

Memorandum

Date: September 15, 2023
To: Emily Arteché, City of Snoqualmie
From: Chris Breiland, PE, Fehr & Peers
Subject: **Option to Better Capture Development Impacts on Snoqualmie's Transportation System**

With buildout of Snoqualmie Ridge phases I and II and [pending adoption of a development agreement] for the Mill Site, the majority of future development in the City of Snoqualmie is likely to come from smaller-scale infill development, repurposing of existing commercial buildings, and redevelopment of older properties. Given that much of Snoqualmie's recent growth has been through planned unit developments, there was never an urgency to establish a more comprehensive transportation impact analysis and impact mitigation program for the City.

However, without these types of programs, Snoqualmie stands to lose out on the following:

- A rigorous system to ensure the transportation system is functioning safely and effectively for current and future residents/workers as new development occurs.
- A means to equitably and effectively ensure that new development helps to pay for the infrastructure needed to support additional demands on the transportation system.

This memorandum presents an option for Snoqualmie to address this issue in a way that will be familiar to most developers and consistent with most other jurisdictions in Western Washington.

Historic and Current Practice

When Snoqualmie Ridge was proposed, it was accompanied by an Environmental Impact Statement (EIS) prepared under Washington's State Environmental Policy Act (SEPA). SEPA requires an extensive evaluation of the impacts of any discretionary government action that has the potential to negatively impact the environment. An element of the environment included in SEPA is the transportation system (part of the built or human environmental impacts assessment).

Snoqualmie Ridge prepared EIS documents for both phases of development and as part of the EIS were measures identified to mitigate adverse impacts to the transportation system. Examples included building regional roadways, like Snoqualmie Parkway and installing traffic signals and other traffic control devices both within and around the development site. Based on these mitigation measures, the City of Snoqualmie developed a transportation mitigation plan for Snoqualmie Ridge that required a mix of construction and funding commitments for transportation improvements.

For developments outside of Snoqualmie Ridge, the scale of development generally will not trigger a SEPA analysis, although the City can request that a Transportation Impact Study (TIS) be prepared to assess potential on-site and off-site impacts.

The Problem

The challenge with the current system is that there are not formal triggers for when a TIS is required, nor what is expected to be studied in this type of evaluation. This places additional pressure on Snoqualmie staff to negotiate with developers on what is required to be studied, which could lead to inconsistent results or the potential for some developers to try and game the system.

Additionally, the City does not have a simple mechanism to ensure that developers address some of the transportation impacts caused by the development. This is particularly challenging for smaller-scale development that may not have a large individual impact, but when many small developments are taken into consideration, a substantial capital investment is needed. In practice, this often results in many developers investing nothing in the transportation system until a facility is over capacity or failing in some other way, which leave the final developer responsible to fix the entire issue—this is inherently inequitable.

Potential Solution

The challenges that Snoqualmie faces are not new and there are long-established practices to formalize transportation impact review and transportation mitigation. Notably, most jurisdictions in Western Washington have established both *Transportation Impact Study Guidelines* and a *Transportation Impact Fee Program*. These are summarized below.

- Transportation Impact Study Guidelines define the expectations of a jurisdiction for how a TIS should be executed. Typically, they include guidance on when a TIS is required and articulate different scope elements based on the size of the project. The larger the project the more complex the scope tends to be. This ensures that small projects are not saddled with expensive costs to prepare a study, but that large projects have a clearly defined

impact area that needs to be analyzed. TIS guidelines can be focused on traffic and parking impacts only or be fully multimodal.

- Example: [Spokane Valley](#) (vehicle impact only)
- Example: Olympia (multimodal)—see attachment
- Transportation Impact Fees are defined fees required of all developers (unless development is exempt under state law—applies only to affordable housing and child care centers) to pay for “system improvements” to the transportation network. Impact fees are authorized under the Growth Management Act and can be implemented by any jurisdiction. Transportation Impact Fees are a fair way for developers to pay a proportionate share into the transportation system since they are based on trip generation and scale with the size of development. Transportation Impact Fees require a specific “rate study” to establish the fee program, which defines how existing deficiencies and external growth are excluded from the fee program. Impact Fees also are required to fund a defined list of projects (included in the rate study) that is consistent with the Capital Facilities Element of the Comprehensive Plan. Transportation Impact Fees can fund virtually any type of new capacity project (they cannot be used for pure maintenance), including new roads, lanes, shoulders, traffic signals, bike lanes, bike trails, sidewalks, crosswalks, pedestrian refuge islands, etc.

Many jurisdictions in Western Washington have Transportation Impact Fee programs. Notable examples include:

- North Bend
- Duvall
- Sultan
- Carnation
- Sammamish
- Monroe
- Issaquah

This [PDF on the MRSC website](#) has a great listing and comparison of Western Washington fees. Note that some of Snoqualmie’s neighboring jurisdictions have some of the highest fees in the state (North Bend, Duvall, Sammamish, and Issaquah). These are important financing tools for these communities to build out their transportation systems.

Budget Implications

Developing TIA Guidelines is relatively straightforward and can be as simple as adapting a similar jurisdiction's to creating a more customized version for Snoqualmie. Typical cost ranges for developing TIA Guidelines are between \$6,000-\$25,000.

Transportation Impact Fee programs have a required amount of travel modeling to substantiate the fact that the program excludes existing deficiencies, external growth, establishes a nexus of the project list to growth, and charges a proportionate fee to all eligible developments. Therefore, the cost to develop these programs is not insubstantial, however, the costs can be rolled back onto the fee program itself to recoup costs over time. A basic vehicle-based Transportation Impact Fee program is generally about \$50,000 to establish. A more complex multimodal Impact Fee Program is in the \$70,000-\$100,000 range. Impact Fee Programs also include the writing of necessary ordinance language as well as establishing provisions for regular price adjustments to account for inflation.

Appendix A: Olympia TIA Guidelines

Chapter 4

TRANSPORTATION

Appendix 7 TRANSPORTATION IMPACT ANALYSIS (TIA) GUIDELINES FOR NEW DEVELOPMENTS

TRANSPORTATION PRESUBMISSION CONFERENCE REQUIREMENTS

- Description of project to include: land use with project size in residential units or building square footage.
- Site plan to include: proposed public street access, onsite parking (for vehicles and bicycles) location and internal street network.
- At the Site Plan Review Committee meeting, staff will indicate if a subsequent Transportation Impact Analysis (TIA) is required.

TRANSPORTATION IMPACT ANALYSIS SCOPING MEETING

- Retain qualified traffic engineer with a professional engineer's license.
- Prior to scoping meeting provide CP&D a TIA scoping letter to include the following:
 - a. Proposed use and size.
 - b. Trip Generation per City of Olympia Transportation Impact Fee Program Update.
 - c. Site Plan to include: proposed public street access, onsite parking location (for bicycles and vehicles) and internal street network. Indicate location of any off-site adjacent or cross street driveway or street intersections.
 - d. Provide a pm peak hour project trip assignment, based on the Thurston Regional Transportation Demand Model (360.741.2510). Indicate geographic distribution for north, south, east, and west.
 - e. Provide project year of occupancy.

TRANSPORTATION IMPACT ANALYSIS PRIOR TO PRELIMINARY PLAT

- This analysis must follow City of Olympia guidelines for a Transportation Impact Analysis (see following TIA Guidelines for New Development).
- All analysis will use a two-hour LOS and unsignalized intersection LOS will be determined by a weighted average of all intersection approaches. This will be explained further at the TIA Scoping Meeting.

A. INTRODUCTION

A Transportation Impact Analysis (TIA) is a specialized study of the impacts that a certain type and size of development will have on the surrounding transportation system. The TIA is an integral part of the development review process. It is specifically concerned with the generation, distribution, and assignment of traffic and person trips to and from the new development. **New development includes properties that are redeveloped.** The purpose of a TIA is to determine what impact development trips will have on the existing and proposed transportation network and what impact the existing and projected trips on the transportation system will have on the new development.

These guidelines have been prepared to establish the requirements for a TIA. Except as directed by other sections of the Olympia Municipal Code the Environmental Review Officer (ERO) will be the person responsible under the State Environmental Policy Act (SEPA), as well as city ordinances, for enforcing the need for a TIA. The ERO will consult with the Transportation Line of Business of the Public Works Department and, based on their recommendation, determine the need for a TIA.

B. WHEN REQUIRED

To adequately assess a new development's transportation impact on the transportation system, the ERO, based on the recommendation of the Transportation Line of Business, may require a TIA. The requirement for a TIA will be based on the size of the development proposed, existing transportation conditions, traffic volumes, transit service, pedestrian/bicycle facility conditions, queue lengths, safety analysis, community concerns, and other pertinent factors relating to transportation impacts attributable to new developments.

The ERO, based on the recommendation of the Transportation Line of Business, will make the determination as to whether a TIA will be required. As a minimum, the following guidelines will be utilized in making this decision:

1. The new development generates more than 70 person trips during the peak hour of the generator. In general, person trip generation shall be calculated using the PM peak-hour person trip generation rates in the Transportation Impact Fee Rate Study Addendum, unless a variation is approved by the Transportation Line of Business. Depending on the characteristics of the land use, the Transportation Line of Business may also identify that the peak hour of the generator does not correspond to the PM peak hour summarized in the Transportation Impact Fee Rate Study. In these cases, other sources that may be considered by the Transportation Line of Business may include person trip generation rates directly from the ITE Trip Generation Manual (although the City must determine if there are an adequate number of sites surveyed in the ITE Manual) or ITE vehicle trip generation estimates factored by the vehicle-to-person trip ratio documented in the current edition of the City of Olympia Transportation Impact Fee Rate Study. Person trips include a trip that leaves the project site by any mode (vehicle driver, vehicle passenger, walking, biking, or transit).
2. The new development distributes more than 25 percent of site-generated peak-hour vehicle traffic through a signalized intersection or the critical movement at an unsignalized intersection.
3. The new development is within an existing or proposed transportation benefit area. This may include Latecomer Agreements, Transportation Benefit Districts (TBD), Local Improvement Districts (LID), or local/state transportation improvement areas programmed for development reimbursements.
4. The new development may potentially affect the implementation of the transportation system outlined in the Transportation Element of the Comprehensive Plan, the Transportation Improvement Program, the Transportation Master Plan, or any other documented transportation project.
5. A rezone of the subject property will require a TIA prior to rezone approval.
6. The original TIA is more than two years old or where the proposed person trip generation increases by more than 10 percent.
7. If there is an identified or potential hazardous traffic condition (safety concern, including a consideration of crash history, systemic safety characteristics, long queues, or other safety concerns identified by the Transportation Line of Business).

If the ERO, based on the recommendation of the Transportation Line of Business, has made the determination to require a TIA, the general guidelines for content and structure shall follow the format outlined in Section D, Scope of Work.

C. QUALIFICATIONS FOR PREPARING TIA DOCUMENTS

A TIA shall be conducted under the direction of a responsible individual or firm acceptable to the ERO, based on the recommendation of the Director of the Transportation Line of Business, or Public Works Director, or Deputy Director of Public Works. The TIA shall be prepared by an engineer licensed to practice in the State of Washington with special training and experience in traffic engineering. The developer shall provide the ERO the credentials of the individual(s) selected to perform the TIA and review them with the Transportation Line of Business to determine if the individual or firm is qualified. Upon request, the ERO may provide the developer a list of qualified individuals to perform such work.

D. SCOPE OF WORK

The level of detail and scope of work of a TIA may vary with the size, complexity, and location of the new development. A TIA shall be a thorough review of the immediate and long-range effects of the new development on the transportation system.

1. New Development Prospectus

- a. Provide a reduced copy of the site plan, showing the type of development, street system, right-of-way limits, access points, and other features of significance in the new development. The site plan shall also include pertinent off-site information, such as locations of adjacent intersections, land use descriptions, street right-of-way limits with respect to the existing roadway, and other features of significance. Exhibit A illustrates an example site plan for reference purposes.
- b. Provide a vicinity map of the project area showing the transportation system to be impacted by the development. The map should show the surrounding roadway network with functional classifications, existing transit routes, as well as any project identified in the Transportation Master Plan. Exhibit B illustrates an example vicinity map for reference purposes.
- c. Discuss specific development characteristics, such as type of development proposed (single-family, multi-family, retail, industrial, etc.), internal street network, proposed access locations, parking requirements, zoning, and other pertinent factors attributable to the new development.
- d. Discuss project completion and occupancy schedule for the new development. Identify horizon years for traffic analysis purposes.

2. Existing Conditions

- a. Discuss street characteristics, including functional classification, number of traveled lanes, lane width, shoulder treatment, posted speed, 85th percentile speeds (if available/requested by the City), bicycle and pedestrian infrastructure, transit service and infrastructure, and traffic control at study intersections. Existing conditions descriptions should extend approximately 1/2 mile from the edge of the proposed development, as specified by the Transportation Line of Business. A figure may be used to illustrate existing transportation facilities. Identify a set of study intersections in coordination with the Transportation Line of Business; the ERO must agree to the final list of study intersections.
- b. Identify safety and access conditions, including discussions of the five-year crash history at the roadway segments, driveways, and unsignalized intersections immediately adjacent to the site and any signalized intersections within 1/2 mile of the site or as specified by the Transportation Line of Business.
- c. Obtain all available pertinent transportation data from the City of Olympia. If data is unavailable, the individual or firm preparing the TIA shall collect the necessary data to supplement the discussions and analysis in the TIA.
- d. Conduct peak-hour turning movement counts of vehicles, bicycles, and pedestrians at study intersections, if traffic volume data is more than two years old or, if after consulting with the Transportation Line of Business, it is recommended to the ERO that new counts should be conducted. A copy of the reduced data shall be attached to the TIA, when submitted to the ERO, who will distribute it for review.
- e. A figure shall be prepared showing existing average daily traffic (ADT) and peak-hour traffic volumes, posted speeds/85th percentile speeds on the adjacent streets and intersections in the study area. Complete turning movement volumes shall be illustrated as shown in Exhibit C. This figure shall represent the base-line traffic volumes for analysis purposes.

3. Development Trip Generation

This element of the TIA shall be conducted initially to identify the limits of the study area. The study area shall include all pertinent intersections and streets impacted by development traffic. The limits of the study area shall be representative of the specific conditions outlined in Section B of these guidelines.

To define study intersections and streets, a threshold requirement of development traffic exceeding 20 vehicles in the peak direction of the peak-hour traffic on the adjacent streets and intersections shall apply. The threshold requirement of the development generating 25 percent or more of site traffic through a signalized intersection or the critical movements at an unsignalized intersection shall also apply. Each intersection and street impacted as described shall be included in the study area for analysis purposes.

The individual or firm preparing the TIA shall submit to the ERO a figure illustrating the proposed trip distribution for the new development. The trip generation shall be included in a table format on the figure with peak-hour traffic volumes assigned to the study area in accordance with the trip distribution. Once approved by the ERO, based on the recommendation of the Transportation Planner, a formal scoping of the development proposal shall be conducted to clearly identify the study area and contents expected in the TIA. Exhibit D shows an example figure for reference purposes.

The methodology and procedures used in preparing the trip generation and trip distribution elements of the TIA are as follows:

a. Trip Generation

Site traffic shall be generated for daily, afternoon and/or morning peak-hour periods, using the most current Transportation Impact Fee Rate Study Addendum. The new vehicle trip rate accounts for “passer-by” traffic volume discount and is based on the ITE Trip Generation Handbook edition that is consistent with the Transportation Impact Fee (TIF) rate schedule. Variations of vehicle trip rates will require approval from the ERO, based on the recommendation of the Transportation Line of Business.

To determine if the project meets Olympia’s Transportation Concurrency standard and to assess Transportation Impact Fees, person trip generation must also be calculated for the PM peak-hour using the rates in the Transportation Impact Fee Rate Study Addendum, unless a variation is approved as noted in above in Section B subsection 1.

For assessing potential non-vehicle transportation/safety impacts (see section 4.b), trip generation for pedestrian, bicycling, and transit access trips is also required. To calculate the trip generation for these modes, the applicant can use any valid data source that is approved by the ERO, based on the recommendation of the Transportation Line of Business. However, to simplify the calculation for basic land use categories, the following data from the TRPC household travel survey (for non-commuting/home-based travel) and the US Census Bureau (for commute-oriented land uses) are acceptable. Note that an updated household travel survey from TRPC is expected in 2022 and the most recent Census data for commuting trips is always preferred.

Table X: Typical Mode Share Percentages for Estimating Mode Share

Mode	Commute Trips (source: American Community Survey 2019 5 -Year Estimates)	All Other Trips (source: 2013 TRPC Household Travel Survey)
Drive alone	The City requires the use of the TIF rate schedule for vehicle trip generation. These data are only relevant for non-vehicle modes.	
Carpool/Vanpool		
Walk	4%	8%
Bus/Public Transit/School Bus	4%	4%
Bicycle	2%	2%
Other (not specified in survey)	1%	1%

Note that the American Community Survey indicates that 6% of Olympia workers telecommuted. Since these trips do not use the network, the trips that use the transportation network were scaled up to reflect actual trip generation leaving a development site.

For multi-use and/or “phased” projects, a trip generation table shall be prepared showing proposed land use, trip rates, and person trips for daily and peak-hour periods and appropriate traffic volume discounts, if applicable, per phase. Transportation impact will be based on the cumulative effect of each phase.

b. Trip Distribution

The trip distribution for a new development shall be approved by the ERO, based on the recommendation of the Transportation Planner, prior to the formal scoping of the TIA. The methodology shall be clearly defined and discussed in detail in the TIA. Information on transportation modeling, regional distribution models, transportation analysis zones, and employment density areas are available from the Thurston County and City of Olympia Planning Departments. Available information can be used to assist in the preparation of the trip distribution model. A regional trip distribution map may be required by the ERO, based on the recommendation of the Transportation Planner, for large-scale development projects. Exhibit E shows an example figure for reference purposes.

4. Future Transportation Conditions

a. Future Transportation Conditions, Not Including Site Generated Trips

Future traffic volumes shall be estimated using information from transportation models or applying an annual growth rate to the base-line traffic volumes. The future traffic volumes shall be representative of the horizon year for project development. The ERO will work with the Transportation Line of Business to determine an appropriate growth rate, if that option is utilized.

In addition, proposed on-line development projects shall be taken into consideration, when forecasting future traffic volumes. The increase in traffic from proposed on-line projects shall be compared to the increase in traffic by applying an annual growth rate.

If modeling information is unavailable, the greatest traffic increase, from either the on-line developments or the application of an annual growth rate or a combination of an annual growth rate and on-line developments, shall be used to forecast the future traffic volumes.

New transportation infrastructure that may add non-vehicle trips adjacent to the site should also be qualitatively described. Projects include new bike lanes, bicycle corridors, pathways, trails, sidewalks, mid-block crossings, or transit services, as identified in the Transportation Master Plan and other relevant transportation documents. The ERO will work with the Transportation Line of Business to identify appropriate future non-vehicle transportation projects.

b. Future Transportation Conditions, Including Site Generated Trips

The site-generated traffic shall be assigned to the street network in the study area, based on the approved trip distribution model. The site traffic shall be combined with the forecasted traffic volumes to show the total traffic conditions estimated at development completion. A figure will be required showing daily and peak-hour turning movement volumes for each traffic study intersection. Exhibit F shows an example figure for reference purposes. In addition, a figure shall be prepared showing the base-line volumes with site-generated traffic added to the street network. This figure will represent site-specific traffic impacts to existing conditions.

In addition, the TIA will include an estimate of the peak-hour site-generated pedestrian, bicycle, and transit-access trips and a description and figures of how these trips will utilize the surrounding transportation network. For most developments, a basic description of the peak hour non-motorized trip

generation along with figures of key destinations and the routes between the development and those key destinations is sufficient. Key pedestrian and bicycle destinations are defined in the Transportation Master Plan and specifically include: schools (K-12, public and private), bus stops, parks, government/public buildings that have a public interface, grocery stores, Neighborhood Centers (as defined in the City Code), existing and planned trails, and existing and planned pathways. For example, noting and creating figures of the pedestrian routes between an office building and the closest bus stop (including any needed street crossings) would be expected. As another example, describing and creating figures of the pedestrian and bicycle routes between an apartment building and adjacent (within 1/2 mile) major off-site destinations (as identified above) would also be expected. The intent of this description is to identify the “desire lines” of pedestrians, bicycles, and transit riders and the Transportation Master Plan defined major destinations (identified above) to determine if there are adequate facilities to support convenient and safe access to those locations. Exhibit G shows an example figure for reference purposes.

5. Traffic Operations

The Level of Service (LOS) and capacity analysis shall be conducted for each pertinent intersection in the study area, as determined by the ERO, based on the recommendation of the Transportation Line of Business. The methodology and procedures for conducting the capacity analysis shall be consistent with the guidelines specified in the most current version of the Highway Capacity Manual. The individual or firm preparing the TIA shall calculate the intersection LOS for each of the following conditions:

- a. Existing peak-hour traffic volumes (figure required).
- b. Site-generated traffic (figure required).
- c. Future traffic volumes, not including site traffic (figure required).
- d. Future traffic volumes, including site traffic (figure required).
- e. LOS results for each traffic volume scenario (table required).

The LOS table shall include LOS results for morning and afternoon peak periods, if applicable. The table shall show LOS conditions with corresponding vehicle delays for signalized intersections and LOS conditions for the critical movements at unsignalized intersections. For signalized intersections the LOS conditions and average vehicle delay shall be provided for each approach and the intersection as a whole. All analysis will use a two hour LOS and unsignalized intersection LOS will be determined by a weighted average of all intersection approaches.

The capacity analysis for existing signalized intersections shall include existing phasing, timing, splits, and cycle lengths in the analysis, as observed and measured during the peak-hour traffic periods. All traffic signal system operational data will be made available by the City of Olympia.

If the new development is scheduled to be completed in phases, the TIA shall conduct an LOS analysis for each separate development phase. The incremental increases in site traffic from each phase shall be included in the LOS analysis for each preceding year of development completion. A figure will be required for each horizon year of phased development.

If the new development impacts a traffic signal coordination system currently in operation, the ERO, based on the recommendation of the Transportation Line of Business, may require the TIA to include operational analysis of the system. Timing plans and proposed modifications to the coordination system may be required.

The capacity analysis will be conducted using computer software compatible with the Transportation Line of Business’s software package. **The individual or firm preparing the TIA shall use SYNCHRO (coordinated systems) or SIDRA (roundabouts) for capacity analysis of study intersections. For unsignalized intersections, the Highway Capacity Manual methodology will be used.** A software copy of the capacity analysis worksheets will be submitted concurrently with the TIA document to the Public Works Transportation Line of Business.

Other computer software packages used for capacity analysis applications will not be accepted.

6. Mitigation

The TIA shall include a proposed mitigation plan. **LOS “E” and “F” shall be used as the threshold for determining appropriate mitigating measures on roadways and intersections in the study area. Mitigating measures may be required to the extent that the transportation facilities operated at a LOS “D” condition or better. Inside the high density residential corridor and core areas LOS “E” condition is acceptable.** At the City’s sole discretion, identified mitigating measures to improve LOS to “D” or “E” conditions may be modified or substituted for non-vehicle capacity improvements when considering potential impacts to transportation safety and other modes. For example, the TIA might indicate that a right turn lane is required for an intersection to operate at LOS “D” conditions; however, the City may elect to not implement the right turn lane because of impacts to pedestrian crossing times at the intersection or a bicycle safety conflict. In this case, the City can elect to take an “in-lieu” payment for the cost of adding the right turn lane to enhance intersection operations in other ways for better multimodal operations, which could include non-vehicle capacity improvements that are consistent with the Transportation Master Plan, Street Safety Plan or other relevant transportation studies or documents. Alternatively, the City and developer may negotiate to have the developer build a non-vehicle capacity project as mitigation for the traffic operations impact – in these cases, the cost of the mitigation or in-lieu fee will be roughly proportional to the cost of the traffic capacity mitigation.

The following guidelines shall be used to determine appropriate mitigating measures of traffic impacts generated by new developments.

- a. On transportation facilities where the need exists to construct improvements prior to occupancy of the new development, the cost for the mitigation will be entirely borne by the new development. However, in the event the ERO officer and the Transportation Line of Business identify more than one development under simultaneous review, accumulative impacts and distribution of mitigation costs may be considered. A Latecomers Agreement could be formulated by the new development for reimbursement of mitigation costs.
- b. On transportation facilities identified for new improvements that are funded by impact fees, the adverse traffic impacts of the new development will be considered mitigated by payment of the City’s Transportation Impact Fees. However, if construction of the impact-fee improvements are required to mitigate operations or safety issues that would occur as soon as the project is occupied, the City Traffic Engineer may require the new development to construct impact-fee funded improvements prior to project occupancy. In this case, the new development may request to be reimbursed for construction cost equal or less than the funds listed in the City’s CFP, not to exceed the value of the impact fees that are due from the developer.
- b. If the transportation facility currently operates less than LOS “D” (LOS “E” within high density residential corridors and core areas), the new development may be required to make interim facility improvements to maintain the existing level of service operation on the facility and to identify future facility improvements five years beyond the anticipated opening year of the new development. As noted in the main body paragraph for this section, the City could also choose to implement/require/or take a fee in-lieu to develop a non-vehicular improvement, if transportation safety or other modal operations are deemed to be a priority over adding capacity for vehicles. If agreed to by the City, the cost of the interim improvements will be deducted from the new development’s proportionate share of costs for the identified future facility improvements, only if the cost of interim improvements is less than the ultimate proportionate share. The new development also has the option to wait until the improvements are implemented by the City or other developments.
1. To calculate the proportionate share of costs, the development’s share of total person trips that would use the future facility would be determined relative to the total person trip growth using the future facility over the horizon of when the facility would be needed. For example, if a roundabout is required to be built in the next 10 years, the development’s share of person trip generation through the roundabout would be calculated against all the growth in person trips

through the roundabout forecast 10 years into the future. Note that in general, proportionate cost contributions are not required for impact fee projects.

c. Unsignalized intersections that currently operate at less than a LOS “D” condition (LOS “E” within core areas) shall be analyzed for traffic signal and intersection improvements (i.e., roundabout, exclusive left, through, or right lanes; three- or four-way stops; etc.). Unsignalized intersection LOS will be determined by the weighted average of the control delay from all movements (see Highway Capacity Manual equation 17-40 and 17-41). Provided a single lane approach is failing and the vehicle queue is four or more vehicles, exclusive turn lanes or a roundabout may be required, unless the City determines that these lanes would result in traffic safety or modal conflicts. If two or more traffic signal warrants are satisfied (minimum warrant 1, condition A or B must be met), signal/roundabout and intersection improvements may be required as a mitigating measure for the new development, unless the City identifies an alternative mitigating measure. Under no circumstance will the City’s alternative mitigating measure exceed the cost contribution of traditional signal/roundabout improvements in this case.

If at least two traffic signal warrants are not satisfied by the new development’s horizon year, the TIA shall determine if traffic signal warrants, roundabout, or other intersection improvements would be needed within a five-year period, after the new development’s horizon year. The new development could be required to provide a proportionate share cost towards future traffic signal, roundabout, and/or intersection improvements constructed to City standards, if warranted within the five-year period (and the improvement is not on the City’s impact fee project list), unless the City determines that a more appropriate mitigating measure is required to meet safety or multimodal operations needs.

In addition, if intersection LOS mitigation is needed, a roundabout will be considered, or exclusive left-turn lane warrants will be analyzed and required, as part of the intersection improvement. The City may require construction of a roundabout or exclusive left-turn lanes to address operations and safety impacts if left-turn lane warrants are met.

d. In intersections where the projected LOS condition is at “D” but where one or more of the LOS conditions on the approaches fall below LOS “D,” mitigating measures may be required to improve the capacity and traffic operations at the intersection. The City reserves the right to review all adverse traffic impacts at these intersections and to determine appropriate mitigating measures.

e. Other conditions which should be considered for mitigation:

- Facilities for safe and comfortable pedestrian and bicycle travel should be provided along the project frontage and immediately adjacent to the site as identified in the Engineering Design, Development Standards, Transportation Master Plan, or Comprehensive Plan.
- Based on the pedestrian, bicycle, or transit access desire line analysis, the developer shall work with the City to determine if any affected crossing is appropriate for a midblock crossing treatment that has not been identified in the Transportation Master Plan or any other city transportation plans. In this event, the City will identify an adequate engineering solution for the treatment (e.g., crosswalk, RRFB, median island, pedestrian signal/beacon, etc.). The developer will be required to install the midblock crossing treatment to address safety and operations impacts; although for major improvements, such as a new pedestrian traffic signal, the City may accept a proportionate payment that is calculated based on person trips using the facility, as described in section b.1 above. Because these crossings are not included in the Transportation Master Plan and therefore not part of the Impact Fee Program, no Transportation Impact Fee Credits are due for these necessary improvements to address pedestrian, bicycle, or transit access.
- The need for transit stops, bus pullouts, and shelters shall be identified if applicable. The developer will be required to install a transit shelter if daily transit boardings exceed 20 and no shelter is present.

- If a safety hazard is identified for either pedestrians, bicyclists, or vehicles, appropriate mitigating measures shall be identified to correct the deficiency. Mitigation measures shall address site access, frontage, and other high crash locations within 1/2 mile of the site.
- If a new development will adversely impact an adjacent neighborhood, measures to mitigate these impacts shall be identified.

Exhibit A: Site Plan



Exhibit B: Roadway & Transit Network

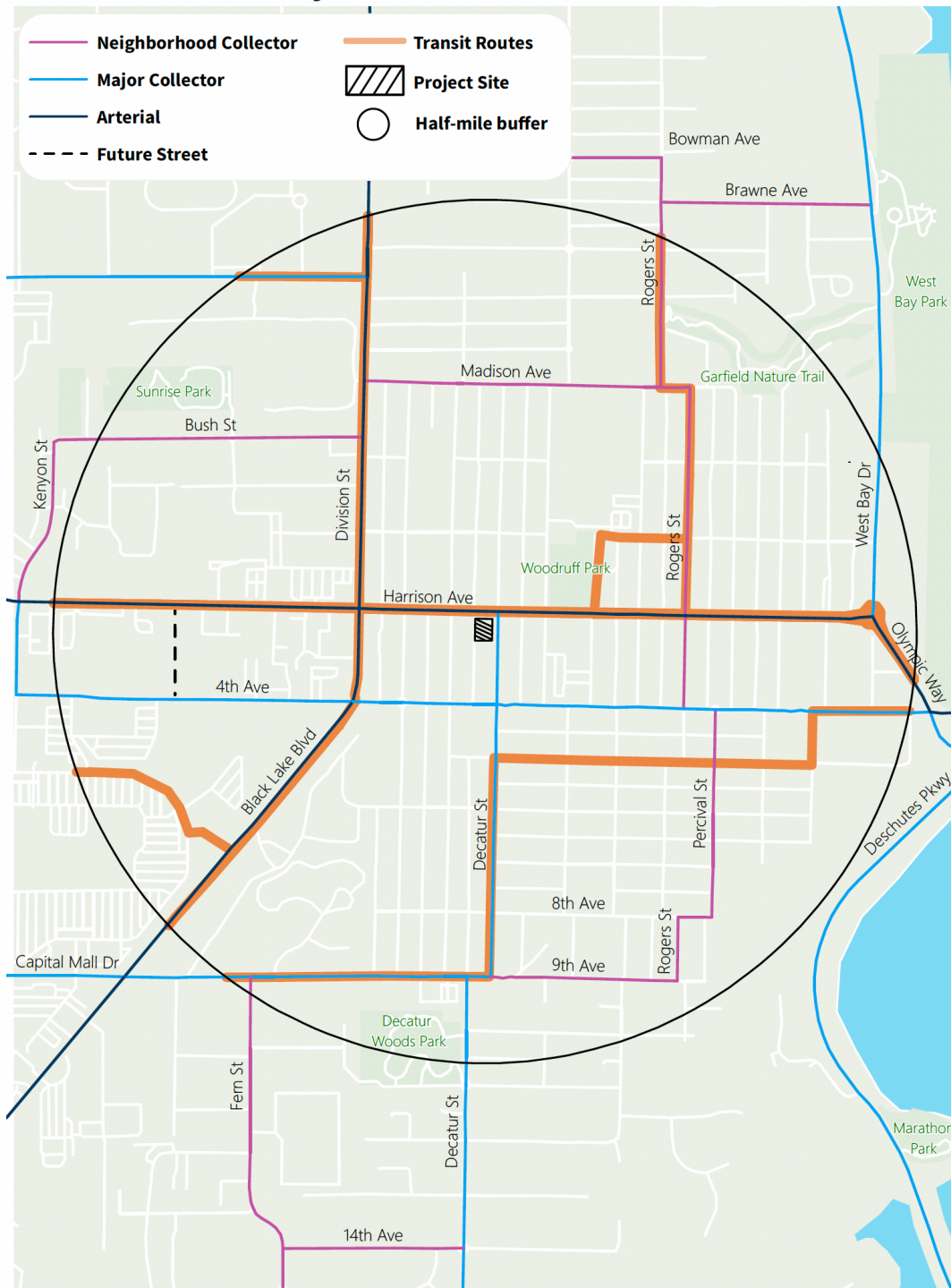


Exhibit C: Planned Facilities in TMP

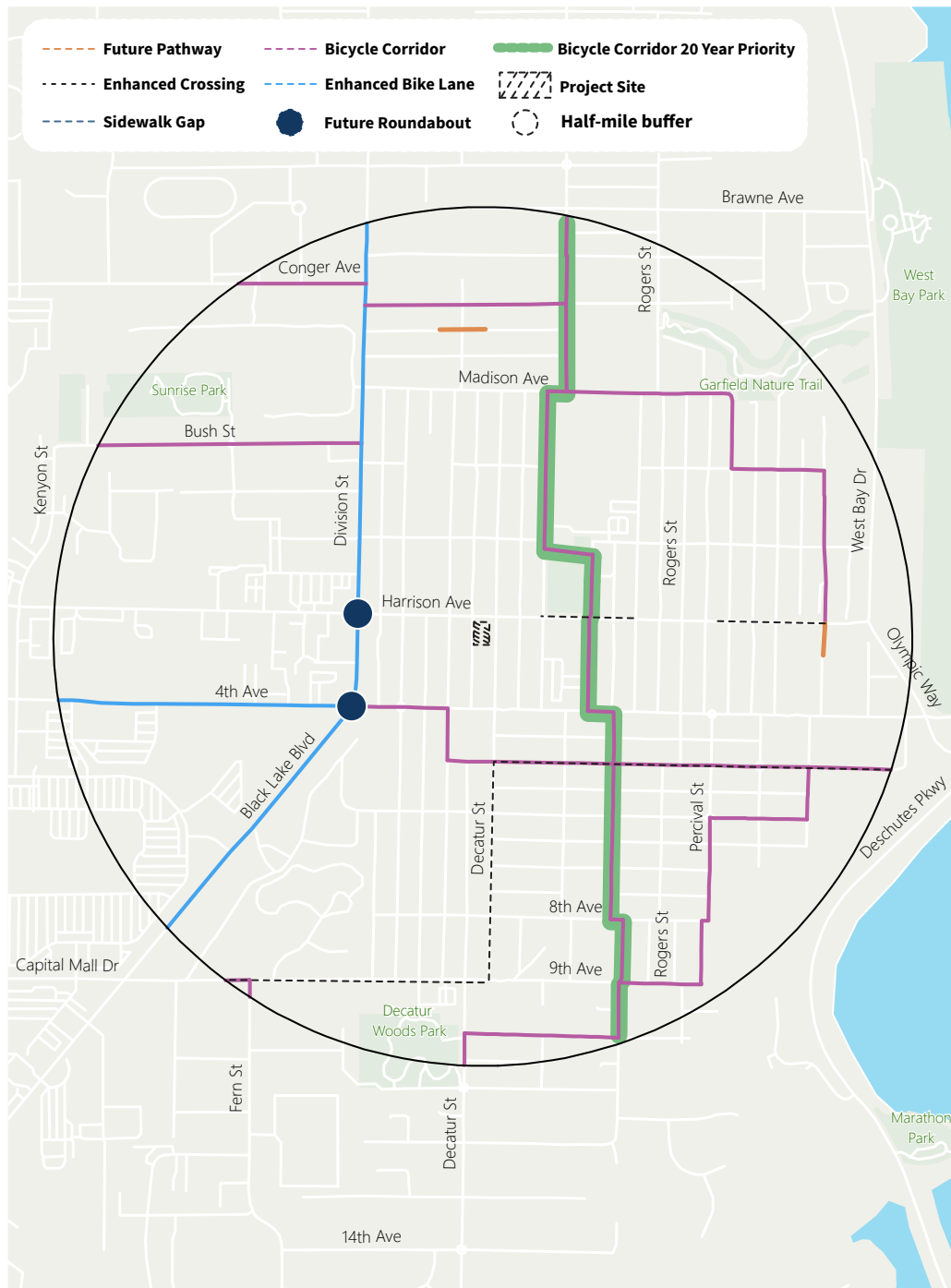


Exhibit D: Existing PM Peak Hour Turning Volumes & Average Weekday Traffic

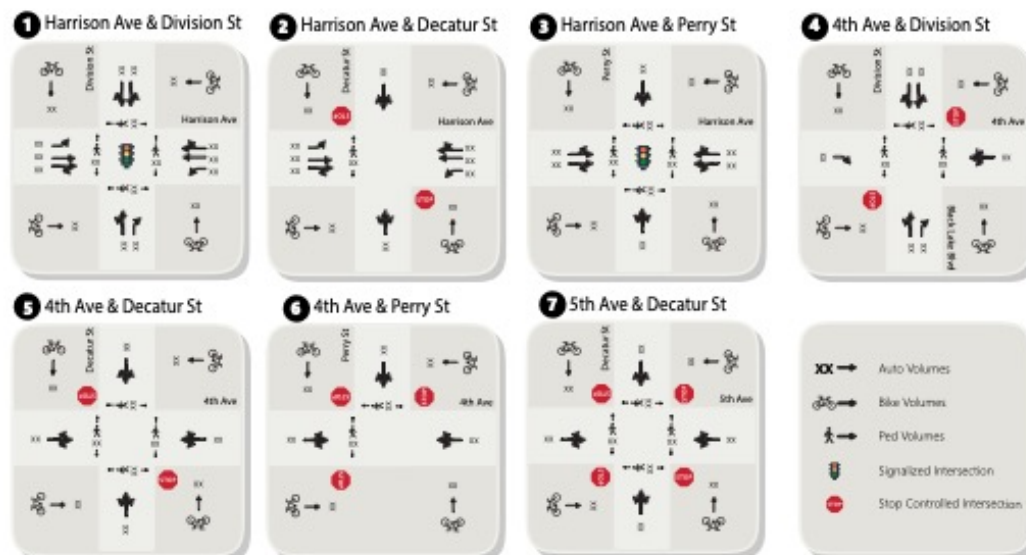
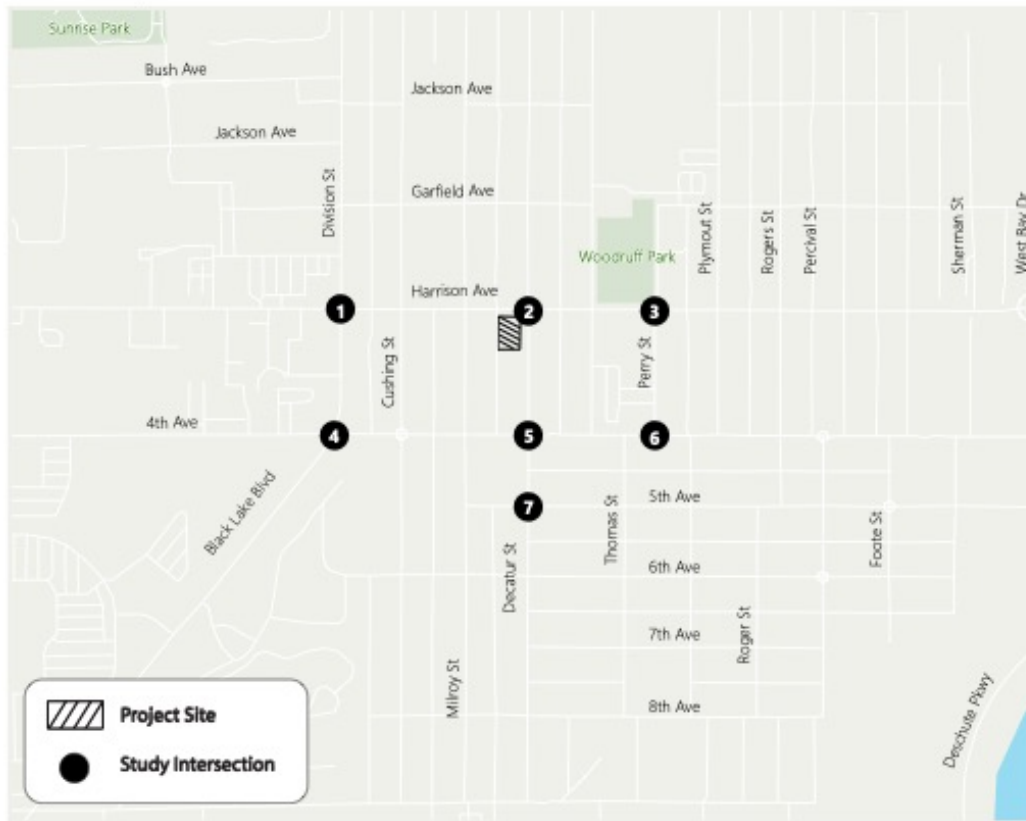
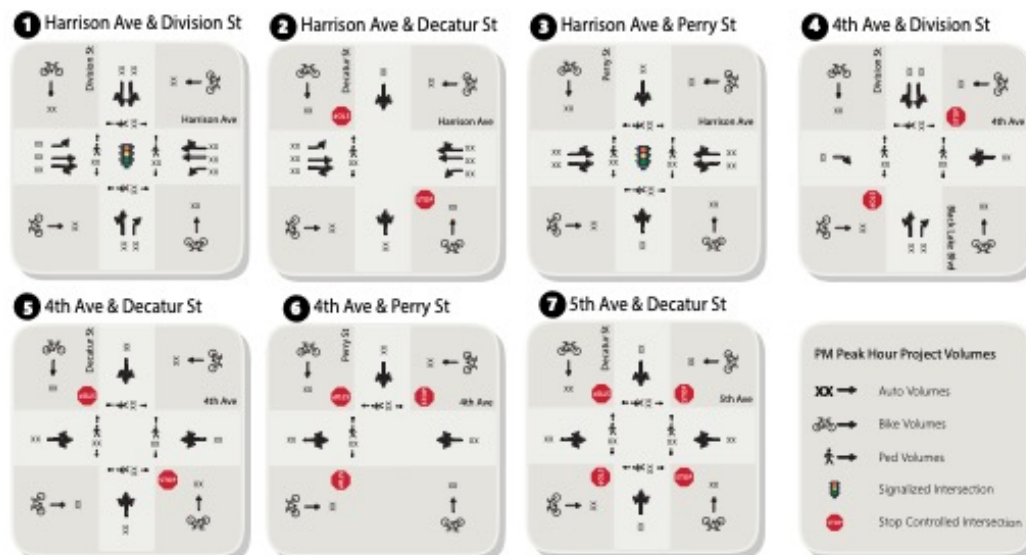
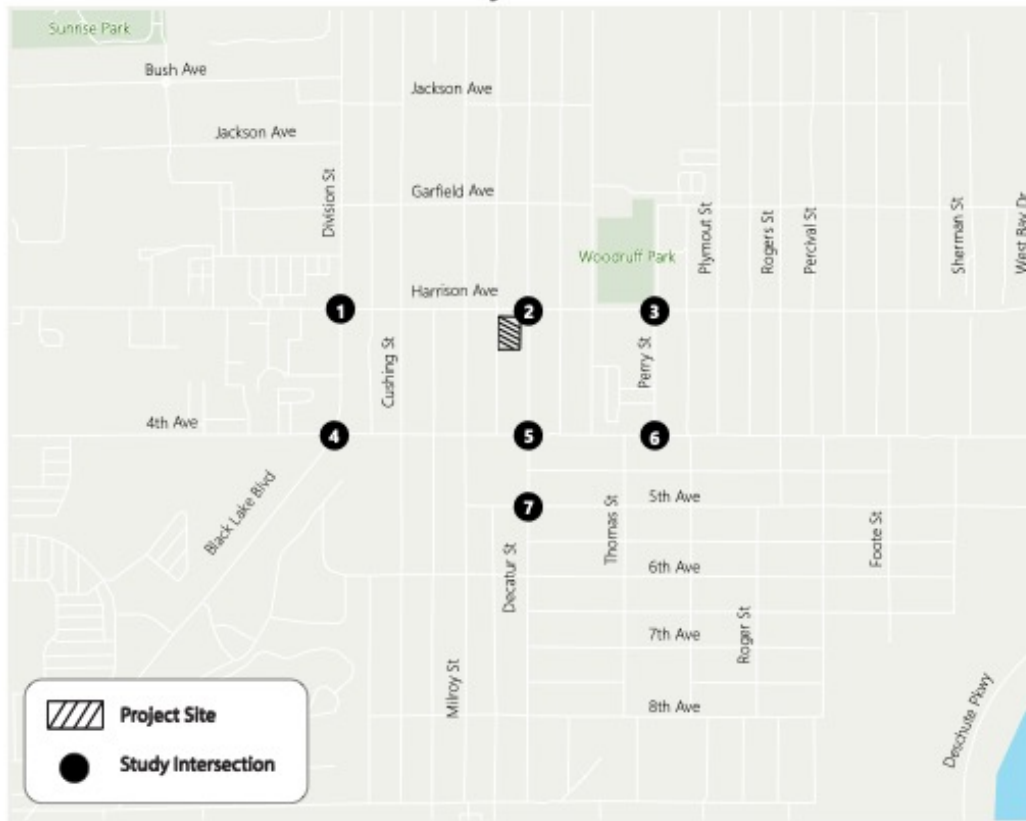


Exhibit E: PM Peak Hour Project Traffic Distribution



Project Site (indicated by a hatched box)

Project Trip Distribution (indicated by blue arrows)

Direction	Percentage
East (Harrison Ave)	40%
West (Harrison Ave)	5%
North (Garfield Ave)	10%
North-East (Conger Ave)	15%
South (Milroy St)	5%
South-West (Black Lake Blvd)	20%
East (Perry St)	5%

Exhibit G: Projected PM Peak Hour Turning Volumes & Average Weekday Traffic

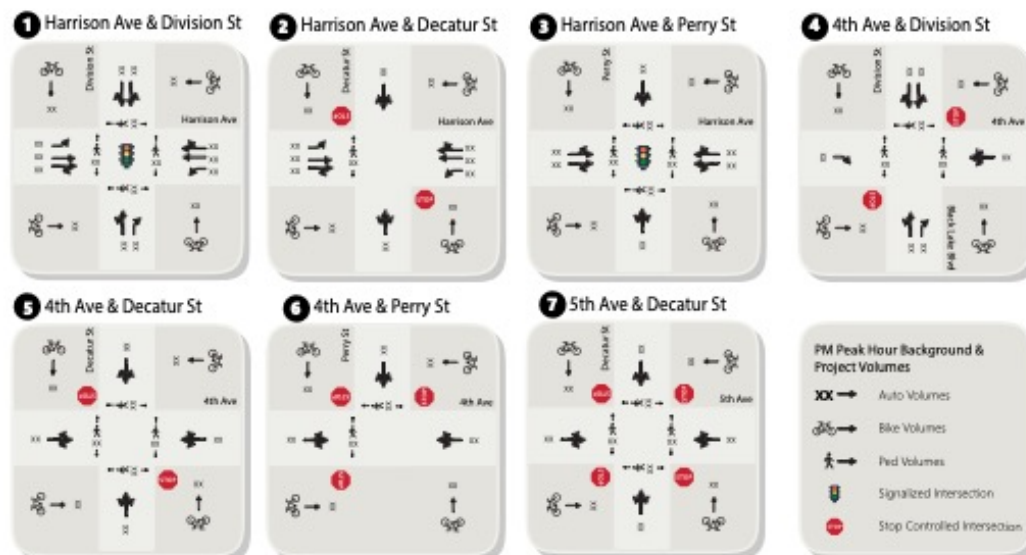
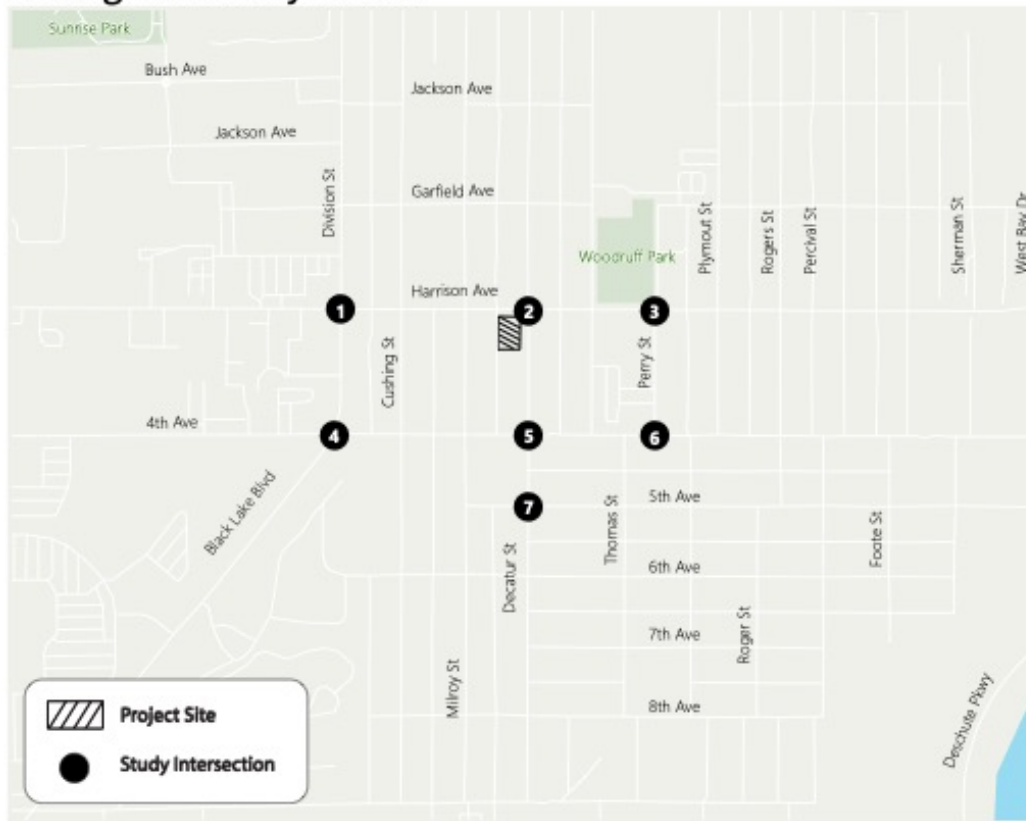


Exhibit H: Active Mode Desire Line Analysis

