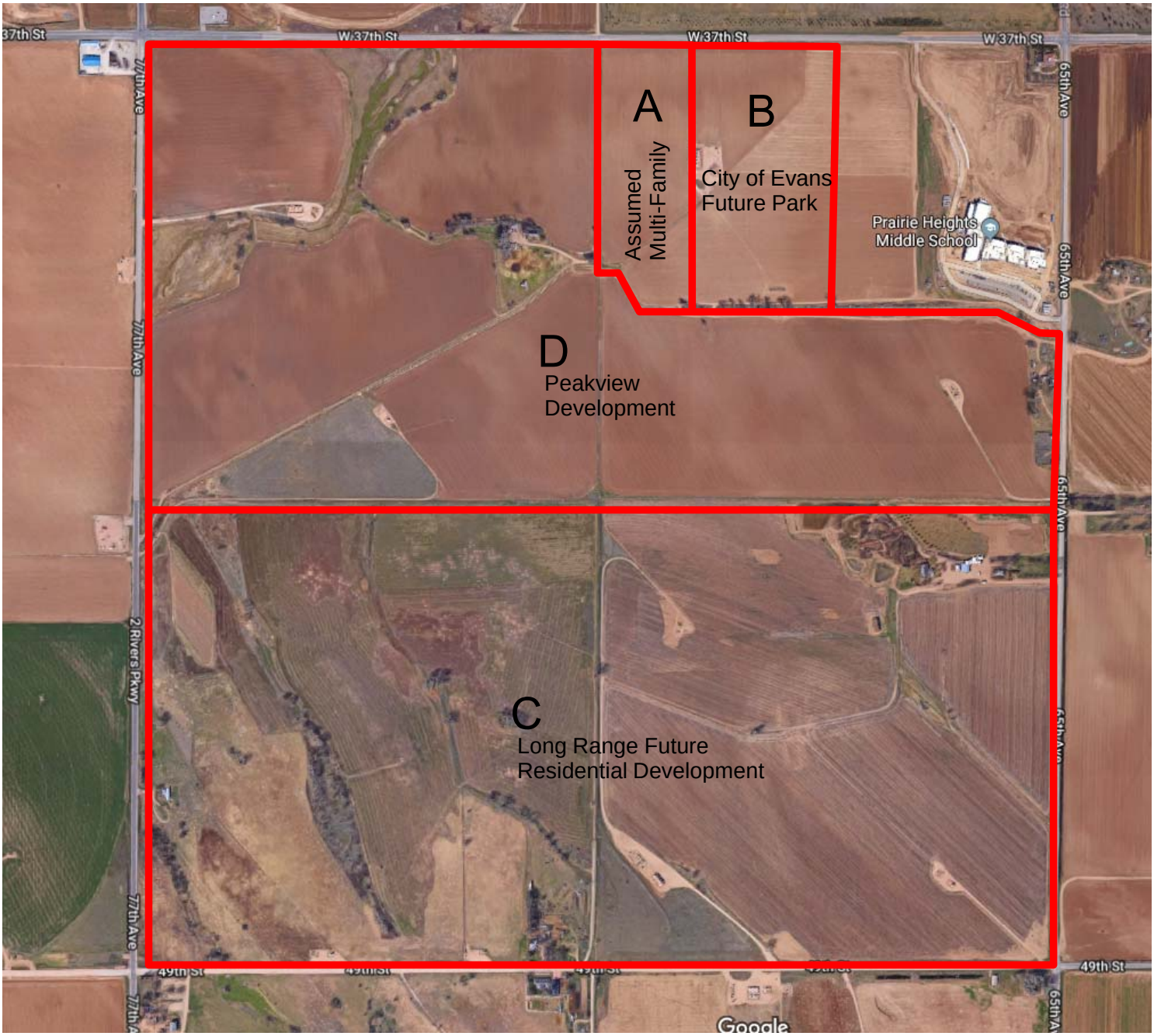
Figure 1 shows an aerial of the properties that contribute to the south leg of the 37th Street/Site Access intersection. An assumed multi-family development (A) at 12 units per acre (170 dewlling units), the City of Evans 23 acre future park (B), a portion long range future residential development (C), and the portion of Peakview Development.

Table 1 shows the average daily traffic for each development and the percentage each contributes to the south leg. The calculated average daily traffic on the south leg of the 37th Street/Site Access intersection is a total of 6,550 vehicles per day in the long range future. The calculated average daily Peakview traffic is 3,450 vehicles per day, 52.7 percent of the total traffic. The calculated average daily multifamily traffic is 1,250 vehicles per day, 19.1 percent of the total traffic. The property to the south contributes 1,800 vehicles per day, 27.5 percent of the total traffic. The City of Evans property to the east open property was assumed to be a 23 acre park this adds 50 vehicles per day, 0.7 percent of the total traffic.

There are two benefits to the multi-family property with Peakview building the south leg of the 37th Street/Site Access intersection on Peakview property: 1) The multi-family property will not have to dedicate right-of-way for this street section and will therefore have more property to develop; and 2) This roadway will be built by Peakview and the multi-family property will have access to it via a roundabout built by Peakview.

Do not hesitate to contact me if you have questions or desire additional information

TABLE 1 Trip Generation for Lot 1, Block 17 and Lot 8 per HMGC Tract H TIS				
Code	**Use**	**Size**	**Average Weekday Daily Trip Ends**	**Percent of Total Trip Ends**
A	Multi-Family	170 D.U.	1,250	19.1%
B	City of Evans Future Park	23 acres	50	0.7%
C	Future Residential Development	300 acres	1,800	27.5%
D	PeakView	Per TIS	3,450	52.7%
Tract A Total			6,550	100.0%



PROPERTIES IMPACTING THE SOUTH LEG OF THE 37TH STREET/ SITE ACCESS INTERSECTION

Figure 1

DELICH ASSOCIATES

Peakview Memo, October 2018

PEAKVIEW
TRANSPORTATION IMPACT STUDY

EVANS, COLORADO

JULY 2019

Prepared for:

ROI Land Investments, LTD
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Project #1810

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I. INTRODUCTION

This Transportation Impact Study (TIS) addresses the capacity, geometric, and control requirements for the proposed Peakview development. The proposed Peakview development is located south of 37th Street, between 65th Avenue and Two Rivers Parkway in Evans, Colorado.

During the course of the analysis, numerous contacts were made with the project developer (ROI Land Investments), project planning consultant (LAI Design Group), the project civil engineer (Northern Engineering), and the City of Evans. This study generally conforms to the format set forth in the Evans Street Specifications. A scoping discussion was held with the Evans City Engineer. The Base Assumptions Form and related information is provided in Appendix A. The study involved the following steps:

- Collect physical, traffic, and development data;
- Perform trip generation, trip distribution, and trip assignment;
- Determine peak hour traffic volumes;
- Conduct capacity and operational level of service analyses on key intersections;
- Analyze signal warrants;
- Conduct evaluation of pedestrian, bicycle, and transit modes of transportation.

This TIS is a revision of the "Peakview Transportation Impact Study" dated September 2019. It addresses comments from a memo from Tetra Tech, dated March 25, 2019 reviewing the Transportation Impact Study. The September 2018 TIS was a revision of the "Peakview Transportation Impact Study" dated July 2018. It addresses a change in access location, number of residential units, and the size of the commercial.

II. EXISTING CONDITIONS

The location of the Peakview development is shown in Figure 1. It is important that a thorough understanding of the existing conditions be presented.

Land Use

Land uses in the area are residential, institutional, and open/agricultural. There are residential uses to the north of the site. The Prairie Heights Middle School is to the east of the site. The Peakview site is currently vacant. The center of Evans lies to the east of the proposed Peakview site.

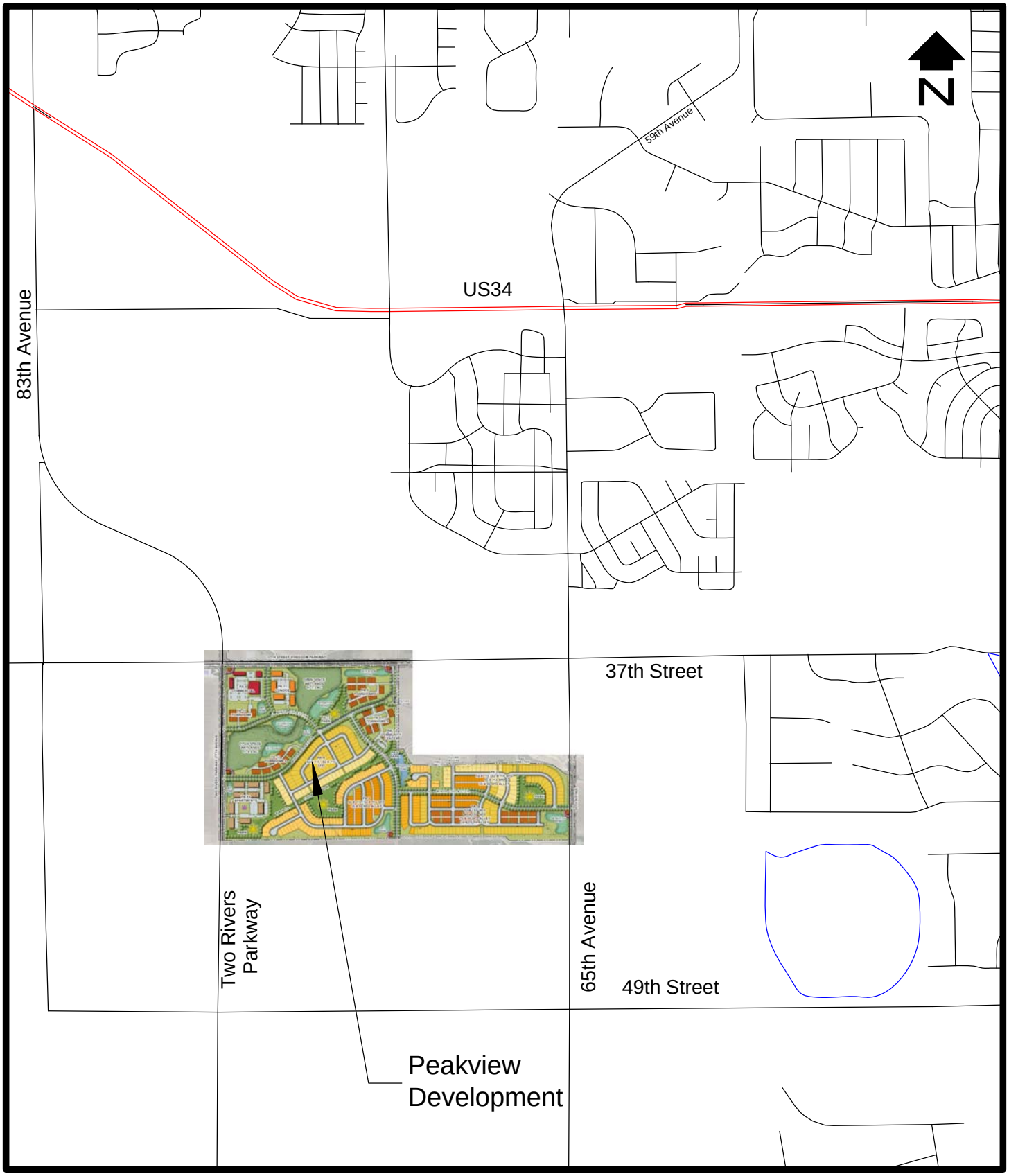
Streets

The primary streets in the area of the Peakview development are 37th Street, 65th Avenue, and Two Rivers Parkway. The existing geometry at the key existing intersections is shown in Figure 2.

Thirty-Seventh Street is an east/west street classified as a four-lane arterial on the Evans Master Street Plan. A portion of 37th Street is within Greeley. Currently, 37th Street has a two-lane cross section. The existing speed limit is 50 mph in this area. At the 37th Street/65th Avenue intersection, 37th Street has an eastbound and westbound left-turn lane and a through/right-turn lane in each direction. The 37th Street/65th Avenue intersection has signal control. At the 37th Street/Two River Parkway intersection, 37th Street has an eastbound and westbound left-turn lane, a through lane in each direction, an eastbound right-turn lane, and an eastbound right-turn acceleration lane. The 37th Street/Two rivers Parkway intersection has stop sign control on Two Rivers Parkway.

Sixty-Fifth Avenue is a north/south street classified as a four-lane arterial on the Evans Master Street Plan. North of 37th Street, 65th Avenue is within Greeley. Currently, 65th Avenue has a four-lane cross section, north of 37th Street, and a two-lane cross section, south of 37th Street. The existing speed limit is 45 mph, north of 37th Street, and 50 mph, south of 37th Street. At the 37th Street/65th Avenue intersection, 65th Avenue has a southbound left-turn lane, a southbound through lane, a southbound right-turn lane, a northbound left-turn/through lane, and a northbound right-turn lane.

Two Rivers Parkway is a north/south street classified as a four-lane arterial on the Evans Master Street Plan. North of 37th Street, Two Rivers Parkway is within Greeley. Currently, Two Rivers Parkway has a two-lane cross section. The existing speed limit is 55 mph in this area. At the 37th Street/Two Rivers Parkway intersection, Two Rivers Parkway has southbound and northbound movements combined into single lanes.



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SITE LOCATION

Figure 1

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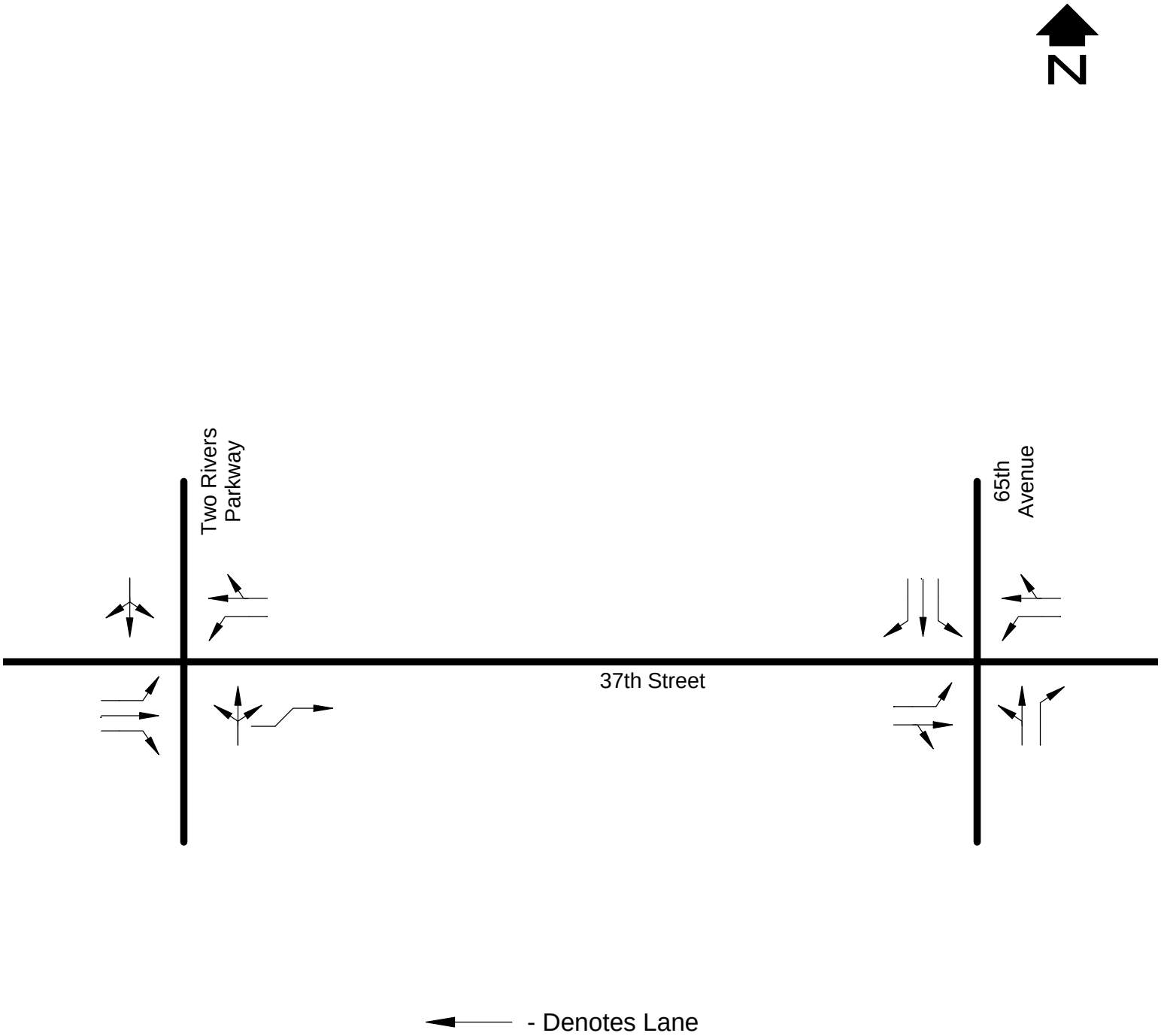

EXISTING GEOEMETRY

Figure 2

Existing Traffic

Recent morning and afternoon peak hour traffic volumes at the 37th Street/65th Avenue and 37th Street/Two Rivers Parkway intersections are shown in Figure 3. The counts at the key intersections were obtained in February 2018. Raw traffic count data is provided in Appendix B.

Existing Operation

The 37th Street/65th Avenue and 37th Street/Two Rivers Parkway intersections were evaluated using techniques provided in the 2010 Highway Capacity Manual. Using the morning and afternoon peak hour traffic shown in Figure 3, the peak hour operation is shown in Table 1. Calculation forms are provided in Appendix C. The key intersections are currently operating acceptably with existing control and geometry in the morning and afternoon peak hours. A description of level of service for signalized and unsignalized intersections from the 2010 Highway Capacity Manual and a table showing the Greeley Motor Vehicle LOS Standards (Intersections) are also provided in Appendix C. The Peakview site is in an area termed "mixed use." In areas termed "mixed use," acceptable operation at signalized intersection during the peaks is defined as level of service E or better for the overall intersection, and level of service E or better for any leg or movement. At arterial/collector or local unsignalized intersections, acceptable operation is defined as level of service F. At arterial/arterial or collector/local unsignalized intersections, acceptable operation is defined as level of service F.

Pedestrian Facilities

Currently, there are no pedestrian facilities along 37th Street, 65th Avenue, and Two Rivers Parkway. As future development occurs in the area, it is assumed that the future developments will build adjacent streets in accordance with Evans Standards and will include sidewalks.

Bicycle Facilities

There are bicycle lanes on Two Rivers Parkway, north of 37th Street.

Transit Facilities

Currently, this area of Evans is not served by the Greeley-Evans Transit (GET).

RECENT PEAK HOUR TRAFFIC

Figure 3

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TABLE 1 Current Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T/RT	A	B
	EB APPROACH	A	B
	WB LT	B	B
	WB T/RT	B	B
	WB APPROACH	B	B
	NB LT/T	B	B
	NB RT	A	B
	NB APPROACH	B	B
	SB LT	B	B
	SB T	B	B
	SB RT	A	A
	SB APPROACH	B	B
	OVERALL	B	B
37th Street/Two Rivers Parkway (stop sign)	EB LT	A	A
	WB LT	A	A
	NB LT/T/RT	D	F
	SB LT/T/RT	E	F
	OVERALL	B	C

III. PROPOSED DEVELOPMENT

The Peakview development is a mixed-use development, located south of 37th Street, between 65th Avenue and Two Rivers Parkway in Evans. Figure 4 shows a site plan of the Peakview site. The Peakview development is proposed as 1097 dwelling units and 83,000 square feet of commercial uses. Phase 1 includes 219 single family homes and 78 Townhomes. Phase 2 includes 243 single family homes and 125 townhomes. Phase 3 includes 288 apartment/condo units, and 120,000 square feet of commercial. Phase 1 will likely be built in the next year or so following approval. The short range (2020) future includes Phase 1 of the Peakview development and an appropriate increase in the background traffic due to normal growth in the area. The mid range (2023) and long range (2040) futures includes full development of the Peakview site and an appropriate increase in background traffic due to normal growth and other potential developments in the area. In phase 1 the Peakview development will have access to/from 65th Avenue and 37th Street. With full development, the site plan shows that the Peakview development will have access to/from 65th Street, 37th Street, and Two Rivers Parkway.

Trip Generation

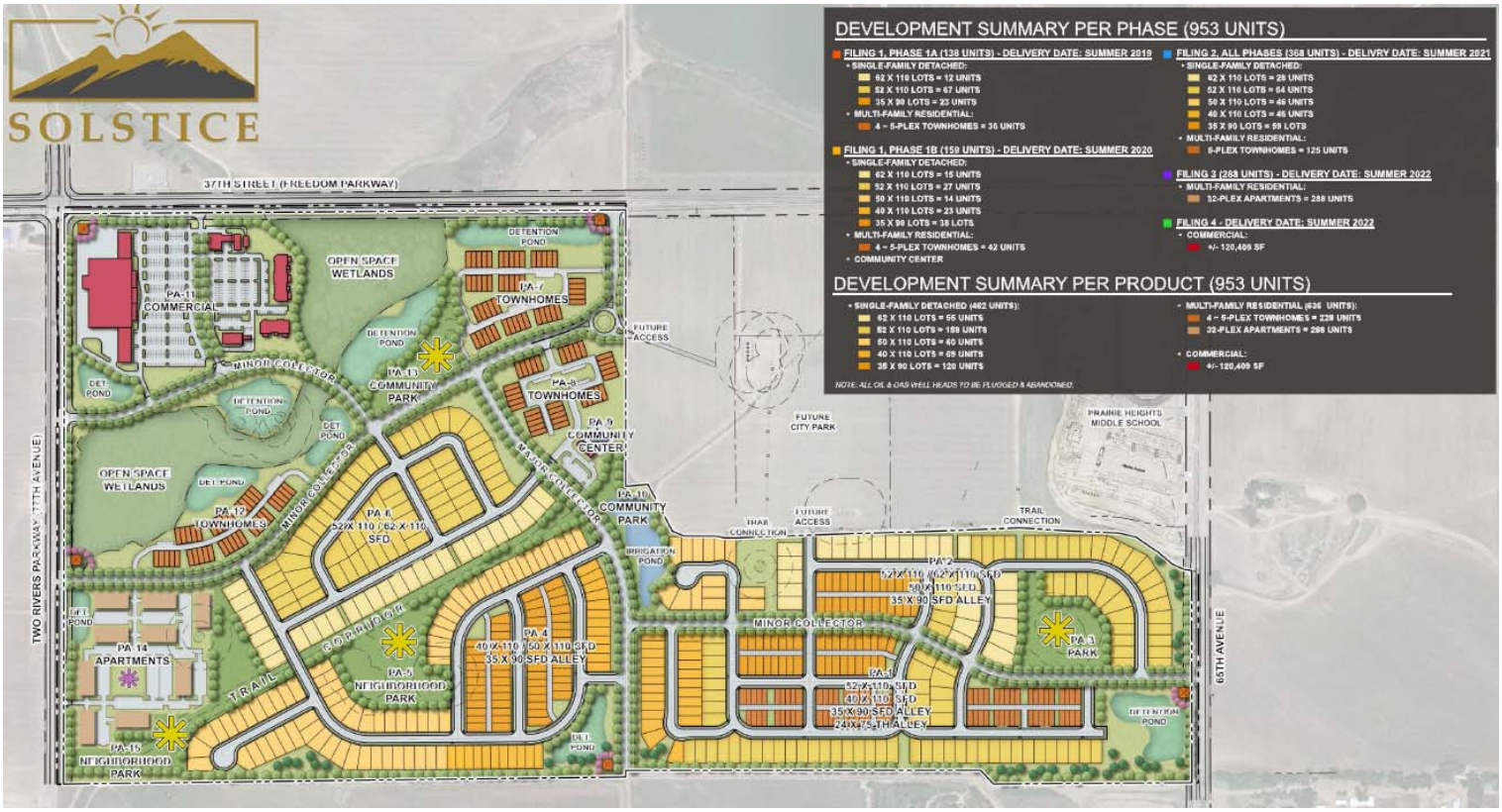
Trip generation is important in considering the impact of a development such as this upon the existing and proposed street system. Trip generation information contain in Trip Generation, 10th Edition, ITE was used to estimate trips that would be generated by a proposed/expected uses at the Peakview. A trip is defined as a one-way vehicle movement from origin to destination. Table 2 shows the expected trip generation on a daily and peak hour basis. Phase 1 of the Peakview development will generate approximately 2,638 daily trip ends, 198 morning peak hour trip ends, and 260 afternoon peak hour trip ends. At full development of the Peakview development will generate approximately 13,450 daily trip ends, 710 morning peak hour trip ends, and 1,147 afternoon peak hour trip ends. Passby for the commercial was based on data in the Trip Generation Handbook, 3rd Edition, ITE.

Trip Distribution

Trip distribution for Peakview development was estimated using the existing/future travel patterns, land uses in the area, consideration of trip attractions/productions in the area, and engineering judgment. Figure 5 shows the trip distribution for the short range (2020), mid range (2023) and long range (2040) futures.

Background Traffic Projections

Figure 6 shows the short range (2020) background traffic projections. Background traffic projections for the short range (2020) future horizon were calculated by increasing the traffic volumes by two percent per year.

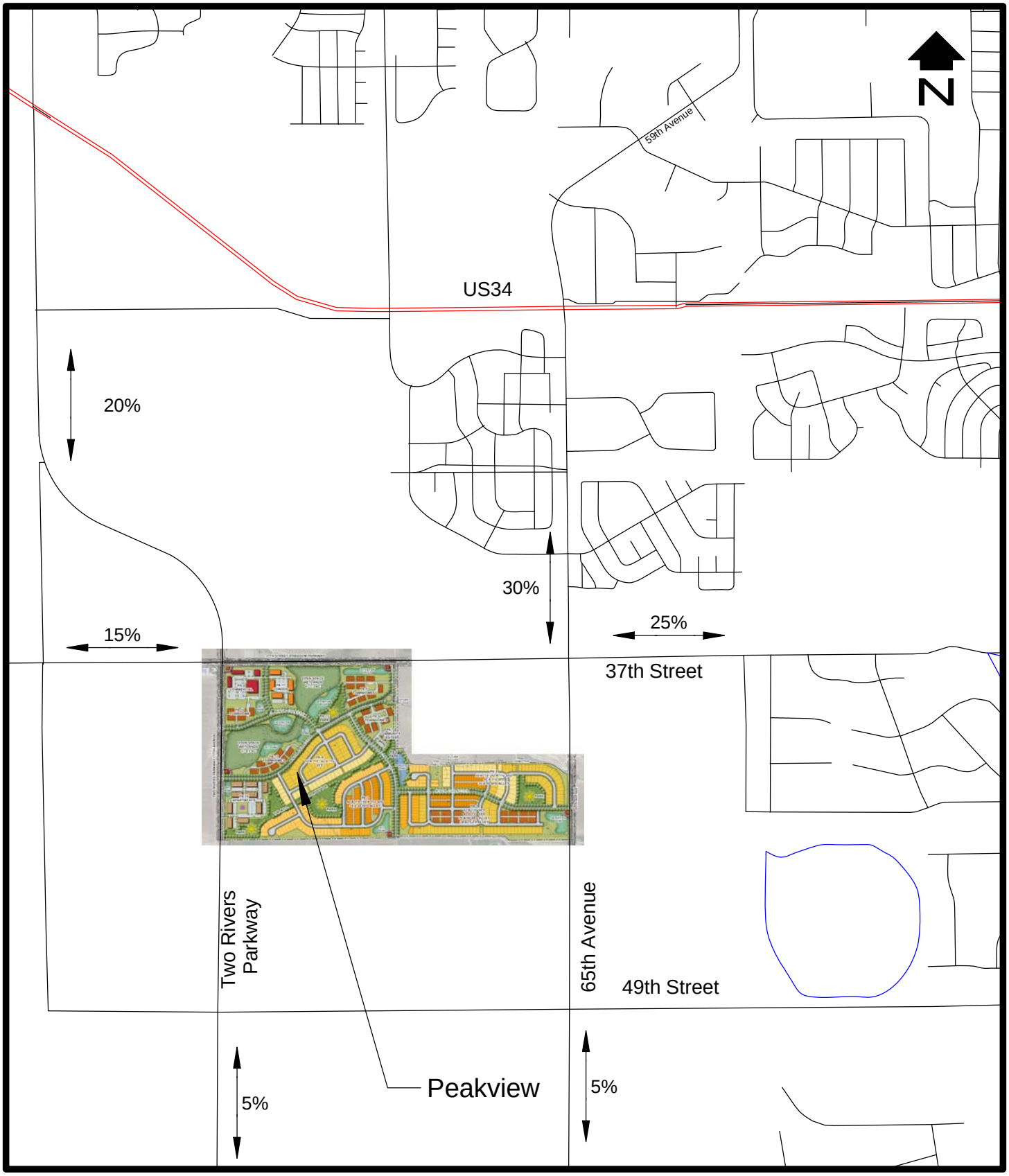


SITE PLAN

Figure 4

DELICH ASSOCIATES

TABLE 2 Trip Generation												
Code	Use	Size	AWDTE		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	In	Rate	Out	Rate	In	Rate	Out
Phase 1												
210	Single Family	219 D.U.	9.44	2068	0.19	42	0.55	120	0.62	136	0.37	81
220	Multifamily	78 D.U.	7.32	570	0.11	9	0.35	27	0.35	27	0.21	16
Phase 1 Total				2638		51		147		163		97
Phase 2												
210	Single Family	243 D.U.	9.44	2294	0.19	46	0.55	134	0.62	151	0.37	90
220	Multifamily	125 D.U.	7.32	916	0.11	14	0.35	44	0.35	44	0.21	26
Phase 2 Total				3210		60		178		195		116
Phase 3												
221	Multifamily	288 D.U.	5.44	1566	0.09	26	0.27	78	0.27	78	0.17	49
Phase 3 Total				1566		26		78		78		49
Residential Subtotal				7414		137		403		436		262
Internal Capture				110		3		4		53		19
Residential Assigned				7304		134		399		383		243
Commercial (Phase 3)												
850	Supermarket	25.0 KSF	106.78	2670	2.29	57	1.53	38	4.71	118	4.53	113
Passby (17%/34%)				424		10		10		40		40
820	Shopping Center	95.0 KSF	37.75	3586	0.58	55	0.36	34	1.83	174	1.98	188
Passby (17%/34%)				610		9		9		59		59
Commercial Subtotal				6256		112		72		292		301
Commercial Passby				1034		19		19		99		99
Internal Capture				110		4		3		19		53
Commercial Assigned				5112		89		50		174		149
External Total				13450		242		468		656		491
Total Passby				1034		19		19		99		99
Total Assigned				12416		223		449		557		392

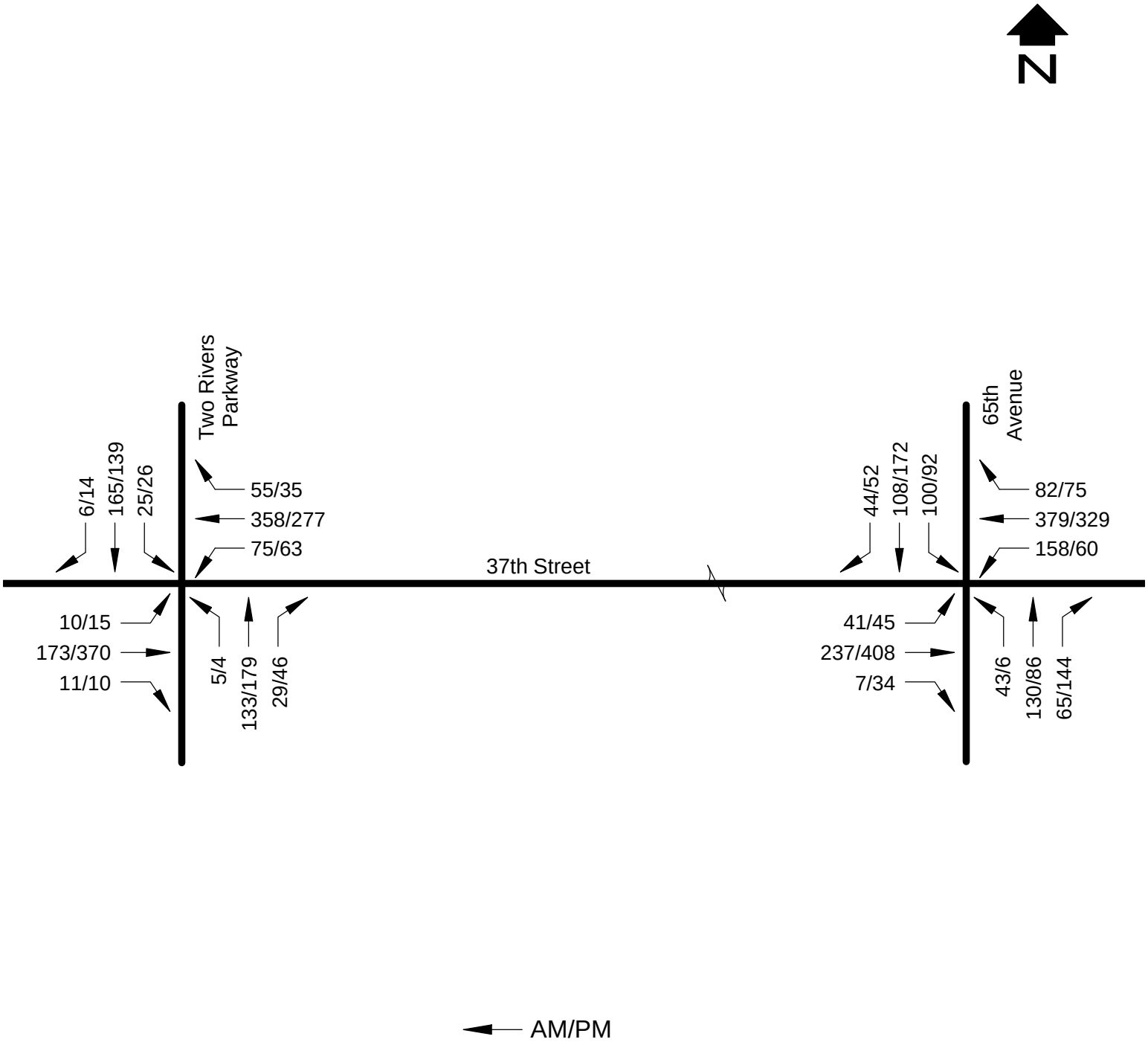


SCALE: 1"=2000'

TRIP DISTRIBUTION

Figure 5

DELICH ASSOCIATES



SHORT RANGE (2020) BACKGROUND
PEAK HOUR TRAFFIC

Figure 6

Figure 7 shows the mid range (2023) background traffic projections. Background traffic projections for the mid range (2023) future horizon were calculated by increasing the traffic volumes by two percent per year.

Figure 8 shows the long range (2040) background traffic projections. Background traffic projections for the long range (2040) future horizon were calculated by increasing the traffic volumes by two percent per year. It was assumed that all vacant parcels in the Peakview area would be developed by/before the long range (2040) future. It was also assumed that the street network would be fully constructed in the Peakview area. The completed street network would provide numerous routes for the travelling public.

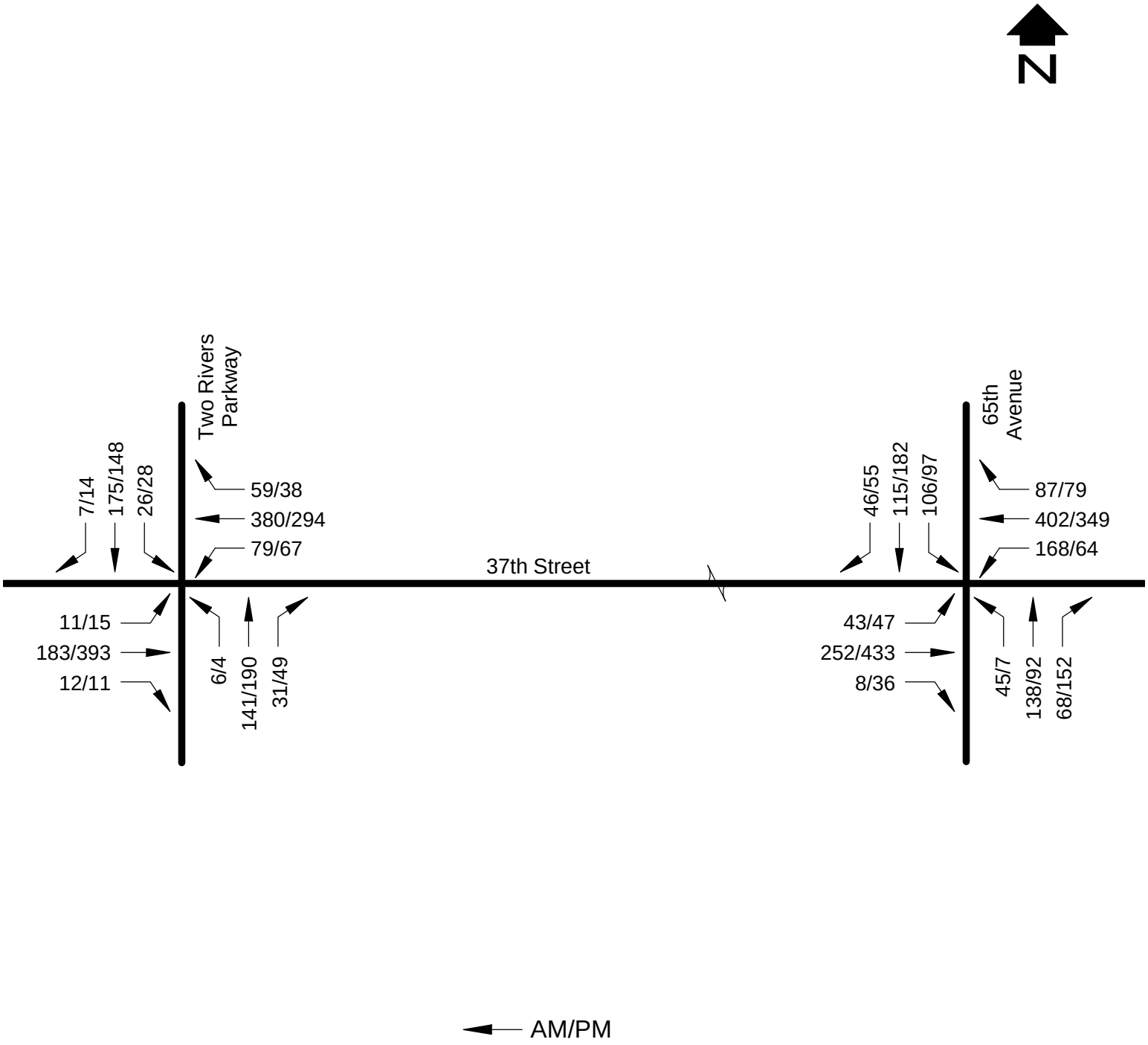
The City of Evans Transportation Plan forecasts a 4.12 percent per year growth rate and Weld County 2035 Transportation Plan forecasts a 7.69 percent per year growth rate. This is a large development and is part of the growth rates assumed in the Evans and Weld County forecasts. The overall mid range growth rate is approximately 7 percent per year and the overall long range growth rate is 4 percent per year. Therefore, the growth rate in the Peakview Transportation Impact Study seems to be in line with the Evans and Weld County forecasts.

Trip Assignment

Trip assignment is how the generated and distributed trips are expected to be loaded on the street system. The assigned trips are the resultant of the trip distribution process. Figure 9 shows the Phase 1 site generated morning and afternoon peak hour traffic at the key intersections. Figure 10 shows the site generated (full development) morning and afternoon peak hour traffic at the key intersections. Figure 11 shows the short range (2020) total (phase 1 site plus background) peak hour traffic at the key intersections. Figure 12 shows the mid range (2023) total (site plus background) peak hour traffic at the key intersections. Figure 13 shows the long range (2040) total (site plus background) peak hour traffic at the key intersections.

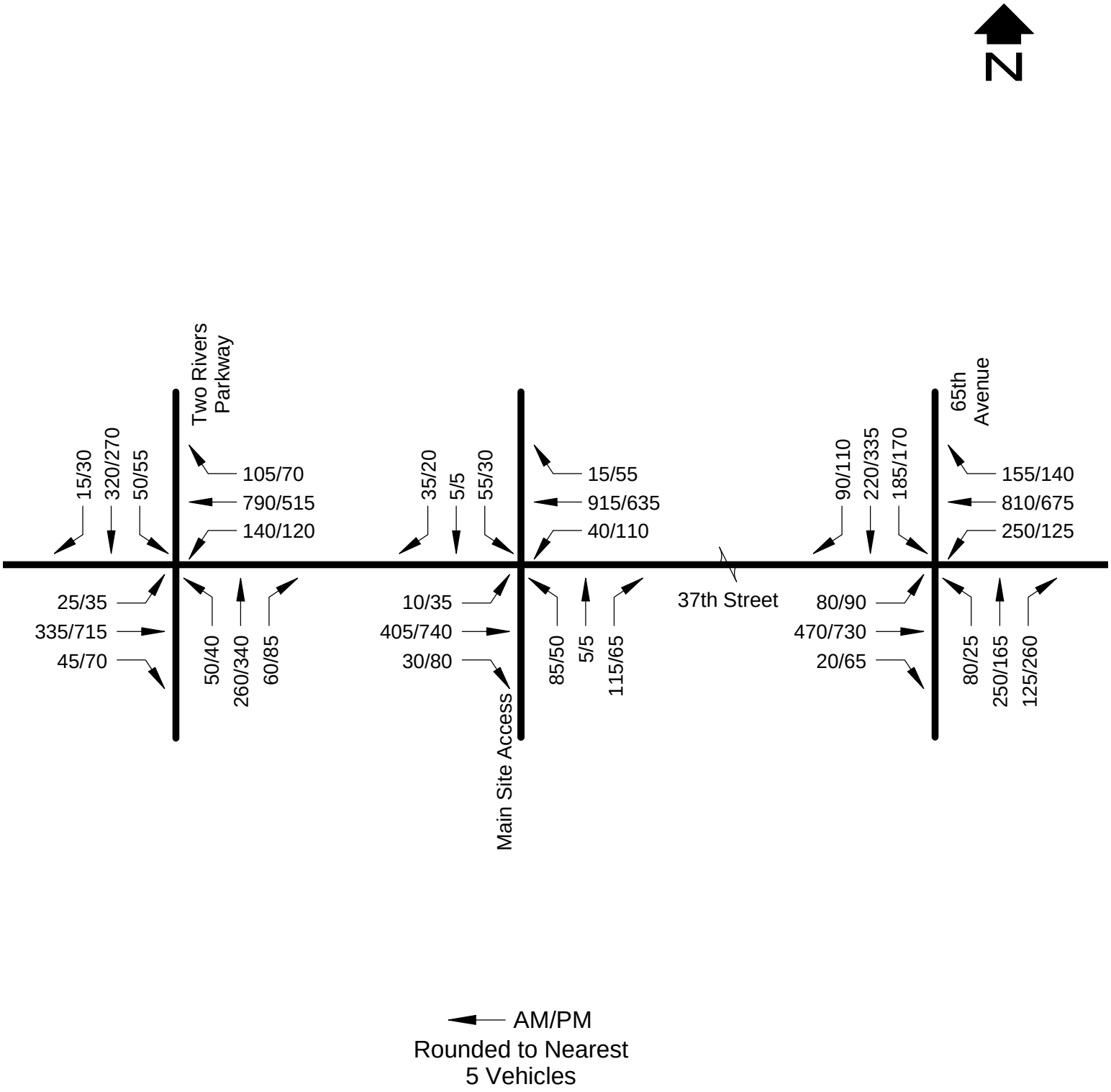
Signal Warrants

As a matter of policy, traffic signals are not installed at any location unless warrants are met according to the Manual on Uniform Traffic Control Devices. For the roads in the vicinity of The Waterfield development, four hour and/or eight hour signal warrants are applicable. These warrants require much data and are applied when the traffic is actually on the area road system. It is acknowledged that peak hour signal warrants should not be applied, but since the peak hour forecasts are readily available in a traffic impact study, it is reasonable to use them to get an idea whether other signal warrants may be met. If peak hour signal warrants will not be met at a given intersection, it is reasonable to conclude that it is not likely that other signal warrants would be met. If peak hour signal warrants are met, it merely indicates that further evaluation should occur in the future as



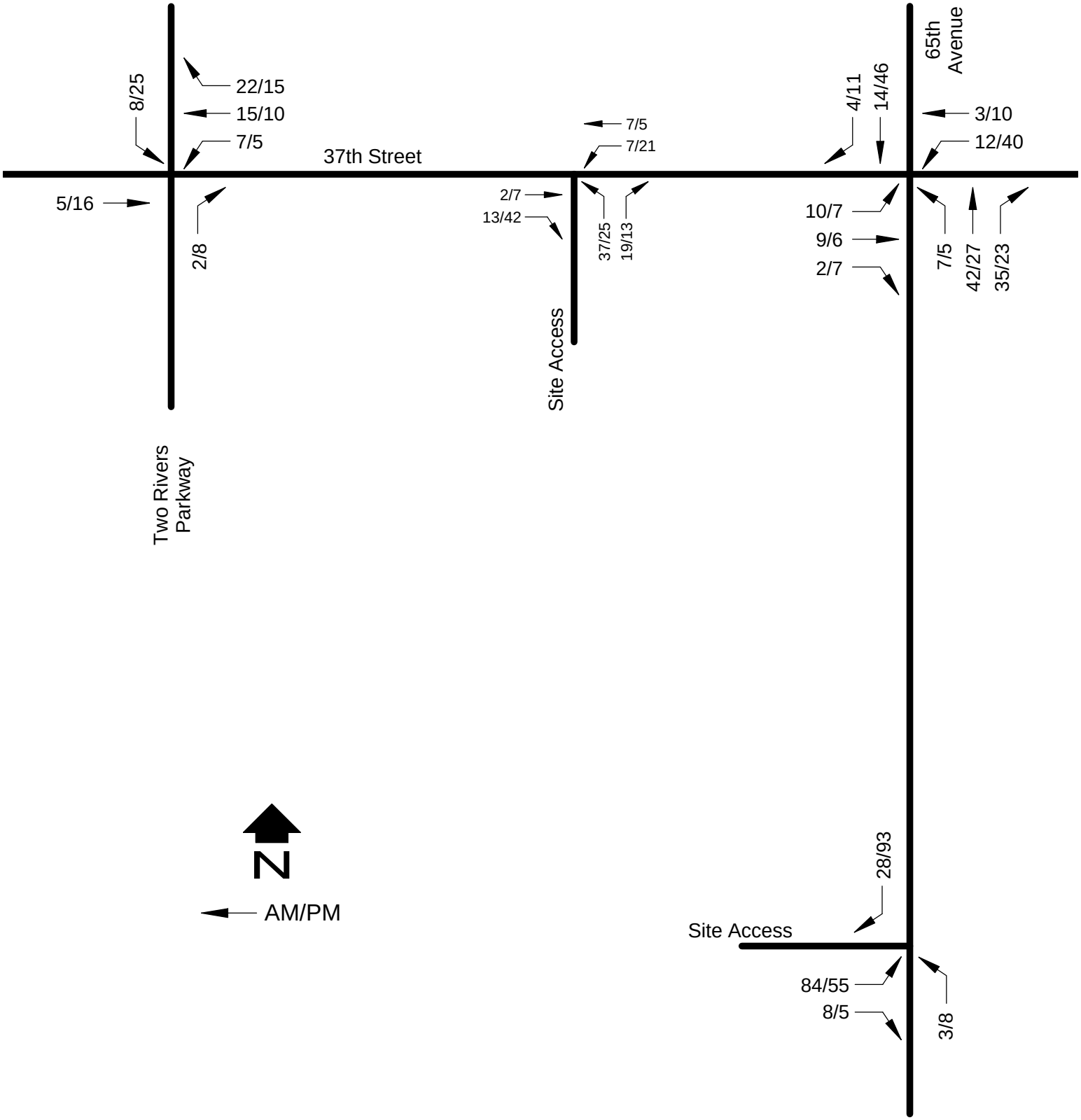
MID RANGE (2023) BACKGROUND
PEAK HOUR TRAFFIC

Figure 7



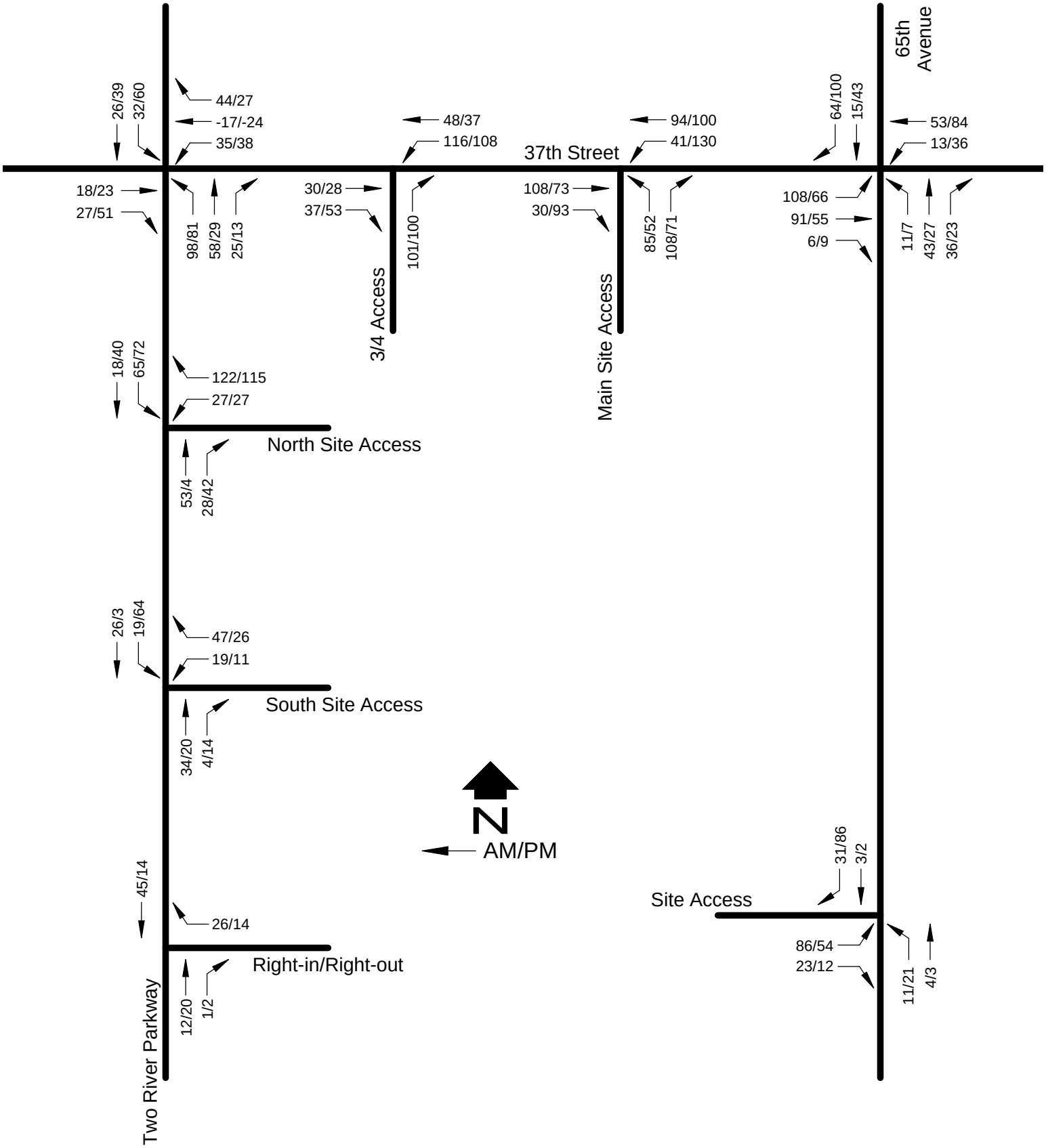
LONG RANGE (2040) BACKGROUND
PEAK HOUR TRAFFIC

Figure 8



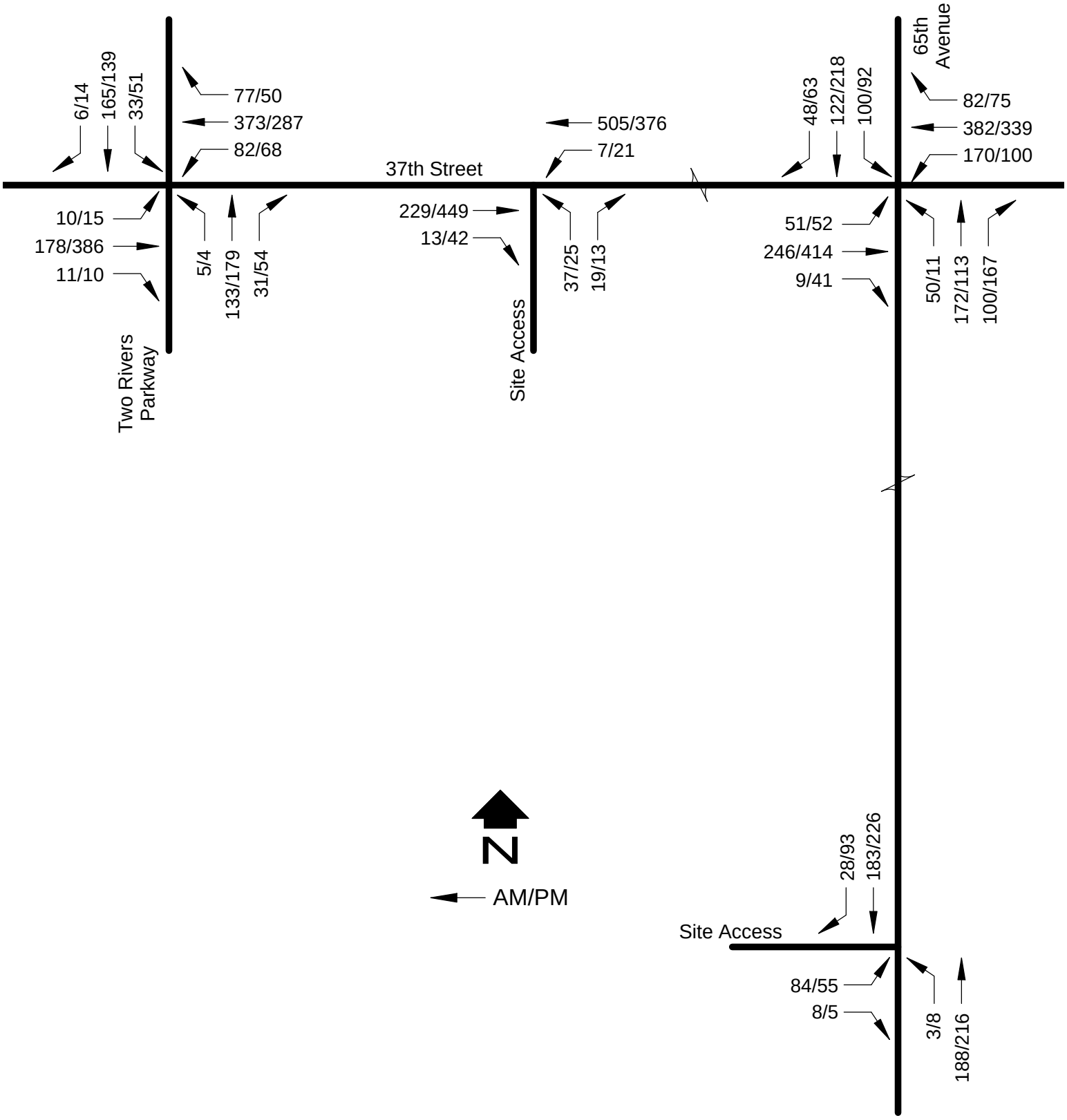
PHASE 1 SITE GENERATED PEAK HOUR TRAFFIC

Figure 9



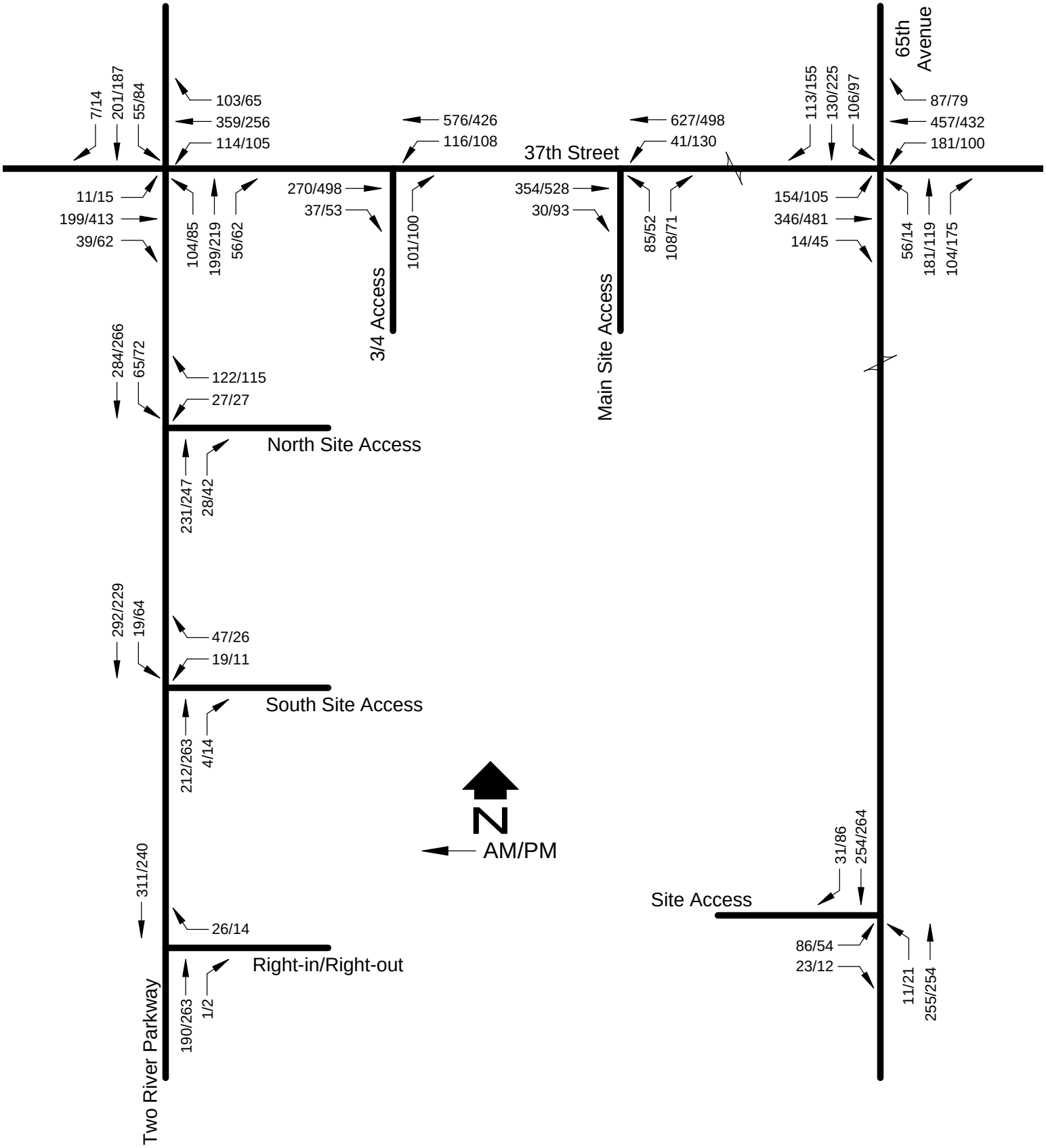
FULL DEVELOPMENT SITE GENERATED PEAK HOUR TRAFFIC

Figure 10



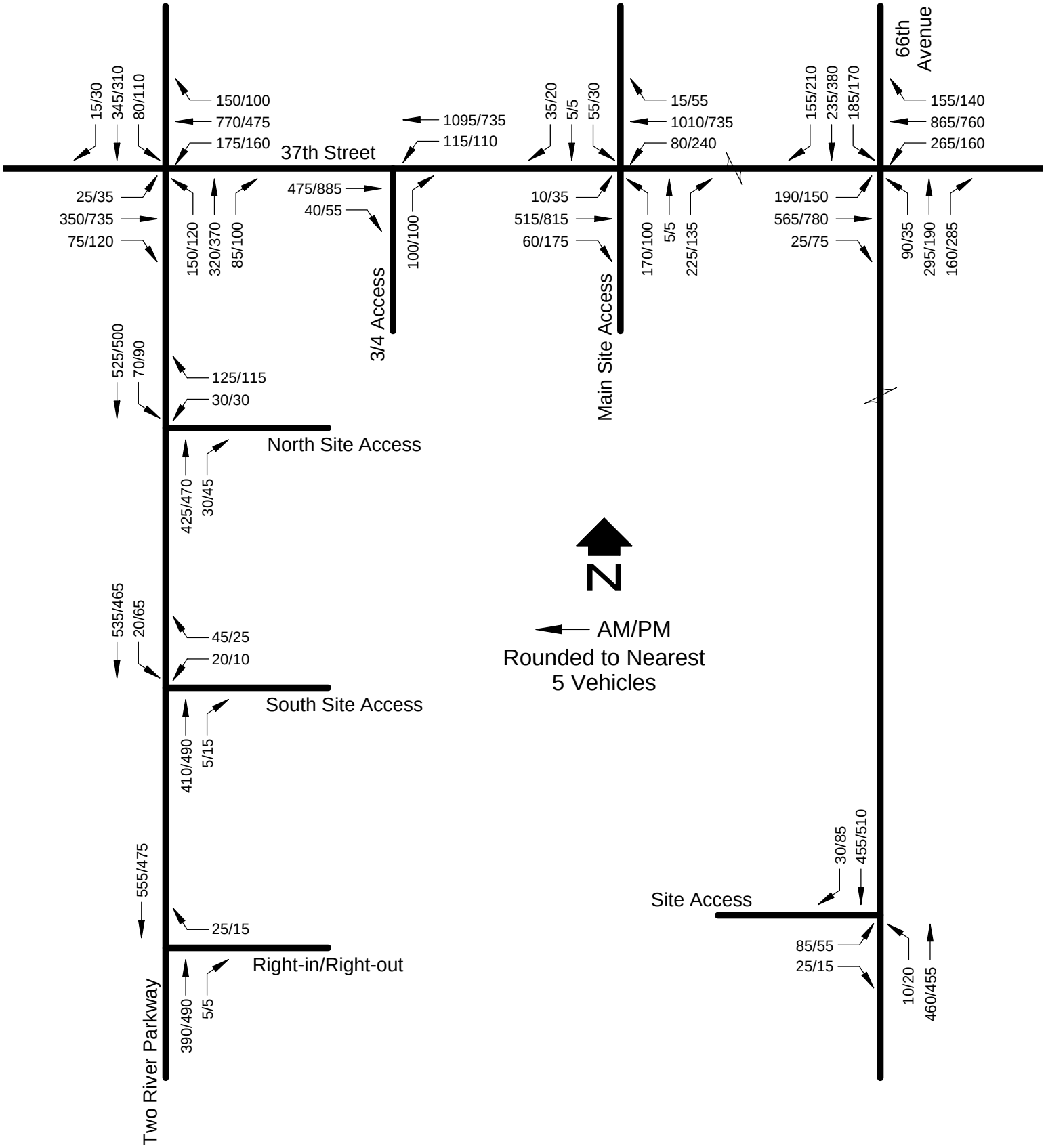
SHORT RANGE (2020) TOTAL PEAK HOUR TRAFFIC

Figure 11



MID RANGE (2023) TOTAL PEAK HOUR TRAFFIC

Figure 12



LONG RANGE (2040) TOTAL PEAK HOUR TRAFFIC

Figure 13

as the development occurs. However, a judgment can be made that some intersections will likely meet other signal warrants. The 37th Street/65th Avenue intersection is currently signalized.

Using the recent peak hour traffic (Figure 3), the peak hour signal warrant will be met in the morning and afternoon peak hour at the 37th Street/Two Rivers Parkway intersection. It is likely that other signal warrants will be met. Therefore, the short range (2020) future was analyzed with a signal at the 37th Street/Two Rivers Parkway intersection.

Using the mid range (2023) total peak hour traffic (Figure 12), the 37th Street/Site Access intersection will not meet the lower threshold for the minor street in the mid range (2023) future.

Using the long range (2040) total peak hour traffic (Figure 13), the peak hour signal warrant will be met in the morning and afternoon peak hour at the 37th Street/Site Access intersection. It is likely that other signal warrants will be met. The peak hour signal warrant analyses are provided in Appendix D.

Geometry

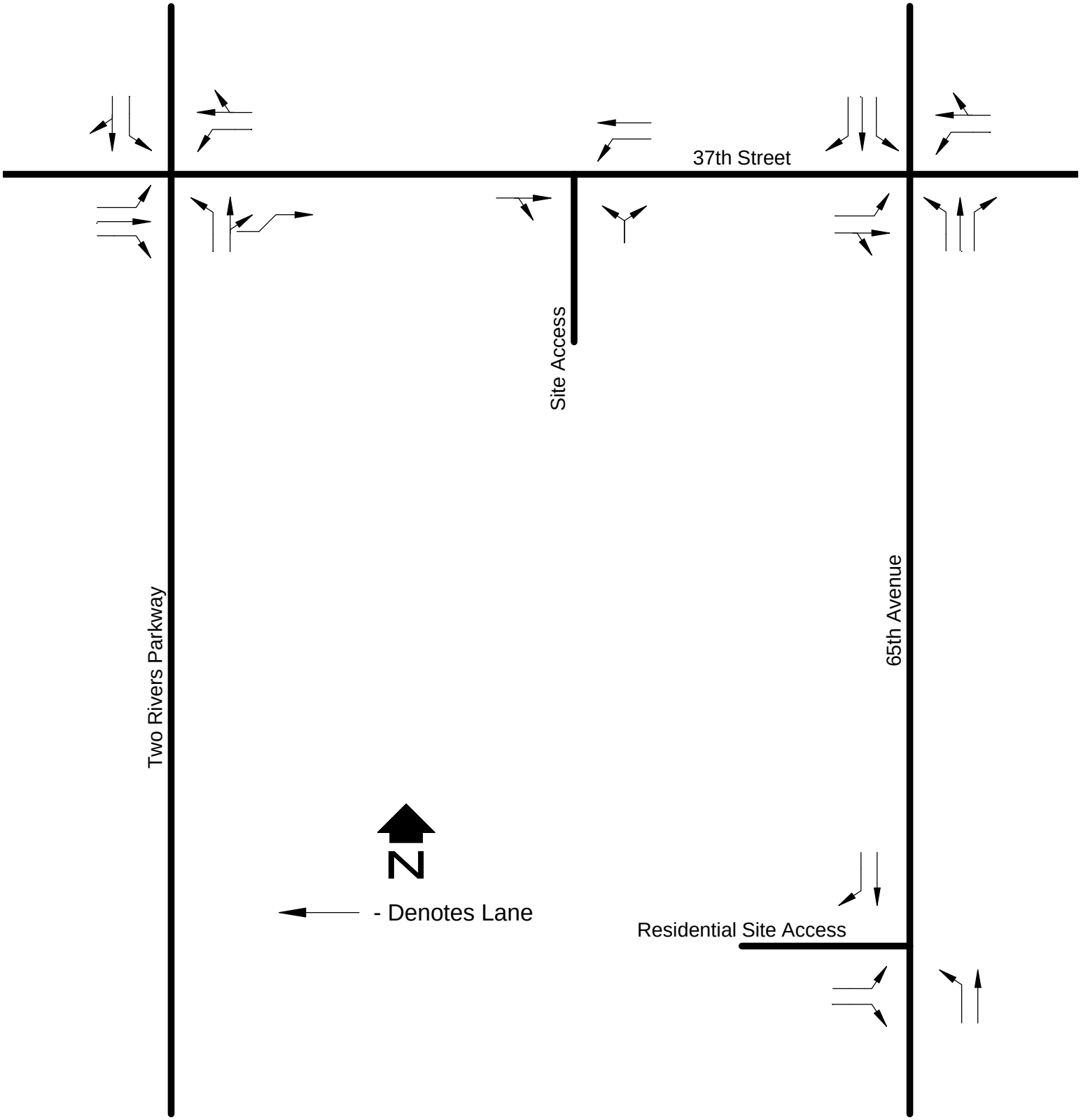
Figure 14 shows a schematic of the short range (2020) intersection geometry. At the 37th Street/65th Avenue intersection, a northbound left-turn lane is required based on existing traffic volumes. At the 37th Street/Site Access intersection, a westbound left-turn lane is required. At the 65th Avenue/Site Access intersection, a northbound left-turn lane and southbound right-turn lane are required. At the 37th Street/Two Rivers Parkway intersection, northbound and southbound left-turn lanes are required based on the arterial classification.

Figure 15 shows a schematic of the mid range (2023) intersection geometry. Left-turn lanes are required at all intersections based on the arterial classification. Right-turn lanes are required at all intersections, except the Two Rivers/Right-in Right-out and Two Rivers/South Site Access intersections.

Figure 16 shows a schematic of the long range (2040) intersection geometry. It is assumed that 37th Street, 65th Avenue, and Two Rivers Parkway will have two through lanes in each direction in the long range (2040) future. However, they may not be needed based on the forecasted traffic volumes.

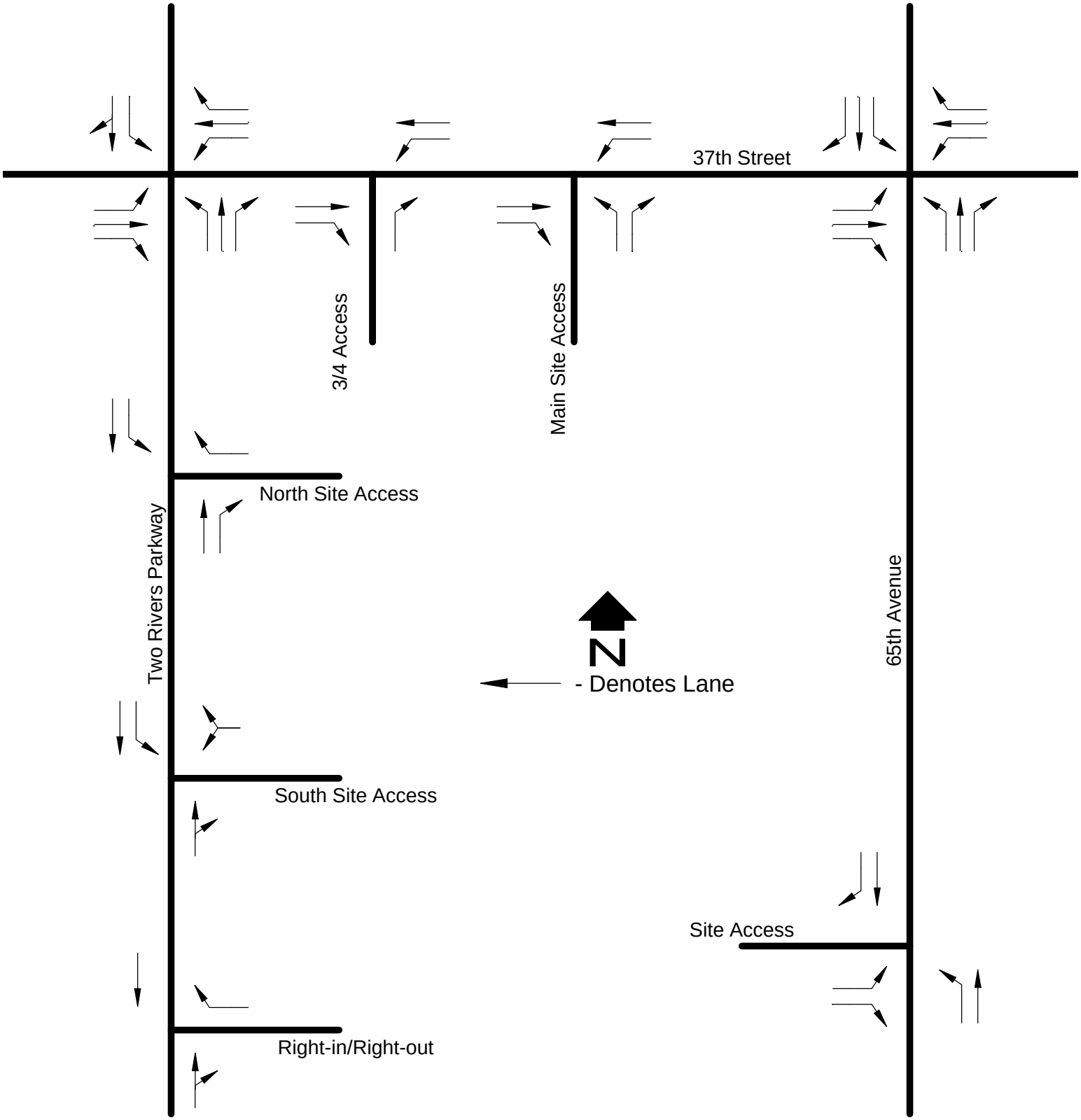
Operation Analysis

Operation analyses were performed at the 37th Street/65th Avenue, 37th Street/Site Access, 37th Street/ ¾ Access, 37th Street/Two Rivers Parkway, 65th Avenue/Site Access, Two Rivers/North Site Access, Two Rivers/South Site Access, and Two Rivers/Right-in



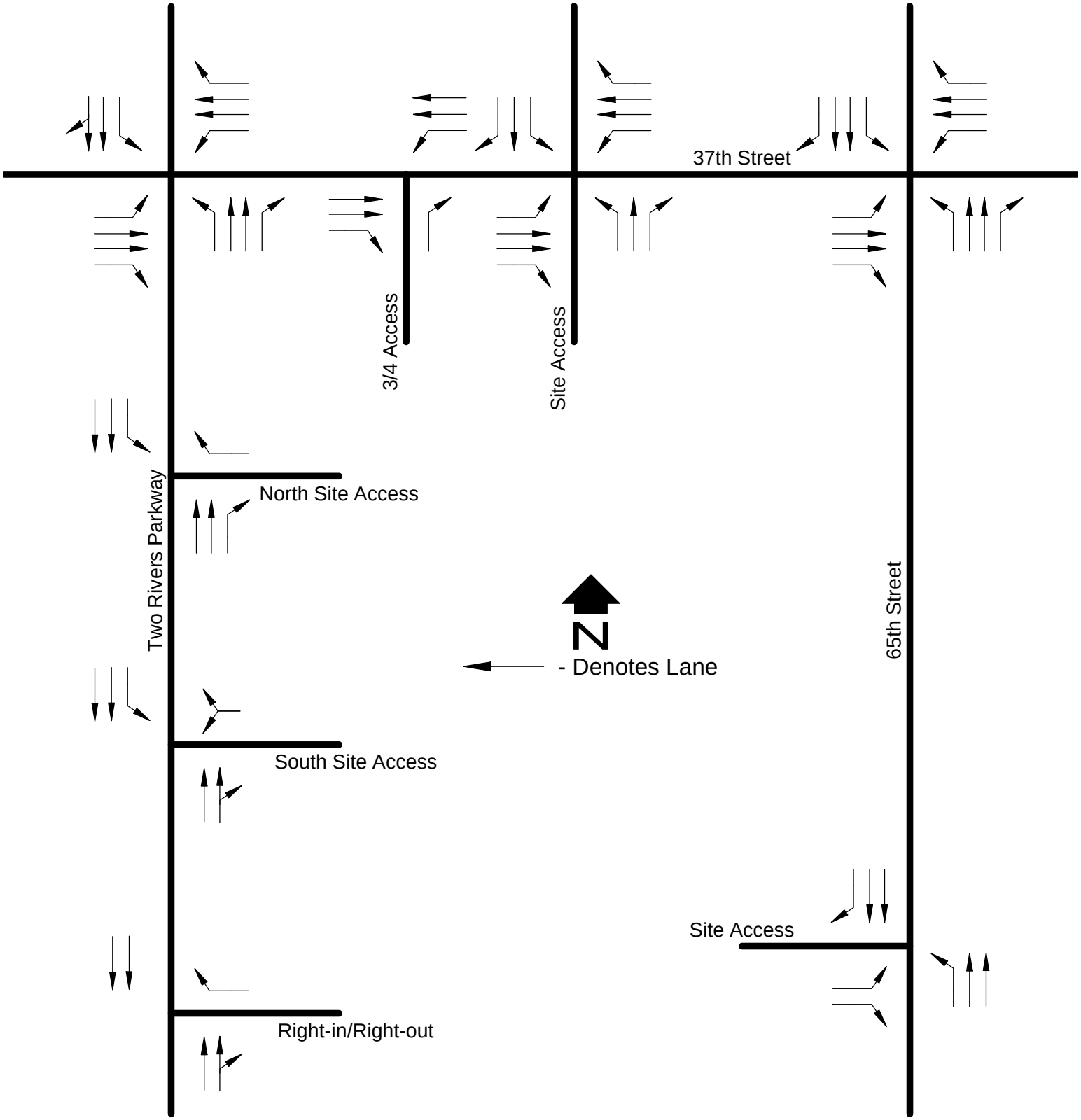
SHORT RANGE (2020) GEOMETRY

Figure 14



MID RANGE (2023) GEOMETRY

Figure 15



LONG RANGE (2040) GEOMETRY

Figure 16

Right-out intersections. The operations analyses were conducted for the short range future, reflecting a year 2020 condition; mid range future, reflecting a year 2023 condition; and long range future, reflecting a year 2040 condition.

Using the short range (2020) background peak hour traffic volumes (Figure 6), the 37th Street/65th Avenue and 37th Street/Two Rivers Parkway intersections operate as indicated in Table 3. Calculation forms for these analyses are provided in Appendix E. The key intersections will operate acceptably.

Using the mid range (2023) background peak hour traffic volumes (Figure 7), the 37th Street/65th Avenue and 37th Street/Two Rivers Parkway intersections operate as indicated in Table 4. Calculation forms for these analyses are provided in Appendix F. The key intersections will operate acceptably.

Using the long range (2040) background peak hour traffic volumes (Figure 8), the 37th Street/65th Street, 37th Street/Site Access, and 37th Street/Two Rivers Parkway intersections operate as indicated in Table 5. Calculation forms for these analyses are provided in Appendix G. The key intersections will operate acceptably.

Using the short range (2020) total peak hour traffic volumes (Figure 11), the 37th Street/65th Avenue, 37th Street/Site Access, 37th Street/Two Rivers Parkway, and 65th Avenue/Site Access intersections operate as indicated in Table 6. Calculation forms for these analyses are provided in Appendix H. The key intersections will operate acceptably.

Using the mid range (2023) total peak hour traffic volumes (Figure 12), the 37th Street/65th Avenue, 37th Street/Site Access, 37th Street/ ¾ Access, 37th Street/Two Rivers Parkway, 65th Avenue/Site Access, Two Rivers/North Site Access, Two Rivers/South Site Access, and Two Rivers/Right-in Right-out intersections operate as indicated in Table 7. Calculation forms for these analyses are provided in Appendix I. The key intersections will operate acceptably.

Using the long range (2040) total peak hour traffic volumes (Figure 13), the 37th Street/65th Avenue, 37th Street/Site Access, 37th Street/ ¾ Access, 37th Street/Two Rivers Parkway, 65th Avenue/Site Access, Two Rivers/North Site Access, Two Rivers/South Site Access, and Two Rivers/Right-in Right-out intersections operate as indicated in Table 8. Calculation forms for these analyses are provided in Appendix J. The key intersections will operate acceptably.

TABLE 3 Short Range (2020) Background Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T/RT	B	B
	EB APPROACH	B	B
	WB LT	B	B
	WB T/RT	B	B
	WB APPROACH	B	B
	NB LT	B	B
	NB T	C	C
	NB RT	A	A
	NB APPROACH	C	C
	SB LT	B	B
	SB T	C	C
	SB RT	A	A
	SB APPROACH	B	C
	OVERALL	B	B
37th Street/Two Rivers Parkway (signal)	EB LT	B	B
	EB T/RT	B	B
	EB APPROACH	B	B
	WB LT	B	B
	WB T/RT	B	B
	WB APPROACH	B	B
	NB LT	A	A
	NB T	A	A
	NB RT	A	A
	NB APPROACH	A	A
	SB LT	A	A
	SB T/RT	A	A
	SB APPROACH	A	A
	OVERALL	B	B

TABLE 4 Mid Range (2023) Background Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T	B	B
	EB RT	A	A
	EB APPROACH	B	B
	WB LT	B	B
	WB T	B	B
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	B	B
	NB T	C	C
	NB RT	A	A
	NB APPROACH	B	C
	SB LT	B	B
	SB T	C	C
	SB RT	A	A
	SB APPROACH	B	C
	OVERALL	B	B
37th Street/Two Rivers Parkway (signal)	EB LT	B	B
	EB T	B	B
	EB RT	A	A
	EB APPROACH	B	B
	WB LT	B	B
	WB T	B	B
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	A	A
	NB T	A	A
	NB RT	A	A
	NB APPROACH	A	A
	SB LT	A	B
	SB T/RT	A	A
	SB APPROACH	A	A
	OVERALL	B	B

TABLE 5 Long Range (2040) Background Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	A
	EB T	C	A
	EB RT	A	A
	EB APPROACH	B	A
	WB LT	B	A
	WB T	B	B
	WB RT	B	B
	WB APPROACH	B	B
	NB LT	C	C
	NB T	D	D
	NB RT	A	D
	NB APPROACH	D	D
	SB LT	C	C
	SB T	C	D
	SB RT	A	A
	SB APPROACH	C	C
	OVERALL	C	B
37th Street/Two Rivers Parkway (signal)	EB LT	C	C
	EB T	C	C
	EB RT	A	A
	EB APPROACH	C	C
	WB LT	C	C
	WB T	B	B
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	B	B
	NB T	B	B
	NB RT	A	A
	NB APPROACH	B	B
	SB LT	B	B
	SB T/RT	B	B
	SB APPROACH	B	B
	OVERALL	B	C

TABLE 6 Short Range (2020) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T/RT	B	C
	EB APPROACH	B	B
	WB LT	B	B
	WB T/RT	B	B
	WB APPROACH	B	B
	NB LT	B	B
	NB T	C	C
	NB RT	A	B
	NB APPROACH	C	C
	SB LT	B	B
	SB T	C	C
	SB RT	A	A
	SB APPROACH	B	C
	OVERALL	B	B
37th Street/Site Access (stop sign)	WB LT	A	A
	NB LT/RT	B	C
	OVERALL	A	A
37th Street/Two Rivers Parkway (signal)	EB LT	B	B
	EB T/RT	B	B
	EB APPROACH	B	B
	WB LT	B	B
	WB T/RT	B	B
	WB APPROACH	B	B
	NB LT	A	A
	NB T	A	A
	NB RT	A	A
	NB APPROACH	A	A
	SB LT	A	A
	SB T/RT	A	A
	SB APPROACH	A	A
	OVERALL	B	B
65th Avenue/Site Access (stop sign)	EB LT	B	B
	EB RT	A	A
	EB APPROACH	B	B
	NB LT	A	A
	OVERALL	A	A

TABLE 7 Mid Range (2023) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T	B	C
	EB RT	A	A
	EB APPROACH	B	C
	WB LT	B	B
	WB T	B	C
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	B	B
	NB T	C	C
	NB RT	A	C
	NB APPROACH	C	C
	SB LT	B	B
	SB T	C	C
	SB RT	C	C
	SB APPROACH	C	C
	OVERALL	B	C
37th Street/Site Access (stop sign)	WB LT	A	A
	NB LT	D	E
	NB RT	B	B
	NB APPROACH	C	C
	OVERALL	A	A
37th Street/ ¾ Site Access (stop sign)	WB LT	A	A
	NB RT	B	B
	OVERALL	A	A

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TABLE 7 Mid Range (2023) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/Two Rivers Parkway (signal)	EB LT	B	B
	EB T	B	B
	EB RT	B	A
	EB APPROACH	B	B
	WB LT	B	B
	WB T	B	B
	WB RT	B	A
	WB APPROACH	B	B
	NB LT	A	B
	NB T	A	B
	NB RT	A	A
	NB APPROACH	A	B
	SB LT	A	B
	SB T/RT	A	B
	SB APPROACH	A	B
	OVERALL	B	B
65th Avenue/Site Access (stop sign)	EB LT	B	B
	EB RT	A	A
	EB APPROACH	B	B
	NB LT	A	A
	OVERALL	A	A
Two Rivers Parkway/North Site Access (stop sign)	WB LT	C	C
	WB RT	B	B
	WB APPROACH	B	B
	SB LT	A	A
	OVERALL	A	A
Two Rivers Parkway/North Site Access (stop sign)	WB LT	B	B
	SB LT	A	A
	OVERALL	A	A
Two Rivers Pkwy/Right-in Right-out (stop sign)	EB LT	A	A
	OVERALL	A	A

TABLE 8 Long Range (2040) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/65th Avenue (signal)	EB LT	B	B
	EB T	C	A
	EB RT	A	A
	EB APPROACH	C	A
	WB LT	B	B
	WB T	B	B
	WB RT	B	B
	WB APPROACH	B	B
	NB LT	C	C
	NB T	D	D
	NB RT	C	D
	NB APPROACH	D	D
	SB LT	C	C
	SB T	C	D
	SB RT	C	C
	SB APPROACH	C	C
	OVERALL	C	B
8th Street/71st Avenue (signAL	EB T	B	C
	EB RT	B	B
	EB APPROACH	B	C
	WB LT	B	B
	WB T	A	A
	WB APPROACH	A	A
	NB LT	B	B
	NB RT	B	B
	NB APPROACH	B	B
	OVERALL	B	B
37TH Street/ ¾ Access (stop sign)	WB LT	B	B
	NB RT	A	B
	OVERALL	A	B

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TABLE 8 Long Range (2040) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
37th Street/Two Rivers Parkway (signal)	EB LT	C	C
	EB T	C	C
	EB RT	A	A
	EB APPROACH	C	C
	WB LT	C	C
	WB T	B	B
	WB RT	B	A
	WB APPROACH	B	B
	NB LT	B	B
	NB T	B	C
	NB RT	A	A
	NB APPROACH	B	C
	SB LT	B	B
	SB T/RT	B	C
	SB APPROACH	B	C
	OVERALL	C	C
65th Avenue/Site Access (stop sign)	EB LT	C	C
	EB RT	B	B
	EB APPROACH	C	C
	NB LT	A	A
	OVERALL	A	A
Two Rivers Parkway/North Site Access (stop sign)	WB LT	C	C
	WB RT	B	B
	WB APPROACH	B	B
	SB LT	A	A
	OVERALL	A	A
Two Rivers Parkway/North Site Access (stop sign)	WB LT	B	B
	SB LT	A	A
	OVERALL	A	A
Two Rivers Pkwy/Right-in Right-out (stop sign)	EB LT	A	B
	OVERALL	A	A

IV. CONCLUSIONS

This study assessed the impacts of the Peakview development on the street system in the vicinity of the proposed development in the short range (2020), mid range (2023), and long range (2040) futures. As a result of this analysis, the following is concluded:

- The Peakview development is feasible from a traffic engineering standpoint. Phase 1 of the Peakview development will generate approximately 2,646 daily trip ends, 199 morning peak hour trip ends, and 262 afternoon peak hour trip ends. At full development of the Peakview development will generate approximately 17,660 daily trip ends, 1,177 morning peak hour trip ends, and 1,662 afternoon peak hour trip ends.

- Currently, the 37th Street/65th Avenue and 37th Street/Two Rivers Parkway intersections operate acceptably with existing control and geometry. At the 37th Street/Two Rivers Parkway intersection, the calculated delay for the northbound and southbound approaches was commensurate with level of service F in the afternoon peak hour.

- The 37th Street/65th Avenue intersection is currently signalized. The 37th Street/Two Rivers Parkway intersection meets the peak hour signal warrant with the existing traffic. It is likely that other signal warrants will be met. In the long range (2040) future, the peak hour signal warrant will be met in the morning and afternoon peak hour at the 37th Street/Site Access intersection.

- In the short range (2020) future, given development of Phase 1 of the Peakview site and an increase in background traffic, the key intersections will operate acceptably with the recommended geometry. At the 37th Street/Two Rivers Parkway intersection, the calculated delay for the afternoon approaches was commensurate with level of service E and F with stop sign control.

- In the mid range (2023) future, given full development of the Peakview site and an increase in background traffic, the key intersections will operate acceptably with the recommended geometry and a signal at the 37th Street/Two Rivers Parkway intersection.

- In the long range (2040) future, given full development of the Peakview site and an increase in background traffic, the key intersections will operate acceptably with a signal at the 37th Street/Two Rivers Parkway and 37th Street/Site Access intersections.

- The short range (2020), mid range (2023), and long range (2040) geometry is shown in Figures 14, 15 and 16, respectively.

CITY COUNCIL AGENDA REPORT

DATE: October 5, 2020

AGENDA ITEM: 9.D

SUBJECT: Consideration of Water Efficiency Plan

PRESENTED BY: James L. Becklenberg, City Manager
Randy Ready, Deputy City Manager
Rick R. Pickard, P.E., Senior Civil Engineer

AGENDA ITEM DESCRIPTION:
An up-to-date Municipal Water Efficiency Plan (MWEP) is a requirement of the Water Conservation Act of 2004, as well as CRS section 37-60-126 for all municipal water providers. Furthermore, a State-approved Plan will continue to qualify Evans for funding from the Colorado Water Conservation Board (CWCB) and the Colorado Water Resources and Power Development Authority (CWRPDA) for water supply and delivery projects. An Executive Summary of the current update is attached for City Council consideration. A full copy of the report is available online at https://www.evanscolorado.gov/water/conservation

The City of Evans first developed a Municipal Water Efficiency Plan (*MWEP* or *Plan*) in 2009. Once it is approved, the new update will become the City's adopted Efficiency Plan for the planning horizon through 2028. The purpose of the Plan is to serve as a guide for the City regarding water conservation measures that can be adopted. The Update was prepared by Loveland-based Water Rights, Planning, and Engineering consulting firm Clear Water Solutions. 70% of the funding for the work that went into the report was provided in the form of a grant from the Colorado Water Conservation Board.

HIGHLIGHTS OF THE MWEP UPDATE:
The highlights of the MWEP update are summarized in the attached Executive Summary. Major Sections of the report include the following:

1. Profile of Existing Water Supply System
2. Profile of Water Demands and Historical Water efficiency Activities
3. Integrated Planning and Water Efficiency Benefits and Goals
4. Selection of Water Efficiency Activities
5. Implementation and Monitoring Plan
6. Adoption of New Policy, Public Review and Formal Approval

The Plan set out to reach a targeted treated water savings goal of 10 % over the ten-year planning period by carefully screening a set of water efficiency activities to be implemented in the community. 34 such activities emerged as recommended for implementation over the next ten years. The consultants estimate 17% total water savings from adoption of all 34 activities—almost doubling the initial 10% reduction goal. Staff looks forward to future work sessions with City Council to get direction to help prioritize, fund and implement the programs and activities that are

deemed to be the most worthy investments and the right fit at the right time to meet the community's water efficiency needs. Please see pages ES-4 and ES-5 of the attached Executive Summary for the list of all 34 activities recommended for implementation. Staff will further highlight some of these activities considered to be early action items during the work session discussion.

Along with the completion of the MWEP, the City received a complementary grant from the Sonoran Institute to integrate water efficiency and conservation measures into the 2020 community-wide Master Plan update. The City and the City's Consultant (Marjo Curgus from Del Corazon Consulting) utilized the updated Municipal Water Efficiency Plan (MWEP) as a base to form policy and goal recommendations for what will become the Water Efficiency chapter of the Master Plan.

The following major action items have received additional attention and are among those recommended to be incorporated into the City's updated Master Plan. These are indications of strong agreement among experts approaching Evans' water use issues from different perspectives:

- Improve the efficiency of outdoor watering by implementing goals and policies in the Master Plan and make suggested amendments to the Landscaping Standards in the Land Use Code.
- Lead by example and make public parks and spaces highly water efficient yet attractive.
- Implement effective methods to reduce waste from high water users such as outdoor irrigation, leaking fixtures, car washes, etc.
- Provide guidelines to assist business users to reduce water consumption.
- Develop a tap-fee discount incentive to encourage both residential and non-residential development to be more water-efficient.
- Develop an action plan by category, timeframe, financial feasibility and ease of implementation.

APPROVAL PROCESS FOR THE MWEP UPDATE

In order for the 2019 Municipal Water Efficiency Plan to be formally approved by State Agencies, the following timetable has been developed:

1. Update 2009 WEP (completed)
2. Recommendation from Water and Sewer Board to proceed to City Council for consideration of the Draft Report (unanimously recommended for approval on July 16)
3. Presentation to City Council and Approval of the "Draft" Report (presented for consideration on October 5, 2020)
4. A Sixty-day Public Review process (October 6-December 7)
5. Revisions (if needed) to the Draft Report following Public Review process
6. Presentation to City Council for Final Approval (December 15)
7. Submit to State Agencies for their approval (December 16)

FINANCIAL SUMMARY:

The City of Evans applied for and was awarded a CWCB grant in the amount of $30,000 to help complete the MWEP Update. The grant has been used towards payment of a substantial amount of the fees to Clearwater Solutions for the preparation of the Report.

The full cost of the Clearwater Solutions work involved with preparation of the WEP update is $44,114.16. Of this amount, the CWCB grant reimbursed the City $30,000 (70%) with the remainder of $14,114.16 being covered by City funds.

To date, the City has spent $37,770 of the funds to prepare the WEP update. The remainder of the funds will be used to cover the costs incurred during the remaining steps including Adoption of New Policy, Public Review Process, and Formal Approval by the State.

As staff discussed with the Finance Committee and during the September 15 City Council Budget work session, $100,000 of funding is being included in the 2021 Water Fund Operating Fund budget request to fund water conservation efforts. Staff will return for further discussion with Council about 2021 water efficiency priorities at future work sessions.

RECOMMENDATION:
Staff recommends that City Council approve the draft of the Municipal Water Efficiency Plan to begin the official 60-day public comment period.

SUGGESTED MOTIONS:
"I move to approve the Draft Municipal Water Efficiency Plan Update."

"I to deny the Draft Municipal Water Efficiency Plan Update."

ATTACHMENTS:

- ***Executive Summary*** of the City of Evans 2019 Municipal Water Efficiency Plan Update

City of Evans, Colorado

CITY OF EVANS

2019 MUNICIPAL WATER EFFICIENCY PLAN UPDATE

DRAFT

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EXECUTIVE SUMMARY

The City of Evans, Colorado *(City* or *Evans*) is a Northern Colorado community located in Weld County. Named for Territorial Governor John Evans, Evans was established in 1869 and was known as the "Queen City of the Platte" and held the Weld County's seat of government. In its early years, Evans was a small 'wild west' town of 400 people. The City has grown into an urban community that values its rural roots and historical heritage. A variety of amenities for its residents make it a great place for families and businesses alike. The City has over 300 acres of parks and open space, biking trails by the river, shopping areas, and has easy access to major highways going to Denver, the Rocky Mountains, and the International Airport.

The City of Evans distributes water to a service area that includes customers in the incorporated City limits and portions of the unincorporated area. The City has an estimated population of 21,615 people[1] and encompasses 10.53 square miles or 6,740 acres. The City's Urban Growth Area is nearly three times the size of the current limits.

In an effort to optimize its water resources, the City of Evans developed this Municipal Water Efficiency Plan Update (*MWEP* or *Plan*) in accordance with the Water Conservation Act of 2004 and to meet the provisions of Colorado Revised Statute section 37-60-126. As part of CRS 37-60-126, a State-approved Plan will qualify Evans for funding from the Colorado Water Conservation Board (*CWCB*) and the Colorado Water Resources and Power Development Authority for water supply and delivery projects.

This report documents the City's water rights and systems, historical and projected water demands, planning process used to prepare this Plan, and targeted water efficiency activities to implement. Water efficiency planning was completed in accordance with CWCB's Municipal Water Efficiency Plan Guidance Document (*Guidance Document)*. The benefits of water efficiency activities may include: delaying the purchase of costly water supplies and infrastructure upgrades, reducing wastewater flows and treatment and associated costs, and improved water management and stewardship.

The City's existing water supplies consist of both treated water supplies and non-potable supplies. The City's raw water supplies come from trans-mountain diversions from the Colorado River and native streamflow in the South Platte River basin. Treated water supplies have an average yield of approximately 6,361 acre-feet (*AF*) per year. This Plan is intended to provide guidance to the City in developing water efficiency activities that complement its existing land planning activities, future economic developments, and community goals.

[1] Population in 2018 from the Colorado Department of Local Affairs, State Demography Office.

In 2018, the City's water demand was 2,663 AF of treated water to meet residential, commercial, irrigation and municipal customer usage, as well as non-revenue losses. The annual treated water demand is expected to increase due to population growth and new development to approximately 3,247 AF by the end of this Plan's planning period in 2028. Water savings from water efficiency activities developed in this Plan may save up to 498 AF per year of treated water demand. The savings from this planning effort will make a considerable contribution toward the water supplies needed to serve the 2028 demand.

Past and Current Water Efficiency Activities

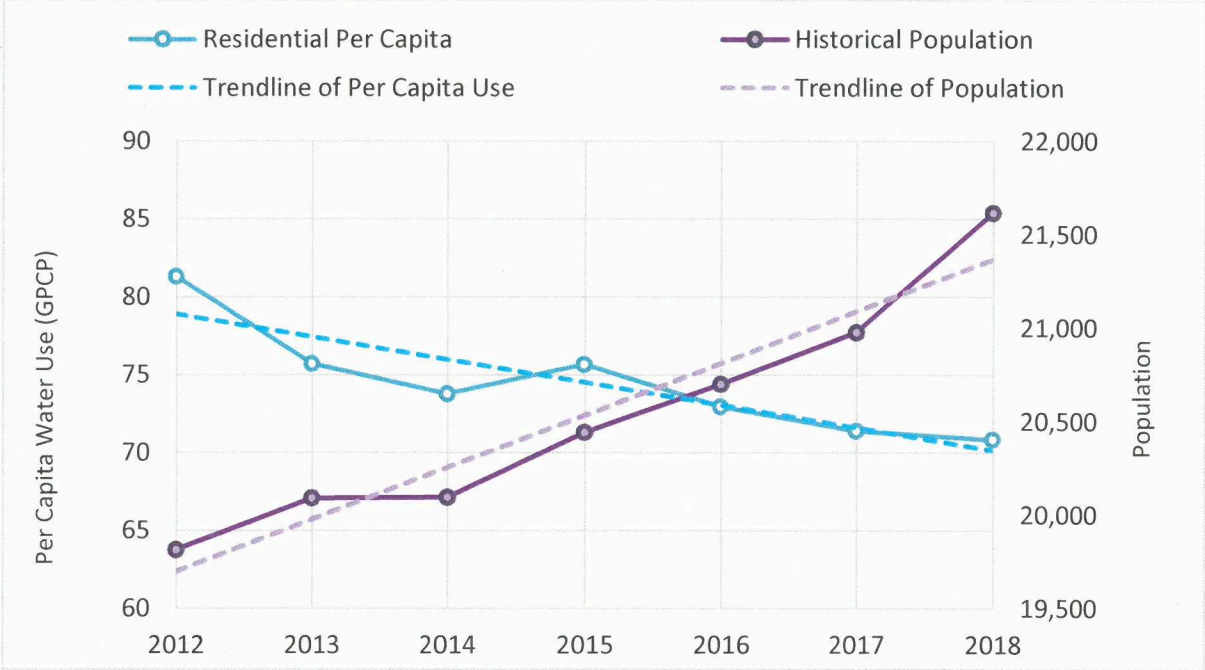
Evans has implemented several water efficiency activities prior-to and since its *2009 Water Conservation Plan*. The water efficiency activities that have been historically implemented are shown in **Table ES-1**.

Table ES-1: Evans' Existing and Ongoing Water Efficiency Activities

Water Efficiency Activities	Approx. Date of Implementation
Foundational Activities	
Advanced Metering Infrastructure Installation and Operations	2015
Water Rate Study - Water Efficient Rate Structure with Regular Updates	2001 (recent update in 2019)
Water Reuse System	Since 2010 and prior
Tap Fees with Water Use Efficiency Incentives (Lot-based water dedication)	Since 2010 and prior
Master Plans/Water Supply Plans/Integrated Water Resource Plans	2016
Drought Management Plan	2013
General Monitoring and Verification Activities and General Water Rates and Billing	Since 2010 and prior
Designated Water Conservation Coordinator	Since 2010 and prior; not consistently
Ordinances and Regulations	
Weekly and Time of Day Outdoor Watering Restrictions	1982
Water Waste Ordinance	2002
Irrigation System Standards for New Developments	2004
New Car Wash Standards (New Construction)	In development (anticipated 2022)
Landscape Design Ordinances and Restrictions	2004
Education Activities	
Public Education (Newsletter, Webpage, Interactive Website, Social Media, etc.)	Since 2010 and
Children's Water Fair or Festival	Since 2010 and prior; not consistently

Water savings from water efficiency activities are challenging to quantify, especially activities that are highly dependent on human behavior, such as public education programs. Also, some water efficiency activities are not implemented consistently, such as a designated water conservation coordinator, so water savings can fluctuate from year-to-year. Without collecting specific data on each activity, a simple way to evaluate water savings as a whole is by calculating the City's per capita water use to observe trends. The City's residential per capita water use show a general downward trend in water use since 2012 as depicted in **Figure ES-1**.

Figure ES-1: Treated Water Use and Population Trends



The residential per capita usage decreased by 10 gallons per day per person from 2012 to 2018. Some of the variability in the per capita water use is likely linked to the yearly fluctuations in temperature and precipitation. For example, 2012 was a dry year which may explain the higher per capita water usage. This may be linked to increases in outdoor water usage during dry years. Other factors that may impact the residential per capita use is new developments with dual systems. While the residential per capita from treated water decreases, residents are using non-potable water for irrigation which can skew the per capita values. Based on the cost-benefit analysis, the projected saving from Evans' implemented water efficiency activities is 242 AF per year.

An initial set of water savings goals were developed in the beginning stages of this planning effort to guide the development of this Plan. The initial goals were used as a means to screen and evaluate potential activities to ensure the City's goals can be met

with the water efficiency activities evaluated. The following initial goals were established:

- The targeted water savings goal for this Plan will be to lower the treated water demand by 10% over the ten-year planning period, or approximately 1% per year.
- The targeted ten-year water reduction goals for the following customer categories were as follows:
    - Residential: 13%
    - Commercial: 5%
    - Irrigation: 5%
    - Municipal: 5%
    - Non-Revenue Water: 1%
- To develop a Plan that can be effectively implemented by City Staff and with City Council approval and encouragement.
- To implement water efficiency activities that are compatible with the community and residents.
- To develop a cost-effective program that achieves water savings goals while staying within budget constraints.
- To assess activities and programs with partnership opportunities.

The City of Evans used a four-phase process recommended in the *Guidance Document* to select and fully evaluate water efficiency activities for implementation in this Plan. The four phases include: 1) assessment; 2) identification; 3) qualitative screening; and 4) evaluation and selection.

During the initial screening process, City staff selected 35 potential water efficiency activities to evaluate in a cost-benefit analysis. During the second screening process, City staff eliminated one activity that didn't fit with the City's goals and interests. The City used the following criteria to screen potential activities:

- Applicability to the City of Evans
- Moderate to high potential reduction of water use and financially feasible
- Staff and City Council support
- Partnership opportunities with other entities to help organize and implement activities

The following 34 activities were selected for implementation by the City in this Plan:

- System Wide Water Audits
- Advanced Meter Reading Installation and Operations
- Water Rate Study – Water Efficient Rate Structures with Regular Updates
- Water Reuse System
- Tap Fees with Water Use Efficiency Incentives
- Leak Detection and Repair Program
- Master Plans/Water Supply Plans/Integrated Water Resource Plans/Capital Improvement Plans
- Drought Management Plan

- General Monitoring and Verification Activities and General Water Rates and Billing
- Designated Water Conservation Coordinator
- Slow the Flow Residential Indoor Audits
- Slow the Flow Residential Irrigation Audits
- Slow the Flow Commercial Irrigation Audits
- Rebates and Retrofit Program - Indoor
- Rebates and Retrofit Program - Outdoor
- Giveaways: Water Audit Kits
- Xeriscape Incentives – Garden in a Box
- Distribute Pre-Rinse Spray Heads to Restaurants and Institutions
- Restrict High Water Use Turn on Medians and in Parking Lot Plantings
- Weekly and Time of Day Outdoor Watering Restrictions
- Water Waste Ordinance
- Irrigation System Standards for New Developments
- 10% Lot Restriction
- Requiring Wind and/or Rain Sensors for Business and Open Space Irrigation
- Restrictive Covenants Ordinance
- New Car Wash Standards (New Construction)
- Landscape Design Ordinances and Restrictions
- Public Education Activities
- Children's Water Fair or Festival
- Post or Distribute ET Irrigation Scheduling
- K-12 Teacher and Classroom Education
- Property Manager/HOA Education and Training
- Citizen Advisory Board
- Xeriscape Demonstration Garden

Table ES-2 compares the City's initial water savings goals at the beginning of this planning effort to the water savings estimated for the selected activities. Over a ten-year period, the selected activities are estimated to provide an overall water savings of 5,127 AF. This is an overall reduction from the forecasted water use by 17% which exceeds the City's initial water savings goal of 10%. This value is a ten-year savings for all the 34 activities.

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Table ES-2: Water Efficiency Goals Comparison

Water Use Categories	Total Projected Water Use (2019 to 2028)	Reduction Goals for Planning Horizon		Adjusted Reduction Goals for Planning Horizon	
				Total Water Savings from Activities	Resulting Reduction
	(AF)	(%)	(AF)	(AF)	(%)
Residential	19,827	13%	2,578	3,679	19%
Commercial	5,671	5%	284	901	16%
Irrigation	831	5%	42	213	26%
Municipal	687	5%	34	99	14%
Non-Revenue Water	2,734	1%	27	236	9%
Total:	29,750		2,965	5,127	
Total Percent Reduction:			*10%*	*17%*	

Implementation and Monitoring Plan

The implementation plan defines the process necessary to develop the selected water efficiency activities. The City Manager will be chiefly responsible for coordinating and delegating tasks to City Staff to implement this Plan. The Public Works, Utility Billing, Engineering, Communication and Parks Departments will have roles in implementing some of the selected activities pertaining to their departments. For some activities, the City Staff may partner with other organizations offering tools and programs for municipalities, such as Resource Central, the Northern Colorado Water Conservancy District or the City of Greeley.

A monitoring plan outlines the City's process to monitor the progression of the implementation plan to ensure its success. The success of the stated goals is measured through monitoring of billing data, screening/evaluating activities acceptable to City staff, and soliciting City Council and community feedback on water efficiency activities. Monitoring various types of data is beneficial in tracking the water savings generated from implementing an MWEP. Evans monitors the produced treated water and the total billed water by customer category on an annual and monthly basis. Evans also tracks the number of taps per customer category and the City's population. The demand data, which will be collected during the monitoring period of the Plan, is presented in **Table ES-3**.

Table ES-3: Selection of Demand Data for Efficiency Plan Monitoring

Monitoring Data	HB 10-1051 Reporting Requirement				Selection			
	Annual	Monthly	Bi-Monthly	Daily	Annual	Monthly	Bi-Monthly	Daily
Total Water Use								
Total treated water produced (metered at Master Meters from WTP)						X		
Total treated water delivered (sum of customer meters)	√					X		
Raw non-potable deliveries						X		
Per capita water use					X			
Non-revenue water	√				X			
Water Use by Customer Type								
Treated water delivered		√				X		
Raw non-potable deliveries						X		
Residential per capita water use					X			
Unit water use (e.g. AF/account or AF/irrigated acre)					X			
Other Demand Related Data								
Drought index information						X		
Population					X			
New taps						X		

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CITY COUNCIL AGENDA REPORT

DATE:	October 5, 2020
AGENDA ITEM:	9.E
SUBJECT:	Consideration of Resolution No. 32-2020 to Approve and Authorize Execution of an Agreement to Sell NISP Units to the Fort Collins-Loveland Water District
PRESENTED BY:	James L. Becklenberg, City Manager Randy L. Ready, Asst. City Manager Drew Lyman, Asst. City Attorney

AGENDA ITEM DESCRIPTION:

At the March 19, 2019 work session City Council gave the direction to reduce the City's allocation in the Northern Integrated Supply Project (NISP) from 1,600 ac-ft of raw water to 1,200 ac-ft. On April 2, 2019 City Council approved Resolution 09-2019 confirming the decision to amend the City's participation level in NISP. This came after numerous City Council work sessions over several months including four joint-sessions with the City's Water and Sewer Board. The attached agenda report from the April 2, 2019 meeting serves as a summary of the information presented and provides background on the various components of the complex project.

Since April 2019, NISP requested that member jurisdictions interested in increasing or decreasing their NISP participation levels wait until after the project proceeded further in the state and federal environmental review and permitting process. In August of this year, members were notified that they could begin to transfer shares among themselves. The City has known for some time that the Fort-Collins-Loveland Water District (the District) is interested in acquiring more shares of NISP water above its current 3,000 share participation level. At this time, however, there are more prospective sellers than buyers within the NISP membership group, and other potential sellers have contacted the District about the transfer of shares. Since there are no other buyers on record, staff recommends that the City transfer the 400 shares with no premium in order to fulfill the City Council direction to divest in a short period of time.

The District Board (Buyer) approved the agreement on September 15, 2020. City Council consideration and approval on October 5 will clear the way for the District to pay the purchase price to Evans and for the parties to execute Petitions for Amendment of NISP Participation Agreements to be submitted to the Northern Integrated Supply Project Water Activity Enterprise. Once the Petitions have been received by Northern, Northern will place approval of the transfer on the next available meeting agenda – which, by that time, will likely be in January 2020, making the transfer official.

FINANCIAL SUMMARY:

The Purchase Price in the Agreement for the 400 NISP Units is $705,752, which equals $1,764.38 per acre-foot. To date, the City has invested $2,823,008 in the full 1,600 acre-feet commitment. The asking price was determined by taking 25% (400/1600) of the expenditures to date. Since there are other sellers interested in divesting themselves of NISP shares and no other current members who have expressed interest in buying, the City's selling price fully recovers the costs spent to date on those 400 shares.

RECOMMENDATION:

Staff recommends approval of Resolution 32-2020 to approve and authorize execution of an agreement to sell 400 acre feet of NISP Units to the Fort Collins-Loveland Water District for the Purchase Price of $705,752.

SUGGESTED MOTIONS:

"I move to adopt Resolution No.32-2020."

"I move to deny the adoption of Resolution No.32 -2020."

ATTACHMENTS:

- Resolution No. 32-2020
- Agreement to Transfer NISP Units
- April 2, 2019 Council Agenda Report

CITY OF EVANS, COLORADO

RESOLUTION NO. 32-2020

A RESOLUTION TO APPROVE AND AUTHORIZE EXECUTION OF AN AGREEMENT TO SELL 400 ACRE FEET OF NISP UNITS TO THE FORT COLLINS-LOVELAND WATER DISTRICT FOR THE PURCHASE PRICE OF $705,752

WHEREAS, the City of Evans, Colorado (the "City") is a home rule Colorado municipal corporation, duly organized and existing under Section 6, Article XX of the Colorado Constitution; and

WHEREAS, the City Council of the City of Evans, Colorado (the "City Council"), pursuant to Colorado statute and the Evans City Charter, is vested with the authority of administering the affairs of the City of Evans, Colorado; and

WHEREAS, the City is a participant in the Northern Integrated Supply Project ("NISP"), its participation presently being the right to 1,600 acre-feet of water yield, as defined by and subject to a series of agreements with the Northern Integrated Supply Project Water Activity Enterprise ("NISP Enterprise"); and

WHEREAS, the Fort Collins-Loveland Water District ("District"), acting by and through its Water Activity Enterprise, is a quasi-municipal corporation and political subdivision of the State of Colorado ("Fort Collins-Loveland") and also is a participant in NISP, its participation presently being the right to 3,000 acre-feet of water yield, as defined by and subject to a series of agreements with the NISP Enterprise; and

WHEREAS, the City desires to enter into the Agreement to Transfer NISP Units attached as Exhibit A to sell 400 acre feet of NISP water yield (400 units) to the District for the purchase price of $705,752; and

WHEREAS, the City has reviewed the proposed Agreement to Transfer NISP Units and desires to enter into the Agreement.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF EVANS, COLORADO AS FOLLOWS:

Section 1. To benefit the residents of the City, the City Council authorizes and approves Agreement to Transfer NISP Units.

Section 2. Brian Rudy, the Mayor of the City of Evans is hereby authorized to execute the Agreement to Transfer NISP Units attached hereto and incorporated by reference as Exhibit A, and James Becklenberg, the City Manager of the City of Evans is hereby authorized to execute such other agreements, documents or certificates and to take such other actions as may be necessary or convenient to carry out and give effect to the City's obligations under the Agreement To Transfer NISP Units.

Section 3. Nothing contained in this Resolution or the Agreement to Transfer NISP Units shall constitute a debt, indebtedness or multiple-fiscal year direct or indirect debt or other financial obligation of the City within the meaning of the Constitution or statutes of the State of Colorado or the home rule charter of any political subdivision thereof, nor give rise to a pecuniary liability of the City or a charge against its general credit or taxing powers.

Section 4. Severability. If any article, section, paragraph, sentence, clause, or phrase of this Resolution is held to be unconstitutional or invalid for any reason such decision shall not affect the validity or constitutionality of the remaining portions of this Resolution. The City Council hereby declares that it would have passed this resolution and each part or parts thereof irrespective of the fact that any one part or parts be declared unconstitutional or invalid. This Resolution shall be in full force and effect upon its passage and approval.

PASSED AND ADOPTED AT A REGULAR MEETING OF THE CITY COUNCIL OF THE CITY OF EVANS ON THIS 5th DAY OF OCTOBER 2020.

ATTEST:

CITY OF EVANS, COLORADO

_____

Julie Kamka, City Clerk

BY: _____

Brian Rudy, Mayor

AGREEMENT TO TRANSFER NISP UNITS

THIS AGREEMENT TO TRANSFER NISP UNITS (this "Agreement") is entered into as of September 15, 2020, by and between the CITY OF EVANS, COLORADO, a home rule municipal corporation and political subdivision of the State of Colorado (the "City"), and the FORT COLLINS-LOVELAND WATER DISTRICT, acting by and through its Water Activity Enterprise, a quasi-municipal corporation and political subdivision of the State of Colorado (the "District") (the District and the City being singularly referred to as a "Party" and collectively referred to as the "Parties").

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Transfer of NISP Units. Subject to approval by the Northern Integrated Supply Project Water Activity Enterprise (the "NISP Enterprise"), the City agrees to transfer to the District 400 acre-feet of water yield (the "NISP Units"), as further described in the form of Petition to Amend NISP Participation Agreements to Decrease Participation by 400 Acre Feet (the "City Petition") and the form of Petition to Amend NISP Participation Agreements to Increase Participation by 400 Acre Feet (the "District Petition"), both of which are attached hereto as Exhibit A and incorporated herein by this reference.

2. Purchase Price. The District agrees to pay the City $705,752.00 (the "Purchase Price") for the NISP Units.

3. Closing. The closing of the transaction described herein shall occur at a location and on a date and time mutually acceptable to the Parties, but no later than 30 days after the date on which the NISP Enterprise approves the transfer of the NISP Units. At closing, the City shall deliver to the District the executed City Petition, and the District shall deliver to the City (a) the executed District Petition, and (b) the Purchase Price in the form of electronic transfer funds, certified check, or cashier's check.

4. Transfer fees. The Parties will pay equal contributions to NISP transfer fees anticipated to total $300 ($150 for each Party).

5. Approval by NISP Enterprise. This Agreement shall terminate, and the Parties shall be relieved of their obligations hereunder, if the NISP Enterprise does not approve the transfer of the NISP Units on or before February 28, 2021.

6. Notices. Any formal notice, demand or request pursuant to this Agreement shall be in writing and shall be deemed properly served, given or made, if delivered in person or sent by certified mail, postage prepaid, to the Parties at the addresses listed below:

To Evans:	City of Evans Attn: Jim Becklenberg, City Manager 1100 37th Street Evans, CO 80620
With a copy to:	Scotty P. Krob Evans City Attorney 8400 E. Prentice Ave, Penthouse Greenwood Village, CO 80111
To the District:	Fort Collins-Loveland Water District Attn: Chris Matkins, General Manager 5150 Snead Drive Fort Collins, CO 80525
With a copy to:	Collins Cockrel & Cole Bob Cole 390 Union Blvd., Suite 400 Denver, Colorado 80228-1556

7. Amendments. This Agreement may be amended only by written document signed by the Parties.

8. Severability. In the event that any of the terms, covenants or conditions of this Agreement or their application shall be held invalid as to any person, entity or circumstance by any court having competent jurisdiction, the remainder of this Agreement and the application in effect of its terms, covenants or conditions to such persons, entities or circumstances shall not be effected thereby.

9. Entire Agreement. This Agreement embodies the complete agreement between the Parties regarding the subject matter herein and supersedes all prior agreements and understandings, if any.

10. No Third-Party Beneficiaries. The Parties do not intend to benefit any person not a party to this Agreement. No person or entity, other than the Parties, shall have any right, legal or equitable, to enforce any provision of this Agreement.

11. Duly Authorized Signatories. By execution of this Agreement, the undersigned each individually represent that he or she is duly authorized to execute and deliver this Agreement and that the subject Party shall be bound by the signatory's execution of this Agreement.

12. Counterparts, Electronic Signatures and Electronic Records. This Agreement may be executed in two counterparts, each of which shall be an original, but

all of which, together, shall constitute one and the same instrument. The Parties consent to the use of electronic signatures and agree that the transaction may be conducted electronically pursuant to the Uniform Electronic Transactions Act, § 24-71.3-101, *et seq.*, C.R.S. The Agreement and any other documents requiring a signature may be signed electronically by either Party. The Parties agree not to deny the legal effect or enforceability of the Agreement, solely because it is in electronic form or because an electronic record was used in its formation. The Parties agree not to object to the admissibility of the Agreement in the form of an electronic record, a paper copy of an electronic document, or a paper copy of a document bearing an electronic signature on the grounds that it is an electronic record or an electronic signature or that it is not in its original form or is not an original.

CITY OF EVANS, COLORADO, a home rule municipal corporation and political subdivision of the State of Colorado

By: _____
Brian Rudy, Mayor

Attest:

_____
Julie Roeder, Interim City Clerk

FORT COLLINS-LOVELAND WATER DISTRICT, acting by and through its Water Activity Enterprise, a quasi-municipal corporation and political subdivision of the State of Colorado

By: _____
James Borland, President

Attest:

_____
Chris Matkins, Secretary

EXHIBIT A

FORM OF CITY PETITION AND DISTRICT PETITION

[Attached]

Exhibit A

NORTHERN INTEGRATED SUPPLY PROJECT WATER ACTIVITY ENTERPRISE

PETITION TO AMEND NISP PARTICIPATION AGREEMENTS TO DECREASE PARTICIPATION BY 400 ACRE FEET

WHEREAS the City of Evans, a municipal corporation organized under the laws of the State of Colorado (hereinafter "Petitioner"), is a participant in the Northern Integrated Supply Project ("NISP"), its participation presently being the right to 1,600 acre-feet of water yield, as defined by and subject to a series of agreements with the Northern Integrated Supply Project Water Activity Enterprise ("NISP Enterprise"), most recently being (1) the Sixteenth Interim Agreement with the Northern Integrated Supply Project Water Activity Enterprise for Participation in the Northern Integrated Supply Project, dated February 25, 2020, and (2) the NISP Phase 1 Agreement Dated as of December 17, 2019, By and Among the Northern Integrated Supply Project Water Activity Enterprise and the NISP Phase 1 Participants Listed Herein (the "Evans Participation Agreements"); and

WHEREAS, The Fort Collins–Loveland Water District, acting by and through its Water Activity Enterprise, a quasi-municipal corporation and political subdivision of the State of Colorado ("Fort Collins–Loveland") also is a participant in NISP, its participation presently being the right to 3,000 acre-feet of water yield, as defined by and subject to a series of agreements with the NISP Enterprise, most recently being (1) the Sixteenth Interim Agreement with the Northern Integrated Supply Project Water Activity Enterprise for Participation in the Northern Integrated Supply Project, dated May 8, 2020, and (2) the NISP Phase 1 Agreement Dated as of February 13, 2020, By and Among the Northern Integrated Supply Project Water Activity Enterprise and the NISP Phase 1 Participants Listed Herein (the "Fort Collins–Loveland Participation Agreements"); and

WHEREAS, Petitioner has agreed to transfer the right to 400 acre-feet of water yield, with its share of rights and obligations under the Evans Participation Agreements (the "Participation Interest"), to Fort Collins–Loveland, and Fort Collins–Loveland has concurrently herewith petitioned the Board to amend the Fort Collins–Loveland Participation Agreements to increase its participation by 400 acre-feet of water yield; and

WHEREAS Fort Collins–Loveland agrees to assume all continuing obligations related to the Participation Interest to be transferred by Petitioner;

NOW, THEREFORE, Petitioner hereby requests that the Evans Participation Agreements be amended to decrease Petitioner's water yield and share of rights and obligations by 400 acre-feet, to 1,200 acre feet. All other terms and conditions of the Evans Participation Agreements shall remain unchanged and in full force and effect.

Respectfully submitted: _____, 2020.

PETITIONER:
THE CITY OF EVANS

By:_____
Name

_____
Title

ATTEST:

By:_____
Name

_____
Title

ORDER OF THE
NORTHERN INTEGRATED SUPPLY PROJECT WATER ACTIVITY ENTERPRISE ON CITY OF EVANS' PETITION FOR AMENDMENT OF NISP PARTICIPATION AGREEMENTS TO DECREASE PARTICIPATION BY 400 ACRE-FEET OF WATER YIELD

Upon the Petition of the City of Evans, Colorado, a municipal corporation organized under the laws of the State of Colorado ("Petitioner"), to Amend its Participation Agreements, and after considering said Application and Petition as required by law at a regular meeting held on _____, 2020, the Board of Directors of the Northern Integrated Supply Project Water Activity Enterprise, hereby orders that:

The Petition is GRANTED.

Petitioner's Participation Agreements are hereby AMENDED to decrease its participation in NISP by 400 acre-feet of water yield, to 1,200 acre-feet of water yield. Petitioner is hereby released from any further obligations with respect to the 400 acre-feet transferred to Fort Collins–Loveland Water District. Exhibit A to the NISP Phase 1 Agreement Dated as of December 17, 2019, By and Among the Northern Integrated Supply Project Water Activity Enterprise and the NISP Phase 1 Participants Listed Herein shall be amended to reflect such decrease in Petitioner's participation in NISP. All other terms and conditions of Petitioner's Participation Agreements shall be unchanged and remain in full force and effect.

Dated _____, 2020.

NORTHERN INTEGRATED SUPPLY PROJECT
WATER ACTIVITY ENTERPRISE

_____
Bradley D. Wind, General Manager

NORTHERN INTEGRATED SUPPLY PROJECT WATER ACTIVITY ENTERPRISE

PETITION TO AMEND NISP PARTICIPATION AGREEMENTS TO INCREASE PARTICIPATION BY 400 ACRE FEET

WHEREAS The Fort Collins–Loveland Water District, acting by and through its Water Activity Enterprise, a quasi-municipal corporation and political subdivision of the State of Colorado (hereinafter "Petitioner"), is a participant in the Northern Integrated Supply Project ("NISP"), its participation presently being the right to 3,000 acre-feet of water yield, as defined by and subject to a series of agreements with the Northern Integrated Supply Project Water Activity Enterprise ("NISP Enterprise"), most recently being (1) the Sixteenth Interim Agreement with the Northern Integrated Supply Project Water Activity Enterprise for Participation in the Northern Integrated Supply Project, dated May 8, 2020, and (2) the NISP Phase 1 Agreement Dated as of February 13, 2020, By and Among the Northern Integrated Supply Project Water Activity Enterprise and the NISP Phase 1 Participants Listed Herein (the "Fort Collins–Loveland Participation Agreements"); and

WHEREAS, the City of Evans, Colorado ("Evans") also is a participant in NISP, its participation presently being the right to 1,600 acre-feet of water yield, as defined by and subject to a series of agreements with the NISP Enterprise, most recently being (1) the Sixteenth Interim Agreement with the Northern Integrated Supply Project Water Activity Enterprise for Participation in the Northern Integrated Supply Project, dated February 25, 2020, and (2) the NISP Phase 1 Agreement Dated as of December 17, 2019, By and Among the Northern Integrated Supply Project Water Activity Enterprise and the NISP Phase 1 Participants Listed Herein (the "Evans Participation Agreements"); and

WHEREAS, Petitioner has agreed to acquire the right to 400 acre-feet of water yield, with its share of rights and obligations under the Evans Participation Agreements (the "Participation Interest"), from Evans, and Evans has concurrently herewith petitioned the Board to amend the Evans Participation Agreements to decrease its participation by 400 acre-feet of water yield; and

WHEREAS, Petitioner agrees to assume all continuing obligations related to the Participation Interest to be transferred by Evans;

NOW THEREFORE, Petitioner hereby requests that the Fort Collins–Loveland Participation Agreements be amended to increase its water yield and share of rights and obligations by 400 acre-feet of water yield, to 3,400 acre-feet of water yield. All other terms and conditions of the Fort Collins–Loveland Participation Agreements shall remain unchanged and in full force and effect.

Respectfully submitted: September 15, 2020.

PETITIONER:
THE FORT COLLINS–LOVELAND WATER DISTRICT, ACTING BY AND THROUGH ITS WATER ACTIVITY ENTERPRISE, A QUASI-MUNICIPAL CORPORATION AND POLITICAL SUBDIVISION OF THE STATE OF COLORADO.

By: _____
Name

Board President
Title

ATTEST:

By: _____
Name

District manager
Title

ORDER OF THE
NORTHERN INTEGRATED SUPPLY PROJECT WATER ACTIVITY ENTERPRISE ON FORT COLLINS–LOVELAND WATER DISTRICT'S PETITION FOR AMENDMENT OF NISP PARTICIPATION AGREEMENTS TO INCREASE PARTICIPATION BY 400 ACRE-FEET OF WATER YIELD

Upon the Petition of The Fort Collins–Loveland Water District, acting by and through its Water Activity Enterprise, a quasi-municipal corporation and political subdivision of the State of Colorado ("Petitioner"), to Amend its Participation Agreements, and after considering said Application and Petition as required by law at a regular meeting held on _____, 2020, the Board of Directors of the Northern Integrated Supply Project Water Activity Enterprise, hereby orders that:

The Petition is GRANTED.

Petitioner's Participation Agreements are hereby AMENDED to increase its participation in NISP by 400 acre-feet of water yield, to 3,400 acre-feet of water yield. Petitioner hereby assumes all obligations with respect to the 400 acre-feet of water yield transferred to Petitioner by Evans. Exhibit A to the NISP Phase 1 Agreement Dated as of February 13, 2020, By and Among the Northern Integrated Supply Project Water Activity Enterprise and the NISP Phase 1 Participants Listed Herein shall be amended to reflect such increase in Petitioner's participation in NISP. All other terms and conditions of Petitioner's Participation Agreements shall be unchanged and remain in full force and effect.

Dated _____, 2020.

NORTHERN INTEGRATED SUPPLY PROJECT
WATER ACTIVITY ENTERPRISE

_____
Bradley D. Wind, General Manager

CITY COUNCIL AGENDA REPORT

DATE: **April 2, 2019**

AGENDA ITEM: **8.B**

SUBJECT: Approval of Resolution No. 09-2019 a Resolution Amending the City's Participation Level in the Northern Integrated Supply Project

PRESENTED BY: James L. Becklenberg, City Manager
Randy L. Ready, Community Development and Public Works Director
Kalen Myers, Management Analyst

AGENDA ITEM DESCRIPTION:
At the March 19, 2019 work session City Council made the decision to reduce the City's allocation in the Northern Integrated Supply Project (NISP) from 1,600 ac-ft of raw water to 1,200 ac-ft. This came after numerous City Council work sessions over several months including four joint-sessions with the City's Water and Sewer Board. This report serves as a summary of the information presented during this time providing background on the various components of the project. The proposed resolution will confirm the City Council's direction to adjust the City's participation level in NISP.

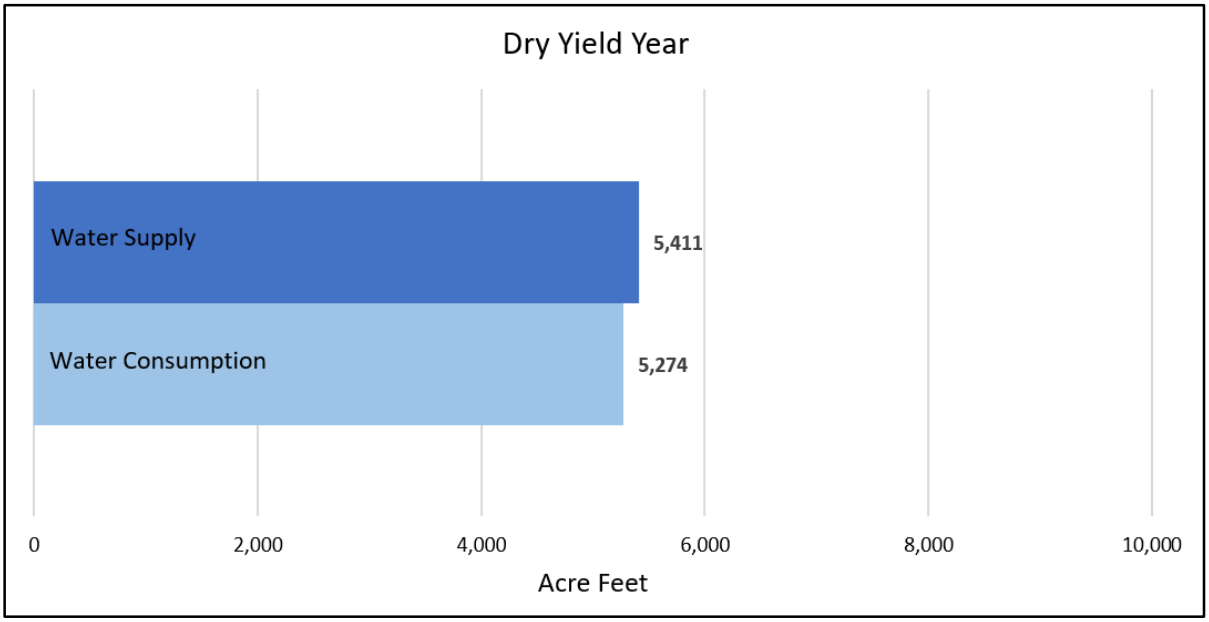
NISP Background
NISP is a water storage and distribution project that will supply 15 north front range municipalities with 40,000 acre-feet of municipal water supply. The City of Evans approved Resolution 108-2002 on December 3, 2002 which authorized the City's participation in NISP. The project consists of:

- Two water storage reservoirs (Glade and Galeton)
- A forebay reservoir (a small reservoir located upstream of the main reservoir used to trap sediment prior to pumping water into the main reservoir)
- Two pumping plants
- A network of pipelines to deliver water for exchange with two irrigation companies
- Improvements to an existing canal to divert water off the Poudre River near the canyon mouth

As an early participant in NISP, in 2002, the City signed on to a four-percent share or 1,600 acre-feet of raw water to be added to Evans' existing water portfolio. This also meant a four percent obligation in the cost of the project which is currently estimated at $1.2B. Recent events will reduce the City's allocation to three percent or 1,200 acre-feet of raw water, making the City's financial commitment an estimated $36M. Water is expected to be available for municipal use in fifteen years, or approximately 2034.

Evans Water Supply

Currently the City of Evans has two main sources of raw water that it transfers to the City of Greeley for treatment on an annual basis. These are units of Colorado Big-Thompson (CBT) and a combination of Native shares from Greeley-Loveland Irrigation, Seven Lakes and Lake Loveland. To understand why the City is investing in a new water source through NISP, an understanding of the current water supply is necessary. The chart below models the City's existing water portfolio during drought conditions and serves as a "worst case" example for planning purposes. The darker top bar shows the City's water supply during a dry year. This is approximately half of what the water supply would be in an average year when yields are stronger. The bottom bar shows City-wide water consumption after water conservation measures have been implemented.



In this dry year scenario there's a small differential of 137 acre-feet of water supply that the City retains. This illustrates that in a dry year the existing portfolio would be just enough to cover the community's water consumption, but there is no excess water to support growth. Under the recently proposed participation level in NISP, the City will add 1,200 acre-ft of raw water to its supply, enabling growth and providing drought protection.

In addition to the raw water allocation, NISP will allow participants to retain up to 4.25 times their allotment in years when water is available to store. With a 1,200 acre-feet allocation, this would equal 5,100 acre-feet of additional water that could be stored in reserve for dry years.

Development Implications

The dry-year scenario shown above illustrates that while the City's existing portfolio meets current water demands, there is no "spare" water to support new growth. This contrasts with some other front range communities that have adequate raw water supply to offer cash-in-lieu water incentives for development. Evans must rely on new water dedications from developers to supply additional water for growth. As competition for water increases and costs continue to grow exponentially, existing water resources will become more and more difficult for the

development community to acquire. NISP provides an alternative water source that the City can make available for future development at a reasonable cost.

Cost Components of NISP

The project requires extensive funding to pay for the raw water, related infrastructure, and treatment and transmission. Debt will be issued for the project which will be paid back through water user base rates. The current estimated cost of the entire project is $1.2B of which the City pays a portion based on participation level. 1,200 acre-ft is equal to 3% of the project, resulting in a $36M financial share. To-date the City has contributed approximately $1.36M to pay for its portion of the preliminary permitting and design fees. In general terms, the costs are allocated as follows:

- $36M raw water (3% of total project, 1,200-acre feet)
- $300 thousand annual operations and maintenance ($250 per ac-ft per year)
- $30M treatment – average estimate based on contemplated treatment options

Estimated Rate Implications

When forecasting a significantly complex capital project such as NISP, many assumptions must be made that may change as the project goes forward. Below is a list of assumptions made in the current rate modeling.

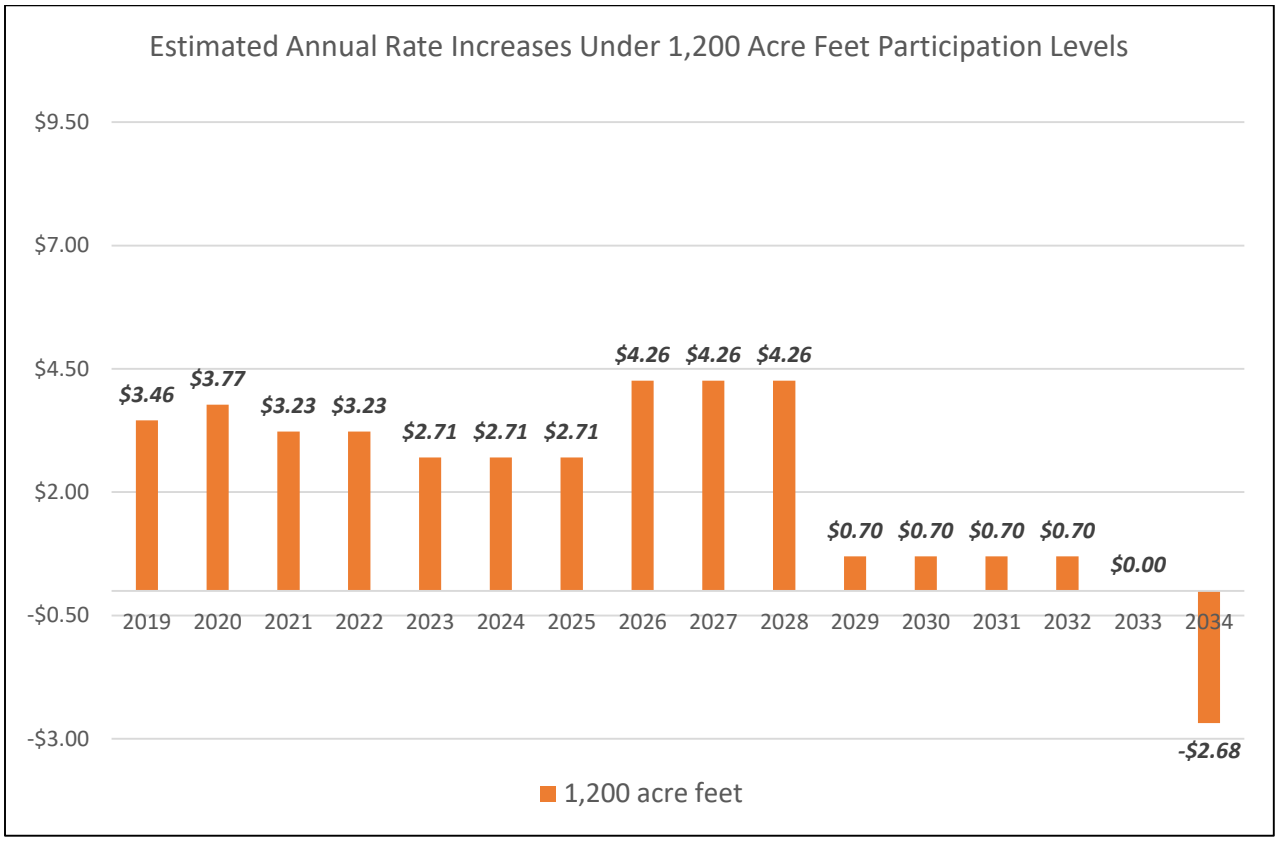
- Current Dollars – the costs used in the model are not adjusted for any inflation.
- Current Cost -- The current estimated cost of the entire project is $1.2B (Evans share of 4% is $48M) Staff cautions that there is significant uncertainty about the future cost based on inflation to the project. For perspective, the 2002 estimate of the entire project was $400M.
- No other rate increases – the estimated rate impacts do not include future base usage rate increases unrelated to NISP.
- Debt – the models assume many factors related to debt issuance such as interest rates and revenue rate requirements that may change over the life of this project impacting the annual obligations and user rates. The model also assumes cash will be available at various points over the 15-year timeframe to pay down previously issued debt. This may not be possible based on the structure of the original debt issuances. It is not uncommon in pooled debt issuance situations such as this for there to be a prohibition on early repayment.
- System Development Fees – the projections for future system development fee revenue is based on an annual three percent increase in the fees. This is highly dependent on many factors including the will of the City Council at the time of rate increase considerations. These revenue projections are also premised upon current knowledge of pending development, but these projects may occur on different timelines or not at all.
- Cash availability – The availability of cash to pay for portions of this project will ultimately de determined by actual growth that occurs as well as future City Council policy decisions.
- Other water system capital expansion improvements – As mentioned above, these models assume system development fees are used first to fund the projected capital expansion projects, Greeley system expansion fees second and any remaining cash used to fund the NISP project. With a 15-year planning horizon, the funding included in the model for capital expansion projects was based on an estimate and historical averages in some cases.

As staff has discussions with prospective developers on more clear development plans, these capital needs will likely change and may impact the assumptions in the models.

Assumptions for the system development fee revenue and unit growth projections are based on the 2019 estimated units (320 Single Family Units) for the first 5 years, then increased by 200 single family units annually for the remaining years. A three percent inflationary factor is also built in.

The table below shows the cumulative base rate impact at the end of fifteen years for three allocation levels in NISP. The City is currently participating at the 1,600 ac-ft level but will be reducing the allocation to 1,200 ac-ft. Based on the assumptions, the 1,200 ac-ft allocation will add $35 to the City's water base rate by the end of the 15-year rate-raising period ($13 less than if the City remained at the 1,600 ac-ft level).

Estimated Base Rate Impact - Residential Per Month In 2034 for NISP Raw water, treatment plant and operations & maintenance		
1,000 Acre Feet	1,200 Acre Feet	1,600 Acre Feet
$28	$35	$48



The chart above shows the timeline of rate increases for the 1,200 ac-ft allocation. Water base rates will increase annually by about $3-$4 for the first 10 years. The final years of the timeline show a reduction in the rate-increase to $0.70/year. Overall the impact is anticipated be a cumulative increase of $35 per month.

Adoption of Resolution

Staff recommends approval of Resolution 09-219 to confirm and document the City Council's decision to reduce the City's participation level in NISP from 1,600 acre-feet to 1,200 acre-feet.

RECOMMENDATION:

Adopt Resolution No. 09-2019

SUGGESTED MOTIONS:

"I move to adopt Resolution No.09-2019"

"I move to deny the adoption of Resolution No. 09-2019"

CITY COUNCIL AGENDA REPORT

DATE:	October 5, 2020
AGENDA ITEM:	9.F
SUBJECT:	Consideration of a Memorandum of Understanding Between the City of Evans and the Colorado Department of Public Safety, Division of Fire Prevention and Control to Allow the City Building Official (SAFEBuilt) to Inspect School Buildings
PRESENTED BY:	James L. Becklenberg, City Manager Randy Ready, Assistant City Manager Anne Best Johnson, Community Development Director

AGENDA ITEM DESCRIPTION:

The State of Colorado requires all school buildings to be constructed in conformance with the building and fire codes adopted by the Division of Fire Prevention and Control within the Department of Public Safety. This requirement is outlined in Colorado Revised Statutes and applies to both building plan reviews and inspections. The State of Colorado may delegate this inspection authority to pre-qualified building departments, including the City of Evans' Building Department which is staffed through contract by SAFEBuilt.

Staff at the City of Evans, in consultation with Greeley-Evans School District 6 and SAFEBuilt, recommends proceeding with a request that SAFEBuilt be pre-qualified to conduct upcoming District 6 building plan reviews and building inspections within the City of Evans. By doing so, the time required for plan review, inspections, and issuance of Certificates of Occupancy is reduced by having a local team respond quickly and perform the necessary work. A Memorandum of Understanding is required to solidify this agreement between the City of Evans and the State of Colorado.

The attached Memorandum of Understanding has a term of three years and can be terminated with 30 days' notice unless a project is underway.

FINANCIAL SUMMARY:

The expedited building plan review and inspection processes will be more efficient and will save the School District both time and money during planning and construction of new school facilities. In addition, all permit review and building inspection fees except for electrical and plumbing inspections (that will continue to be done by State inspectors) will be paid to the City of Evans rather than to the State of Colorado, resulting in Building Department revenue that the City would not otherwise realize.

RECOMMENDATION:
Staff recommends approval of the Memorandum of Understanding between the City of Evans and the State of Colorado to allow the City of Evans (SAFEBuilt) to become a pre-qualified building department.

SUGGESTED MOTIONS:
"I move to approve the Memorandum of Understanding between the City of Evans and the State Division of Fire Prevention and Control within the Department of Public Safety and to authorize the Mayor to sign the MOU."

"I move to deny the Memorandum of Understanding between the City of Evans and the State Division of Fire Prevention and Control within the Department of Public Safety for the reasons stated."

ATTACHMENTS:
- Attachment A: Memorandum of Understanding for Prequalified Building Departments for Public School Construction
- Attachment B: List of Approved Persons

MEMORANDUM OF UNDERSTANDING
FOR PREQUALIFIED BUILDING DEPARTMENTS
FOR PUBLIC SCHOOL CONSTRUCTION
Pursuant to C.R.S. §§ 22-32-124 and 23-71-122

DFPC Reference #Evans-2020

THIS MEMORANDUM OF UNDERSTANDING ("MOU") is entered into this____day of _____ 2020, between the Colorado Department of Public Safety, Division of Fire Prevention and Control ("Division"), 690 Kipling Street, Lakewood, Colorado 80215 and the City of Evans ("PBD"), collectively referred to as the ("Parties").

1. RECITALS

1.1 Background

A. Colorado Revised Statutes ("C.R.S.") §§ 22-32-124 and 23-71-122 require that all buildings and structures be constructed in conformity with the building and fire codes adopted by the Director of the Division of Fire Prevention and Control in the Department of Public Safety ("Division"). To assure that a building or structure is constructed pursuant to the above, the Division shall conduct the necessary plan reviews and inspections, except at the request of the affected board of education, the state charter school institute, the charter school, or the affected junior college district, the Division may delegate this responsibility to the appropriate prequalified building department of a county, town, city or city and county or to the appropriate fire department, in the location of the building or structure.

B. After the Division has reviewed the application and determined that the appropriate building department has plan reviewers and inspectors that have the necessary education, training, and experience; the Division may issue and execute a Memorandum Of Understanding ("MOU") between the local jurisdiction and the Division to conduct the necessary plan reviews, issue building permits, conduct inspections, issue certificates of occupancy, issue temporary certificates of occupancy, and take enforcement action in relation to the building and fire codes adopted by the Division to ensure that a building or structure has been constructed in conformity with Public School Construction Regulations, 8 Code of Colorado Regulations Title ("C.C.R.") 1507-30.

1.2 Purpose

The purpose of this MOU is:

a) For the Division to prequalify the building department to conduct necessary plan reviews, issue building permits, conduct inspections, issue certificates of occupancy, and issue temporary certificates of occupancy to ensure that a building or structure constructed pursuant to C.R.S. §§ 22-32-124 (1) and (1.5), and 23-71-122 (1) (v) (I) through (VII) has

been constructed in conformity with the building and fire codes adopted by the director of the Division.

b) For the prequalified building department ("PBD") to perform code reviews on building and mechanical plans, issue building permits, perform building inspections and issue certificates of occupancy for school construction projects.

c) To identify each Party's responsibilities for ensuring the construction of safe schools within the State of Colorado through compliance with C.R.S. §§ 22-32-124 and 23-71-122, and promulgated rules and regulations;

d) To formalize the cooperative working relationships between the Parties; and,

e) To provide procedures for communications, exchange of information and resolution of problems, as necessary, to carry out this MOU and the provisions of promulgated rules and regulations.

2. DEFINITIONS

2.1 "Director" means the Director of the Division of Fire Prevention and Control within the Department of Public Safety, or the Director's designee.

2.2 Authority Having Jurisdiction ("AHJ") means a city, county, Colorado political subdivision, or city and county or any other local government entity having authority to regulate building construction within its jurisdictional territory.

2.3 Prequalified Building Department ("PBD") means an AHJ or an agent thereof that has met the Division's certification standards for prequalification as a building department to conduct the necessary plan reviews, issue building permits, conduct inspections, issue certificates of occupancy, and issue temporary certificates of occupancy, and has executed this MOU with the Division.

2.4 "Certificate of Occupancy" means an official document issued by the Division or the PBD for a Public School allowing use or occupancy of the building or structure by the school district or by the institute charter school or junior college district.

3. RESPONSIBILITIES

The responsibilities of the Parties are as follows:

3.1 Responsibilities of the Division:

The Division shall:

a) Adopt nationally recognized codes and standards as promulgated by Rules in 8 CCR 1507-30.

b) Ensure that the necessary plan reviews, inspections, quality control, and quality assurance checks are performed in compliance with the statutes, rules, and regulations of the Division.

c) Prequalify the building department as having executed an MOU and has met the required certification standards in 8 CCR 1507-30.

d) Issue and maintain a list of persons the Division has approved as authorized to conduct plan reviews, inspections, and issue certificates of occupancy for public school construction projects. This list of authorized PBD persons is included and incorporated herein by reference as Appendix A of this MOU.

e) Ensure that copies of the PBD building plans are sent to the appropriate fire department and the Division for review of fire safety issues.

f) Rescind this "prequalified" status and terminate the terms of the MOU if the PBD fails to comply with this MOU, C.R.S. § § 22-32-124 and 23-71-122, or the rules and regulations of the Division.

g) Allow the PBD to take enforcement action against a board of education, state charter school institute, charter school or junior college district in relation to the nationally recognized codes and standards adopted in 8 CCR 1507-30.

3.2 Responsibilities of the PBD.

The PBD shall:

a) Conduct the necessary plan reviews and inspections, issue building permits, perform all necessary inspections including final inspections, and issue certificates of occupancy to a building or structure that has been constructed in conformity with the nationally recognized codes and standards adopted in 8 CCR 1507-30. The affected board of education, state charter school institute, charter school or junior college district, at its own discretion may opt to use the PBD that has entered into this MOU with the Division.

b) Take enforcement action against a board of education, state charter school institute, charter school or junior college district that has violated the nationally recognized codes and standards adopted in 8 CCR 1507-30.

c) Verify that the construction project is inspected by a state electrical inspector, per § 12-23-116 C.R.S., notwithstanding the fact that any incorporated town or city, any county, or any city and county in which a public school is located or is to be located has its own electrical code and inspection authority, any electrical installation in any new construction or remodeling or repair of a public school.

d) Verify that the construction project is inspected by a state plumbing inspector, per § 12-58-114.5 C.R.S., notwithstanding the fact that any incorporated town or city, any county, or any city and county in which a public school is located or is to be located has its own plumbing code and inspection authority, any plumbing or gas piping installation in any new construction or remodeling or repair of a public school.

e) Only use persons within their building department that are listed as authorized by the Division to work on board of education, state charter school institute, charter school or junior college district construction projects. This authorized list of persons is attached as Appendix A.

f) Cause copies of the building plans to be sent to the certified fire department and the Division for review of fire safety issues.

g) Issue the necessary Certificate of Occupancy prior to use of the building or structure by the board of education, state charter school institute, charter school or junior college district, if the building or structure is in conformity with the building and fire codes and standards adopted in 8 CCR 1507-30, and if the affected fire department or the Division certifies that the building or structure is in compliance with the fire code adopted by the Division in 8 CCR 1507-30.

h) Issue a Temporary Certificate of Occupancy to allow the board of education, state charter school institute, charter school or junior college district to occupy the buildings and structures, if all inspections are not completed and the building requires immediate occupancy, and if the board of education, state charter school institute, charter school or junior college district has passed the appropriate inspections that indicate there are no life safety issues.

i) Verify that inspections are complete and all known violations are corrected before the board of education, state charter school institute, charter school or junior college district is issued a Certificate of Occupancy. Inspection records shall be retained by the PBD for two years after the Certificate of Occupancy is issued.

j) Set reasonable fees and may collect these fees to offset actual, reasonable, and necessary costs of plan review and inspection of board of education, state charter school institute, charter school or junior college district construction projects. The board of education, state charter school institute, charter school or junior college district shall be notified of any adjustment of fees a minimum of thirty (30) days prior to the effective date of the change.

k) In conjunction with the Division set a date for a hearing as soon as practicable before the board of appeals in accordance with section § 24-33.5-1213.7, C.R.S., and the rules adopted by the Division pursuant to § 24-4-105, C.R.S., if the PBD and the board of trustees of a board of education, state charter school institute, charter school or junior college district disagree on the interpretation of the codes and standards of the Division.

l) Comply with the written Final Agency decision of the appeals board for the purposes of § 24-4-106, C.R.S.

m) Have the sole discretion whether to accept a public school construction project submitted to the PBD by the school district for plan reviews, inspections, issuance of building permits and certificates of occupancy, and other duties as set forth in this MOU.

4. ACCESS TO INFORMATION

Each Party shall, to the extent allowed by law, make available to each other, at no cost, information regarding board of education, state charter school institute, charter school or junior college district construction projects within its possession. Requests for information shall not impose an unreasonable resource burden on the other Party.

5. EFFECTIVE DATE AND TERM

This MOU shall be effective upon signature by the Director of the Division and shall be valid for **three (3)** years from the effective date, unless previously modified or terminated in writing by one of the Parties pursuant to the terms of this MOU.

6. TERMINATION

Either party may terminate the MOU upon 30 days written notice; however, if the PBD accepts a public school construction project for review pursuant to this MOU, the PBD may not terminate this MOU until project completion and issuance of a Certificate of Occupancy. If the PBD fails to comply with the terms and conditions of this MOU or the rules and regulations of the Division, the Division may take enforcement action, pursuant to C.R.S. 24-33.5-1213 and terminate this MOU immediately. An amendment may be mutually agreed upon in writing by the parties prior to the termination date of this MOU to allow for project completion and issuance of a Certificate of Occupancy.

7. MODIFICATIONS AND AMENDMENTS.

This MOU is subject to such modifications as may be required by changes in applicable federal or state law, or federal or state implementing rules, regulations, or procedures of that federal or state law. Any such required modification shall be automatically incorporated into, and be made a part of, this MOU as of the effective date of such change as if that change was fully set forth herein. Except as provided above, no modification of this MOU shall be effective unless such modification is agreed to in writing by both parties in an amendment to this MOU that has been previously executed and approved in accordance with applicable law.

8. ADDITIONAL PROVISIONS

8.1 Legal Authority

The Parties warrant that each possesses actual, legal authority to enter into this MOU. The Parties further warrant that each has taken all actions required by its applicable law, procedures,

rules, or by-laws to exercise that authority, and to lawfully authorize its undersigned signatory to execute this MOU and bind that Party to its terms. The person or persons signing this MOU, or any attachments or amendments hereto, also warrant(s) that such person(s) possesses actual, legal authority to execute this MOU, and any attachments or amendments hereto, on behalf of that Party.

8.2 Notice of Pending Litigation

Unless otherwise provided for in this MOU, the PBD shall notify the Division within five (5) working days after being served with a Summons, Complaint, or other pleading in a case which involves any services provided under this MOU and which has been filed in any federal or state court or administrative agency. The PBD shall immediately deliver copies of any such documents in accordance with Notice Procedures in Section 8.5. of this MOU.

8.3 Assignment and Successors

The PBD agrees not to assign rights or delegate duties under this MOU, or subcontract any part of the performance required under the MOU without the express, written consent of the State.

8.4 Adherence to Applicable Laws

At all times during the term, performance, or execution of this MOU, the PBD shall comply with all applicable federal and state laws, regulations, rules, or procedures, as these provisions currently exist or may hereafter be amended, all of which are incorporated herein by reference and made a part of the terms and conditions of this MOU.

8.5 Notice Procedure

All notices required or permitted to be given pursuant to this MOU shall be in writing and shall be deemed given when personally served or three (3) days after deposit in the United States Mail, certified mail, return receipt requested, and addressed to the following parties or to such other addressee(s) as may be designated by a notice complying with the foregoing requirements.

APPROVED PBD:

Rocco DeLuca Jr.
Building Official
City of Evans
11409 Business Park Circle Suite #350
Firestone, Colorado 80504
303-774-1388

And:

DEPARTMENT OF PUBLIC SAFETY:

Tammy Lichvar
Procurement Director
Colorado Department of Public Safety
700 Kipling St, 3rd Floor
Lakewood, CO 80215
(303) 239-5888

DFPC:
Michael Morgan
Director
Division of Fire Prevention and Control
690 Kipling Street, Suite 2000
Denver, CO 80215
(303) 239-4600

8.6 Entire Understanding

This MOU is the complete integration of all understandings between the parties. No prior or contemporaneous addition, deletion, or other amendment hereto shall have any force or effect whatsoever, unless embodied herein in writing. No subsequent notation, renewal, addition, deletion, or other amendment hereto shall have any force or effect unless embodied in a written contract executed and approved by the Parties.

8.7 Independent Contractor

No principal, agent, or employees of one Party shall be nor shall be deemed an agent or employee of the other Party.

8.8 Governmental Immunity Act

No term or condition of this MOU shall be construed or interpreted as a waiver, express or implied, of any of the immunities, rights, benefits, protection, or other provisions, of the Colorado Governmental Immunity Act, C.R.S. 24-10-101 et seq., or the Federal Tort Claims Act, 28 U.S.C. 2671 et seq., as applicable, as now or hereafter amended.

8.9 Insurance

If the PBD is a "public entity" within the meaning of the Colorado Governmental Immunity Act, CRS 24-10-101, et seq., as amended ("Act"), the PBD shall at all times during the term of this MOU maintain only such liability insurance, by commercial policy or self-insurance, as is necessary to meet its liabilities under the Act. Upon request by the Division, the PBD shall show proof of such insurance satisfactory to the Division.

9. APPROVALS

***Persons signing for the PBD hereby swear and affirm that they are authorized to act on the PBD's behalf and acknowledge that the Division is relying on their representations to that effect.**

Department of Public Safety Division of Fire Prevention and Control	PBD Name City of Evans
_____ Michael Morgan Director, Division of Fire Prevention and Control Date:_____	_____ *Name Title _____ Date:_____

APPENDIX A
LIST OF APPROVED PERSONS

Jurisdiction: City of Evans

Date: 09/29/2020

The specific duties of persons approved by DFPC to perform plan review and inspections on public school construction projects delegated through this MOU are listed below. The PBD shall only use persons within their building department that have been authorized by DFPC to work on public school construction projects. Inspectors for plan review and construction inspections shall be certified by the International Code Council, the National Fire Protection Association, or another similar national organization or have equivalent qualifications, as determined by the director of the Division.

ROCCO DELUCA, Jr – Building Official, Plans Examiner, Inspections

Barry Kramer – Plans Examiner
Brendan Pendley – Plans Examiner

Rob Adraiens – Plans Examiner, Inspections

Richard Kramer – Inspections
Richard DeBrunner - Inspections
Jason Mossman – Inspections
Michael Hougon - Inspections

CITY COUNCIL AGENDA REPORT

DATE:	October 5, 2020
AGENDA ITEM:	9.G
SUBJECT:	Public Hearing: Consideration of Ordinance Number 731-20 to Update the Official Zoning Map for the City of Evans Pursuant to Zoning Changes that Occurred in 2020 (1st Reading)
PRESENTED BY:	James L. Becklenberg, City Manager Randy Ready, Assistant City Manager Anne Best Johnson, Community Development Director

AGENDA ITEM DESCRIPTION:

The Official Zoning Map for the City of Evans needs to be updated pursuant to zoning changes that City Council has approved in recent months. These changes include: Arrowhead Zoning to Agricultural and MountainTRAX Zoning to I-3.

Providing the updated Zoning Map enables the public and staff to rely on the most current information available for decision-making and communication. Upon approval, this map will be uploaded to the City website.

This project relates most directly to two of the City Council's identified strategic goals and objectives for Evans:

1. **Creating a Diverse Economy:** The publication of the most current zoning information enables the public and staff to utilize the information for decision-making and communication.

2. **Creating a Self-Sustaining City:** The updated Official Zoning May for the City of Evans will be one of the tools used during the Comprehensive Planning process. This process will include a sustainability component where land use will be evaluated to ensure a balanced economy and self-sustaining City is the desired end goal.

FINANCIAL SUMMARY:

There are no financial obligations of the City to periodically update the Official Zoning Map for the City of Evans.

RECOMMENDATION:

Staff recommends that City Council approve Ordinance No. 731-20 to update the Official Zoning Map for the City of Evans on first reading.

SUGGESTED MOTIONS:

"I move to approve Ordinance No. 731-20 as proposed."

"I move to deny Ordinance No. 731-20 as proposed for the reasons as stated."

ATTACHMENTS:

- Attachment 1 – Ordinance No. 731-20
- The Official Zoning Map for the City of Evans dated October 1, 2020

CITY OF EVANS, COLORADO

ORDINANCE NO. 731-20

AN ORDINANCE ADOPTING THE OFFICIAL ZONING MAP FOR THE CITY OF EVANS

WHEREAS, the City Council of the City of Evans, Colorado (the "City Council"), pursuant to Colorado statute and the Evans City Charter, is vested with the authority of administering the affairs of the City of Evans, Colorado (the "City"); and

WHEREAS, City Council periodically reviews and approves applications for a Change of Zone through processes outlined in the City of Evans Municipal Code (the "Code"); and

WHEREAS, Title 18, Section 18.04.020.A provides authority to the City to maintain the location and boundaries of the districts established and illustrate such on the Official Zoning Map for the City of Evans; and

WHEREAS, Staff has prepared an updated Official Zoning Map for the City of Evans incorporating zone changes made in 2020.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF EVANS, COLORADO AS FOLLOWS:

The Official Zoning Map of the City of Evans is hereby amended reflective of the updated map dated October 1, 2020 presented for consideration.

INTRODUCED AND PASSED AT A REGULAR MEETING OF THE CITY COUNCIL OF THE CITY OF EVANS ON THIS 5TH DAY OF OCTOBER, 2020.

ATTEST: **CITY OF EVANS, COLORADO**

_____ BY: _____

Julie Kamka, City Clerk Brian Rudy, Mayor

PASSED AND ADOPTED ON A SECOND READING THIS 20th DAY OF OCTOBER, 2020.

ATTEST: **CITY OF EVANS, COLORADO**

_____ BY: _____

Julie Kamka, City Clerk Brian Rudy, Mayor

City of Evans
2020 Official Zoning Map

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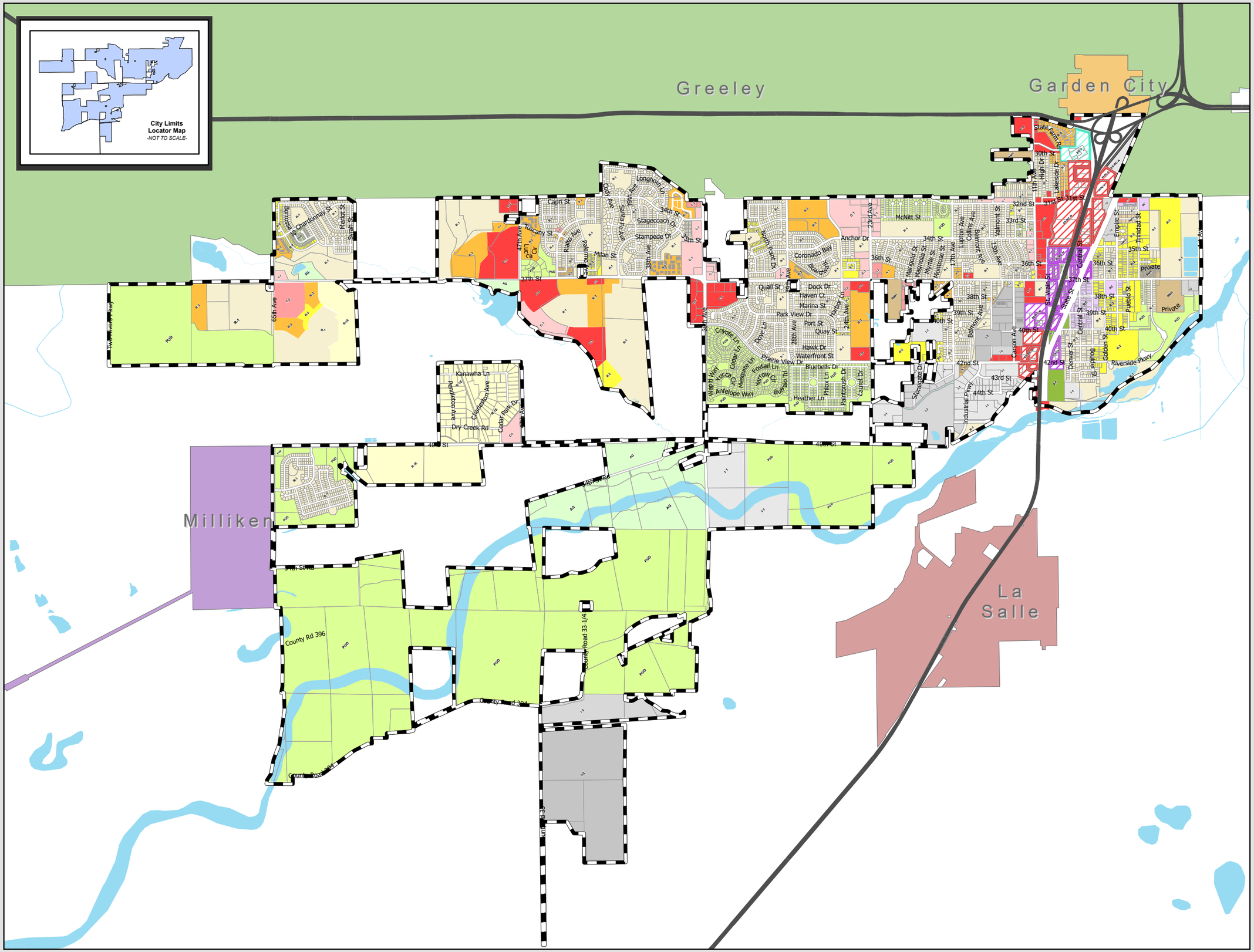
10/1/2020

Ordinance 731-20



Official Zoning Map Amendments

December 2019 - August 2020

Location	Ordinance	Date
MountainTRAXX	721-20	7/21/2020
MountainTRAXX	722-20	7/21/2020
Arrowhead	723-20	8/18/2020

Zoning Classification

- 85-O, US 85 Office District
- 85-RC-A, US 85 Retail & Commercial - Auto
- 85-RC-N, US 85 Retail & Commercial - Neighborhood
- 85-RC-R, US 85 Retail & Commercial - Regional Corridor
- AG, Agricultural
- C-1, Commercial Low Intensity District
- C-2, Commercial Medium Intensity District
- C-3, Commercial High Intensity District
- I-1, Light Industrial District
- I-2, Medium Industrial District
- I-3, Heavy Industrial District
- PF, Public Facilities
- PUD, Planned Unit Development
- RC, Residential Commercial District
- R-1E, Single-family Estate Residential District
- R-1, Single-family Residential District
- R-2, Two-family Residential District
- R-3, Multi-family Residential District
- RMFH, Residential Manufactured Housing District
- RMH, Residential Mobile Home District

Railroads

Highways

Evans City Limits

Parcels

City of Evans, Colorado

N W E S

Data Source: City of Evans GIS, Weld County GIS

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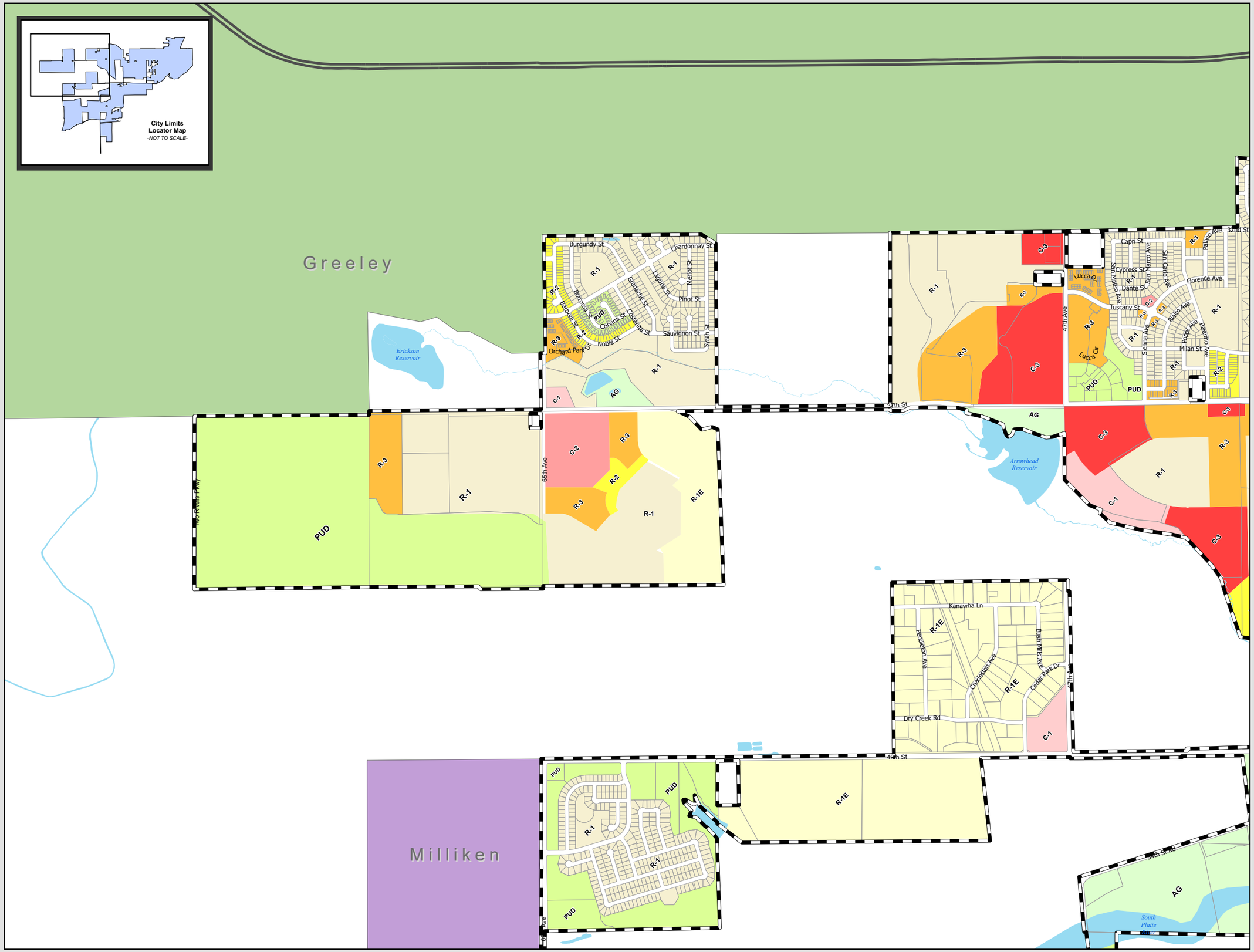

City of Evans
2020 Official Zoning Map

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10/1/2020

Ordinance 731-20

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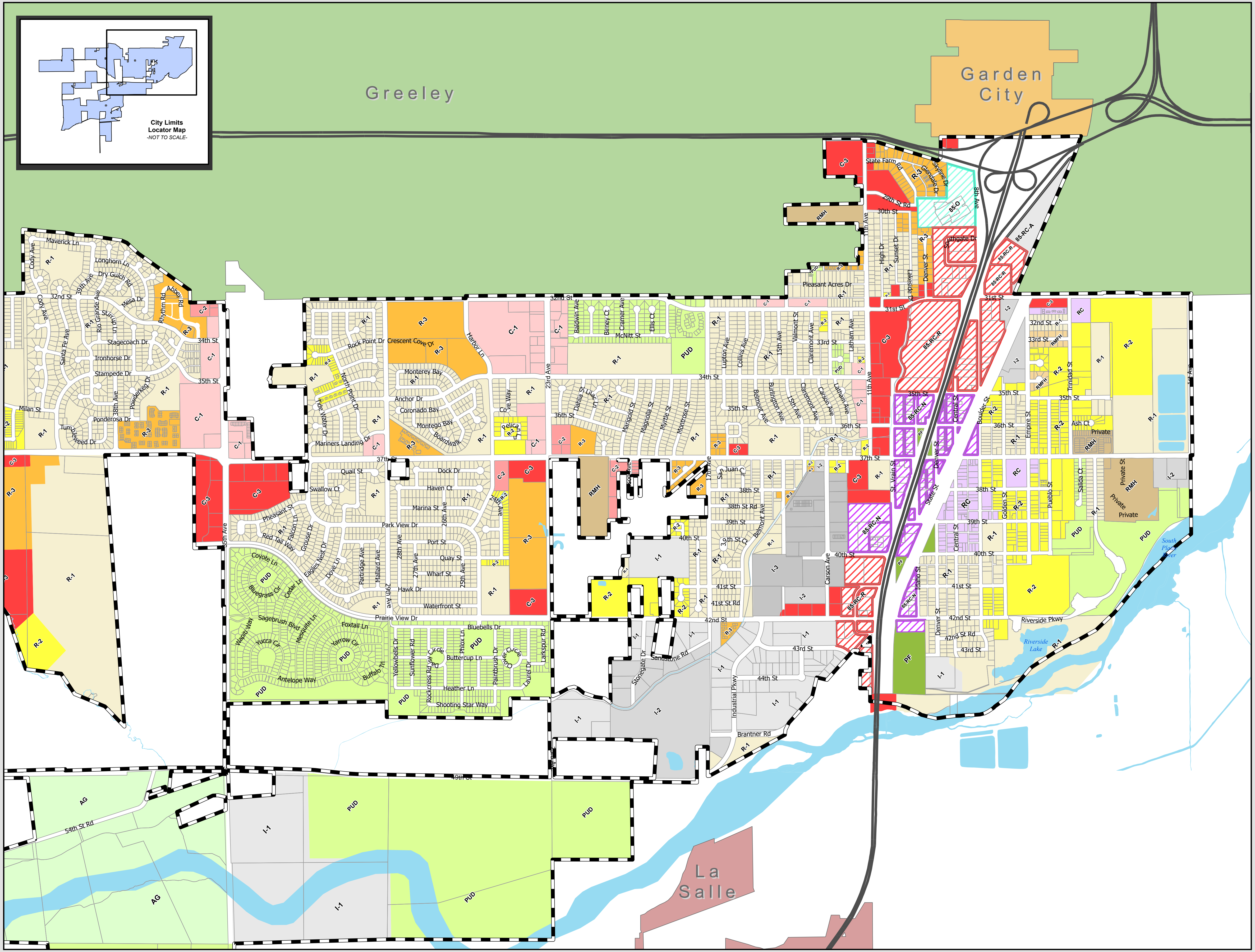

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2020 Official Zoning Map
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Ordinance 731-20

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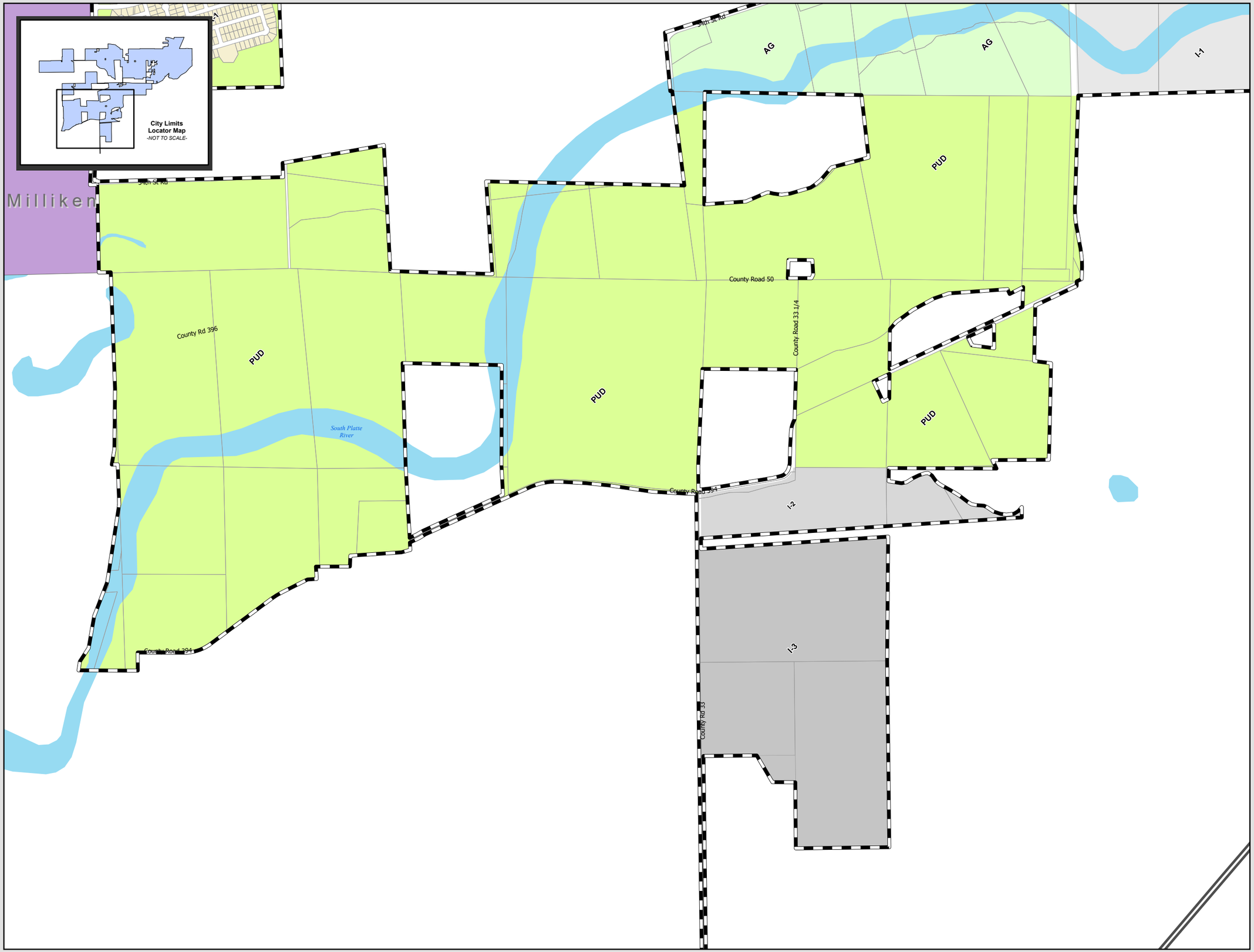
City of Evans
2020 Official Zoning Map

10/1/2020
Ordinance 731-20



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CITY OF EVANS

NOTICE OF PUBLIC HEARING

NOTICE is hereby given, that the Evans City Council will hold Public Hearings on Monday, October 5, 2020 and Tuesday, October 20, 2020 starting at 7:00 P.M. at the Evans Community Complex, Council Chambers, 1100 37th Street, Evans, CO, to adopt the zoning map inclusive of changes of zone applications approved in 2020. The map will be adopted through Ordinance 731-20.

All persons interested in this matter may be present and may be heard. Any interested person may also file any objections to the proposed revision at any time prior to final adoption of the revision.

Additional information may be obtained from the Community Development Director, Anne Best Johnson, abjohnson@evanscolorado.gov, 1100 37th Street, Evans, Colorado, between the hours of 8:00 am and 5:00 pm, Monday through Friday. The full packet and agenda information will be available for review at: www.evanscolorado.gov

CITY COUNCIL AGENDA REPORT

DATE:	October 5, 2020
AGENDA ITEM:	9.H
SUBJECT:	Consideration of Award of Bid for the 2020 Pavement Marking Project
PRESENTED BY:	James L. Becklenberg, City Manager Randy Ready, Deputy City Manager Mark Oberschmidt, P.E., City Engineer

AGENDA ITEM DESCRIPTION:

The 2020 Capital Improvement Program (CIP) Budget originally included $850,000 for roadway surface treatment. Following voter approval of the new one percent sales and use tax to fund road improvements, the City Council added another $500,000 for this year's pavement management projects that had been set aside for future widening projects. Pavement marking is a vital maintenance aspect to promote roadway safety and direction through higher visibility striping and pavement symbols for City streets and intersections. Together with the asphalt chip sealing contract, concrete repair contract, and the asphalt patching contracts, already completed these contracts make up the City's pavement management program for 2020.

Pavement striping is the appropriate process to delineate driving lanes on arterial and collector streets. It has been two years since a complete coverage of our roadway striping has occurred. This year, staff has selected modified epoxy paint, as well as latex enamel paint to cover most roadways within the Evans city limits. The epoxy paint will be used on newly paved or newly chip sealed roadways while the less-expensive latex enamel paint will be used on roads that require near-future reconstruction work. Epoxy paint is a longer lasting, more durable paint that maintains its reflectivity longer than traditional latex paint. Striping inventory has increased over the last four years as staff strives to create a network of bike lanes connecting residential neighborhoods with commercial corridors as well as recreational facilities throughout the city.

Streets that staff identified as priority areas for pavement marking are noted on the attached map. Based on the budget and the bids received, the City will be able to cover most of these streets identified. The streets to be treated as part of this contract are identified on the attached vicinity maps. Some additional work may be done based on the remaining budget after the initial work is completed. Any such work areas will be identified by engineering department staff in areas similar to those currently shown.

Per the City's purchasing policies this project was advertised on BidNet and the City Website on Sept 4th and 9th, 2020. Bids were opened on Sept 16, 2020, with results as follows:

Contractor	Bid Amount
American Striping Co.	$ 120,473.95
Kolbe Striping Co.	$ 206,778.45

Both contractors submitting bids are experienced and in good standing with the City.

FINANCIAL SUMMARY:

In 2020, approximately $207,000 remains in the pavement management budget to cover the remainder of the surface treatment needs including roadway striping.

RECOMMENDATION:

Staff recommends that City Council award the 2020 Pavement Marking Project contract to American Striping Company and authorize the Mayor's signature on a contract in the amount of $120,473.95 with a contingency of $12,026.05 (about 10%) to be accessed with City Manager approval, for a total not-to-exceed amount of $132,500. This will allow the City the flexibility with the successful bidder to do some additional work at the same unit cost without exceeding the total budget.

SUGGESTED MOTIONS:

"*I move to award the 2020 Pavement Marking Project Contract to American Striping Company and to authorize the Mayor's signature on an agreement in the amount of $120,473.95 with a not to exceed amount of $132,500.*"

"I move to deny award of the 2020 Pavement Marking Project Contract."

ATTACHMENTS:

- Bid Tabulation
- Project Vicinity Maps

2020 Pavement Marking Project Bid Tabulation

		American Striping				Kolbe Striping			
Item	**Description**	**Quantity**	**Units**	**Unit Cost**	**Total**	**Quantity**	**Units**	**Unit Cost**	**Total**
	Mobilization								
1	MOBILIZATION	1	LS	$ 3,500.00	$ 3,500.00	1	LS	$ 12,000.00	$ 12,000.00
		Base Bid Total:			$ 3,500.00	**Base Bid Total:**			$ 12,000.00

Item	**Description**	**Quantity**	**Units**	**Unit Cost**	**Total**	**Quantity**	**Units**	**Unit Cost**	**Total**
	EPOXY Pavement Marking Paint								
2	CENTER LINE DOUBLE YELLOW (2 lines at 4" Width and 4" Spacing)	32,176	SF	$ 0.85	$ 27,349.60	32,176	SF	$ 1.35	$ 43,437.60
3	CENTER LINE SOLID/SKIP YELLOW (2 lines at 4" Width and 4" Spacing; 1 Solid and 1 Skip)	3,529	SF	$ 0.85	$ 2,999.65	3,529	SF	$ 1.35	$ 4,764.15
4	TWO WAY LEFT TURN SKIP YELLOW (4" Width; 10' line/30' spacing)	1,081	SF	$ 0.85	$ 918.85	1,081	SF	$ 1.35	$ 1,459.35
5	LANE LINE SOLID SINGLE WHITE (4" Width)	11,454	SF	$ 0.85	$ 9,735.90	11,454	SF	$ 1.35	$ 15,462.90
6	LANE LINE BROKEN SKIP WHITE (4" Width; 10' line/30' spacing)	5,483	SF	$ 0.85	$ 4,660.55	5,483	SF	$ 1.35	$ 7,402.05
7	CHANNELIZATION LINE - WHITE (8" Width)	1,939	SF	$ 0.85	$ 1,648.15	1,939	SF	$ 1.35	$ 2,617.65
8	TRANSITION EDGE LINE (8" Width)	150	SF	$ 0.85	$ 127.50	150	SF	$ 1.35	$ 202.50
9	"CATS PAWS" (*"Width)	100	SF	$ 0.85	$ 85.00	100	SF	$ 1.35	$ 135.00
10	BIKE LINE SOLID WHITE (4" Width)	6,332	SF	$ 0.85	$ 5,382.20	6,332	SF	$ 1.35	$ 8,548.20
11	BIKE LANE SKIP WHITE (4" Width; 2' line/4' spacing)	27	SF	$ 0.85	$ 22.95	27	SF	$ 1.35	$ 36.45
12	BIKE LANE SKIP WHITE (8" Width; 2' line/4' spacing)	84	SF	$ 0.85	$ 71.40	84	SF	$ 1.35	$ 113.40
		Base Bid Total:			$ 53,001.75	**Base Bid Total:**			$ 84,179.25

Item	**Description**	**Quantity**	**Units**	**Unit Cost**	**Total**	**Quantity**	**Units**	**Unit Cost**	**Total**
	LATEX Pavement Marking Paint								
13	CENTER LINE DOUBLE YELLOW (2 lines at 4" Width and 4" Spacing)	36,198	SF	$ 0.45	$ 16,289.10	36,198	SF	$ 0.95	$ 34,388.10
14	CENTER LINE SOLID/SKIP YELLOW (2 lines at 4" Width and 4" Spacing; 1 Solid and 1 Skip)	1,196	SF	$ 0.45	$ 538.20	1,196	SF	$ 0.95	$ 1,136.20
15	TWO WAY LEFT TURN SKIP YELLOW (4" Width; 10' line/30' spacing)	1,469	SF	$ 0.45	$ 661.05	1,469	SF	$ 0.95	$ 1,395.55
16	LANE LINE SOLID SINGLE WHITE (4" Width)	15,353	SF	$ 0.45	$ 6,908.85	15,353	SF	$ 0.95	$ 14,585.35
17	LANE LINE BROKEN SKIP WHITE (4" Width; 10' line/30' spacing)	23,536	SF	$ 0.45	$ 10,591.20	23,536	SF	$ 0.95	$ 22,359.20
18	CHANNELIZATION LINE - WHITE (8" Width)	7,784	SF	$ 0.45	$ 3,502.80	7,784	SF	$ 0.95	$ 7,394.80
19	CROSSHATCH	115	SF	$ 1.40	$ 161.00	115	SF	$ 4.00	$ 460.00
		Base Bid Total:			$ 38,652.20	**Base Bid Total:**			$ 81,719.20

Item	**Description**	**Quantity**	**Units**	**Unit Cost**	**Total**	**Quantity**	**Units**	**Unit Cost**	**Total**
	THERMOPLASTIC Pavement Marking Symbols								
20	STRIPING ERADICATION (Sand Blasting Method)	500	SF	$ 3.00	$ 1,500.00	500	SF	$ 6.50	$ 3,250.00
					$ -				$ -
21	STRIPING ERADICATION (Grinding Method)	500	SF	$ 2.00	$ 1,000.00	500	SF	$ 6.50	$ 3,250.00
					$ -				$ -
22	PREFORMED THERMOPLASTIC MARKINGS (Legends & Symbols)				$ -				$ -
	LEFT TURN ARROWS	4	EA	$ 375.00	$ 1,500.00	4	EA	$ 315.00	$ 1,260.00
	RIGHT TURN WITH STRAIGHT THRU ARROWS	4	EA	$ 525.00	$ 2,100.00	4	EA	$ 475.00	$ 1,900.00
	ONLY	4	EA	$ 425.00	$ 1,700.00	4	EA	$ 425.00	$ 1,700.00
	STOP BAR (2 Locations)	60	SF	$ 12.00	$ 720.00	60	SF	$ 12.00	$ 720.00
	CROSS WALK (11 Locations)	1400	SF	$ 12.00	$ 16,800.00	1400	SF	$ 12.00	$ 16,800.00
		Base Bid Total:			$ 25,320.00	**Base Bid Total:**			$ 28,880.00

Date	Company	Company
Official Address:		
	Signature	Signature
	Title	Title

NOTE TO BIDDERS:

- X All prospective bidders are required to submit additional price requests as specified.
- X All pavement shall be cleaned of all dirt/debris prior to the placement of pavement marking paint. This includes the removal of vegetation overhanging the edge line at all locations where necessary. All pavement cleaning shall be subsidiary to the unit prices for paint.
- X The City of Evans reserves the right to make changes in quantity values. If changes are necessary, the unit price per line item, as provided by the Contractor, will be used to determine the addition or deduction in contract cost. Reductions may be necessary in order to achieve meeting the City of Evans budget needs.
- X All pavement marking quantities are measured in square feet of paint.

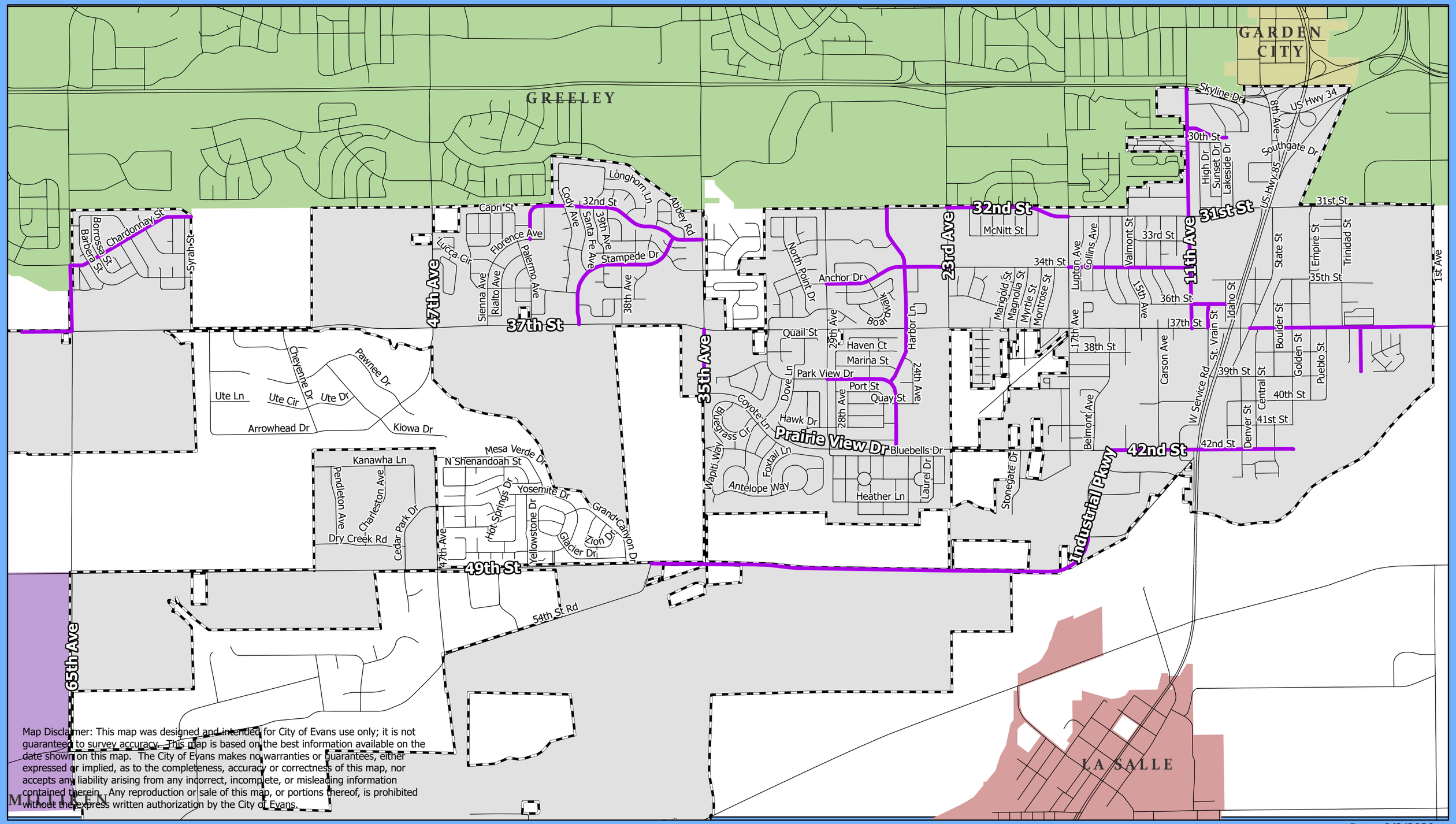
Grand Total:		$ 120,473.95	**Grand Total:**		$ 206,778.45

City of Evans, Colorado

2020 Pavement Marking Project
Epoxy Striping

Epoxy Striping Roads

N



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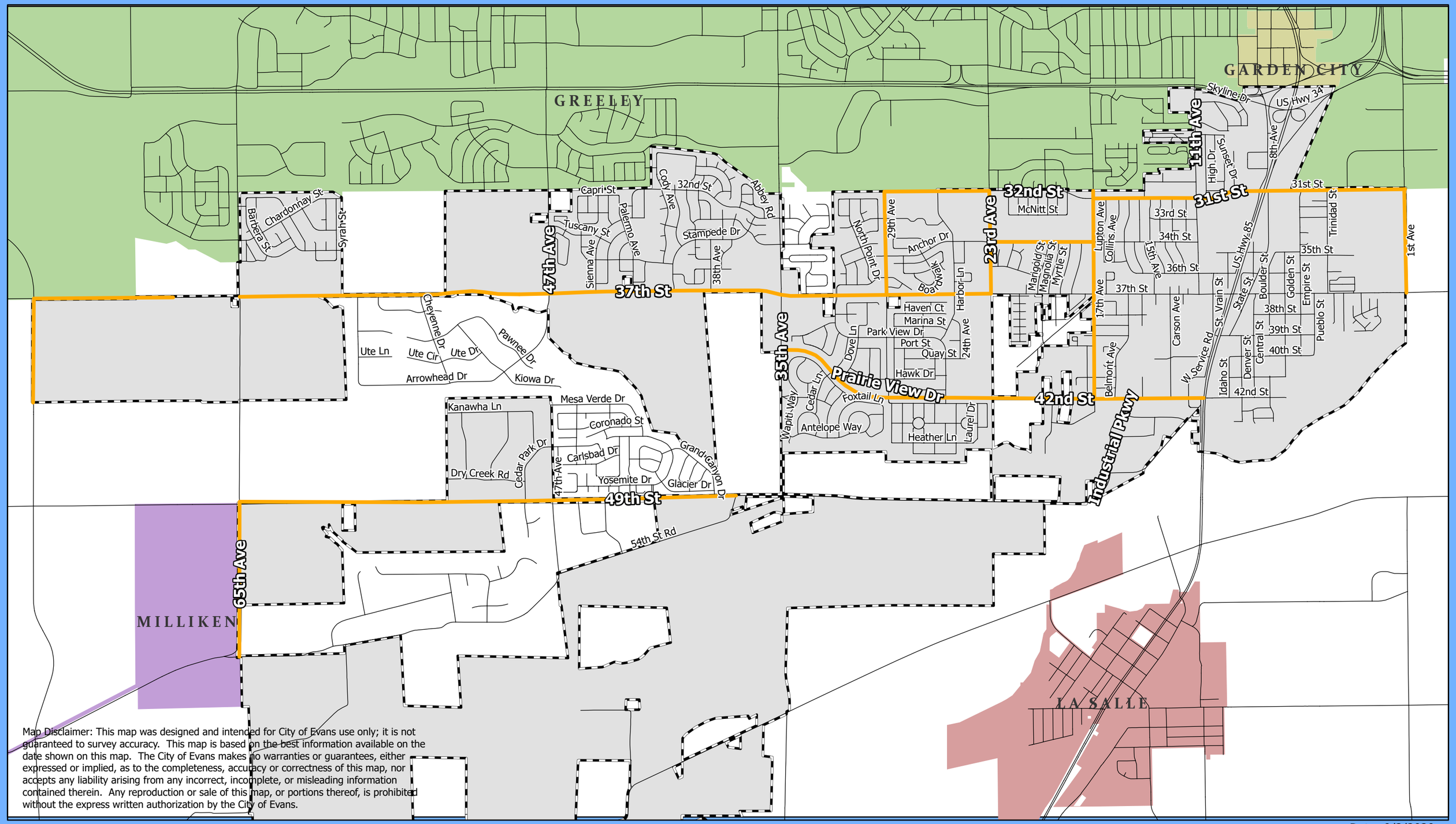
Date: 9/2/2020

City of Evans, Colorado

2020 Pavement Marking Project
Latex Striping

Roads to be Latex Striped

N



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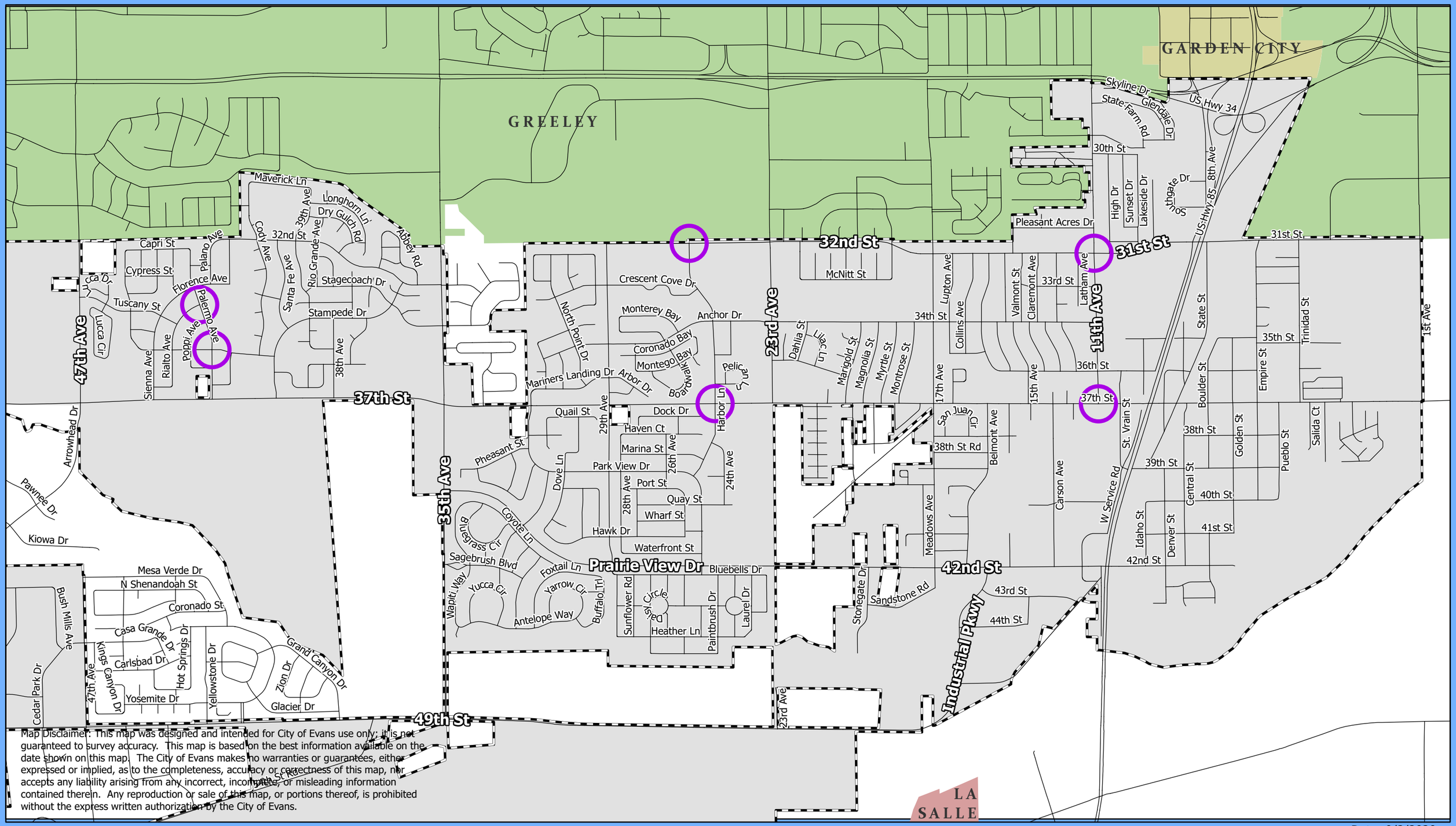
Date: 9/2/2020

City of Evans, Colorado

2020 Pavement Marking Project

Thermoplastic Pavement Markings & Symbols

N



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Date: 9/2/2020

CITY COUNCIL AGENDA REPORT

DATE: October 5, 2020

AGENDA ITEM: 9.I

SUBJECT: AN ORDINANCE AMENDING TITLE 3, CHAPTER 3.04, SUBSECTION 3.04.500.O OF THE EVANS MUNICIPAL CODE TO ALLOW THE CITY MANAGER TO DESIGNATE A HEARING OFFICER TO DETERMINE LICENSE REVOCATION

PRESENTED BY: James L. Becklenberg, City Manager
Drew Lyman, Assistant City Attorney

AGENDA ITEM DESCRIPTION:

To continue to provide for orderly, expeditious, and fair business license revocation procedures both the City Manager and City Attorney recommend that City Council amend Subsection 3.04.500.O to provide the City Manager the discretion to designate a hearing officer to perform the City Manager's duties to conduct business license revocation hearings under Section 3.04.500.O.

The proposed amendment would result in an amended Subsection 3.04.500.O to be read in its entirety as follows:

Subsection 3.04.500.O Revocation of license:

1. The City Manager may, on reasonable notice and after <u>a license revocation</u> hearing, revoke the license of any person found to have violated any provisions of this Chapter.

2. Any findings and order of the City Manager <u>or designated hearing officer</u> revoking the license of any person shall be subject to review by the District Court upon application of the aggrieved party in accordance with Rule 106(a)(4) of the Colorado Rules of Civil Procedure.

3. The City Manager <u>or designated hearing officer</u> may adopt rules and regulations governing the hearings contemplated by this Subsection.

4. <u>The business license revocation hearing shall be held before the City Manager or before a hearing officer designated by the City Manager. At the hearing, the licensee shall have the right to be present and shall have the right to assert any facts, make any arguments, and file any briefs and affidavits he or she believes pertinent to his case. The City Manager or designated hearing officer may request the City and the licensee to file written briefs or statements prior to or at the hearing in the discretion of</u>

the City Manager or designated hearing officer. The admissibility of evidence shall be encouraged, and the City Manager or designated hearing officer shall consider all evidence of probative value.

FINANCIAL SUMMARY:
There is no financial impact anticipated by the ordinance.

RECOMMENDATION:
Staff recommends that City Council adopt the proposed Ordinance 734-20 to amend Section 3.04.500.O to the Evans Municipal Code.

SUGGESTED MOTIONS:
"I move to adopt Ordinance No. 734-20 as proposed to amend Section 3.04.500.O of the Evans Municipal Code."

"I move to deny Ordinance No. 734-20 as proposed for the reasons stated."

ATTACHMENTS:
- Ordinance No. 734-20

CITY OF EVANS, COLORADO

ORDINANCE NO. 734-20

AN ORDINANCE AMENDING TITLE 3, CHAPTER 3.04, SUBSECTION 3.04.500.O OF THE EVANS MUNICIPAL CODE TO ALLOW THE CITY MANAGER TO DESIGNATE A HEARING OFFICER TO DETERMINE LICENSE REVOCATION

WHEREAS the City of Evans is a Colorado home rule municipal corporation duly organized and existing under laws of the State of Colorado and the City Charter; and

WHEREAS the City Council of the City of Evans, Colorado, pursuant to Colorado statute and the Evans City Charter, is vested with the authority of administering the affairs of the City of Evans, Colorado; and

WHEREAS the City Council seeks to provide for more orderly, expeditious, and fair business license revocation procedures by allowing the City Manager to designate a hearing officer to determine license revocation; and

WHEREAS City Council finds it necessary to provide the City Manager the discretion to designate a hearing officer or other designee for the purpose of performing any of the duties of the City Manager under Chapter 3.04, Subsection 3.04.500.O.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF EVANS, COLORADO:

Section 1. The foregoing recitals are hereby affirmed and incorporated herein by this reference as findings of the City Council.

Section 2. Title 3, Chapter 3.04, Subsection 3.04.500.O of the Evans Municipal Code is hereby by amended to read in its entirety as follows:

Title 3, Chapter 3.04, Subsection 3.04.500.O

Subsection 3.04.500.O

Revocation of license:

1. The City Manager may, on reasonable notice and after a license revocation hearing, revoke the license of any person found to have violated any provisions of this Chapter.

2. Any findings and order of the City Manager or designated hearing officer revoking the license of any person shall be subject to review by the District Court upon application of the aggrieved party in accordance with Rule 106(a)(4) of the

Colorado Rules of Civil Procedure.

3. The City Manager or designated hearing officer may adopt rules and regulations governing the hearings contemplated by this Subsection.

4. The business license revocation hearing shall be held before the City Manager or before a hearing officer designated by the City Manager. At the hearing, the licensee shall have the right to be present and shall have the right to assert any facts, make any arguments, and file any briefs and affidavits he or she believes pertinent to his case. The City Manager or designated hearing officer may request the City and the licensee to file written briefs or statements prior to or at the hearing in the discretion of the City Manager or designated hearing officer. The admissibility of evidence shall be encouraged, and the City Manager or designated hearing officer shall consider all evidence of probative value.

Section 3. If any portion of this ordinance is held to be invalid for any reason, such decision shall not affect the validity of the remaining portions of this ordinance. The City Council hereby declares that it would have passed this ordinance and each part hereof irrespective of the fact that any one part be declared invalid.

Section 4. The repeal or modification of any provision of the Municipal Code of the City of Evans by this ordinance shall not release, extinguish, alter, modify, or change in whole or in part any license revocation, conditional issuance of temporary license, penalty, forfeiture, or liability, either civil or criminal, which shall have been incurred under such provision, and each provision shall be treated and held as still remaining in force for the purpose of sustaining any and all proper actions, suits, proceedings, and prosecutions for the enforcement of the penalty, forfeiture, or liability, as well as for the purpose of sustaining any judgment, decree, or order which can or may be rendered, entered, or made in such actions, suits, proceedings, or prosecutions.

Section 5. All other ordinances or portions thereof inconsistent or conflicting with this ordinance or any portion hereof are hereby repealed to the extent of such inconsistency or conflict.

Section 6. This Ordinance, after its passage on final reading, shall be numbered, recorded, published, and posted as required by the City Charter and the adoption, posting, and publication shall be authenticated by the signature of the Mayor and City Clerk, and by the Certificate of Publication. This Ordinance shall become effective upon final passage.

INTRODUCED AND PASSED AT A REGULAR MEETING OF THE CITY COUNCIL OF THE CITY OF EVANS ON THIS _____ DAY OF _____, 2020.

ATTEST: CITY OF EVANS, COLORADO

_____ BY: _____

Julie Kamka, City Clerk Brian Rudy, Mayor

PASSED AND ADOPTED ON A SECOND READING THIS ___ DAY OF _____, 2020.

ATTEST: CITY OF EVANS, COLORADO

_____ BY: _____

Julie Kamka, City Clerk Brian Rudy, Mayor

City Managers Weekly City Council Update
October 2, 2020

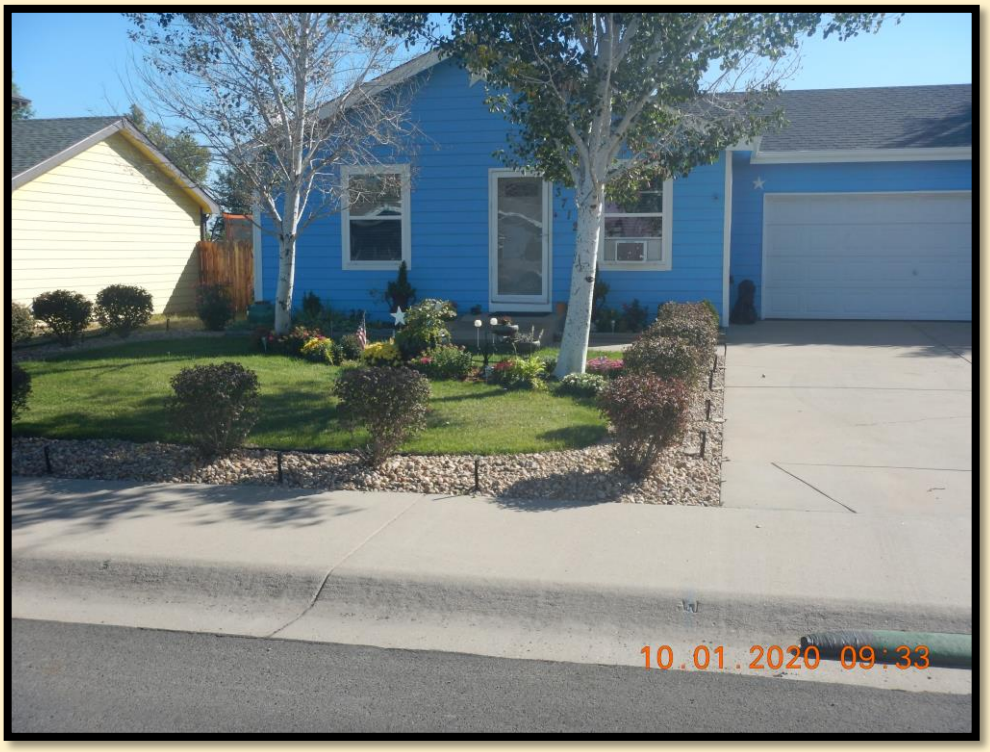
Communication	• Staff created street signs for "The Road Ahead" • Staff shot and produced video promoting Law Enforcement Torch Run • Staff produced Evans Express • Staff promoted Fall Cleanup • Staff promoted National Night Out • Staff promoted Drug Take Back Day
Finance	• Finance staff has completed production of the 2021 Operating and Capital Budget, and Council will consider the budget for adoption on October 5th. This couldn't be possible without the collaboration and support from other departments and Finance is proud of the budget presented for next year. • Work continues on securing funding for the East Side Storm Drainage capital projects. The Colorado Water Resources and Power Authority anticipates having the debt in place by the end of November. • Staff continues to work on tracking costs and receiving reimbursements from DOLA on COVID incurred expenses. • Five responses were received from independent financial auditing firms for selection of a firm to complete the required annual financial audit of the City. The Finance Committee will evaluate the top three scoring firms and recommend one for Council approval.
Human Resources/Risk Management	• Submitted acceptance documents to CIRSA to renew property and casualty insurance for 2021. • Pursuing insurance claims for damage to equipment cause by electrical power surges.
Recreation	• Monthly usage for September is at its highest point since March of this year. Punch pass users have increased a little over 20% in the last month. • The Colorado Parks and Recreation Association annual conference has been moved to a virtual experience this year. Throughout the month of October, staff will be participating in 4-5 sessions each week. • FREE tickets are available at the front desk for the 3rd Annual Trick or Treat Down the Trail. The event will be held on Saturday, October 31 at Riverside Park. Tickets and masks are required for entry.

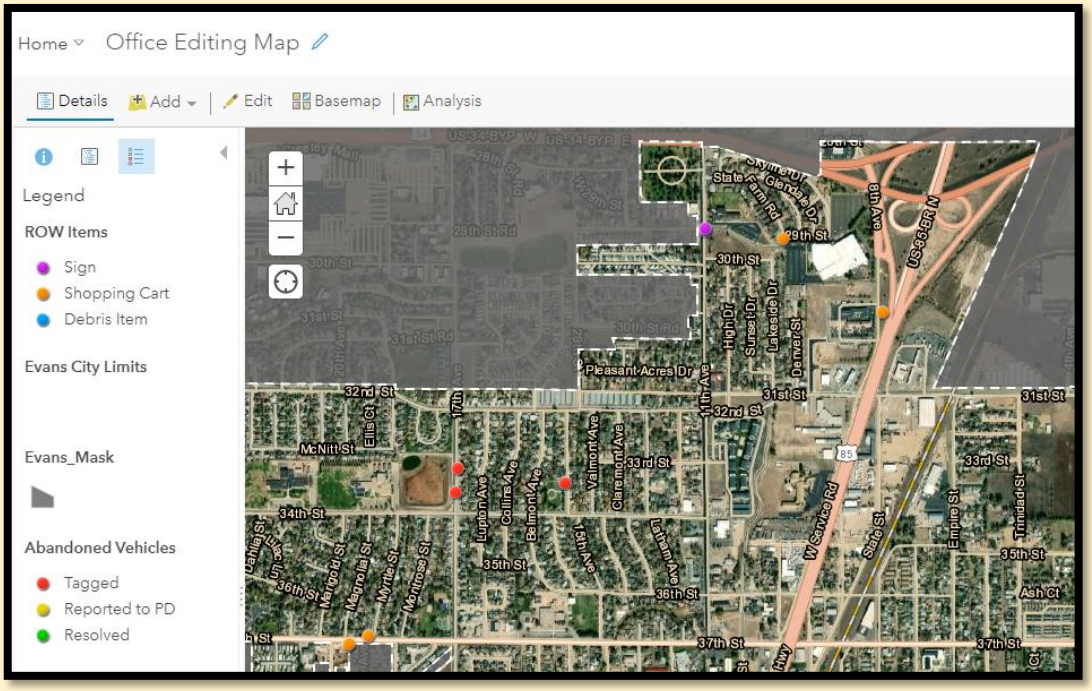
Planning

City of Evans Land Use Applications

Name	Case #/Status	Acres	Location	Brief description	PC	CC	CC
Submitted Applications							
Ridge at Prairie View Replat	20-AP-01; Second set of comments provided 8/31/20; Partial resubmittal 9/3	<1	West of Yellowbells Drive in Prairie View	Incorporating former easement/open space into lots; incorporating easement into lots	NA	TBD	TBA
ACME Oil Field Services	20-USR-01 ; 2nd Submittal comments provided to applicant	<1	Lots 1-4 and 16-18, Block 4, Evans Industrial Park		November	December	NA
H&H Excavation (Hojio)	20-SP-02; Preliminary Site Plan submittal; Pending Applicant's response to comments	<1	industrial Park	Site plan for business/storage	TBD	TBD	NA
Grapevine Hollow, Outlot 5	20-AP-03; Incomplete submittal 2/20; resubmitted 8/24 is still incomplete	<1	Grapevine Hollow	3 Lots from Outlot	TBD	TBD	TBD
6305/6307 Noble Street Minor Replat	20-AP-09; Replat for duplex; referrals are due	<1	Grapevine Hollow	Divide R-2 Lot into 2 Lots	Administrative		
Village Park Apartments	20-SPR-04; Applicant to address round 1 comments	<1	1655 37th St	4-Plex, Infill	Administrative		
Jr's Trucking	20-SP-05; First round of staff comments were provided 8/24	<1	1240 43rd Street	Truck Parking in the Industrial Park	Administrative		
Estwood Village RV Park	20-SP-06; Received 8/21; First round of staff comments to applicant 9/4; 1st resubmiottal by applicant 9/18; second comments to applicant with SIA 10/2	19.9	200 37th Street	RV Park	Administrative		
1280 Brantner Road & 4333 West Frontage Road Annexation	Application received 9/2; Additional materials needed	2+	1280 Brantner Road	Annexation and Industrial Zoning	COZ in October	Petition 10/20; Annexation and COZ in November	TBD
North Suburban Metro District	Metro District						
Approved, pending recording, Development Agreement, Etc.							
ACME Oil Field Services	Minor Replat	<1	Lots 1-4 and 16-18, Block 4, Evans Industrial Park	Lot consolidateion in Industrial Park, comments provided to applicant on September 9, 2020; waiting for application to provided document for recording.			
Crescent Cove Apartments, expansion	20-SP-01 & 20-AP-07	17.83	32nd St between 29th Ave and Harbor Lane	12 buildings, clubhouse/pool; 288 units - 72 1B, 144 2B, 72 3B; Site Plan is administratively reviewed; replatting for easement is administratively approved; Waiting for final documents and DA from applicant			
Peakview Final Plat, Filing 1	18-SUB-01	225	Two Rivers Parkway & 37th	1097 Res, 20 Acres C, 50 acres OS; Final Plat approved by CC; DA language is finalized, waiting for DA and all attachments along with Final Plat			
Kum & Go	19-AP-08	<1	US 85 & 31/32nd St.	Minor Replat due to 8th Avenue closure at US85; Awaiting plat for recording			

- Construction activities continue at BestWay2Store (37th Street & Harbor), Roasty's Coffee Shop (11th Ave & 31st Street), Ziggi's Coffee Shop (37th Avenue and 35th Street); Commonwealth Apartments (42nd Street and 23rd Avenue); and Mission Village/Habitat for Humanity (23rd Ave and Quay Street).
- Master Plan Steering Committee: Met 9/24 to discuss the future vision for Evans with the consulting team, Ayres. The 10/8 meeting will focus on Housing.
- The Master Plan topic of the month for October is Housing. Visit the link to provide your input and view results from previous months' surveys: https://www.evanscolorado.gov/masterplan/monthly-surveys
- Planning Commission: Work Session was held 9/22 to discuss proposed changes to the Code inclusive of the Sign Code and the Land Development Process (Redevelopment, Site Plans, Special Use Permits). These items will be presented for City Council consideration at upcoming Work Sessions.
- The Small Cell Code is close to finalization for presentation at an upcoming City Council meeting.

	• The IGA with CDOT has been finalized and the City is awaiting an official Notice to Proceed with the selected consultant, Fehr & Peers. An internal staff kick-off will be scheduled as soon as the Notice to Proceed is received.
Neighborhood Services	• Final preparations were made for the cleanup event including prepping the yard, delivery of dumpsters, setting up signs, and ensuring safety supplies for staff. • Supplies were provided to United Way for a volunteer trash cleanup event occurring on Friday, October 2. • The October Yard of the Month Award was presented to Joanna Autobee at 3712 Riverside Parkway.  • Staff assisted the Building Department with enforcement of multiple building code violations at one address including construction without a permit and setback violations. • Neighborhood Services continued to work with the GIS Administrator to implement ARC Collector to gather data on items managed in the right-of-way including abandoned vehicles, shopping carts, signs, and other debris.



Engineering	• 2020 Surface Treatment Project - Project Completed. Final payment to the contractor will be made October 22nd. • 2020 Pavement Marking Project – Two Bids were received and Staff is recommending award of the contract to American Striping . The bid award will go to Council on October 5th. • 47th Avenue –DeFalco constructing final manhole (Manhole #9) at the north end of 47th. Inlet construction will continue in various areas. As a separate project, H&H Construction will be raising four sanitary manholes near the south end of the project serving the NE corner of the intersection. • 23rd Avenue – XCEL completed the new pole installation but are now delayed 2 weeks due to Covid. Milestone's work will continue on the project after XCEL gets back and completes their work • Staff is working with Building Division to approve Final Grading Certificates. • The Traffic Signal for 23rd & 37th experienced a power feed failure within Xcel's system. Xcel has replaced the signal secondary electric feed wires. • Traffic Signal 34th Street / 35th Avenue – Xcel Energy has not set a transformer yet for energizing the signal and staff is working to expedite electrical power service. • XCEL 47th Avenue – XCEL has completed the design to underground the distribution lines so that these power lines can be removed from the poles and placed underground ahead of the road construction in 2021. The transmission poles will be moved out of the future roadway. • XCEL 11th Avenue – Staff is waiting to hear back from XCEL as to the schedule of the work putting the distribution lines underground between 32nd and 30th Streets. • East Side Storm Sewer – Design for 31st Street plans are continuing. Potholing should occur in the next few weeks. City has applied for a permit to hydrovac the storm sewer under the UPRR to determine the condition of the pipe. UPRR has provided comments and Staff responded to those comments • Lagoon Decommissioning – Bronco is working with their sub-contractor, Lithos Engineering, on finalizing the emergency overflow storage structure.

	• Evans Ditch flume project- Staff continues to investigate metering options to address the submergence condition of the flume with the River Commissioner's office. • Water Efficiency Plan – The draft report will be presented to Council on October 5. Following consideration by Council a Public Input process will begin. • Prairie Heights Middle School Water Dedication Credit Review- Staff has forwarded our Analysis of Consideration of Credit to the School District's consultant who will review and forward to the District for consideration. • 37th St. Overlay Project – Asphalt Specialties continues to work on the concrete removal and replacement. Asphalt replacement work will begin on October 5th • Tuscany Non-Pot – Staff is working with Finance to make sure there is adequate budget for the construction before advertising for bids. • 31st Street Project is closed out. Staff anticipates getting a check from CDOT in 1-2 weeks • Staff is working with CDOT to close out 35th Avenue project. As-builts will be completed in the next few weeks • NISP reduction of participation commitment – The agreement is complete. Signatures are being collected. A closing date will be set. · • 37th Street Widening – Staff is working with the RockSol team to start putting the plans together for the phased construction of this project from 35th to 47th Avenue over multiple years. Staff met with RockSol and Interwest to look at drainage concepts to convey the stormwater off the road. Staff is having meeting with various property owners along the route to discuss driveways and ROW acquisition. • Greeley Water Customers Transfer to Evans – The draft agreement is being considered by Greeley Sewer and Water Board. When approved the agreement will be reviewed by City of Evans. • Willowbrook Non-Potable System sale to Evans – Final agreements are being prepared. Closing is set for October 1, 2020. · Staff is working on multiple EQR requirement evaluations. · Bay at the Landings Inlet Replacement. Engineering has advertised the project to replace 6 "undersized" inlets identified in the 2016 Mueller Master Drainage Report. Bids will be received and opened on 10/8/2020. A pre bid took place on 09/24/2020. • Bay at Landings Storm Drainage Inlet Replacements – Project is advertised and bids will be received at 10 AM next Thursday (10/8/2020).
Parks	• The fence is being installed along the lake on the new open space area near Arrowhead Lake. • Turf mowing continues to be on schedule. • Weed spraying continues as weather allows. • Staff held the pre-bid meeting for the Village Park Tennis Court Replacement project.
PW Operations	• Staff are mowing detention ponds and right-of-way areas. • Staff got everything ready for fall clean-up. • Staff swept multiple streets between 11th Avenue and 35th Avenue. • Staff completed 8 work orders and responded to 12 phone inquiries for items related to water meters, high usage, and new meter installation.
Waste Water Operations	• Seasonal grounds and irrigation system maintenance is ongoing. • Staff has started hydro cleaning the sanitary sewer lines in the Neville's Crossing sub-division. • Staff continue to sample the two drainage basins for sources of high strength BOD.

	• Eckstine Electric was onsite again this week performing electrical repairs around the treatment plant.