After recording, return to:

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

Space Above for Recording Information Only

DEVELOPMENT AGREEMENT

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

RECITALS

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

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

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

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

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

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

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

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

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

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

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

NOW, THEREFORE, THE PARTIES HERETO AGREE AS FOLLOWS:

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

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

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

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

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

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

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

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

Section 4.2 Phasing.

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

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

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

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

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

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

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

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

Section 4.4 Specific Design Standards.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CITY OF CAMAS

By _____
Print Name _____
Title _____

LACAMAS HERITAGE PROPERTIES, LLC

By _____
Print Name _____
Title _____

SUNCAL ACQUISITIONS, LLC

By _____
Print Name _____
Title _____

[Notary Acknowledgements Following on Next Pages]

STATE OF WASHINGTON)
) ss.
County of Clark)

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

DATED: _____, 2026.

_____
NOTARY PUBLIC for Washington
My Commission Expires: _____

STATE OF WASHINGTON)
) ss.
County of Clark)

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

DATED: _____, 2026.

_____
NOTARY PUBLIC for Washington
My Commission Expires: _____

STATE OF WASHINGTON)
) ss.
County of Clark)

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

DATED: _____, 2026.

_____
NOTARY PUBLIC for Washington
My Commission Expires: _____

Exhibit A

Legal Description

MacKay Sposito

P00002.026
2/10/2026
SPD

Vancouver Office

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

EXHIBIT "A"

LEGAL DESCRIPTION

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

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

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

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

EXCEPT THEREFROM COUNTY ROAD KNOW AS MARTHEN ROAD.

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

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

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

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

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



EXHIBIT "B"

CLARK COUNTY WASHINGTON





-N-

1" = 1000'

MacKay Sposito

ENERGY PUBLIC WORKS LAND DEVELOPMENT

www.mackaysposito.com

18405 SE MILL PLAIN BLVD., SUITE 100
VANCOUVER, WA 98683
PHONE: (360) 695-3411

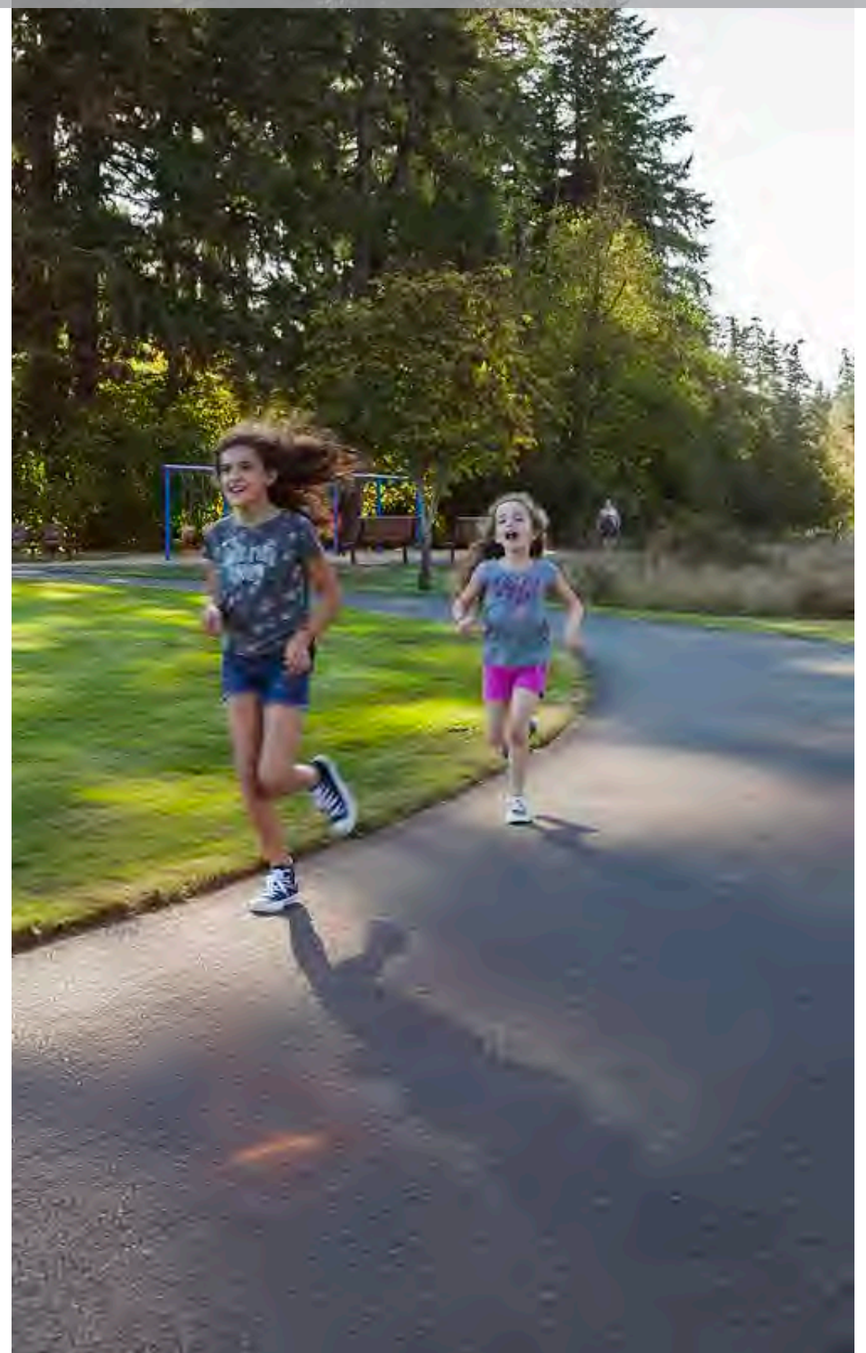
Exhibit B

Master Plan

SunCal

LACAMAS NORTH SHORE
MASTER PLAN







TEAM

SUNCAL
DEVELOPER

Nick Pappas
Matt Keenen
Matthew Vissotzky

GBD ARCHITECTS
ARCHITECT

Mark Raggett

WALKER MACY
LANDSCAPE ARCHITECT

Mike Zilis
Brian Bishop
Cameron Blakely

MACKAY SPOSITO
ENGINEER

Lindsey Perticone
Peter Tuck
Taylor Wilson

CAMAS
CITY

James Carothers
Rob Charles
Robert Maul
Alan Peters
Chris Witkowski

SETTING





OPPORTUNITIES AND CONSTRAINTS

LACAMAS LAKE

LEGACY LANDS

Mature Tree Groves & Significant Rock Outcroppings

Connections to Legacy Lands

Connection to Lacamas Elementary School

Heritage Dairy Farm Structures

Connections to Open Space

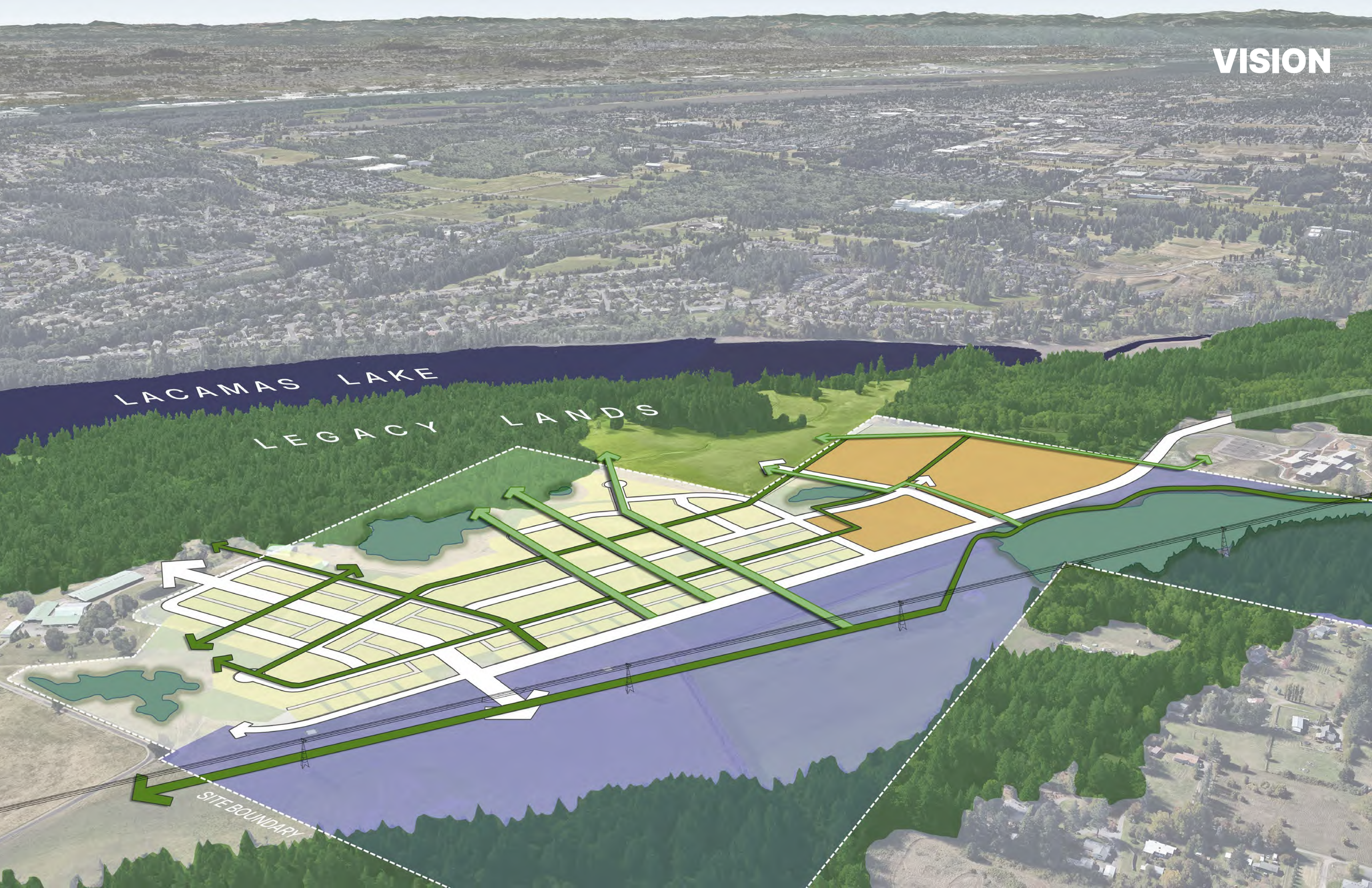
Views to Mount Hood

Power line easement

Forested Edge

SITE BOUNDARY

VISION



SITE MASTER PLAN

Lacamas Elementary School

Private Residences

TOWN CENTER

EMPLOYMENT

North Shore Boulevard

North Shore Boulevard

Plaza and Festival Street

Parking and Trailhead to Legacy Lands

LEGACY LANDS

Existing Forest

SINGLE FAMILY
TOWN CENTER
EMPLOYMENT

OPEN SPACE

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

Connection to Elementary School

Trail connection under BPA Lines

2.5 AC

1.75 AC

Plaza and Festival Street

Pocket Parks

.25 AC

.5 AC

Open stormwater facility

1.5 AC

Soft Surface Trail

2 AC

LEGACY LANDS

1.5 AC

Park over stormwater

21 AC

4 AC

Existing Forest

Mid-Block Greenways

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

POTENTIAL PUBLIC ART

DEEDED OPEN SPACE

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

Plaza and Festival Street

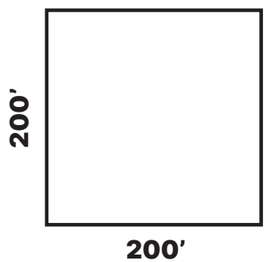
Existing Forest

PLAZA EXAMPLES

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

PIONEER SQUARE

PORTLAND, OR





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

CENTENNIAL PLAZA

REDMOND, OR





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

FEDERAL STREET PLAZA

THE DALLES, OR

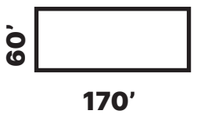


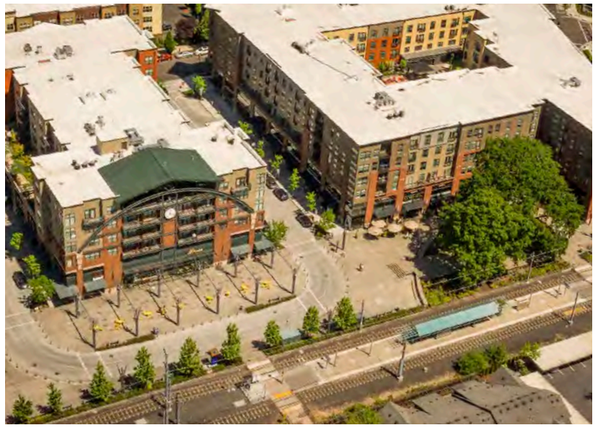


- **Splash Pad**
- **Shaded Seating**
- **Restrooms**
- **Temporary Markets**

JERRY WILEY PLAZA

HILLSBORO, OR





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

PLAZA


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

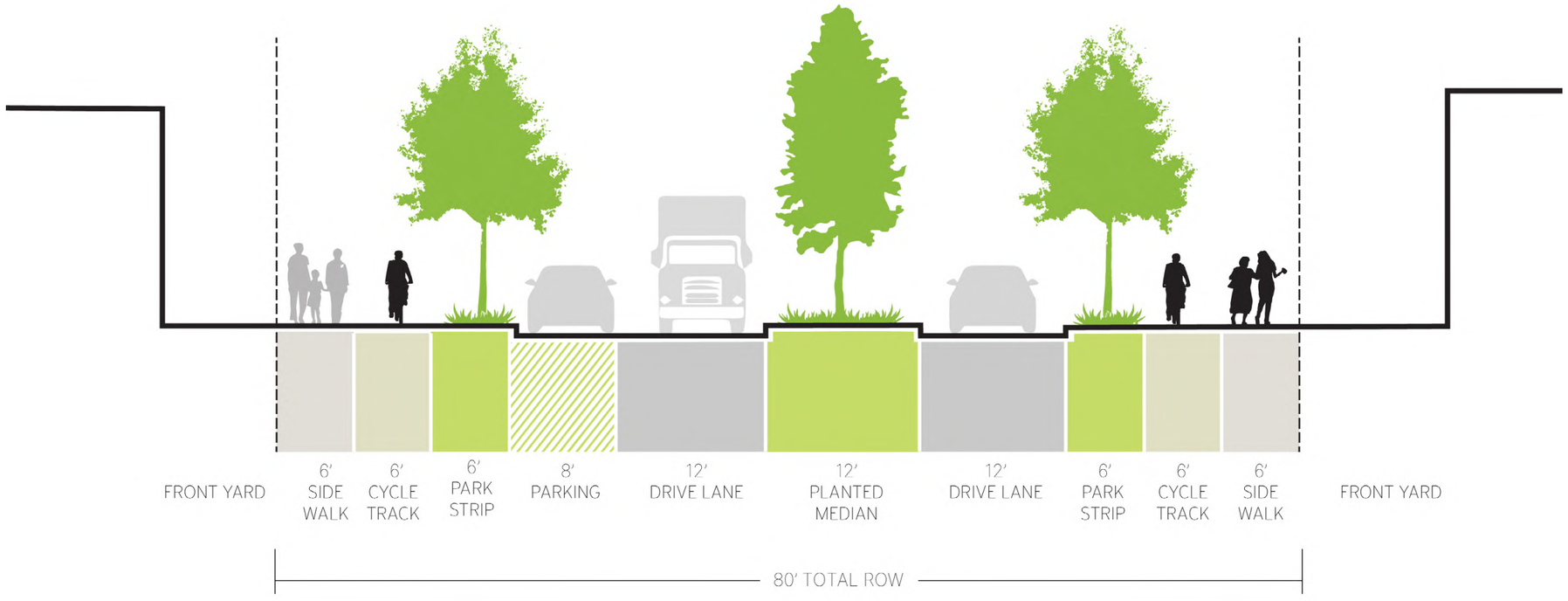
CIRCULATION

ROW Dedication

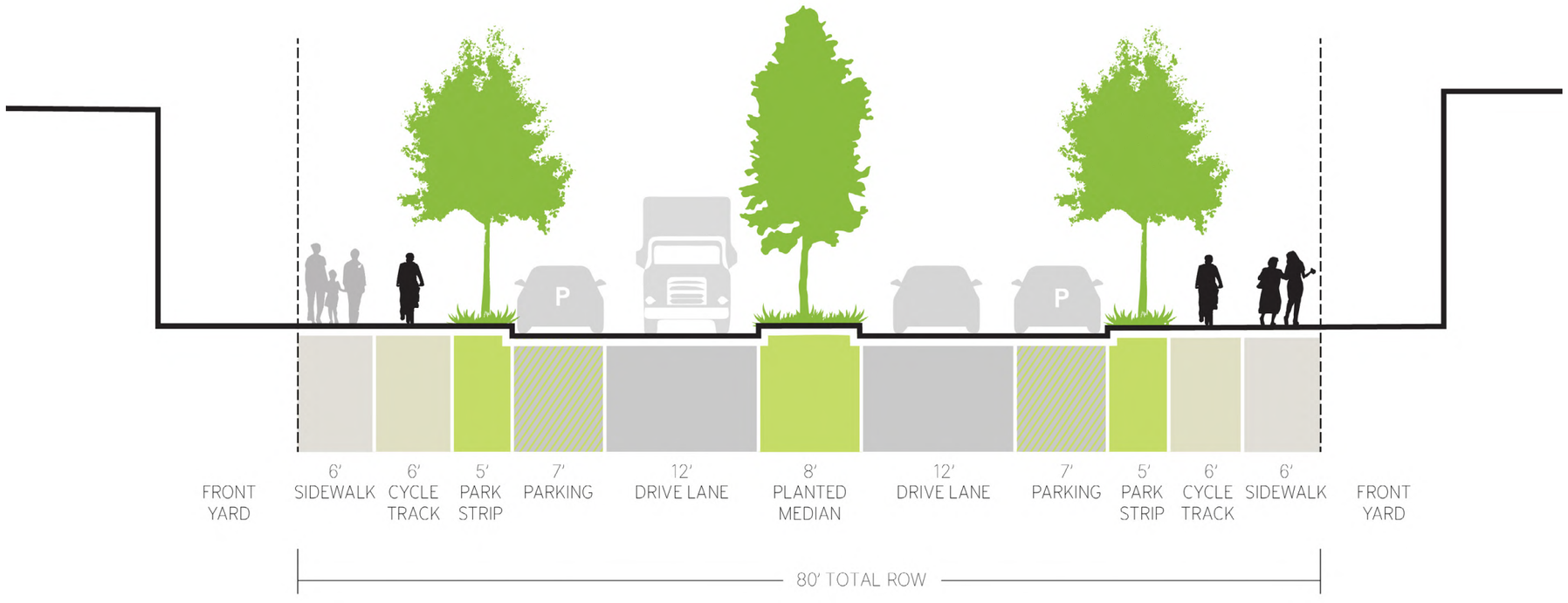
NORTHSHORE BLVD
Minor Arterial
ALLEY
(Per City Code)
LOCAL STREET
(Per City Code)
GATEWAY TO LEGACY LANDS
FESTIVAL STREET
PRIMARY PEDESTRIAN ROUTES

CIRCULATION

NORTH SHORE BOULEVARD (EAST WEST)

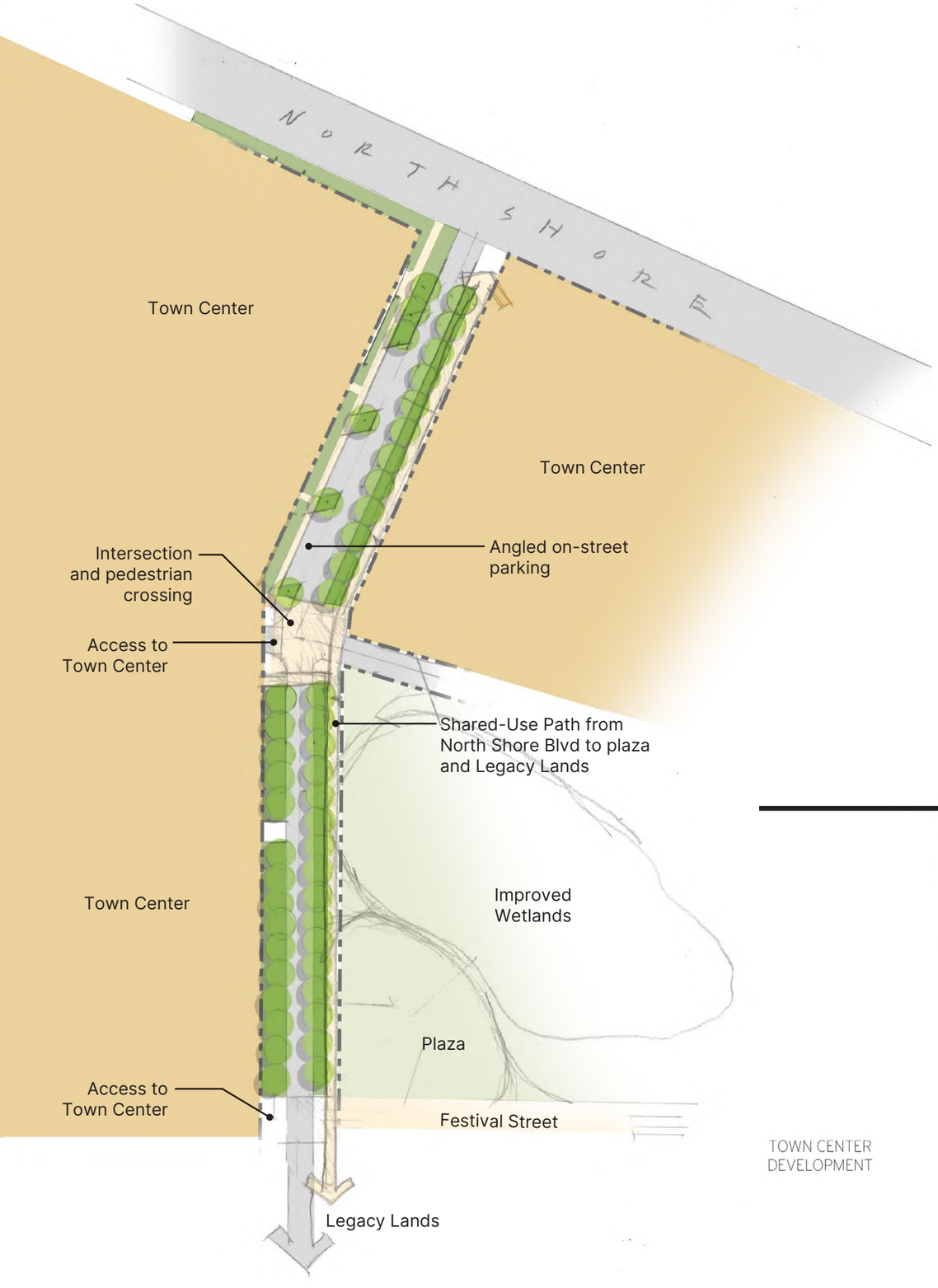


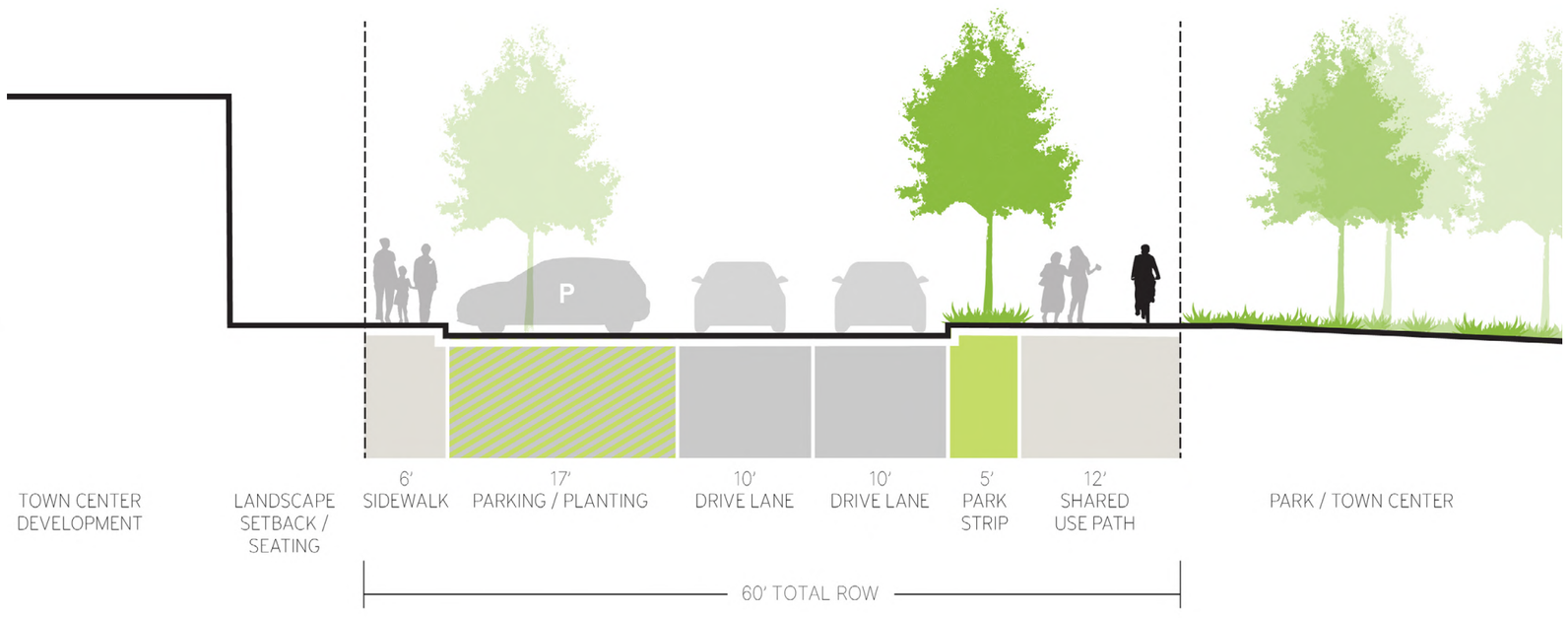
NORTH SHORE BOULEVARD (NORTH SOUTH)





GATEWAY TO LEGACY LANDS





PHASING

PHASE 4

PHASE 3

PHASE 1

PHASE 2

PHASE 2

NORTHSHORE BLVD
Phase 1

NORTHSHORE BLVD
Phase 2

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

TOWN CENTER PARCEL 1

TOWN CENTER PARCEL 2

TOWN CENTER PARCEL 3

NORTHSHORE BOULEVARD

PROPOSED FORCEMAIN

PROPOSED SANITARY PUMP STATION - EXACT LOCATION TO BE DETERMINED

SANITARY SEWER NOTES:

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

0 150 300
SCALE: 1" = 150'

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

MacKay Sposito
ENERGY PUBLIC WORKS LAND DEVELOPMENT
www.mackaysposito.com

PETER A. TUCK
STATE OF WASHINGTON
31417
REGISTERED
PROFESSIONAL ENGINEER

10/13/2025

LACAMAS NORTH SHORE MIXED-USE DEVELOPMENT
CAMAS

UTILITY PLAN - SANITARY

REVISIONS:

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

CONCEPTUAL

C1.0

STORM FACILITY DISCHARGE TO STREAM

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

WETLAND (TYP)

WETLAND BUFFER (TYP)

TOWN CENTER PARCEL 1

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

TOWN CENTER PARCEL 3

TOWN CENTER PARCEL 2

NORTHSHORE BOULEVARD

PROPOSED STORMWATER DISCHARGE LINE ACROSS CITY PARCEL

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

PROPOSED LARGE WETPOND FOR QUANTITY AND QUALITY CONTROL

STORM NOTES:

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

0 150 300
SCALE: 1" = 150'

FILE: W:\8973 Lacamas NS\500 Design\502 Drawings\01 Conceptual\05 Sheets\Utility Layouts Update.dwg PLOTSTYLE: Storm.stb

MacKay Sposito
ENERGY PUBLIC WORKS LAND DEVELOPMENT
www.mackaysposito.com

2/2/2026

LACAMAS NORTH SHORE MIXED-USE DEVELOPMENT
CAMAS

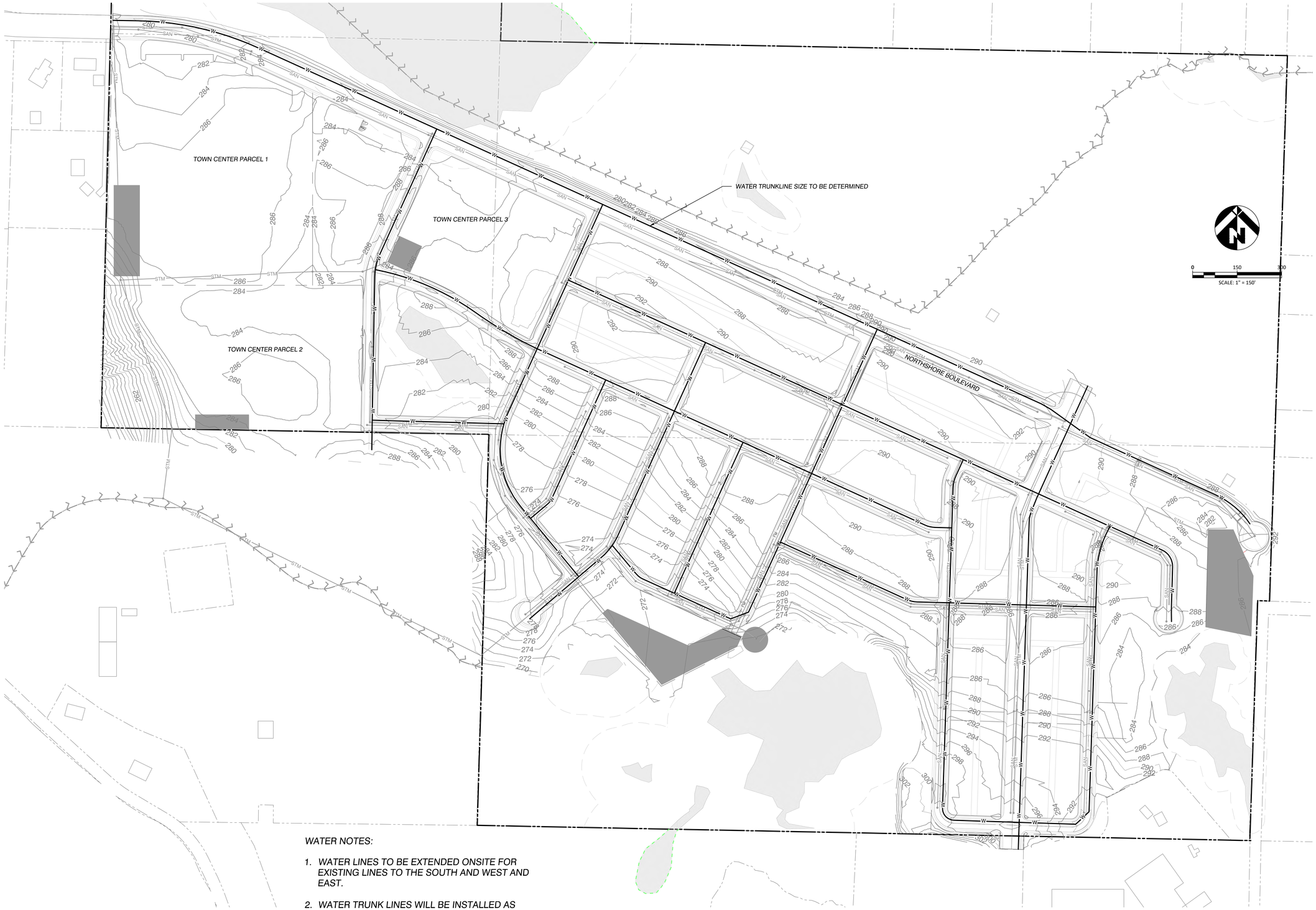
UTILITY PLAN - STORM

REVISIONS:

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

CONCEPTUAL

C1.1



WATER NOTES:

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

MacKay Sposito
ENERGY PUBLIC WORKS LAND DEVELOPMENT
www.mackaysposito.com

PETER A. TUCK
STATE OF WASHINGTON
31317
REGISTERED
PROFESSIONAL ENGINEER

10/13/2025

LACAMAS NORTH SHORE MIXED-USE DEVELOPMENT
CAMAS

UTILITY PLAN - WATER

REVISIONS:

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

CONCEPTUAL

C1.2

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

WETLAND (TYP.)

EXISTING STRUCTURE (TYP.)

TOWN CENTER PARCEL 1

TOWN CENTER PARCEL 3

TOWN CENTER PARCEL 2

EXISTING STREAM (TYP.)

WETLAND (TYP.)

PROJECT BOUNDARY (TYP.)

NORTHSHORE BOULEVARD

GRADING LIMITS (TYP.)

EXISTING STREAM (TYP.)

EXISTING STRUCTURE (TYP.)

WETLAND (TYP.)

WETLAND (TYP.)

EXISTING STRUCTURE (TYP.)

LEGEND

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

APPROXIMATE GRADING VOLUMES

CUT	307,000 CY
FILL	330,000 CY

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

0 200 400

SCALE: 1" = 200'

FILE: W:\0089\73 Lacamas North Shore Camas\500 Design\502 Drawings\01 Conceptual\05 Sheets\G1.0 Grading Plan.dwg PLOTSTYLE: Gradecrosion.stb

MacKay Sposito
ENERGY PUBLIC WORKS LAND DEVELOPMENT
www.mackaysposito.com

PETER A. TUCK
STATE OF WASHINGTON
31847
REGISTERED
PROFESSIONAL ENGINEER

10/13/2025

LACAMAS NORTH SHORE MIXED-USE DEVELOPMENT
CAMAS

GRADING CONTOUR PLAN

REVISIONS:

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

CONCEPTUAL

G1.0

DESIGN GUIDELINES

North Shore Area Design Guidelines

North Shore Area Vision Statement

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

General Development and Design Requirements for the North Shore Area

- **Architectural Character**

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

- **Pedestrian Safety, and Comfort**

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

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

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

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





North Shore Residential

Intent:

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

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

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

North Shore Residential Development Standards:

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

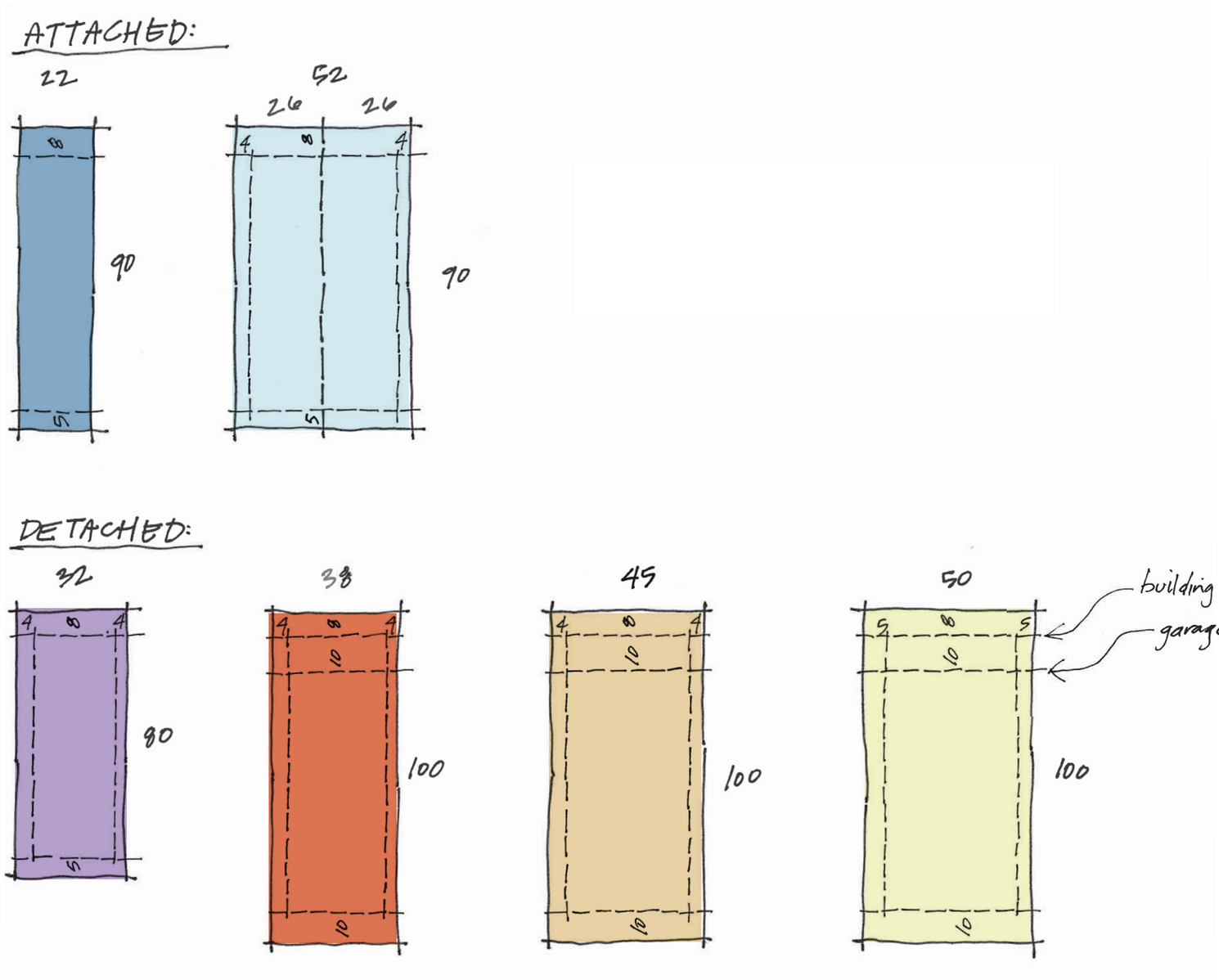
*This percentage does not include drive aisles, surface parking areas, or pedestrian pathways

Setback Exceptions:

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



Potential Lot Mix Diagram



DESIGN GUIDELINES

Architectural Styles and Elements Allowed in the North Shore Residential Area

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

1. Pacific Northwest Inspired

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

2. Craftsman / Northwest Craftsman

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

3. Cottage / Storybook

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

4. Modern Farmhouse

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

5. Transitional

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









North Shore Town Center

Intent:

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

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

A Public Plaza

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

Grocery Anchored Retail Center

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

Retail / Commercial Area

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

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

Minimum Retail Requirement

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

Multifamily Areas

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

North Shore Town Center Development Standards:

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

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



North Shore Employment

Intent:

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

Permitted Uses:

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

North Shore Employment Development Standards:

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

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

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

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





Exhibit C

Transportation Impact Analysis

KITTELSON & ASSOCIATES
851 SW 6th Avenue, Suite 600
Portland, OR 97204
P 503.228.5230

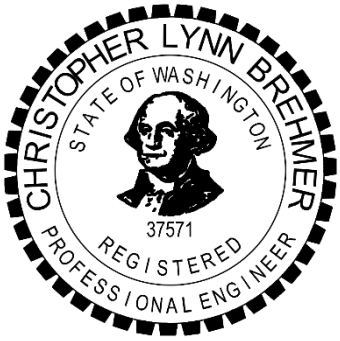
TRANSPORTATION IMPACT STUDY

October 9, 2025 Project# 31612

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

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

Craig Kathol & David Jardin
Clark County Public Works Community Development



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

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

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

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

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

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

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

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

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

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

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

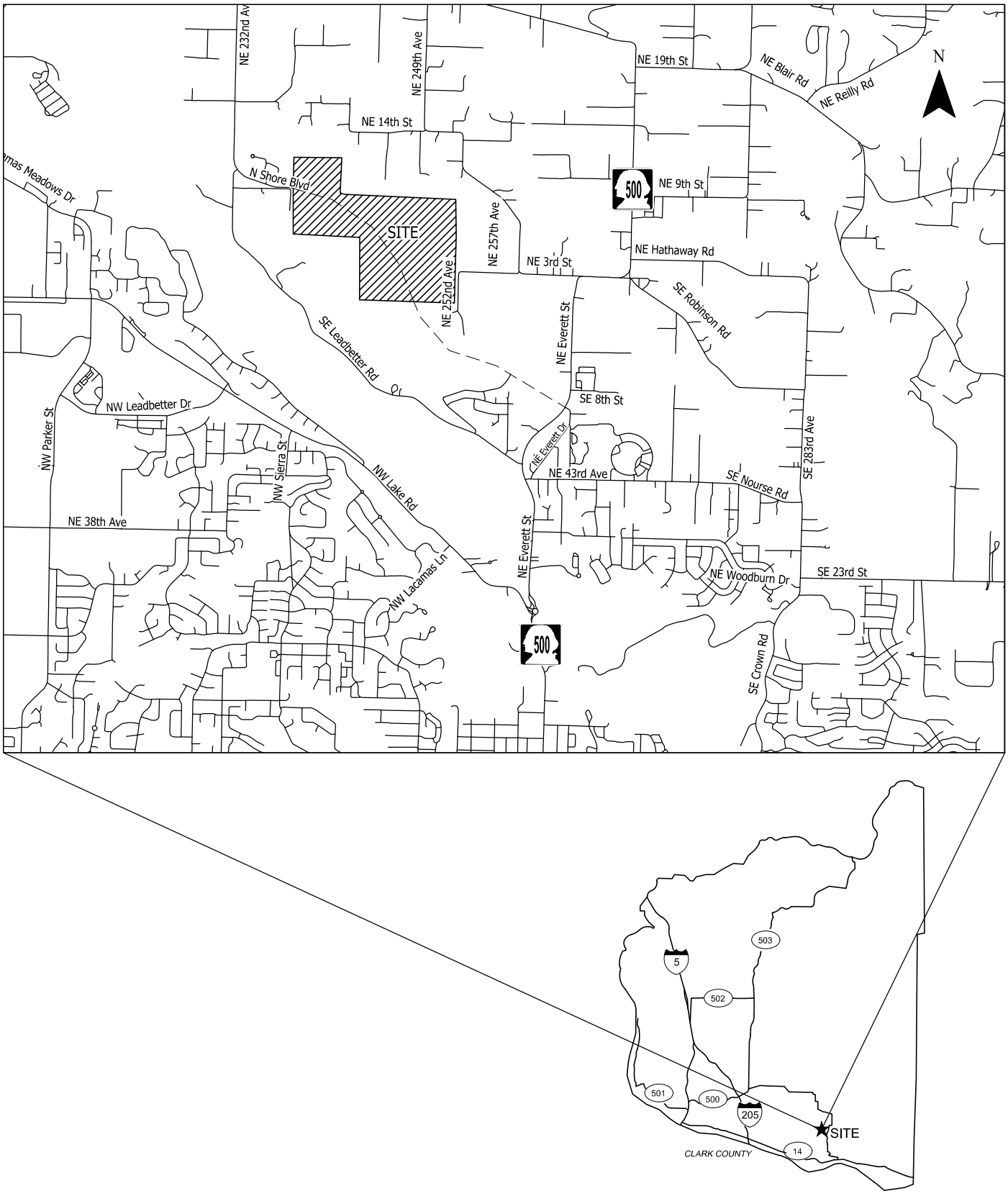
The details of the study methodology, findings, and recommendations are summarized herein.

INTRODUCTION

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

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

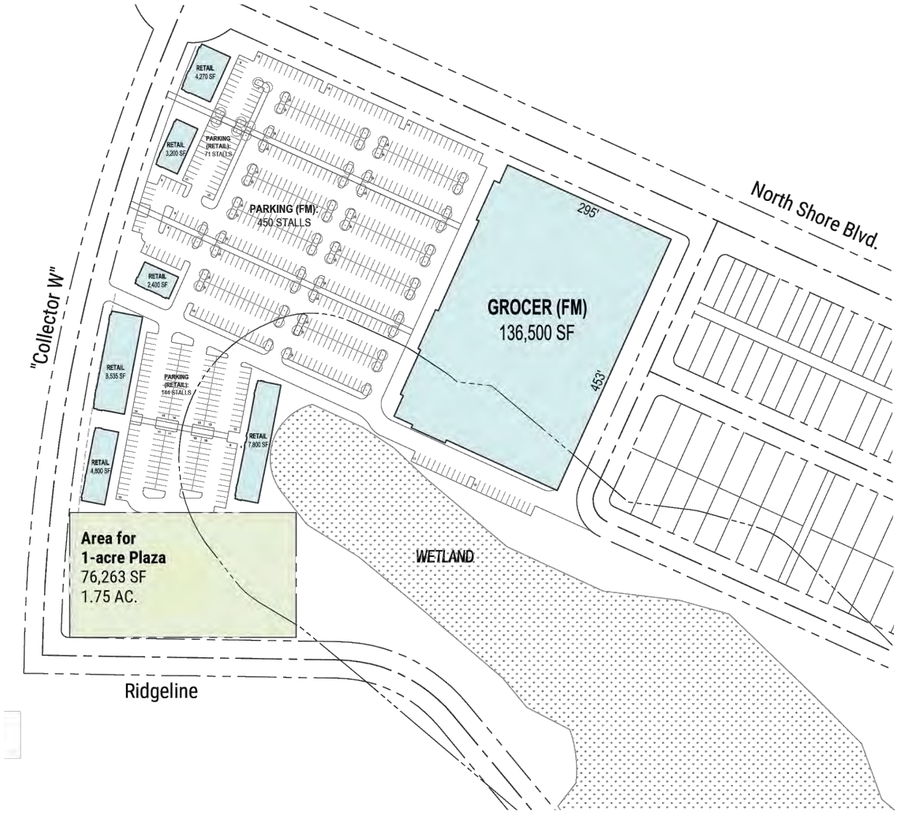
Figure 1 shows the site vicinity map, and Figure 2 shows a current conceptual site plan.

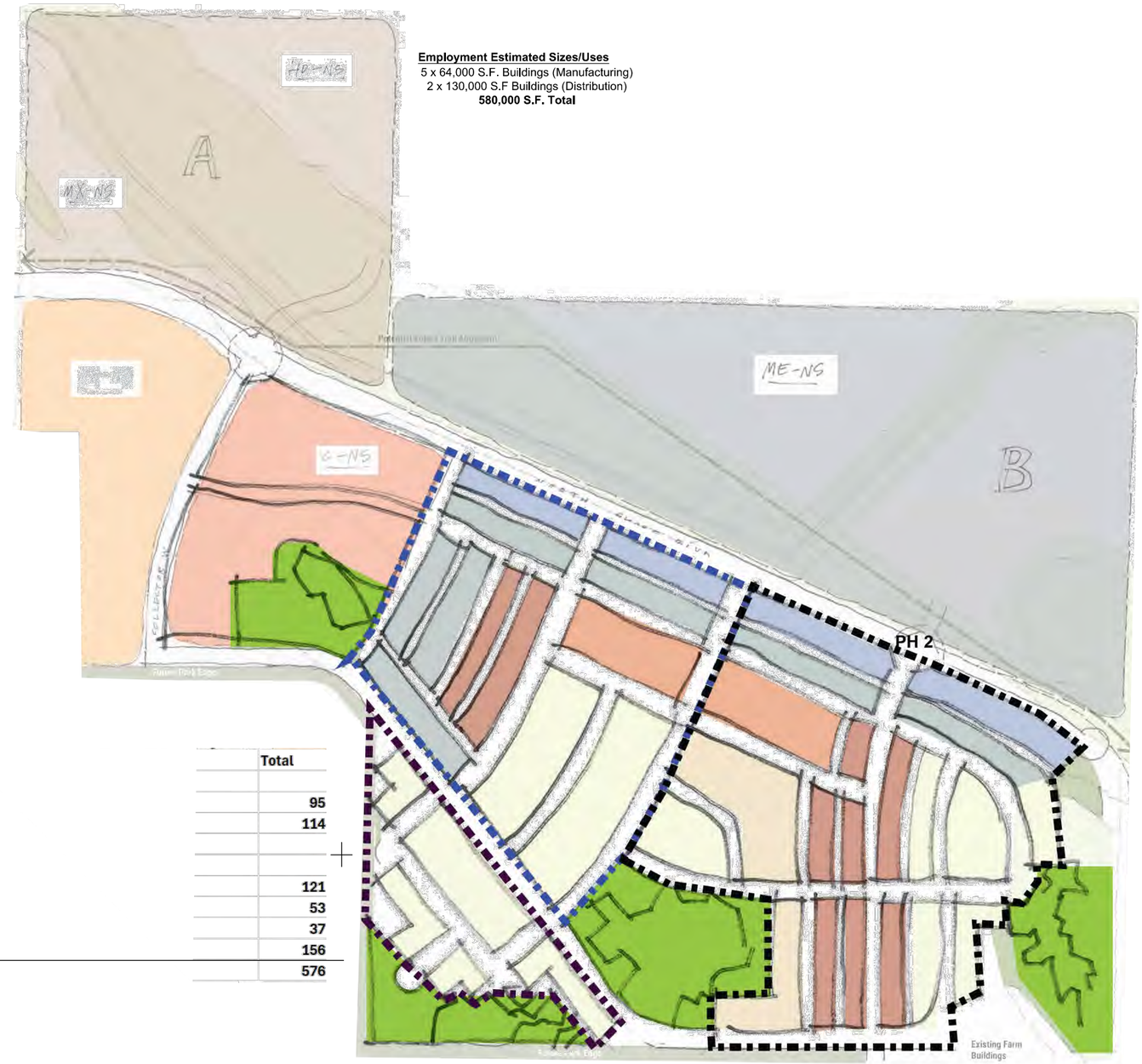


Site Vicinity Map
Camas, Washington

Figure
1

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





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

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

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



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

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

Preliminary Site Plan
Camas, Washington

Figure
2

C:\Users\sbanerjee\appdata\local\temp\AcPublish_8028\31612_TIS Figs.dwg Oct 02, 2025 - 10:49am - sbanerjee Layout Tab: Fig2 Proposed Site Plan

STUDY METHODOLOGY

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

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

Appendix A includes documentation from the scoping process.

Analysis Scenarios

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

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

Study Intersections

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

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

Table 1. Study Intersections

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

Capacity Analysis Methodology

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

Level of Service Standards

City of Camas

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

SR 500 (NE Everett Street)

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

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

Clark County

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

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

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

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

Table 2. Study Intersection Performance Metrics

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

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

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

REPORT FORMAT

This report addresses the following transportation topics:

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

EXISTING CONDITIONS

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

Site Conditions and Adjacent Land Uses

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

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

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

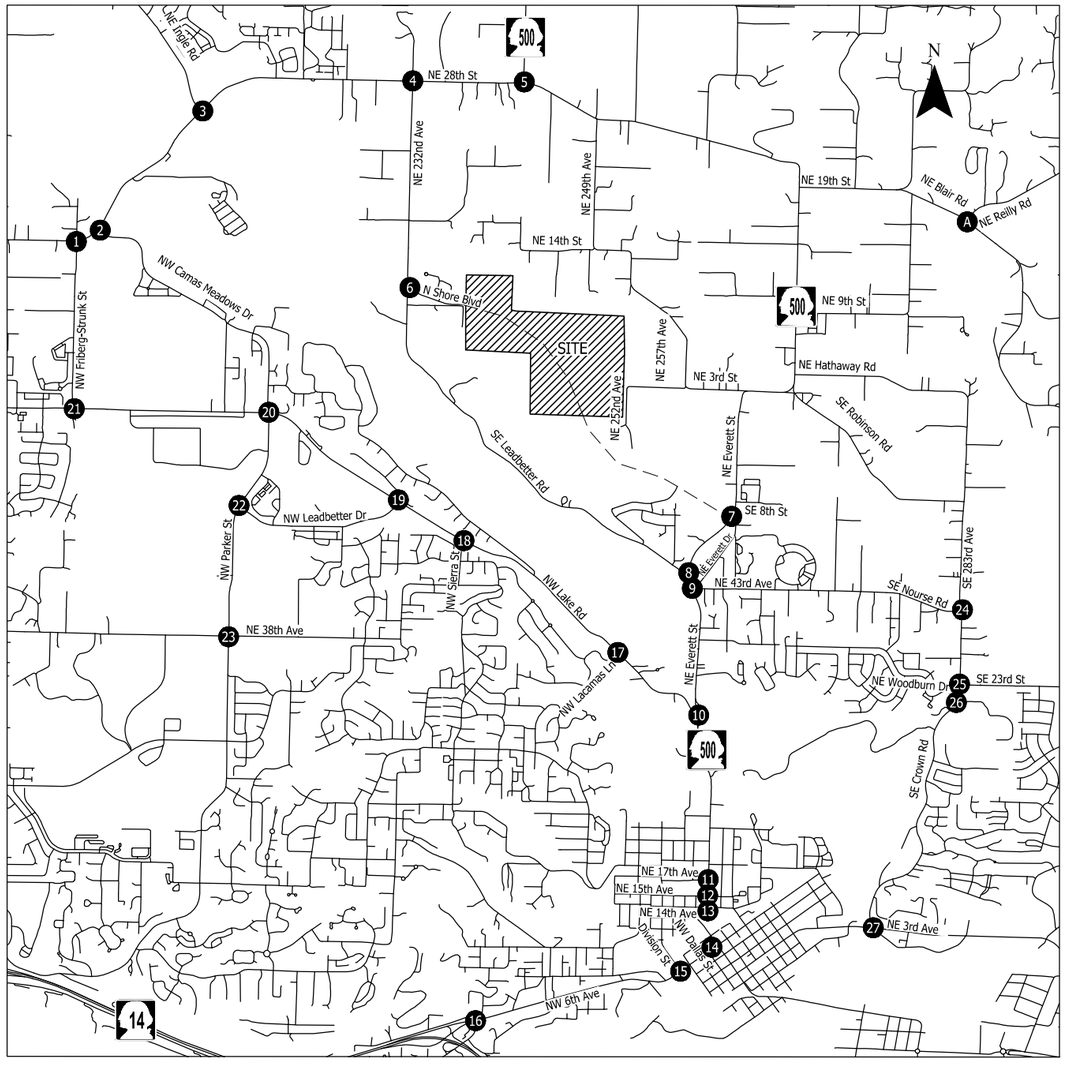
Transportation Facilities

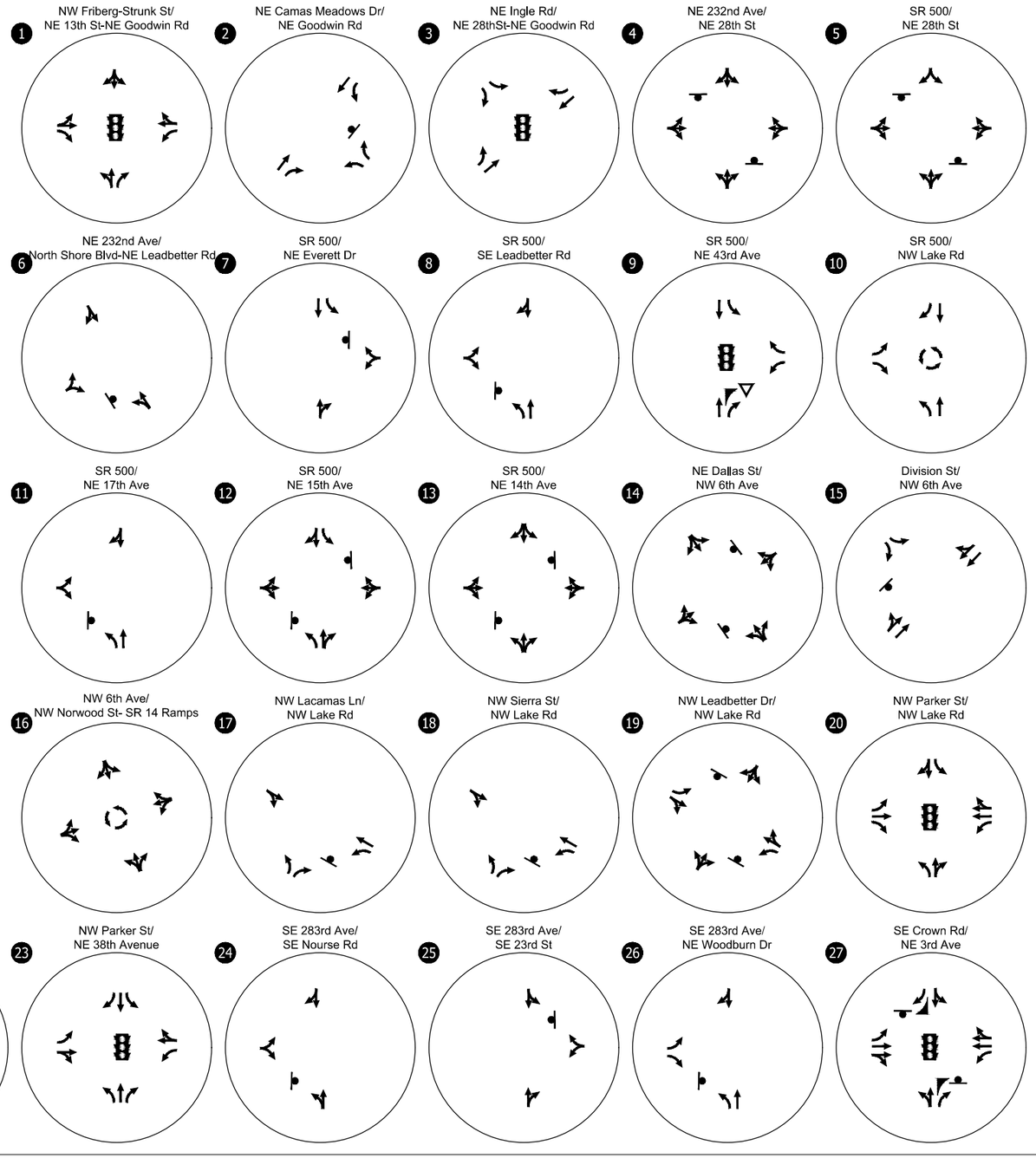
Table 3 provides a summary of the existing streets closest to the site. Figure 3 illustrates the existing lane configurations and traffic control devices at the study intersections.

Table 3. Existing Transportation Facilities

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

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





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

Existing Lane Configurations & Traffic Control Devices Camas, Washington

Figure 3

KITTELSON & ASSOCIATES

C:\Users\sbanerjee\appdata\local\temp\AcPublish_8028\31612_TIS Figs.dwg Oct 02, 2025 - 10:49am - sbanerjee Layout Tab: Fig3 ELCTCD

Facilities for Non-Motorized Users

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

Transit Facilities

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

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

TRAFFIC SAFETY

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

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

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

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

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

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

Walking and Biking Related Crashes

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

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

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

Crash Severity

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

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

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

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

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

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

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

SR 500/NE Everett Drive (Intersection #7)

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

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

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

SR 500/SE Leadbetter Road (Intersection #8)

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

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

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

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

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

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

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

SR 500/NW Lake Road (Intersection #10)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Traffic Volumes and Peak Hour Operations

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

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

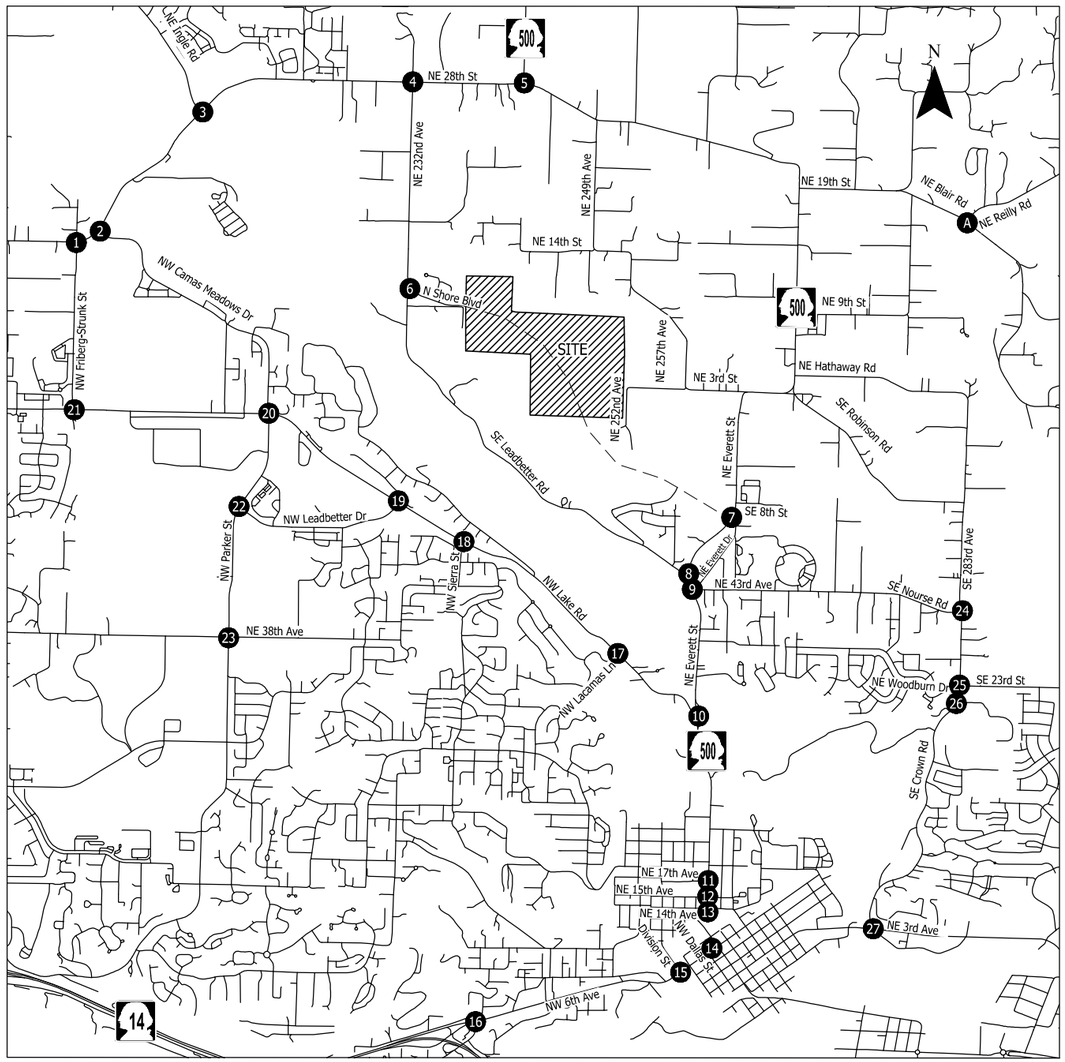
SR 500 (NE Everett Street)/NE 14th Avenue (Intersection #13)

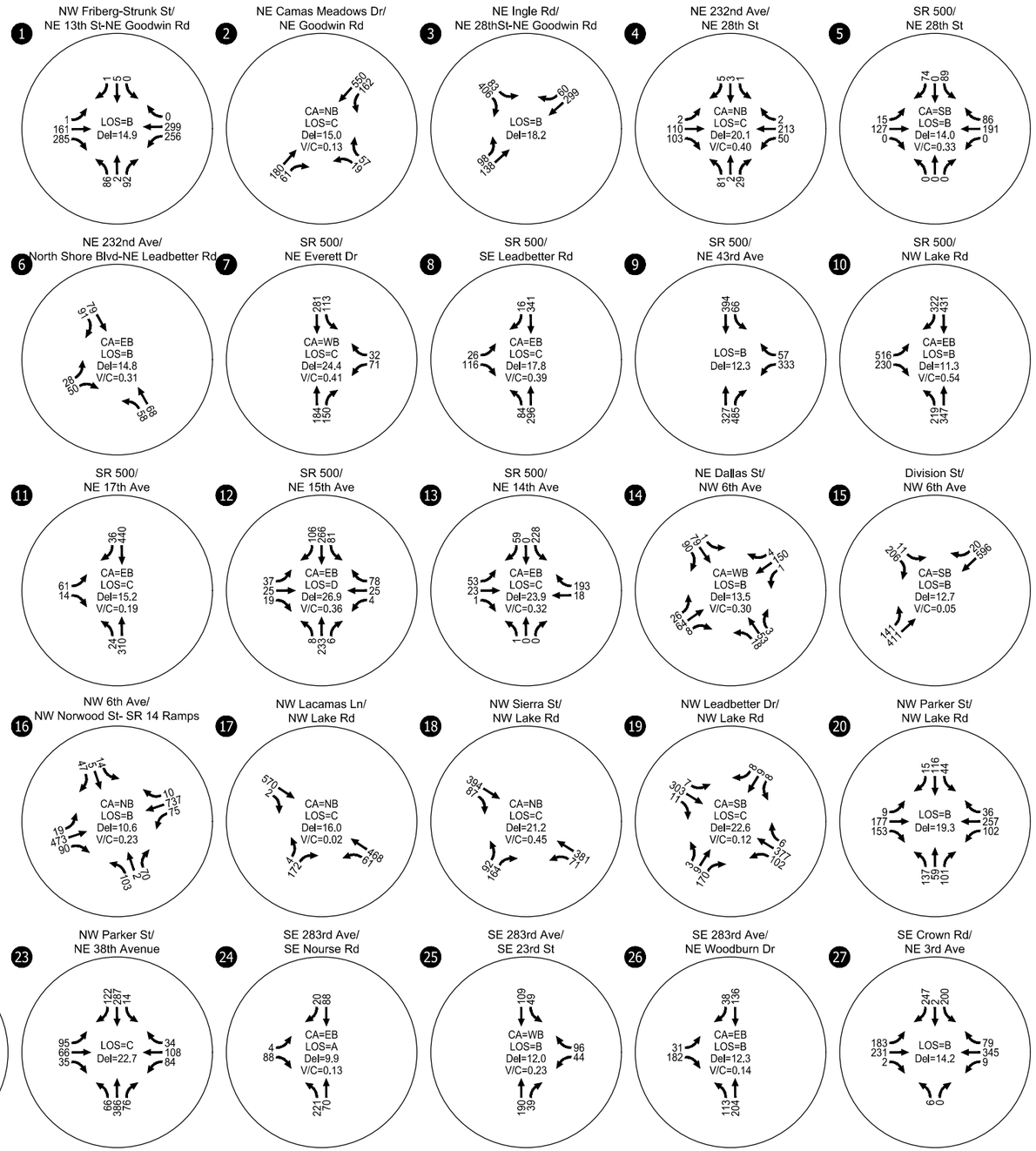
Delay experienced on the eastbound stop-controlled approach results in LOS F operations (exceed LOS E requirement) during the weekday PM peak hour with a V/C ratio of 0.61. Although both the eastbound and westbound approaches are stop controlled, observation of the intersection indicates that drivers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

Other Observations

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

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





- SITE

(#) - STUDY INTERSECTION

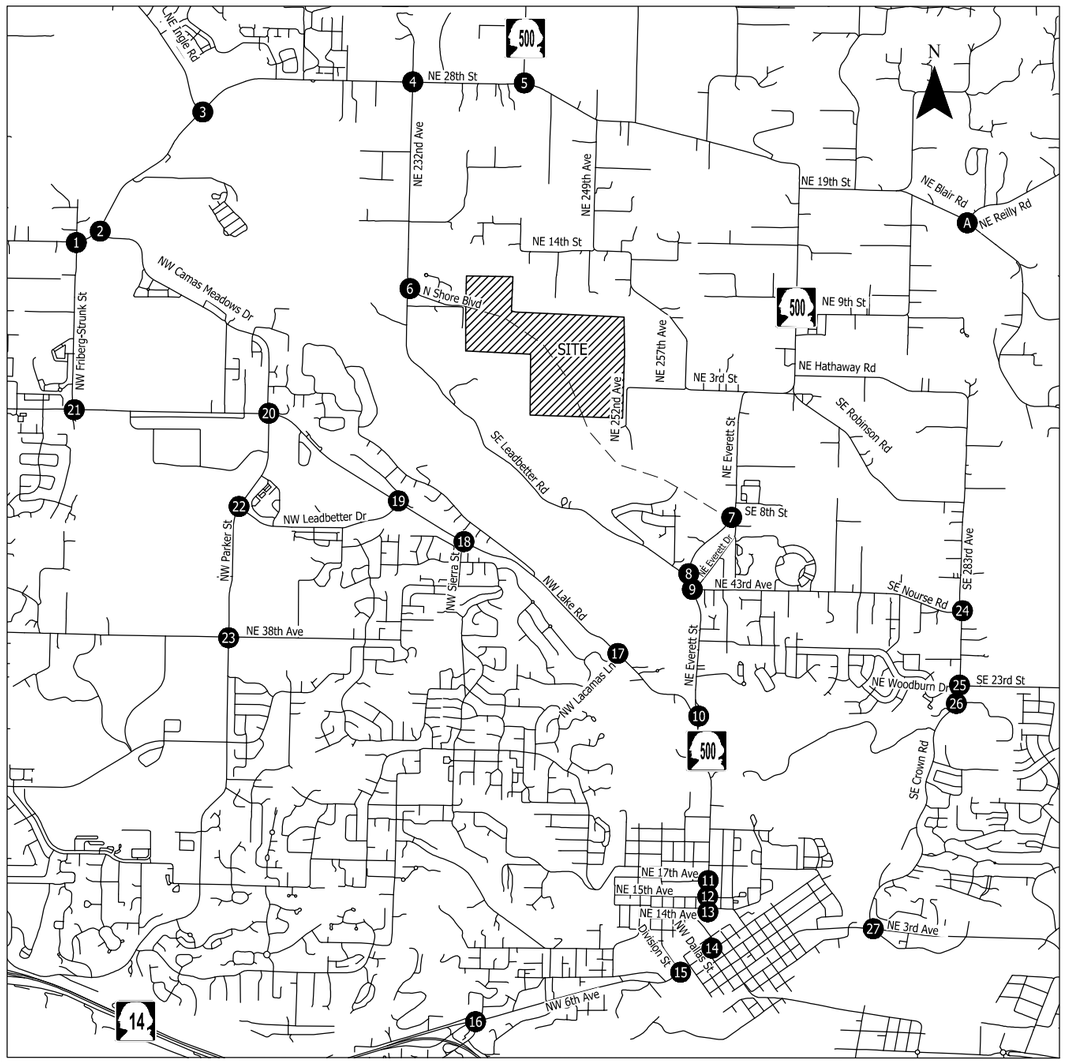
CA = CRITICAL APPROACH (TWSC / ROUNDABOUT)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/ CRITICAL APPROACH LEVEL OF SERVICE (TWSC / ROUNDABOUT)
V/C = VOLUME-TO-CAPACITY RATIO
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/ CRITICAL APPROACH DELAY (UNSIGNALIZED)
TWSC = TWO-WAY STOP CONTROL

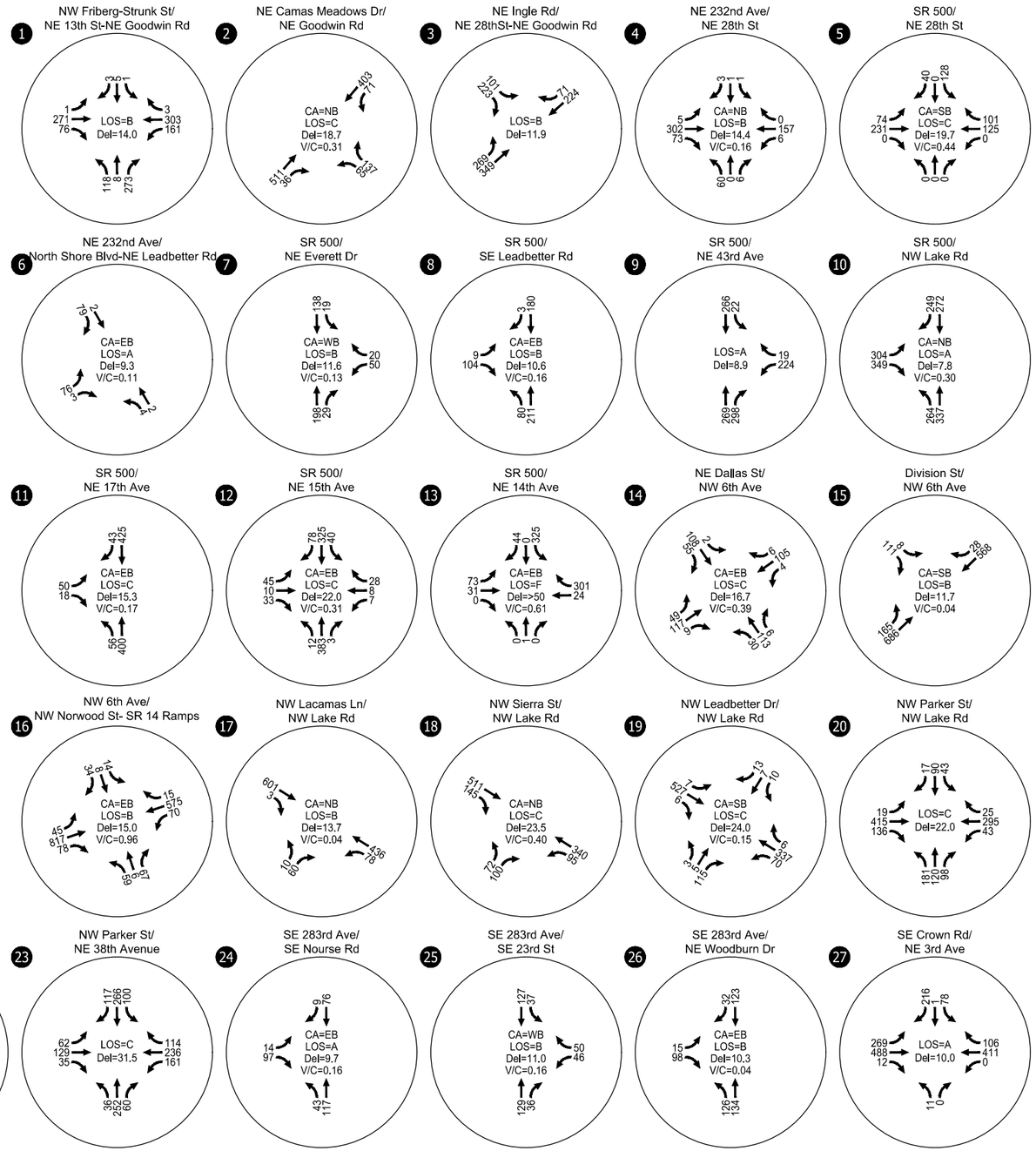
2025 Existing Traffic Conditions Weekday AM Peak Hour Camas, Washington

Figure 4

KITTELSON & ASSOCIATES

C:\Users\sbanerjee\appdata\local\temp\AcPublish_8028\31612_TIS Figs.dwg Oct 02, 2025 - 10:49am - sbanerjee Layout Tab: Fig4 EX AM





- SITE

(#) - STUDY INTERSECTION

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

2025 Existing Traffic Conditions Weekday PM Peak Hour Camas, Washington

Figure 5

KITTELSON & ASSOCIATES

C:\Users\sbanerjee\appdata\local\temp\AcPublish_8028\31612_TIS Figs.dwg Oct 02, 2025 - 10:49am - sbanerjee Layout Tab: Fig5 EXPM

2030 BACKGROUND TRAFFIC CONDITIONS

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

Planned Developments & Transportation Improvements

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

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

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

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

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

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

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

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

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

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

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

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

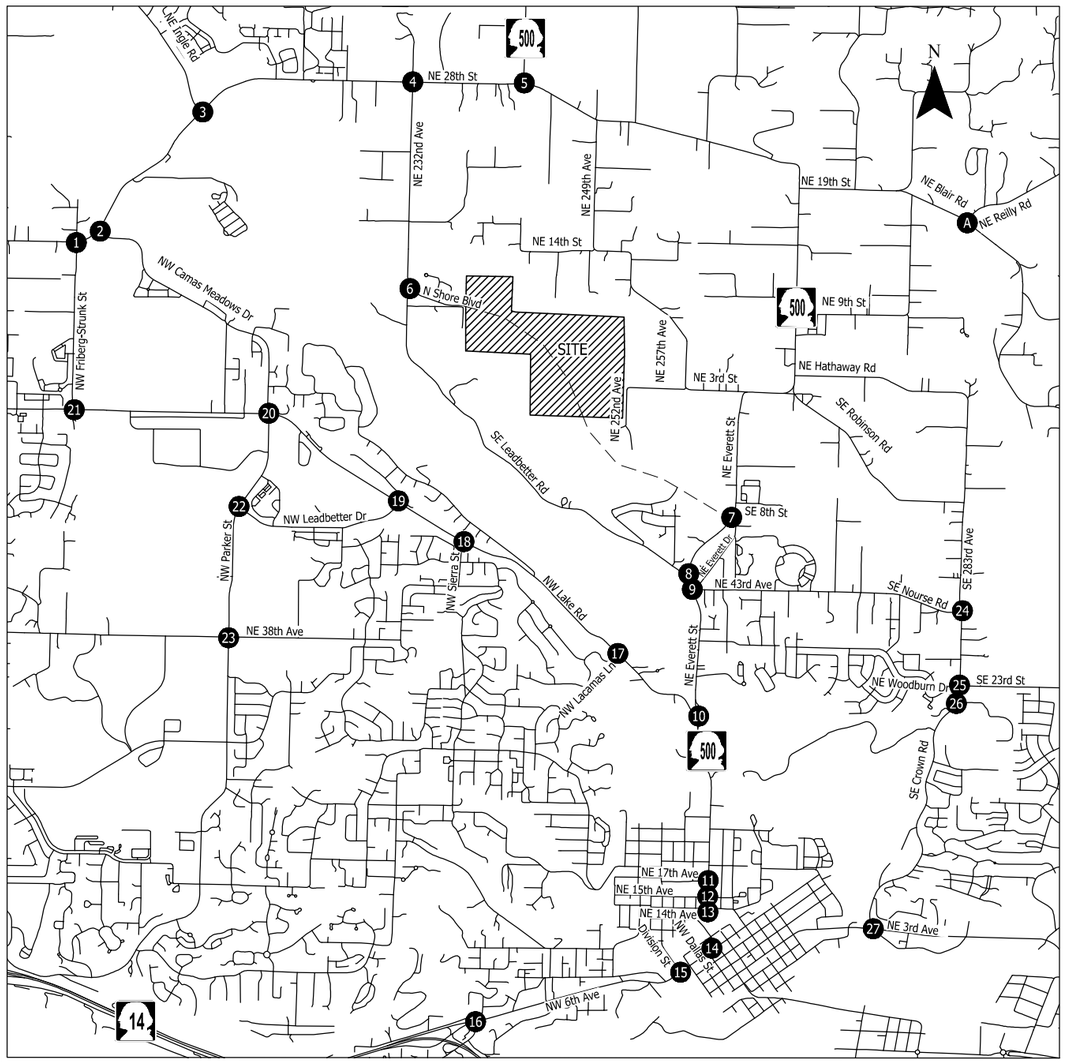
- SR 500 (NE Everett Street)/NE 28th Street (Intersection #5): PM peak hour
- NE Everett Street/NE 14th Avenue (Intersection #13): PM peak hour

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

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

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

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



1 NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd
LOS=B
Del=17.6

2 NE Camas Meadows Dr/ NE Goodwin Rd
CA=NB
LOS=C
Del=20.1
V/C=0.21

3 NE Ingle Rd/ NE 28thSt-NE Goodwin Rd
LOS=C
Del=33.2

4 NE 232nd Ave/ NE 28th St
CA=NB
LOS=D
Del=25.3
V/C=0.54

5 SR 500/ NE 28th St
CA=SB
LOS=C
Del=17.2
V/C=0.44

6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd
CA=EB
LOS=B
Del=12.5
V/C=0.01

7 SR 500/ NE Everett Dr
CA=WB
LOS=B
Del=10.6
V/C=0.28

8 SR 500/ SE Leadbetter Rd
CA=EB
LOS=C
Del=23.7
V/C=0.15

9 SR 500/ NE 43rd Ave
LOS=B
Del=13.3

10 SR 500/ NW Lake Rd
CA=EB
LOS=B
Del=14.7
V/C=0.66

11 SR 500/ NE 17th Ave
CA=EB
LOS=C
Del=18.7
V/C=0.31

12 SR 500/ NE 15th Ave
CA=EB
LOS=D
Del=33.8
V/C=0.43

13 SR 500/ NE 14th Ave
CA=EB
LOS=D
Del=32.8
V/C=0.42

14 NE Dallas St/ NW 6th Ave
CA=WB
LOS=B
Del=14.4
V/C=0.34

15 Division St/ NW 6th Ave
CA=SB
LOS=B
Del=13.8
V/C=0.05

16 NW 6th Ave/ NW Norwood St- SR 14 Ramps
CA=SB
LOS=B
Del=14.0
V/C=0.17

17 NW Lacamas Ln/ NW Lake Rd
CA=NB
LOS=C
Del=16.6
V/C=0.02

18 NW Sierra St/ NW Lake Rd
CA=NB
LOS=C
Del=24.1
V/C=0.52

19 NW Leadbetter Dr/ NW Lake Rd
CA=SB
LOS=D
Del=25.9
V/C=0.14

20 NW Parker St/ NW Lake Rd
LOS=B
Del=19.8

21 NW Friberg-Strunk St/ NW Lake Rd-SE 1st St
LOS=D
Del=39.1

22 NW Parker St/ NW Leadbetter Dr
CA=WB
LOS=D
Del=26.5
V/C=0.63

23 NW Parker St/ NE 38th Avenue
LOS=C
Del=23.4

24 SE 283rd Ave/ SE Nourse Rd
CA=EB
LOS=B
Del=10.2
V/C=0.17

25 SE 283rd Ave/ SE 23rd St
CA=WB
LOS=B
Del=12.2
V/C=0.24

26 SE 283rd Ave/ NE Woodburn Dr
CA=EB
LOS=B
Del=12.6
V/C=0.15

27 SE Crown Rd/ NE 3rd Ave
LOS=B
Del=14.5

- SITE

(#) - STUDY INTERSECTION

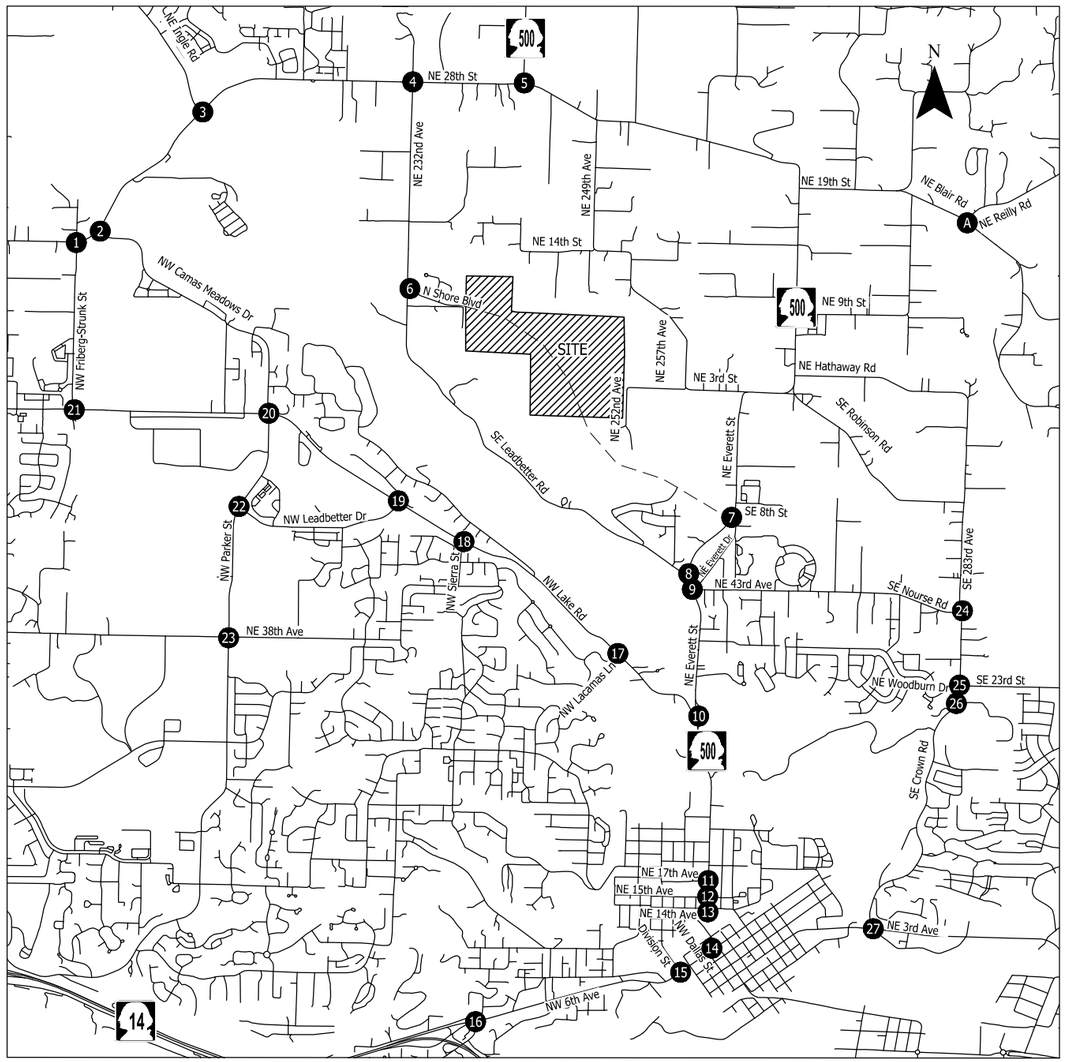
CA = CRITICAL APPROACH (TWSC / ROUNDABOUT)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/ CRITICAL APPROACH LEVEL OF SERVICE (TWSC / ROUNDABOUT)
V/C = VOLUME-TO-CAPACITY RATIO
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/ CRITICAL APPROACH DELAY (UNSIGNALIZED)
TWSC = TWO-WAY STOP CONTROL

2030 Background Traffic Conditions
Weekday AM Peak Hour
Camas, Washington

Figure 6

KITTELSON & ASSOCIATES

C:\Users\sbanerjee\appdata\local\temp\AcPublish_8028\31612_TIS Figs.dwg Oct 02, 2025 - 10:49am - sbanerjee Layout Tab: Fig6 BK AM



1 NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd
CA=EB
LOS=A
Del=9.8
V/C=0.01

2 NE Camas Meadows Dr/ NE Goodwin Rd
CA=NB
LOS=D
Del=27.9
V/C=0.49

3 NE Ingle Rd/ NE 28thSt-NE Goodwin Rd
LOS=B
Del=13.6

4 NE 232nd Ave/ NE 28th St
CA=NB
LOS=C
Del=23.9
V/C=0.44

5 SR 500/ NE 28th St
CA=SB
LOS=E
Del=39.2
V/C=0.73

6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd
CA=EB
LOS=A
Del=9.8
V/C=0.01

7 SR 500/ NE Everett Dr
CA=WB
LOS=B
Del=10.5
V/C=0.21

8 SR 500/ SE Leadbetter Rd
CA=EB
LOS=B
Del=14.0
V/C=0.18

9 SR 500/ NE 43rd Ave
LOS=B
Del=10.2

10 SR 500/ NW Lake Rd
CA=EB
LOS=A
Del=8.7
V/C=0.34

11 SR 500/ NE 17th Ave
CA=EB
LOS=C
Del=22.1
V/C=0.42

12 SR 500/ NE 15th Ave
CA=EB
LOS=D
Del=28.8
V/C=0.41

13 SR 500/ NE 14th Ave
CA=EB
LOS=F
Del=>50
V/C=0.75

14 NE Dallas St/ NW 6th Ave
CA=EB
LOS=C
Del=19.1
V/C=0.46

15 Division St/ NW 6th Ave
CA=SB
LOS=B
Del=12.3
V/C=0.05

16 NW 6th Ave/ NW Norwood St- SR 14 Ramps
CA=NB
LOS=B
Del=14.0
V/C=0.30

17 NW Lacamas Ln/ NW Lake Rd
CA=NB
LOS=B
Del=14.5
V/C=0.05

18 NW Sierra St/ NW Lake Rd
CA=NB
LOS=D
Del=27.5
V/C=0.47

19 NW Leadbetter Dr/ NW Lake Rd
CA=SB
LOS=D
Del=28.5
V/C=0.18

20 NW Parker St/ NW Lake Rd
LOS=C
Del=23.0

21 NW Friberg-Strunk St/ NW Lake Rd-SE 1st St
LOS=B
Del=17.5

22 NW Parker St/ NW Leadbetter Dr
CA=WB
LOS=C
Del=16.3
V/C=0.24

23 NW Parker St/ NE 38th Avenue
LOS=C
Del=31.9

24 SE 283rd Ave/ SE Nourse Rd
CA=EB
LOS=B
Del=10.1
V/C=0.20

25 SE 283rd Ave/ SE 23rd St
CA=WB
LOS=B
Del=11.3
V/C=0.16

26 SE 283rd Ave/ NE Woodburn Dr
CA=EB
LOS=B
Del=10.5
V/C=0.04

27 SE Crown Rd/ NE 3rd Ave
LOS=B
Del=10.4

- SITE

(#) - STUDY INTERSECTION

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

2030 Background Traffic Conditions Weekday PM Peak Hour Camas, Washington

Figure 7

KITTELSON & ASSOCIATES

C:\Users\sbanerjee\appdata\local\temp\AcPublish_8028\31612_TIS Figs.dwg Oct 02, 2025 - 10:49am - sbanerjee Layout Tab: Fig7 BK PM

PROPOSED DEVELOPMENT

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

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

Trip Generation Estimates

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

Table 5. Estimated Site Trip Generation (Residential Phases)

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

Table 6. Estimated Site Trip Generation (Commercial Phases)

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

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

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

Table 7. Estimated Site Trip Generation (Employment Phases)

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

Table 8. Cumulative Site Trip Generation (All Phases)

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

Trip Distribution and Assignment

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

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

Residential Pattern

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

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

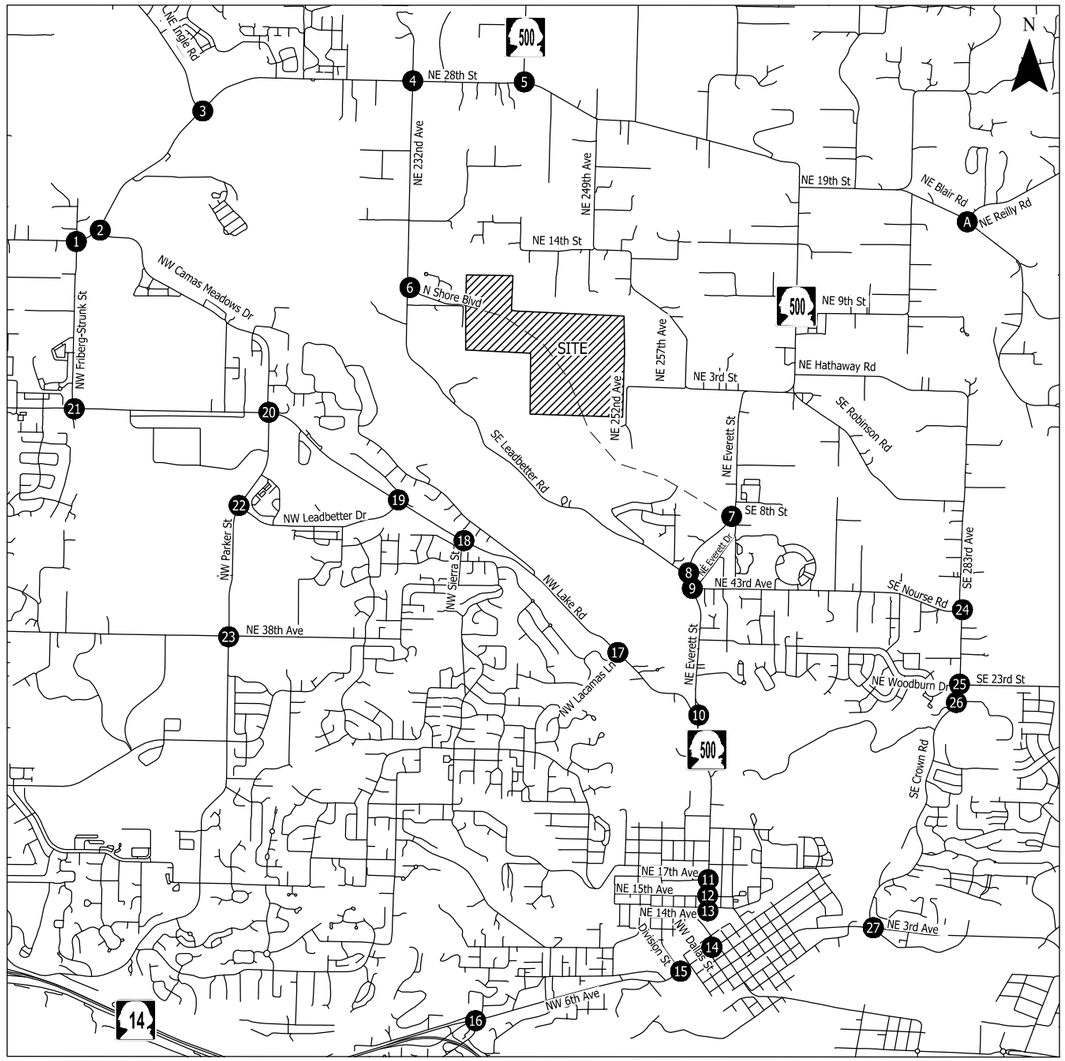
Commercial Retail Pattern

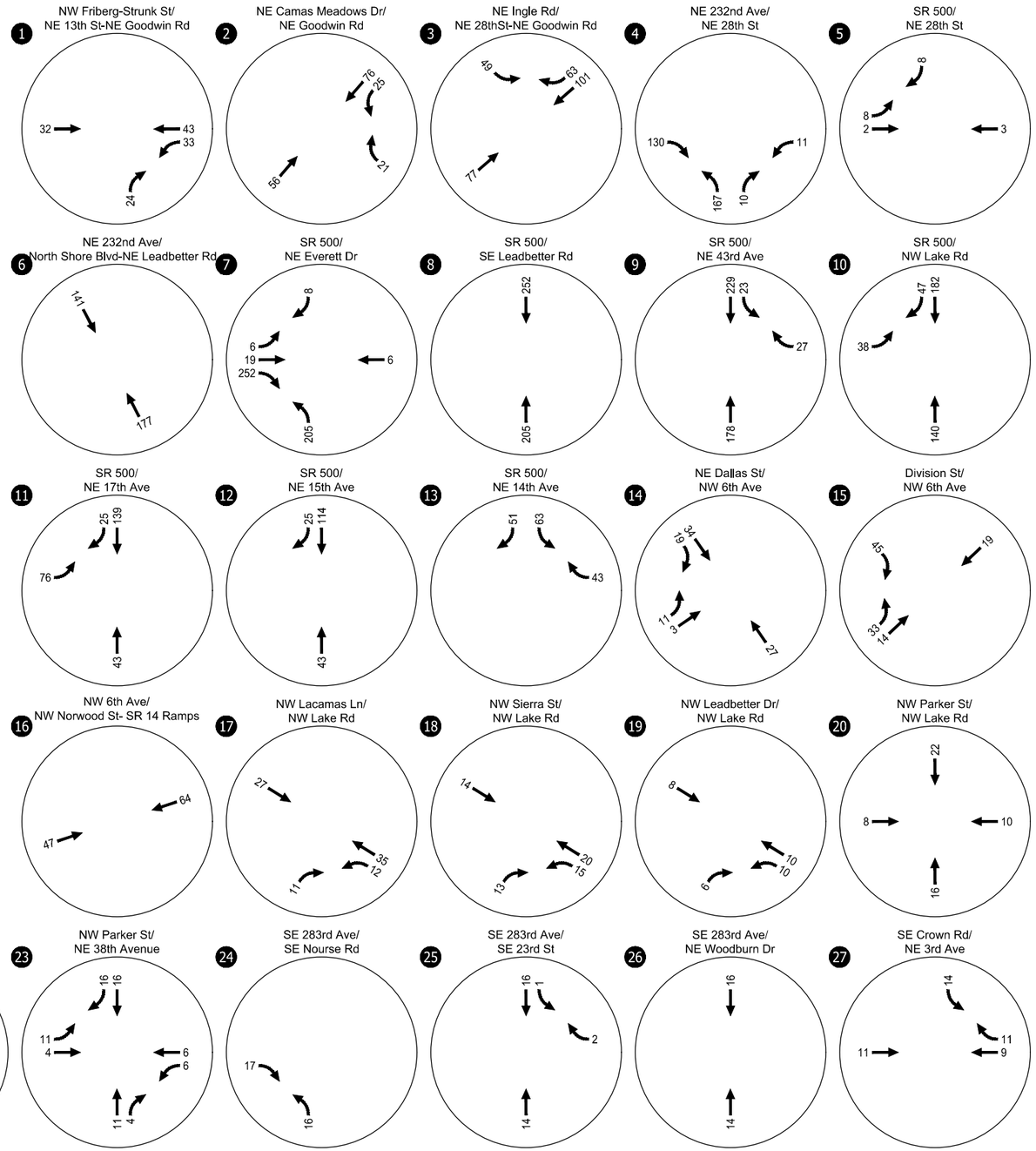
The commercial retail land use estimated trip distribution pattern was developed based on the available RTC modeling, existing and approved residential areas, and consideration of the locations of similar competing retail developments. The commercial land uses are anticipated to primarily serve the North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

Employment Pattern

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

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





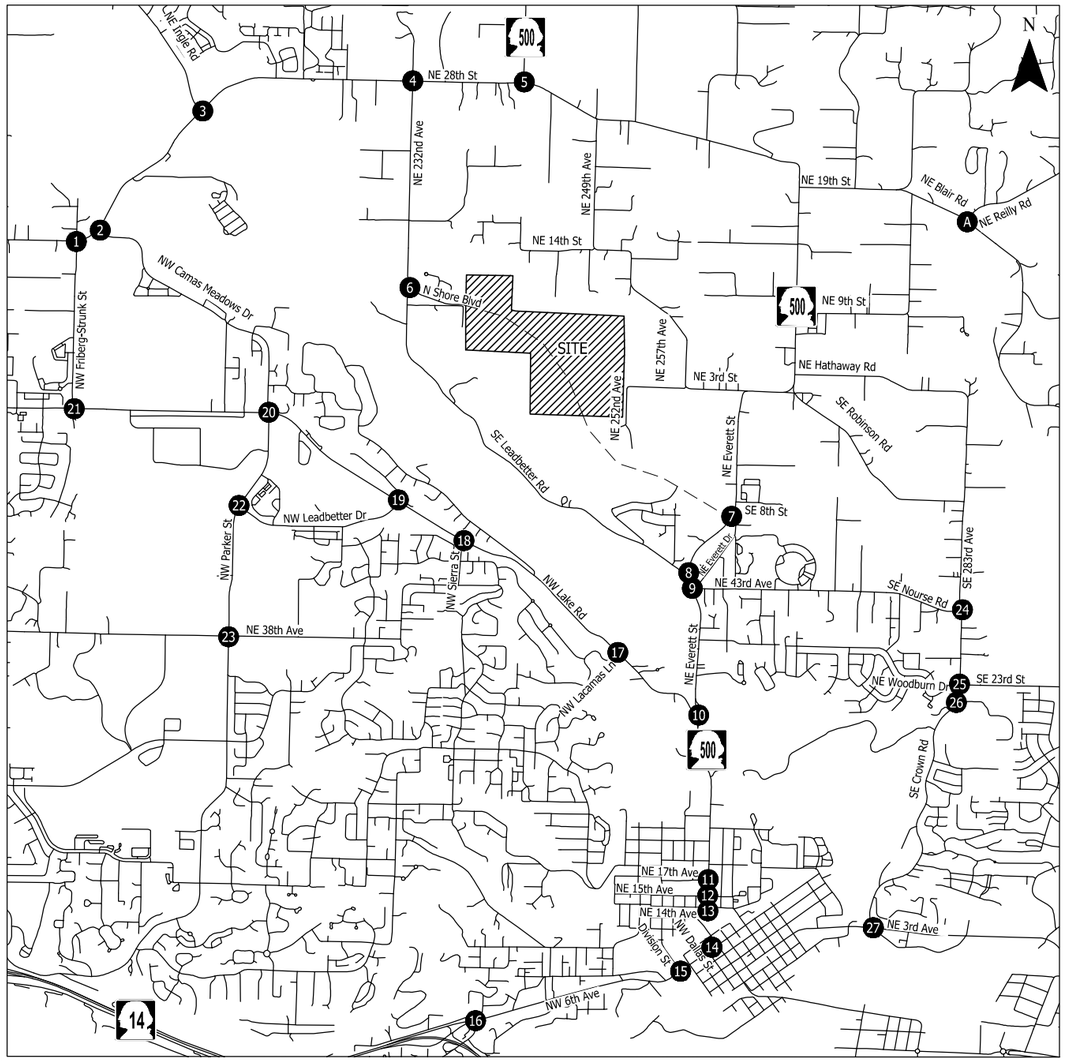
Study Intersections

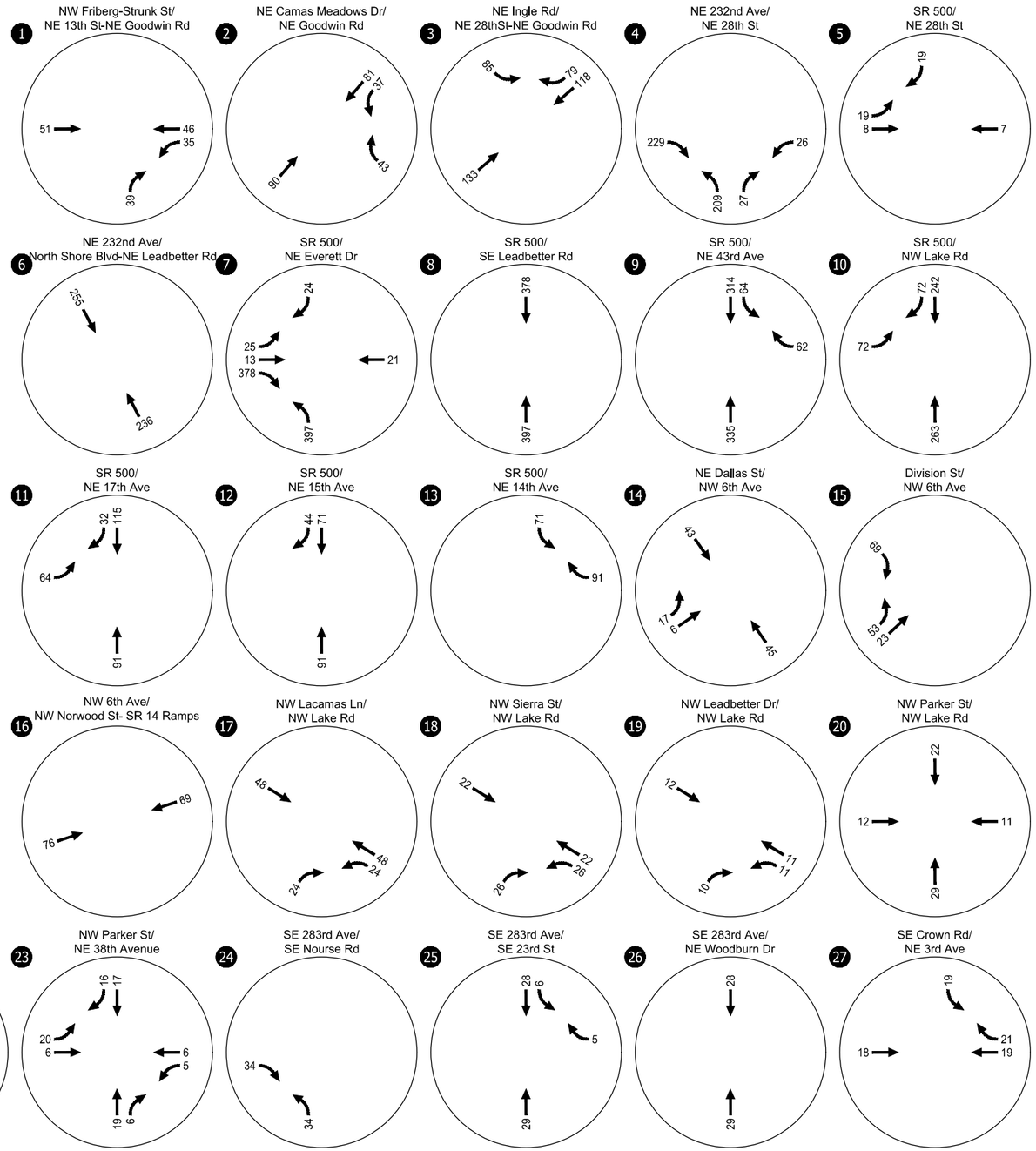
Weekday AM Peak Hour Cumulative Net New Site Trips Camas, Washington

Figure 8

C:\Users\sbanerjee\appdata\local\temp\AcPublish_8028\31612_TIS Figs.dwg Oct 02, 2025 - 10:49am - sbanerjee Layout Tab: Fig8 AM Total Trips

KITTELSON & ASSOCIATES





Study Intersections

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

Figure 9

C:\Users\sbanerjee\appdata\local\temp\AcPublish_8028\31612_TIS Figs.dwg Oct 02, 2025 - 10:50am - sbanerjee Layout Tab: Fig9 PM Total Trips

2030 TOTAL TRAFFIC CONDITIONS

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

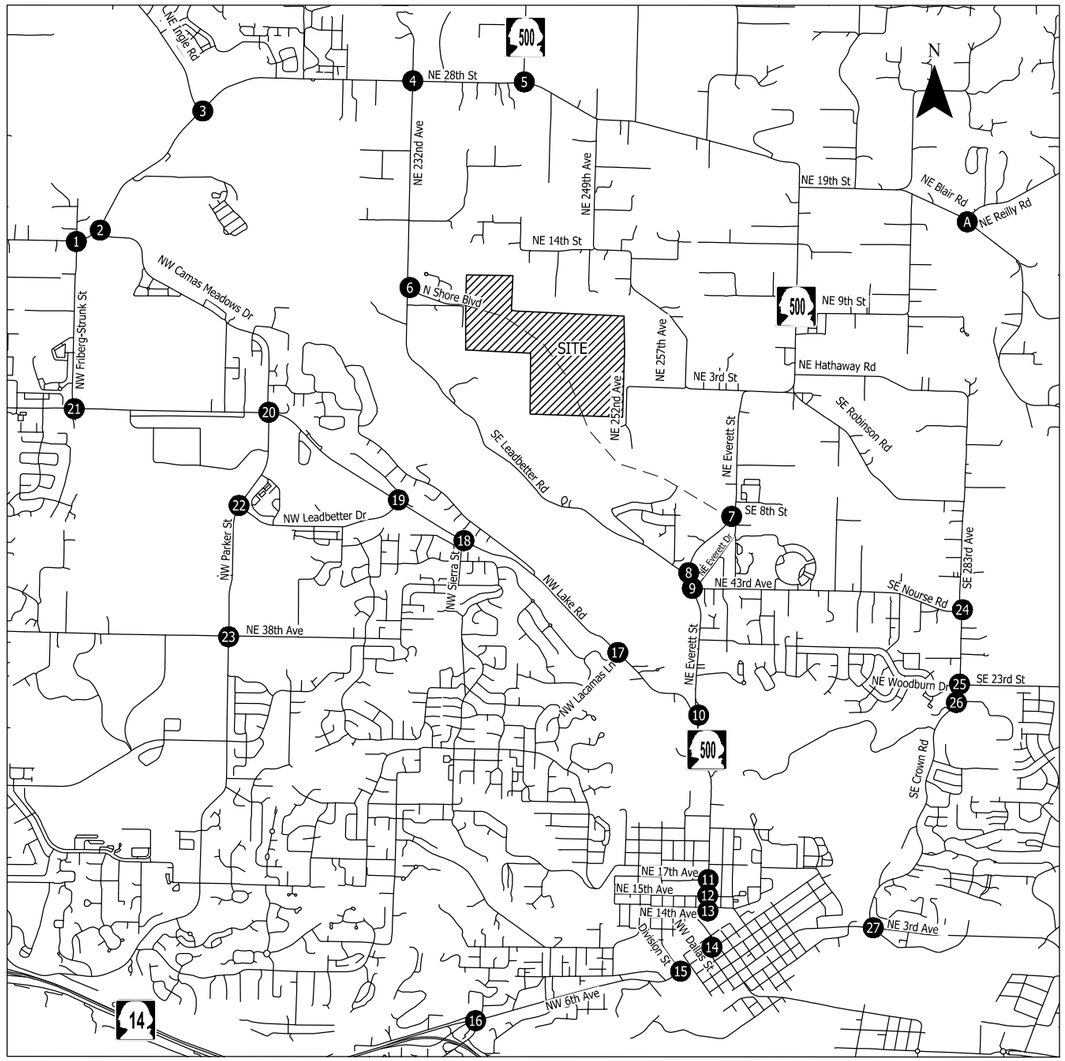
Those intersections that did not satisfy the applicable performance metrics under background conditions each are projected to experience an incremental increase in delay/degradation in operations with the addition of site trips.

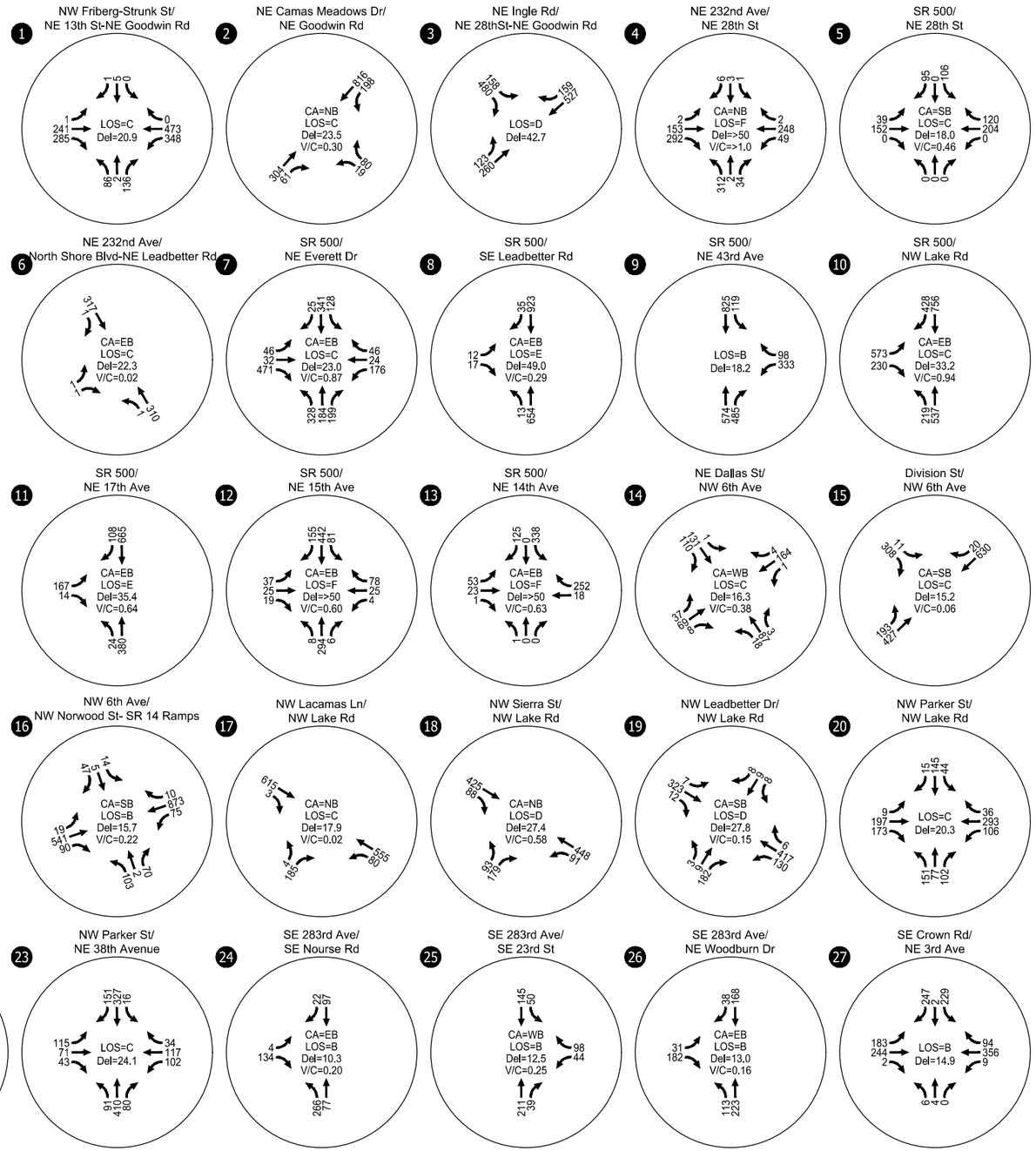
The following intersections are forecast to not meet the applicable agency LOS standard:

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

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

Appendix H contains the year 2030 total traffic analysis worksheets.





- SITE

(#) - STUDY INTERSECTION

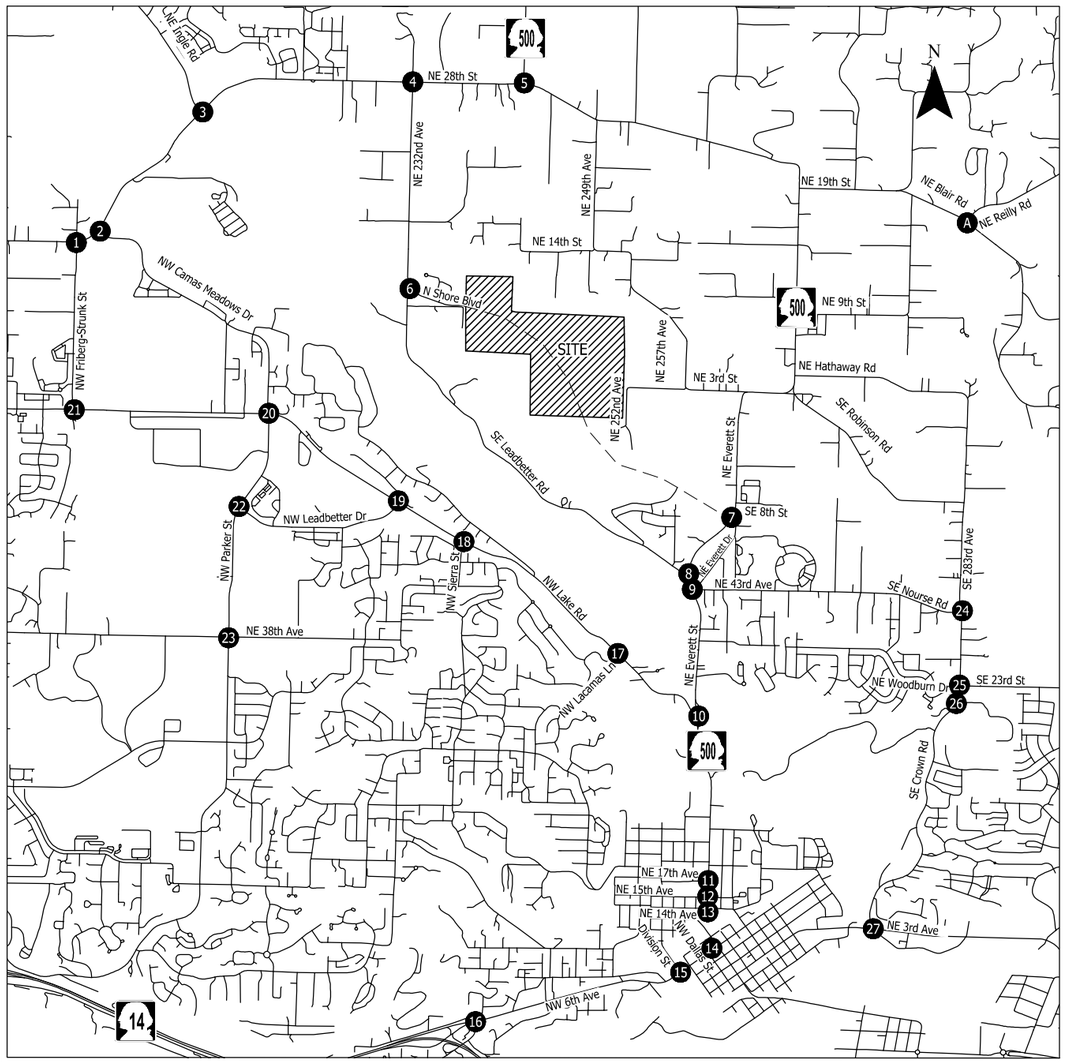
CA = CRITICAL APPROACH (TWSC / ROUNDABOUT)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/ CRITICAL APPROACH LEVEL OF SERVICE (TWSC / ROUNDABOUT)
V/C = VOLUME-TO-CAPACITY RATIO
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/ CRITICAL APPROACH DELAY (UNSIGNALIZED)
TWSC = TWO-WAY STOP CONTROL

2030 Total Traffic Conditions Weekday AM Peak Hour Camas, Washington

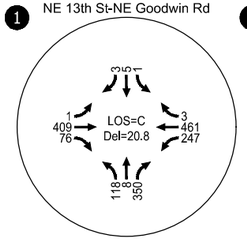
Figure 10

KITTELSON & ASSOCIATES

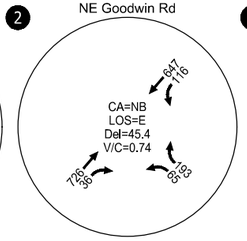
C:\Users\sbanerjee\appdata\local\temp\AcPublish_8028\31612_TIS Figs.dwg Oct 02, 2025 - 10:50am - sbanerjee Layout Tab: Fig10 Total AM



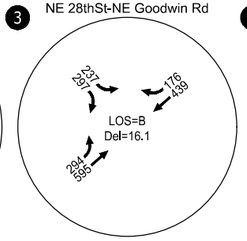
1 NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd



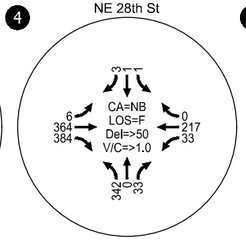
2 NE Camas Meadows Dr/ NE Goodwin Rd



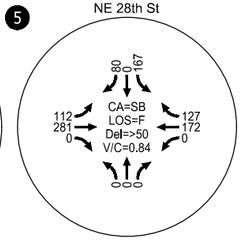
3 NE Ingle Rd/ NE 28thSt-NE Goodwin Rd



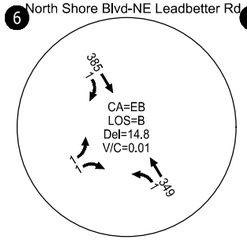
4 NE 232nd Ave/ NE 28th St



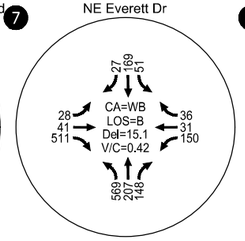
5 SR 500/ NE 28th St



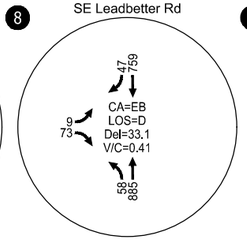
6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd



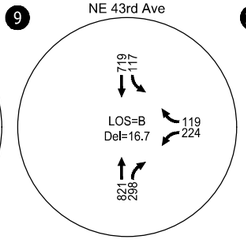
7 SR 500/ NE Everett Dr



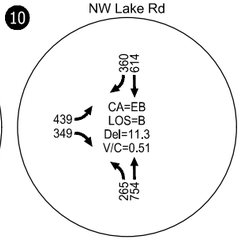
8 SR 500/ SE Leadbetter Rd



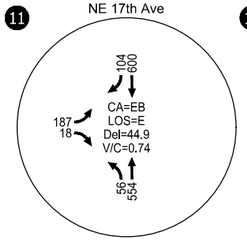
9 SR 500/ NE 43rd Ave



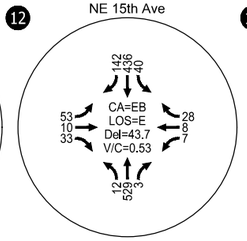
10 SR 500/ NW Lake Rd



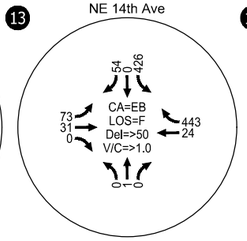
11 SR 500/ NE 17th Ave



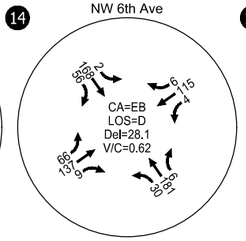
12 SR 500/ NE 15th Ave



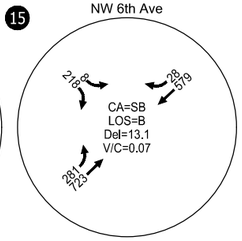
13 SR 500/ NE 14th Ave



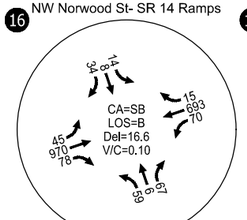
14 NE Dallas St/ NW 6th Ave



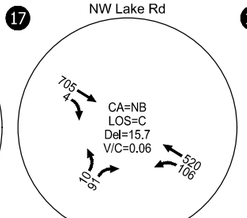
15 Division St/ NW 6th Ave



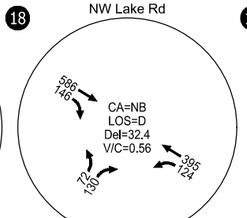
16 NW 6th Ave/ NW Norwood St- SR 14 Ramps



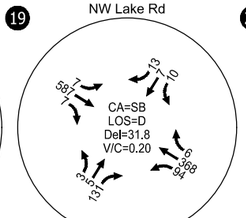
17 NW Lacamas Ln/ NW Lake Rd



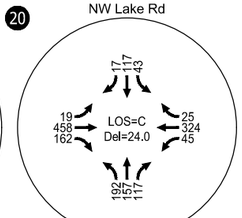
18 NW Sierra St/ NW Lake Rd



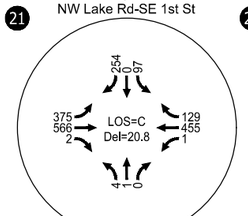
19 NW Leadbetter Dr/ NW Lake Rd



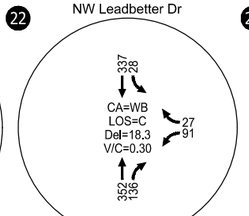
20 NW Parker St/ NW Lake Rd



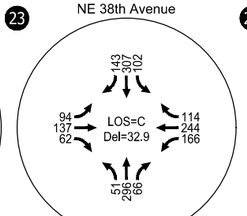
21 NW Friberg-Strunk St/ NW Lake Rd-SE 1st St



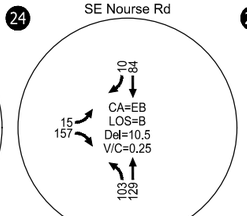
22 NW Parker St/ NW Leadbetter Dr



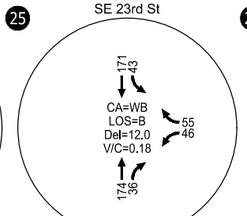
23 NW Parker St/ NE 38th Avenue



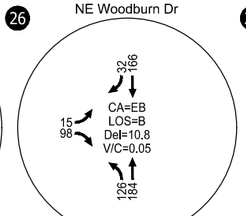
24 SE 283rd Ave/ SE Nourse Rd



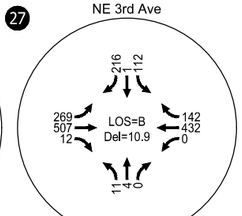
25 SE 283rd Ave/ SE 23rd St



26 SE 283rd Ave/ NE Woodburn Dr



27 SE Crown Rd/ NE 3rd Ave



- SITE

(#) - STUDY INTERSECTION

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

2030 Total Traffic Conditions Weekday PM Peak Hour Camas, Washington

Figure 11

KITTELSON & ASSOCIATES

C:\Users\sbanerjee\appdata\local\temp\AcPublish_8028\31612_TIS Figs.dwg Oct 02, 2025 - 10:50am - sbanerjee Layout Tab: Fig11 Total PM

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

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

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

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

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

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

Total Traffic Intersection Operations Discussion

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

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

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

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

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

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

Traffic Signal Warrant Assessment

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

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

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

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

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

Signalized Operations Analysis

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The City will determine the final contribution amount required.

NEARBY SCHOOL CONSIDERATIONS

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

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

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

PROPORTIONATE SHARE CONTRIBUTIONS

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

Table 13. City of Vancouver Proportionate Share Fee Summary

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

TRANSPORTATION COMPLIANCE LETTER

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

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

Subject to City direction, we recommend future TCL document:

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

SUMMARY FINDINGS & RECOMMENDATIONS

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

Findings

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

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

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

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

Recommendations

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

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

    The City of Camas will determine the final contribution amount.

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

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

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

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

REFERENCES

1. City of Camas. *Transportation Impact Study Guidelines*. June 10, 2019.
2. Transportation Research Board. *Highway Capacity Manual, 7th Edition*. 2022.
3. Washington State Department of Transportation. *WDOT Sidra Policy Settings*. 2021.
4. Washington State Department of Transportation. *WSDOT Design Manual M 22-01.22 – Chapter 320: Traffic Analysis*. September 2024.
5. Clark County. MapsOnline, Clark County WA. GIS. https://gis.clark.wa.gov/mapsonline/index.cfm 2025.
6. Clark County. *Arterial Atlas*. 2016. https://clark.wa.gov/sites/default/files/media/document/2020-11/ArterialAtlas2016%202.pdf
7. Washington State Department of Transportation. Functional Classification Map, accessed May 2025. https://www.wsdot.wa.gov/data/tools/geoportal/?config=functionalclass
8. City of Camas. Camas 2035. https://www.cityofcamas.us/sites/default/files/fileattachments/community_development/page/5971/comprehensive_plan_camas_2035.pdf
9. Institute of Transportation Engineers. *Trip Generation Manual, 11th Edition*. September 2021.
10. Federal Highway Administration. *Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition.*

LIST OF APPENDICES

A. Traffic Study Scoping Documentation

B. WSDOT Crash Data

C. Traffic Count Data

D. Existing Conditions Analysis Worksheets

E. In-Process Data

F. Year 2030 Background Traffic Conditions Analysis Worksheets

G. Site-Generated Trip Assignment by Land Use

H. Year 2030 Total Traffic Conditions Analysis Worksheets

I. Year 2030 Mitigated Total Traffic Conditions Analysis Worksheets

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

Appendix A : Traffic Study Scoping Documentation

KITTELSON & ASSOCIATES
851 SW 6th Avenue, Suite 600
Portland, OR 97204
P 503.228.5230

SCOPING MEMORANDUM

July 23, 2025 Project# 31612

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

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

Craig Kathol & David Jardin
Clark County Public Works

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

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

RE: Lacamas North Shore (Johnston Dairy)

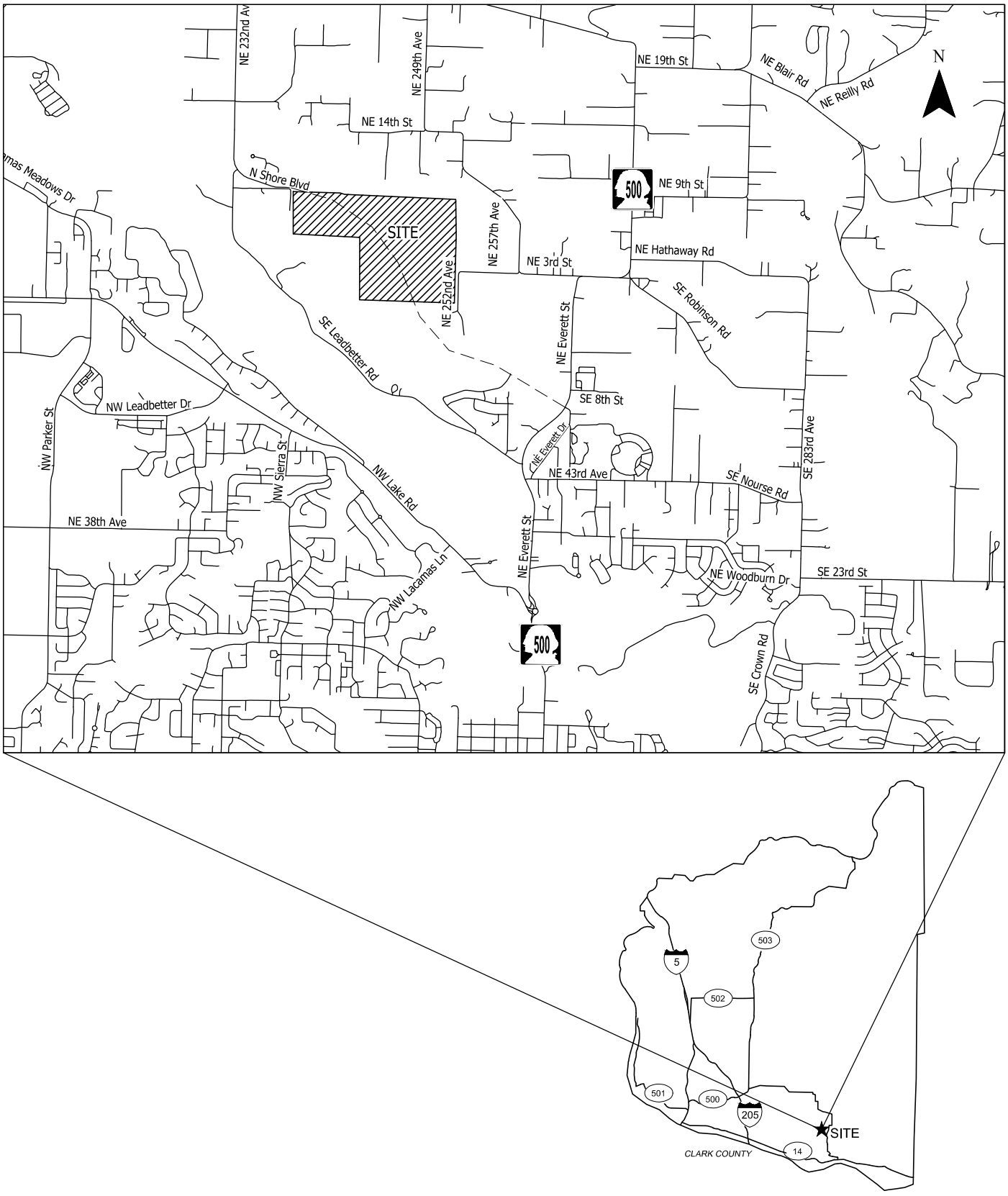
This scoping memorandum documents the project assumptions and methodology associated with preparing a transportation impact study (TIS) for the proposed Lacamas North Shore development in Camas, which is to be located on a portion of the existing Johnston Dairy site. Details of the TIS assumptions and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

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

PROPOSED PROJECT

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

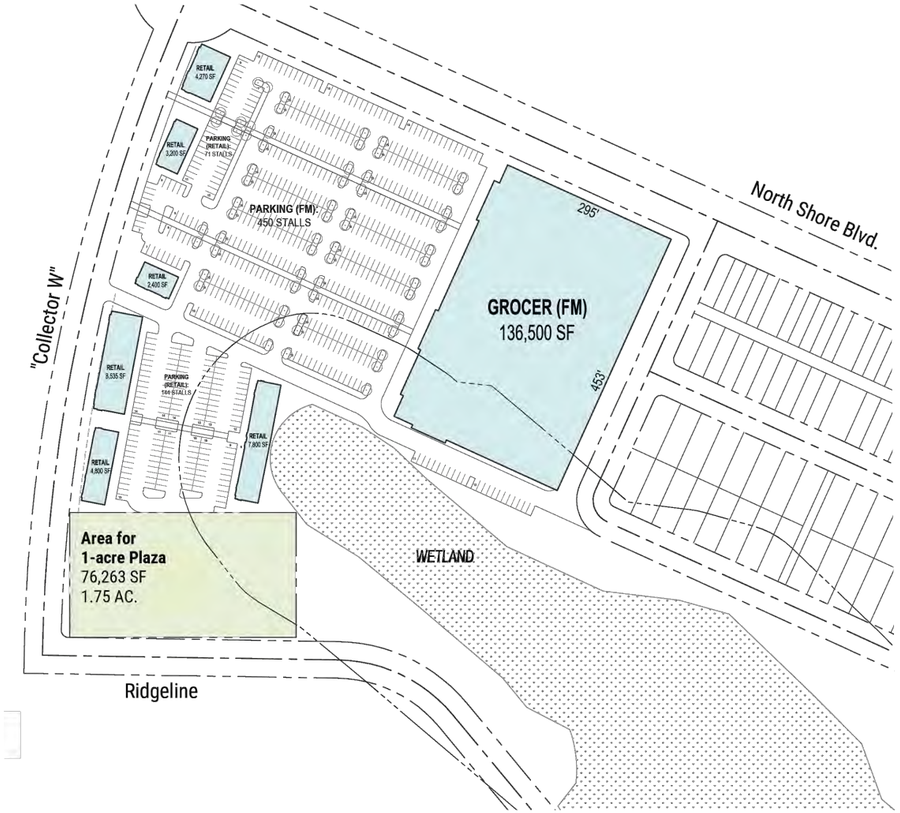
Primary access to the project site is anticipated via North Shore Boulevard, a portion of which would be extended from the current terminus near Lacamas Lake Elementary School east through the site in conjunction with site development. We understand the City plans to construct North Shore Boulevard east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

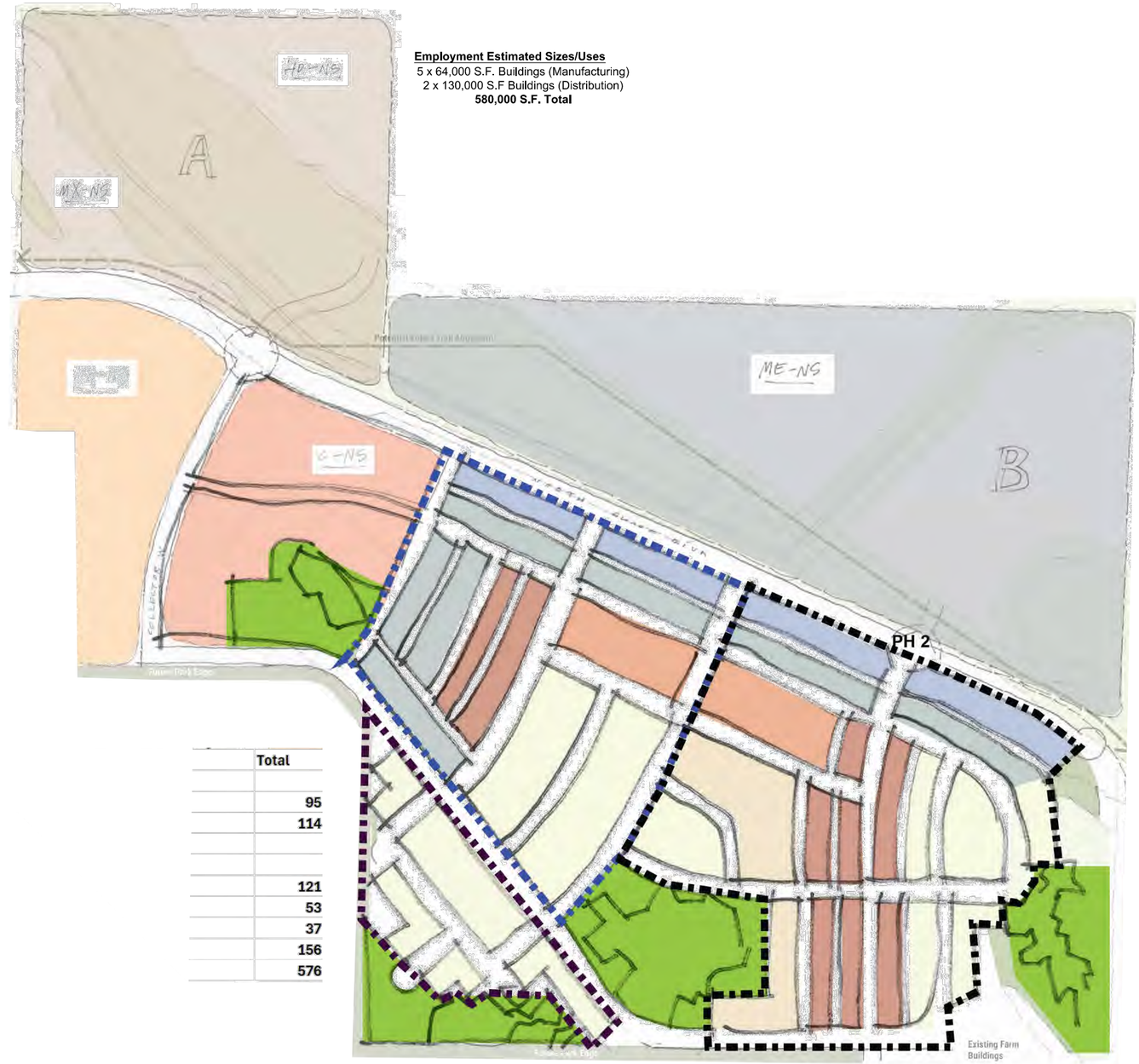


Site Vicinity Map
Camas, Washington

Figure
1

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





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

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

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



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

	Total
	95
	114
	121
	53
	37
	156
	576

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

Preliminary Site Plan
Camas, Washington

Figure
2

KITTELSON & ASSOCIATES

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

ESTIMATED TRIP GENERATION

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

Table 1. Estimated Site Trip Generation (Residential Phases)

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

Table 2. Estimated Site Trip Generation (Commercial Phase)

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

Table 3. Estimated Site Trip Generation (Employment Phase)

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

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

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

ESTIMATED TRIP DISTRIBUTION PATTERNS

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

Residential Pattern

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

Commercial Pattern

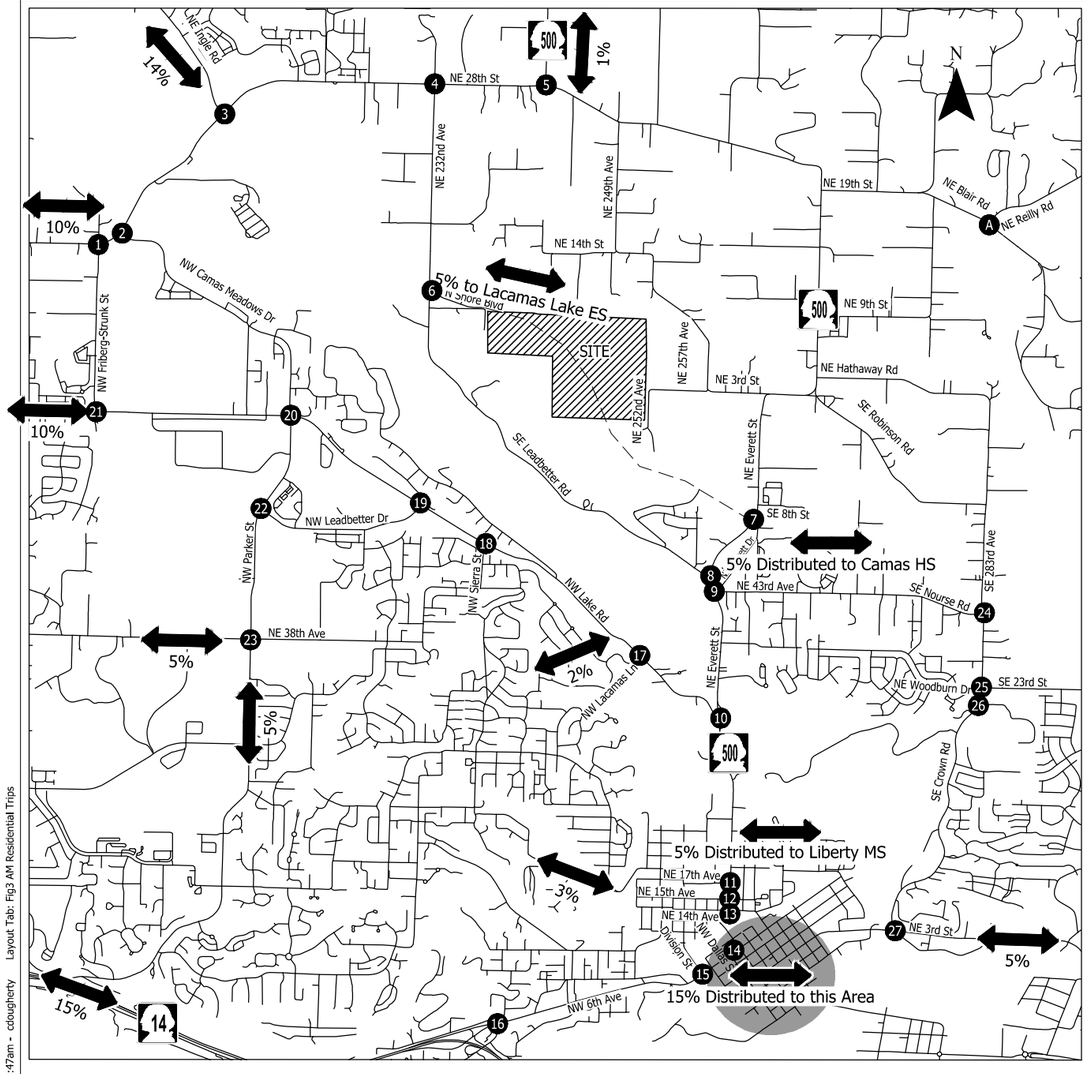
The commercial land use estimated trip distribution pattern was developed based on the available RTC modeling, existing and approved residential areas, and consideration of the locations of similar competing retail developments. The commercial land uses are anticipated to primarily serve the North Shore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

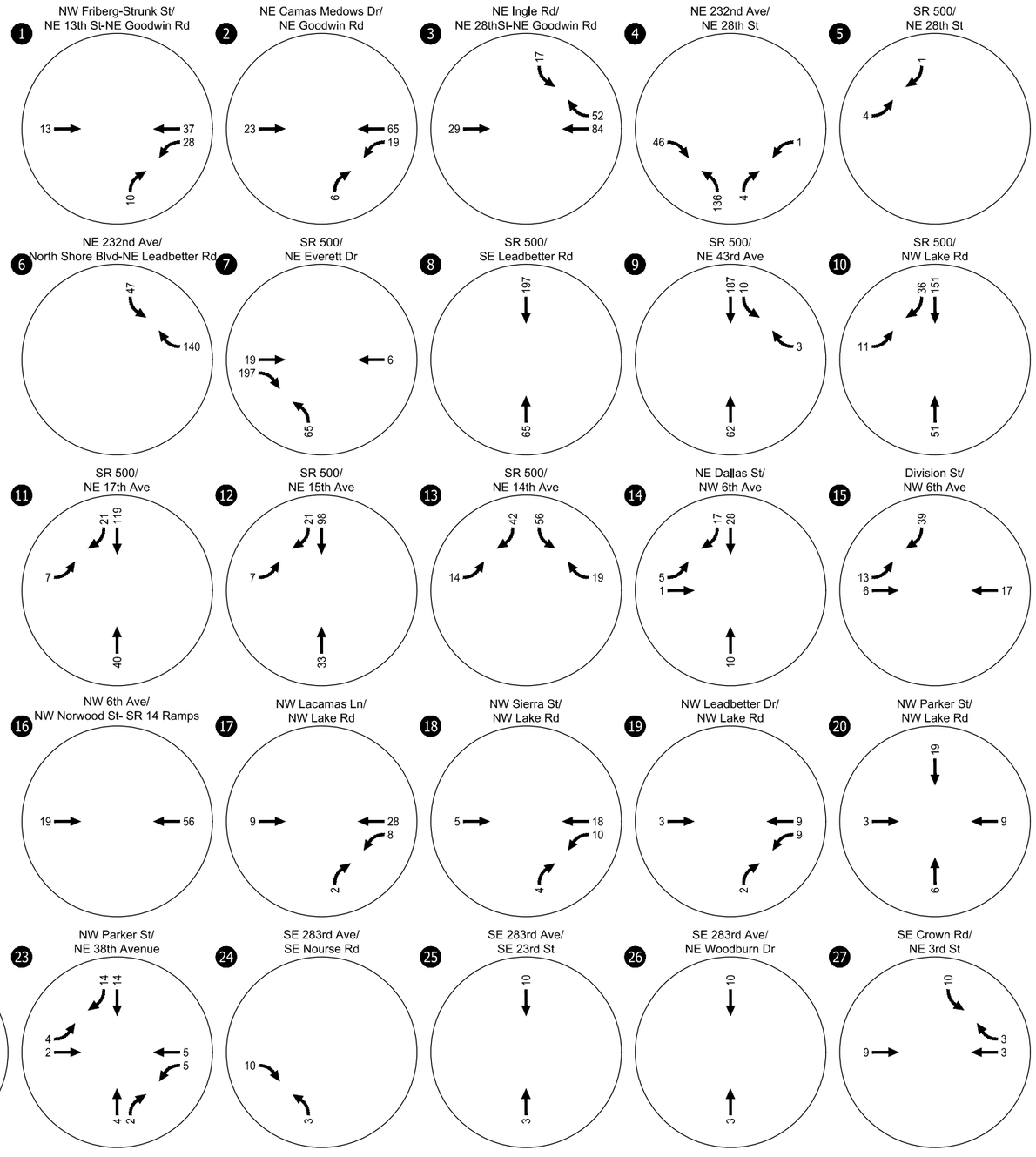
Figures 5 and 6 illustrate the estimated commercial trip distribution pattern and corresponding net new site-generated trip assignment to potential study intersections based on the commercial development trip estimates in Table 2. All pass-by trips will be assumed to travel to/from North Shore Boulevard.

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

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

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





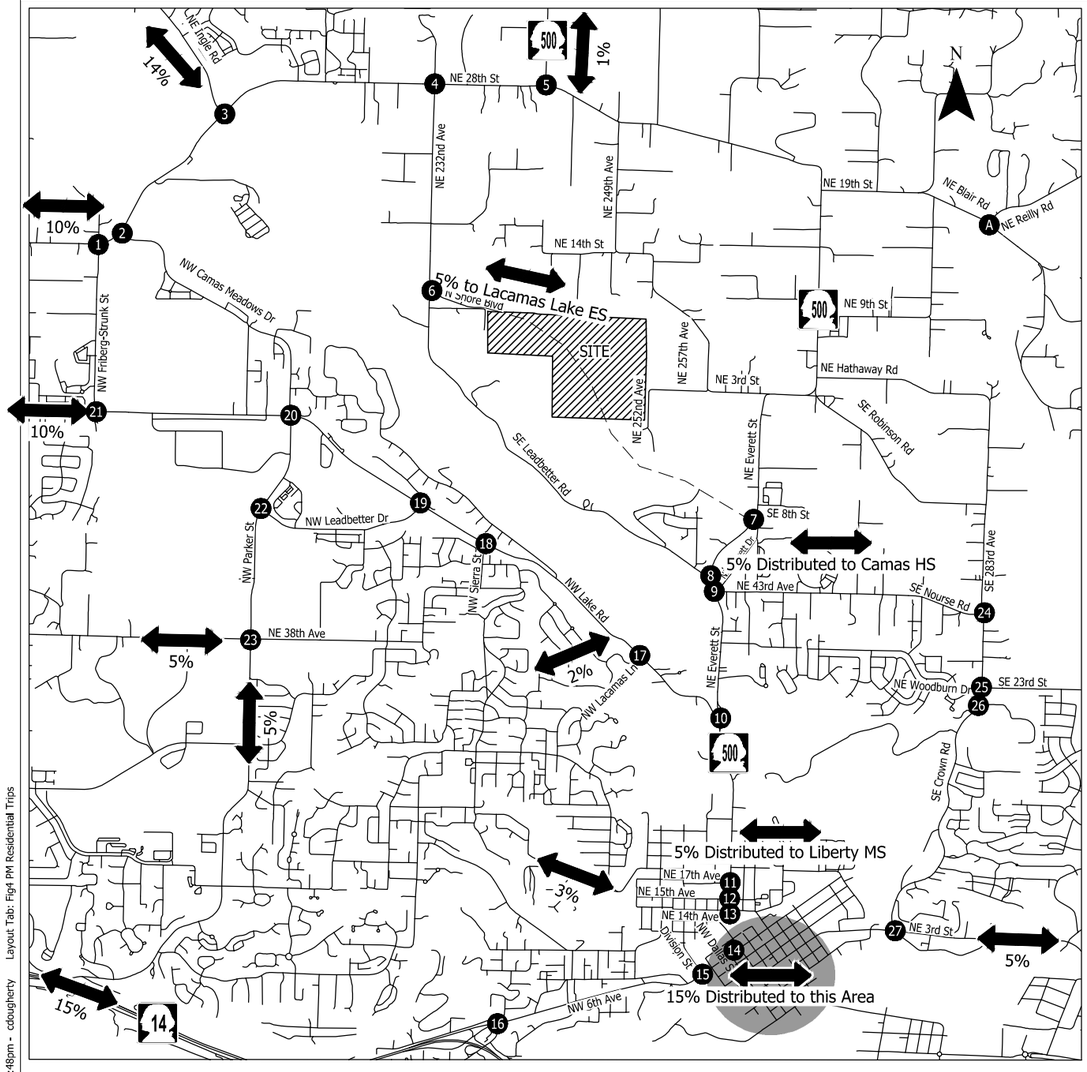
Study Intersections

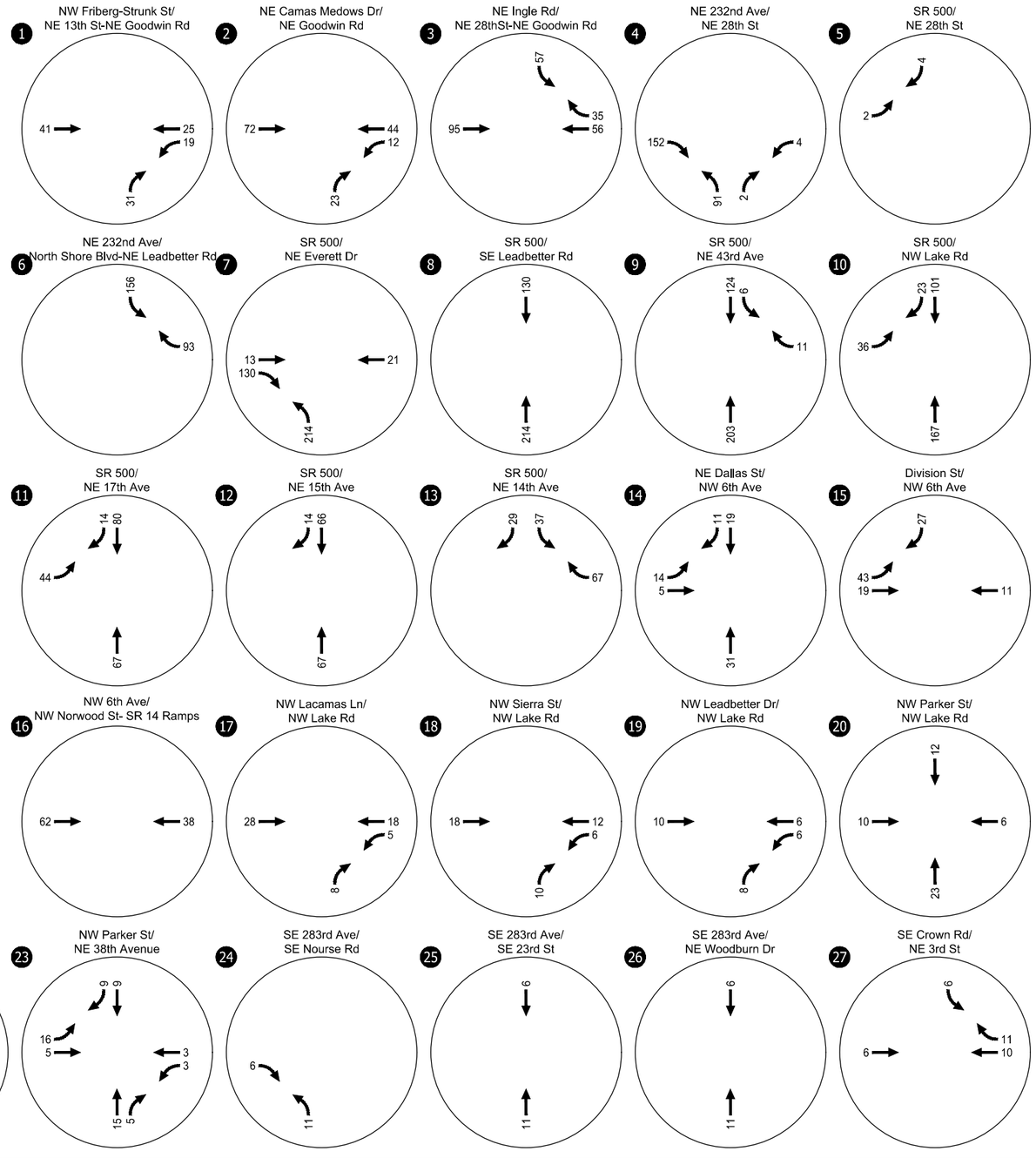
Weekday AM Peak Hour Residential Trip Assignment Camas, Washington

Figure 3

H:\31\31612 - Johnston Dairy\report\figs\31612_Scoping Figs.dwg Jul 16, 2025 - 11:47am - cdougherty Layout Tab: Fig3 AM Residential Trips

KITTELSON & ASSOCIATES





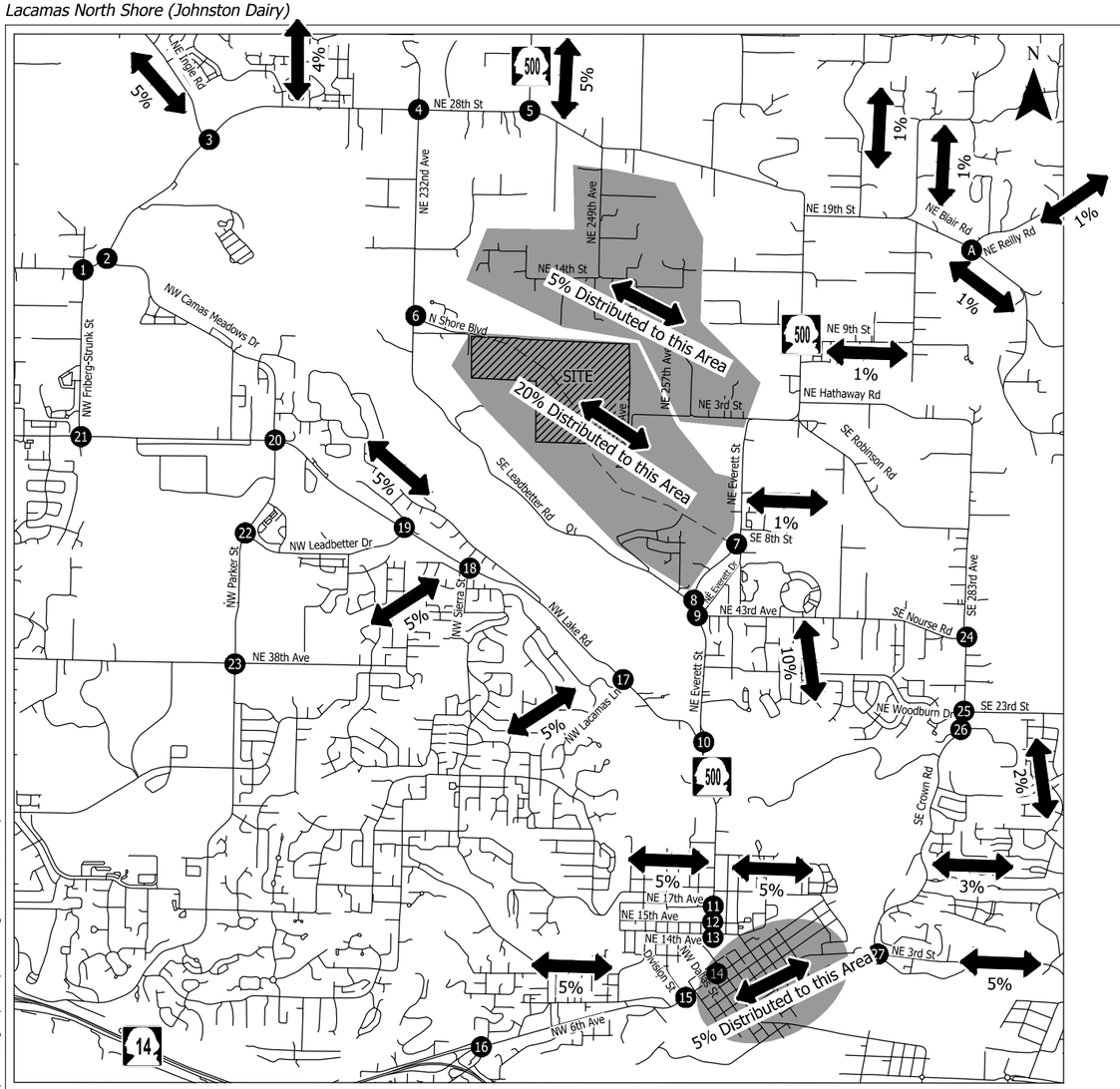
(#) Study Intersections

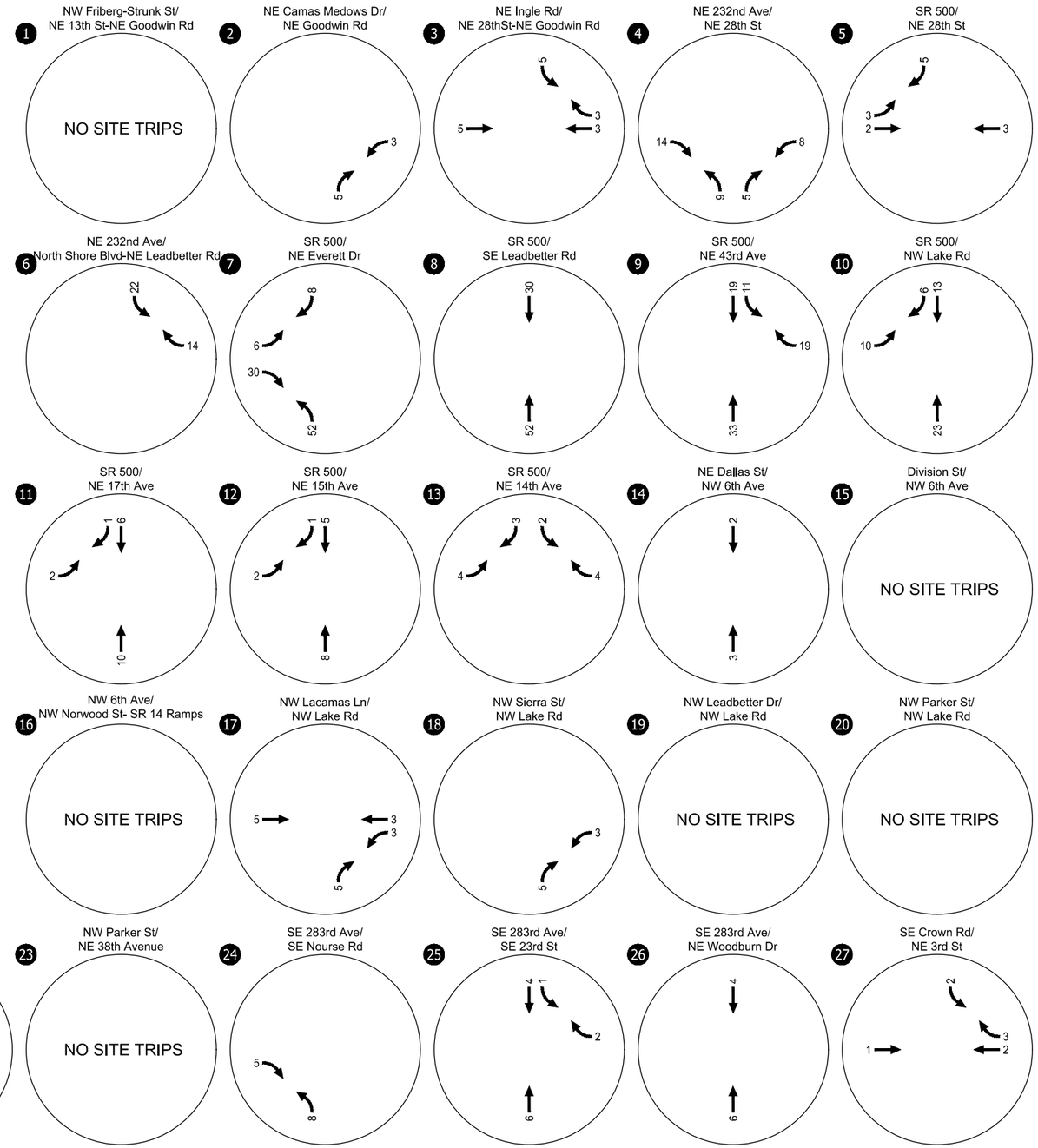
Weekday PM Peak Hour Residential Trip Assignment Camas, Washington

Figure 4

H:\31\31612 - Johnston Dairy\report\figs\31612_Scoping Figs.dwg Jul 16, 2025 - 12:48pm - cdougherty Layout Tab: Fig4 PM Residential Trips

KITTELSON & ASSOCIATES



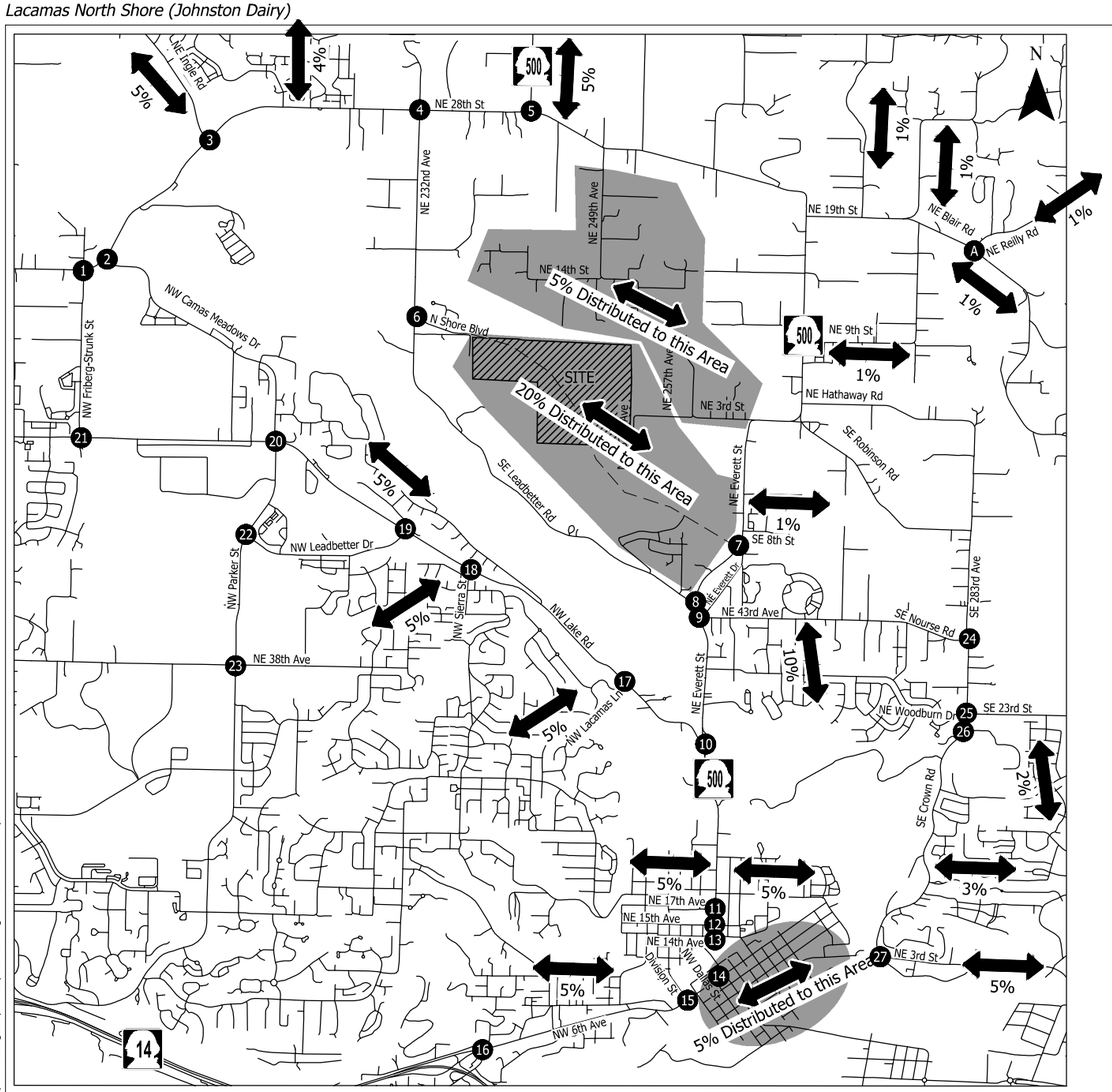


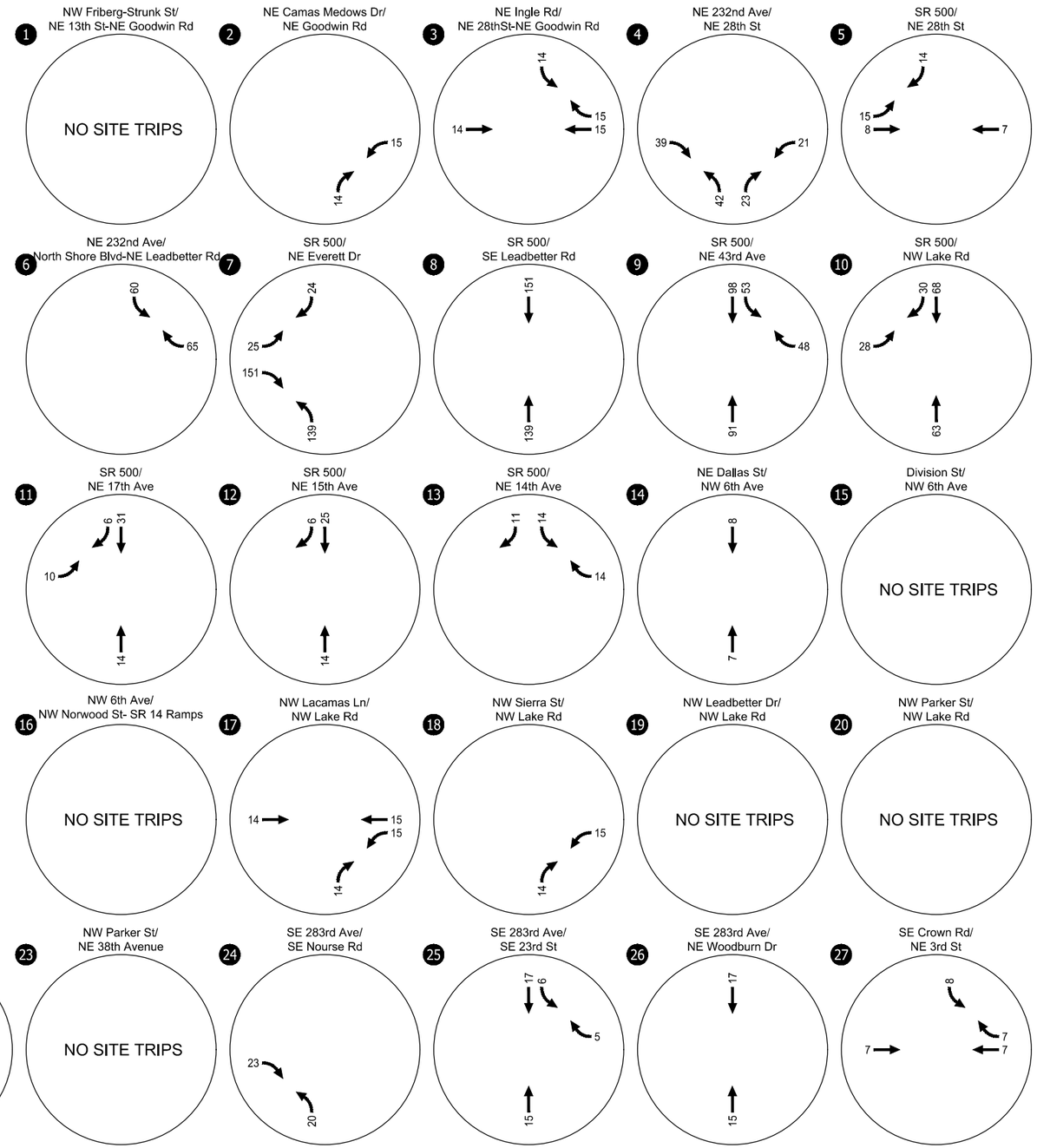
Study Intersections

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

Figure 5

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





Study Intersections

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

Figure 6

H:\31\31612 - Johnston Dairy\report\Figs\31612_Scoping Figs.dwg Jul 11, 2025 - 1:43pm - cdougherty Layout Tab: Fig6 PM Commercial Trips

Employment Pattern

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

Total Site-Generated Trips

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

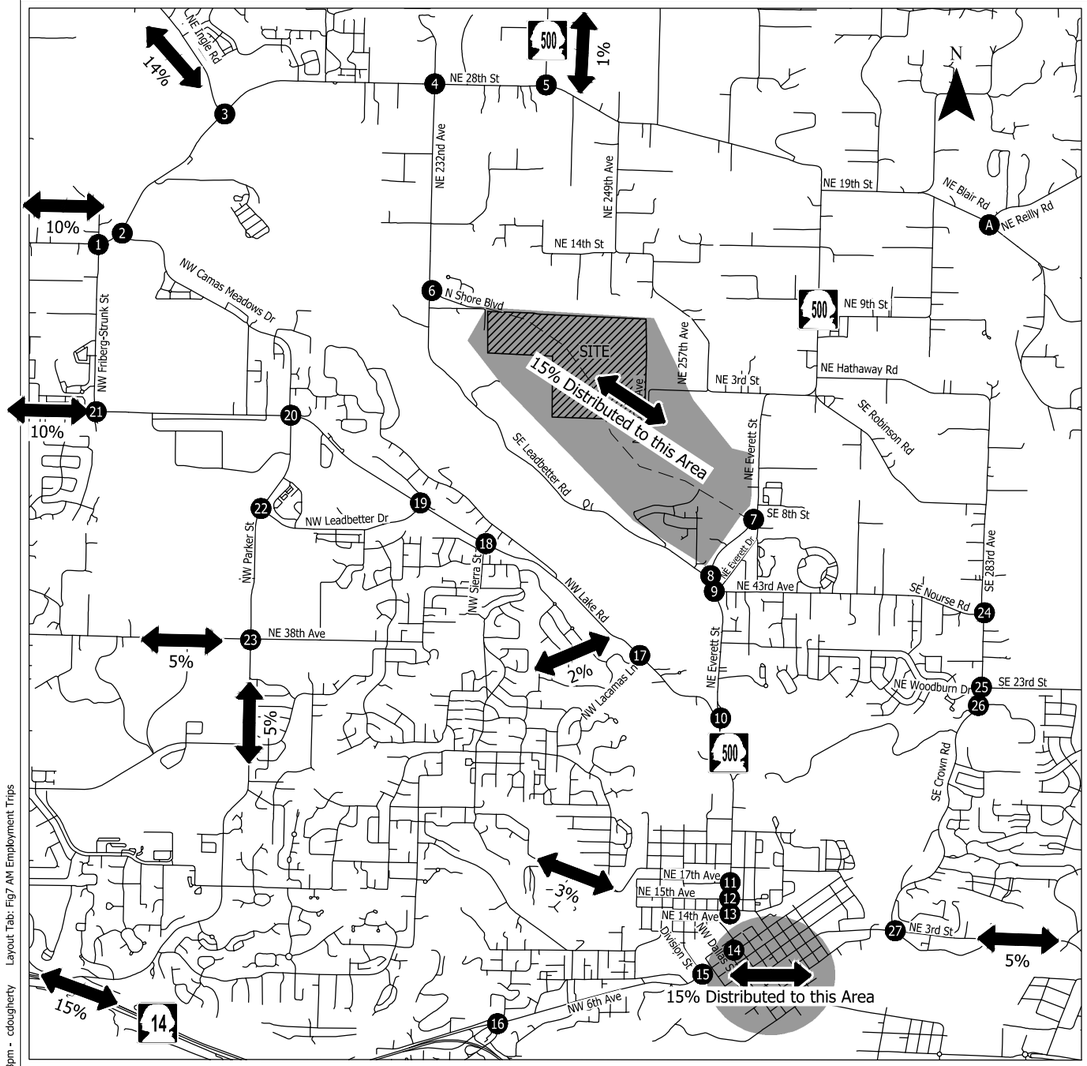
POTENTIAL STUDY INTERSECTIONS

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

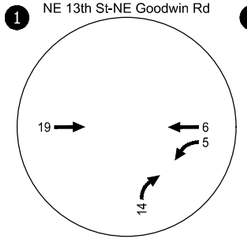
Based on the identified trip thresholds, the preliminary trip distribution pattern and trip assignment outlined above, the intersections listed in Table 4 have been identified for potential inclusion in the TIS[5]. We request City and partner agency staff review and confirm the proposed study intersections.

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

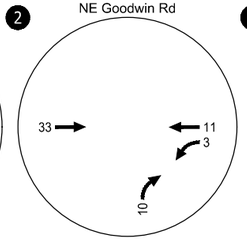
[5] Note that Table 4 excludes the NE Blair Road/NE Reilly Road intersection. While this County-maintained intersection is located within a 3-mile radius of the site, the total site-generated trips added to the STOP controlled approach are less than 5 during the AM and PM peak hours (refer to Figure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



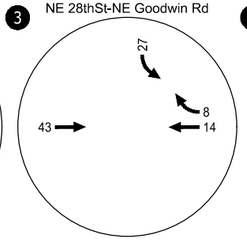
1 NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd



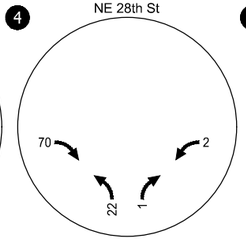
2 NE Camas Medows Dr/ NE Goodwin Rd



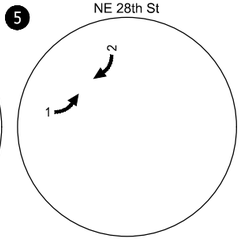
3 NE Ingle Rd/ NE 28thSt-NE Goodwin Rd



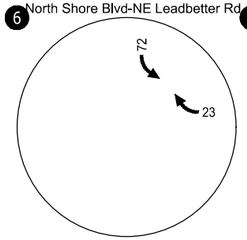
4 NE 232nd Ave/ NE 28th St



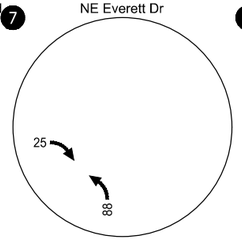
5 SR 500/ NE 28th St



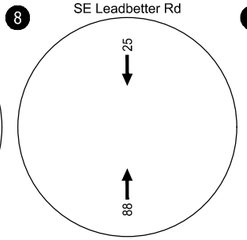
6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd



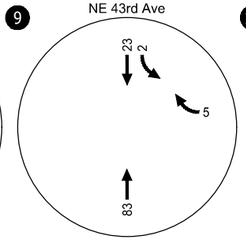
7 SR 500/ NE Everett Dr



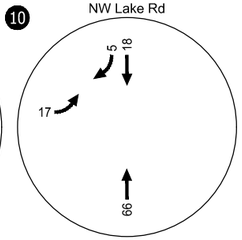
8 SR 500/ SE Leadbetter Rd



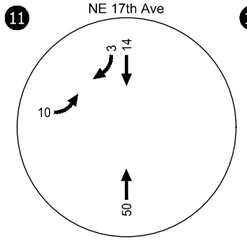
9 SR 500/ NE 43rd Ave



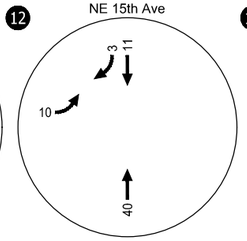
10 SR 500/ NW Lake Rd



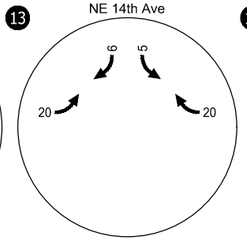
11 SR 500/ NE 17th Ave



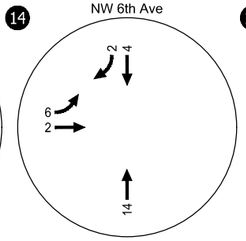
12 SR 500/ NE 15th Ave



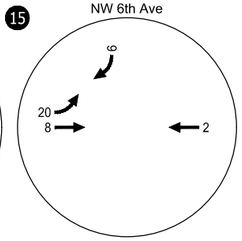
13 SR 500/ NE 14th Ave



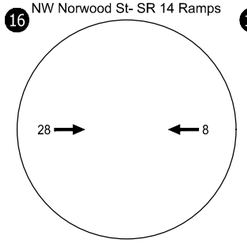
14 NE Dallas St/ NW 6th Ave



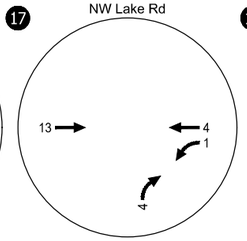
15 Division St/ NW 6th Ave



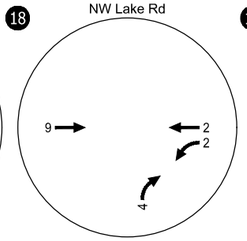
16 NW 6th Ave/ NW Norwood St- SR 14 Ramps



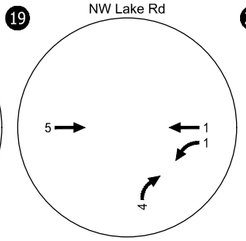
17 NW Lacamas Ln/ NW Lake Rd



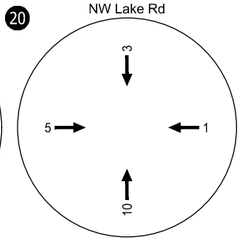
18 NW Sierra St/ NW Lake Rd



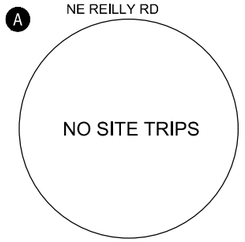
19 NW Leadbetter Dr/ NW Lake Rd



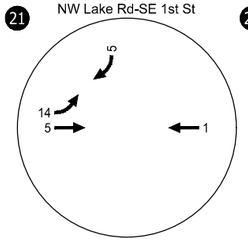
20 NW Parker St/ NW Lake Rd



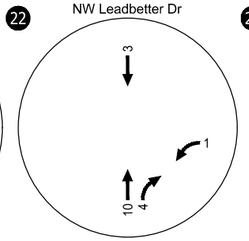
A NE BLAIR RD/ NE REILLY RD



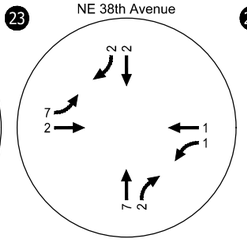
21 NW Friberg-Strunk St/ NW Lake Rd-SE 1st St



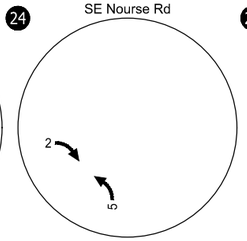
22 NW Parker St/ NW Leadbetter Dr



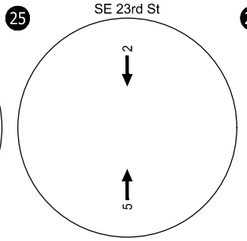
23 NW Parker St/ NE 38th Avenue



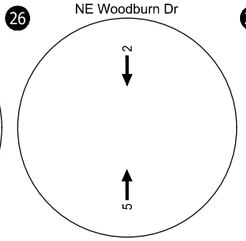
24 SE 283rd Ave/ SE Nourse Rd



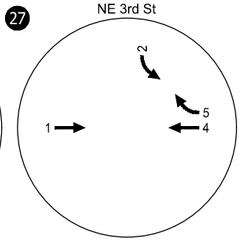
25 SE 283rd Ave/ SE 23rd St



26 SE 283rd Ave/ NE Woodburn Dr



27 SE Crown Rd/ NE 3rd St

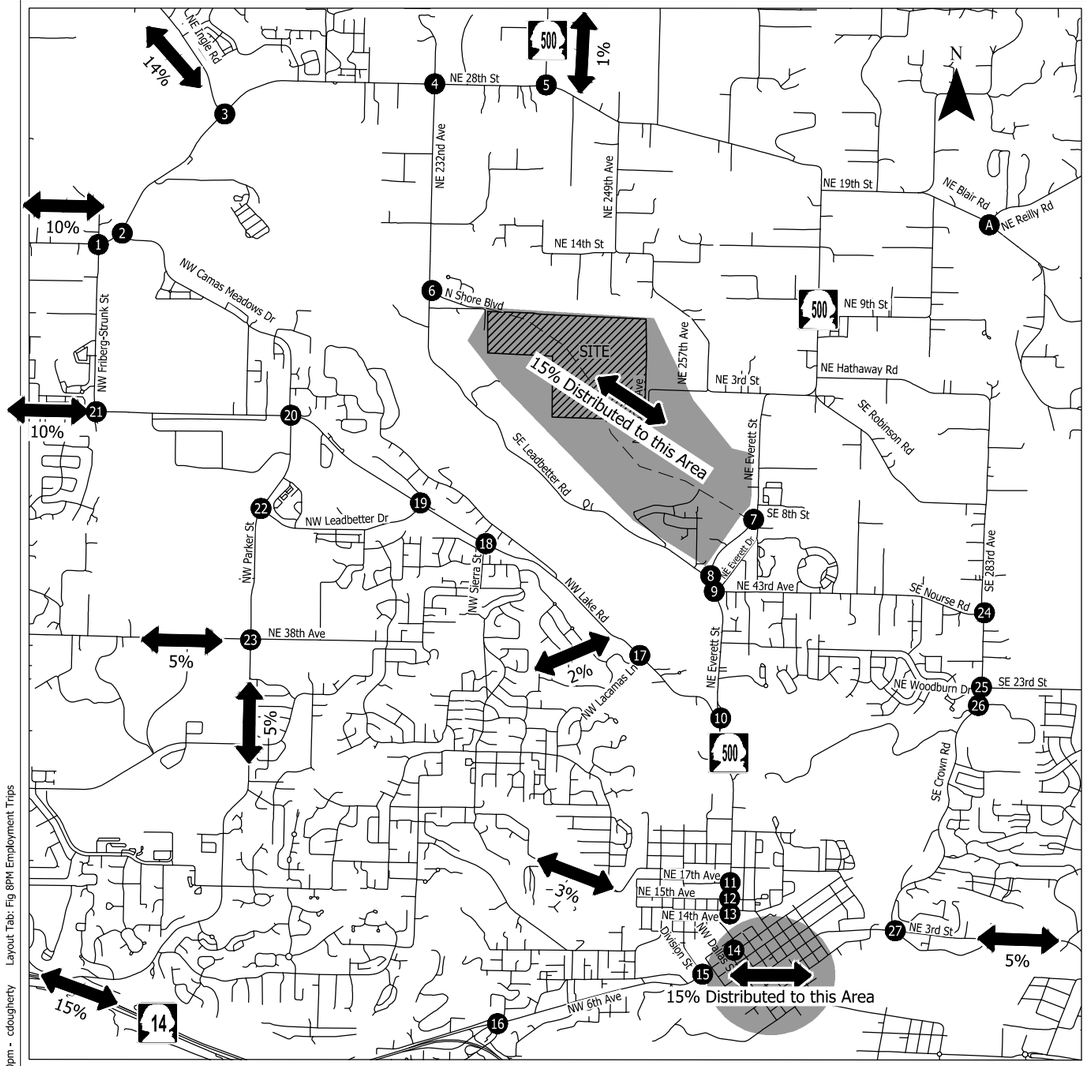


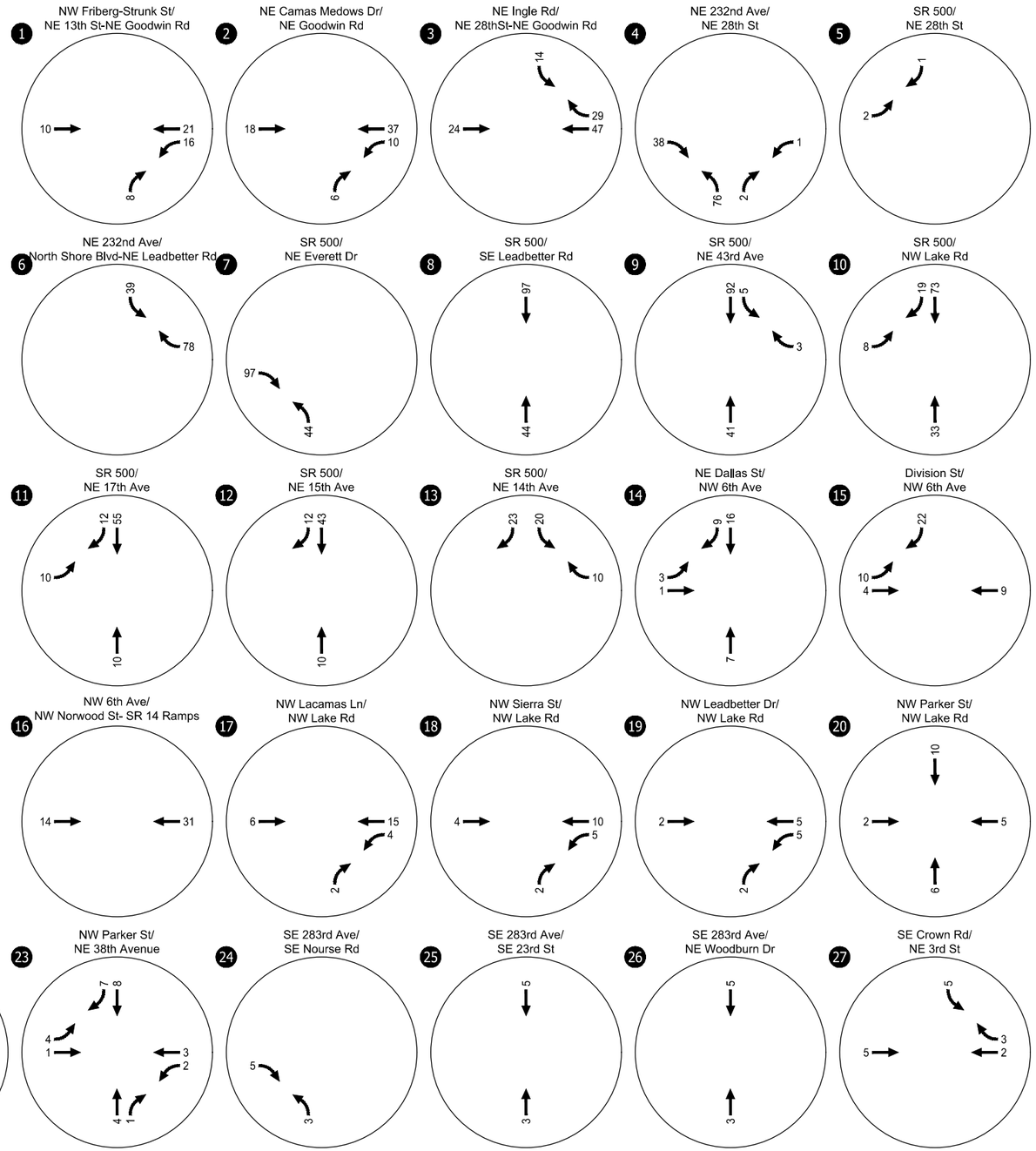
(#) Study Intersections

Weekday AM Peak Hour Employment Trip Assignment Camas, Washington

Figure 7

H:\31\31612 - Johnston Dairy\report\Figs\31612_Scoping Figs.dwg Jul 21, 2025 - 1:58pm - cdougherty Layout Tab: Fig7 AM Employment Trips



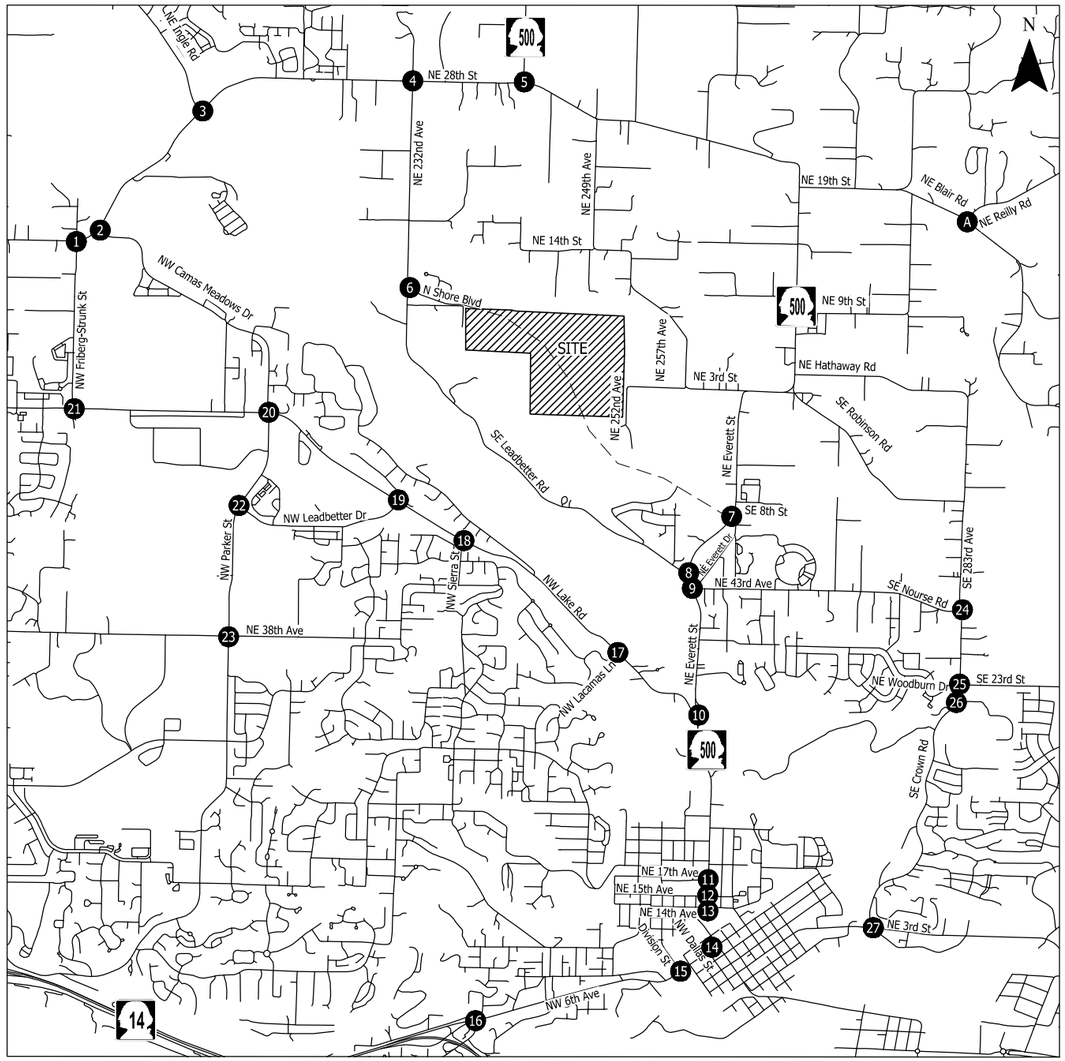


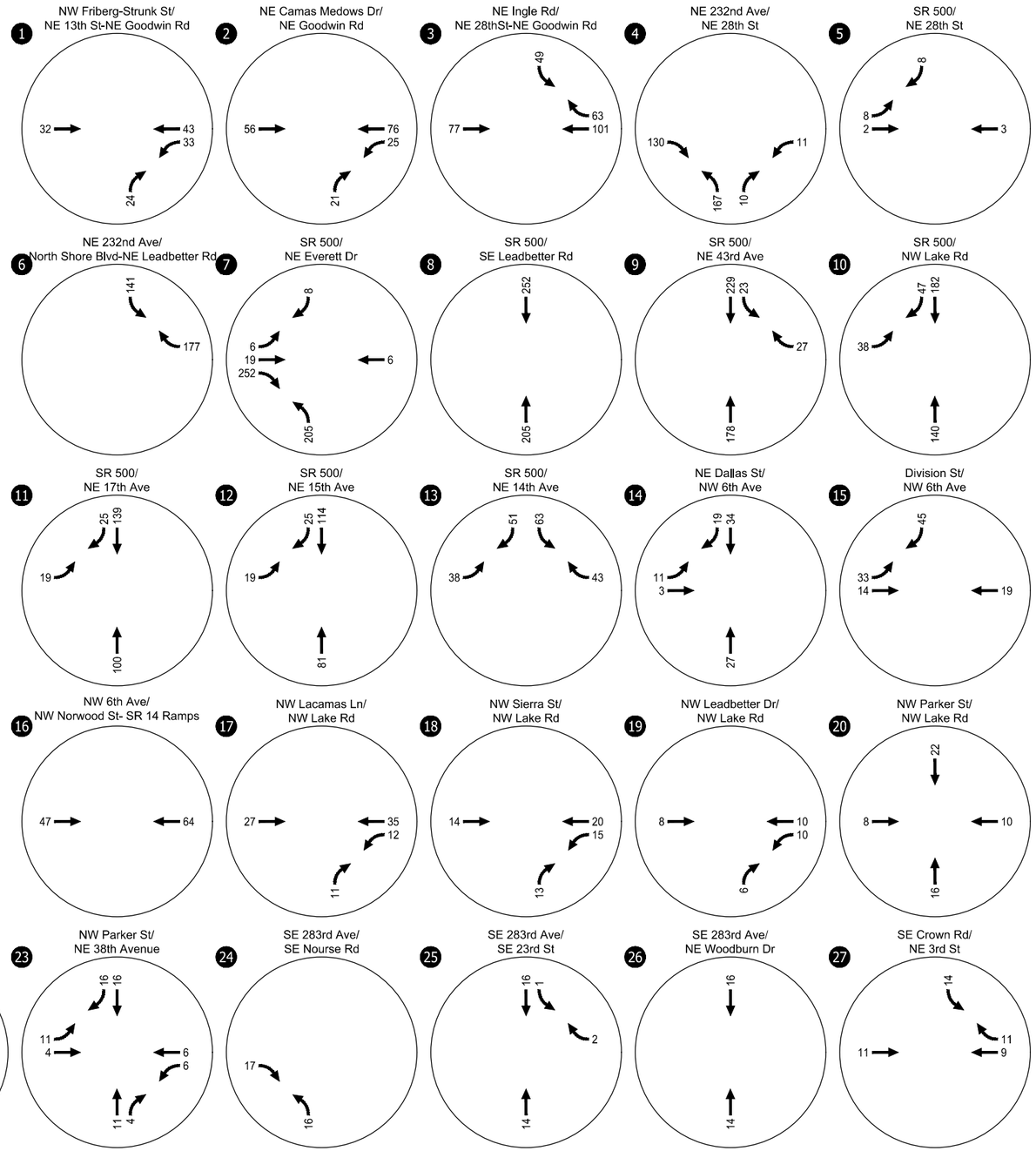
Study Intersections

Weekday PM Peak Hour Employment Trip Assignment Camas, Washington

Figure 8

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





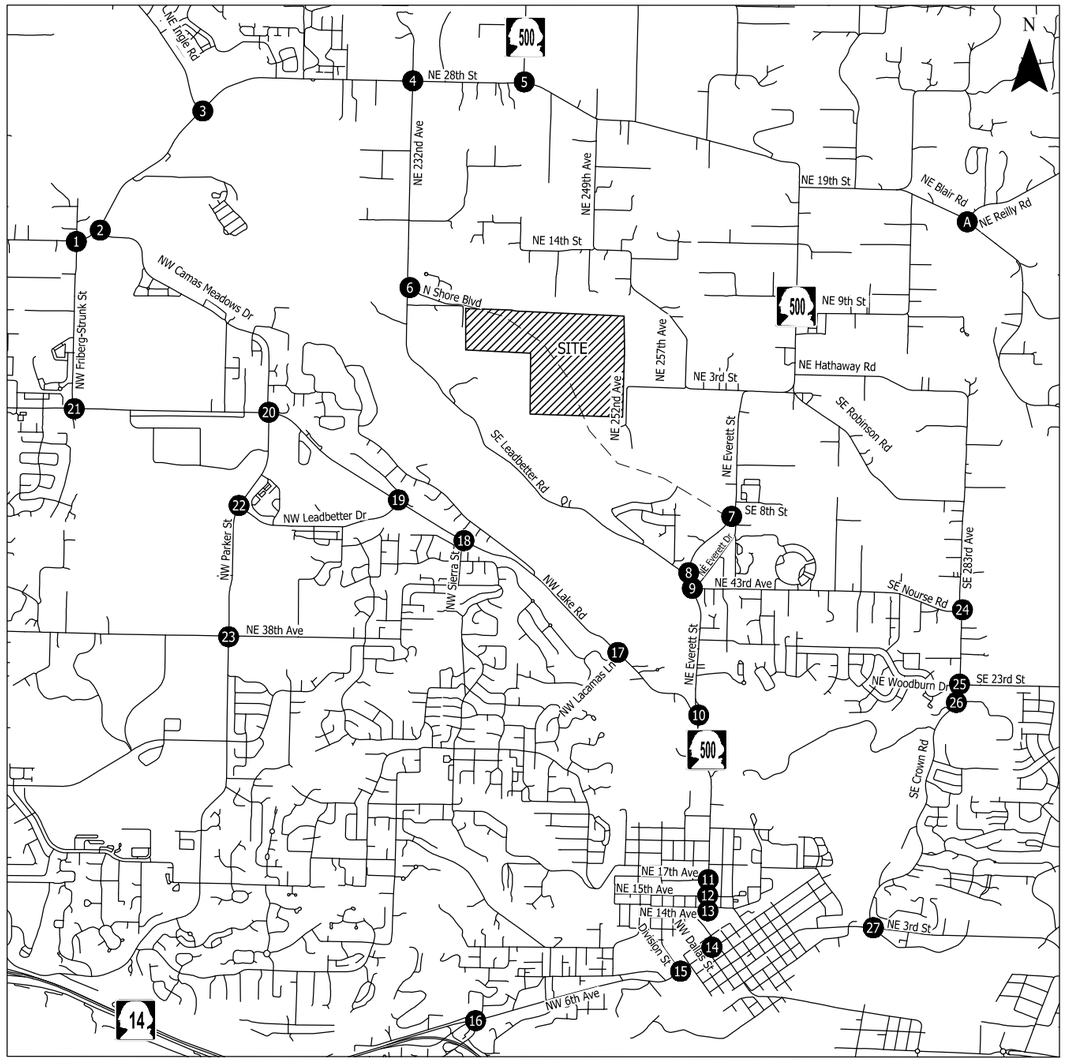
(#) Study Intersections

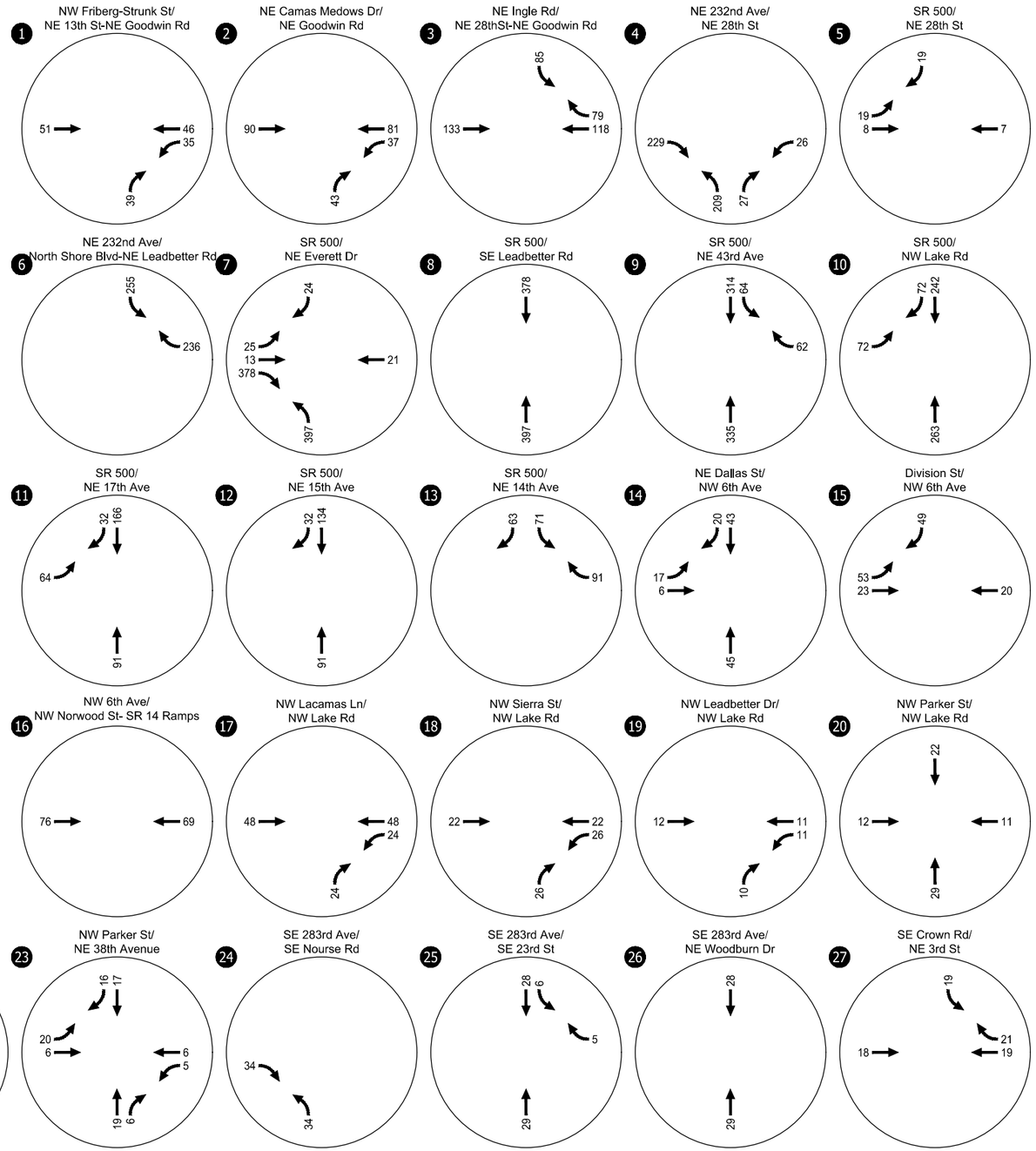
Weekday AM Peak Hour
Cumulative Net New Site Trips
Camas, Washington

Figure
9

H:\31\31612 - Johnston Dairy\report\Figs\31612_Scoping Figs.dwg Jul 21, 2025 - 2:24pm - cdougherty Layout Tab: Fig9 AM Total Trips

KITTELSON & ASSOCIATES





(#) Study Intersections

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

Figure
10

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

KITTELSON & ASSOCIATES

Table 4. Potential Study Intersections

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

ANALYSIS METHODOLOGY

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

MOBILITY STANDARDS

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

City of Camas

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

SR 500

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

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

Clark County

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

Table 5. Applicable Mobility Standards

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

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

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

TWSC = Two-way Stop Control

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

STUDY TIME PERIODS

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

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

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

IN-PROCESS DEVELOPMENTS AND BACKGROUND GROWTH RATES

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

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

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

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

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

BACKGROUND TRANSPORTATION IMPROVEMENTS

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

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

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

CITY OF VANCOUVER PROPORTIONAL SHARE INTERSECTIONS

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

NEXT STEPS

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

Appendix B : WSDOT Crash Data

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

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

Appendix C : Traffic Count Data

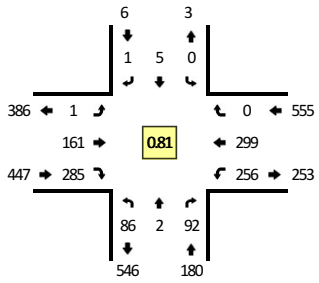
Type of peak hour being reported: Intersection Peak

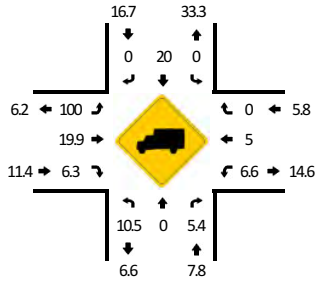
Method for determining peak hour: Total Entering Volume

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

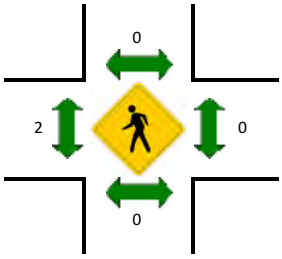
QC JOB #: 16993928
DATE: Tue, May 20 2025

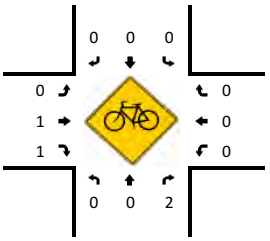
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

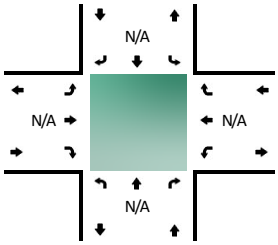


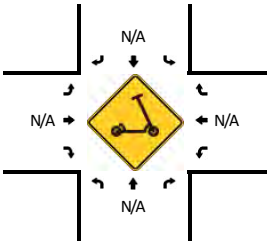


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

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

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

Comments:

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

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

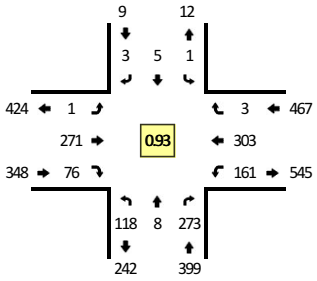
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

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

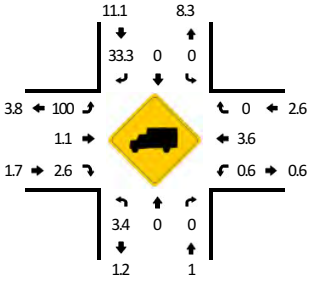
QC JOB #: 16993929
DATE: Tue, May 20 2025

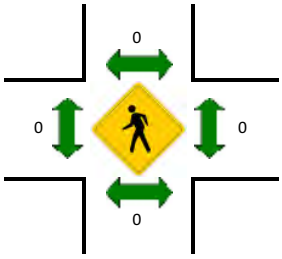
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

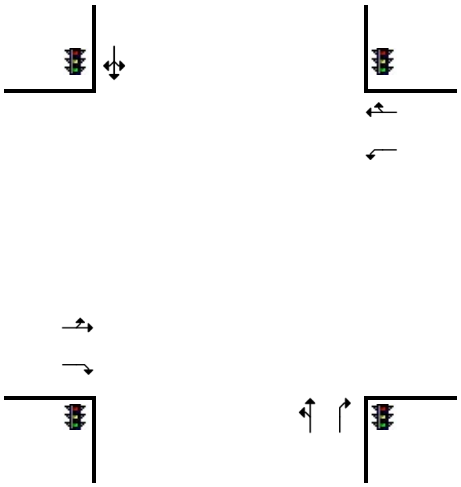


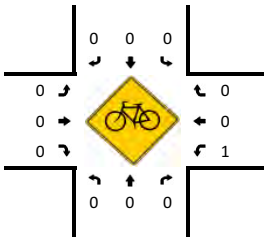


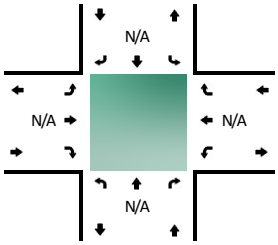
TRUE DATA TO IMPROVE MOBILITY

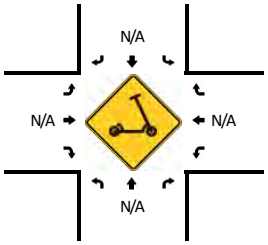












R* = RTOR

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

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

Comments:

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

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

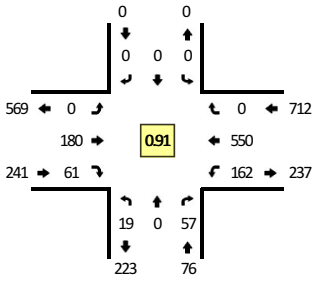
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

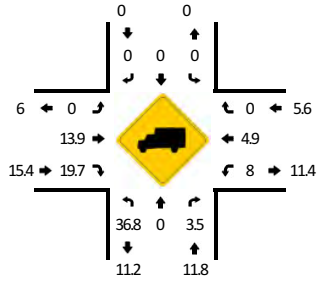
LOCATION: NE Camas Meadows Dr -- NE Goodwin Rd
CITY/STATE: Camas, WA

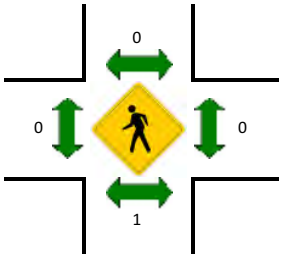
QC JOB #: 16993926
DATE: Tue, May 20 2025

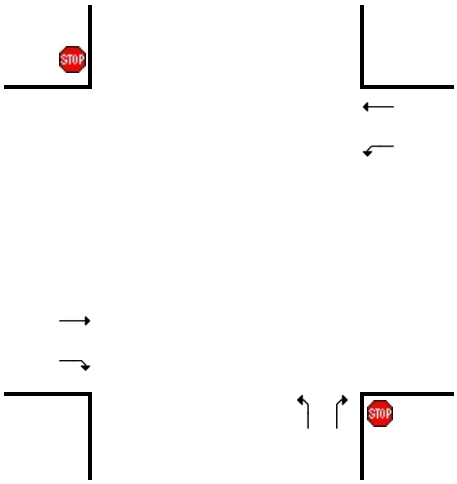
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

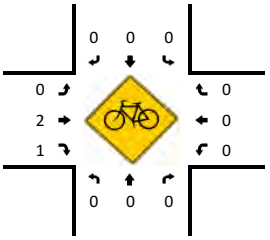


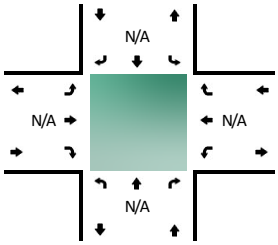
TRUE DATA TO IMPROVE MOBILITY

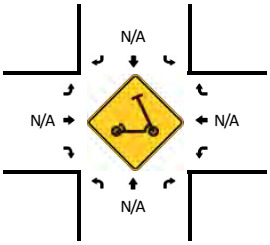












R* = RTOR

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

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

Comments:

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

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

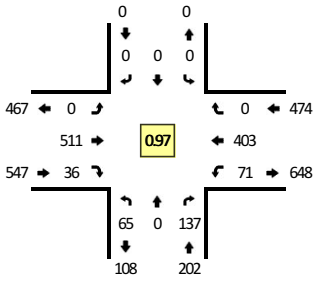
Type of peak hour being reported: Intersection Peak

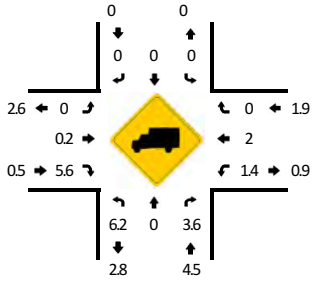
Method for determining peak hour: Total Entering Volume

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

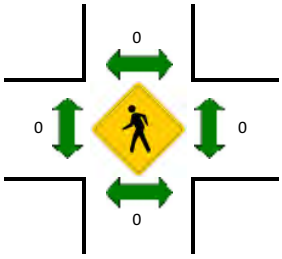
QC JOB #: 16993927
DATE: Tue, May 20 2025

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

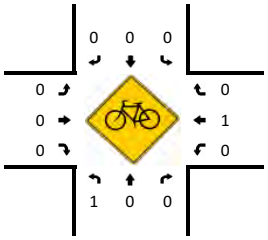


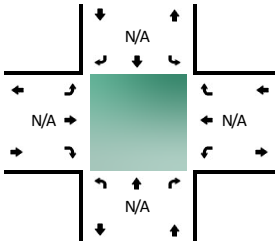


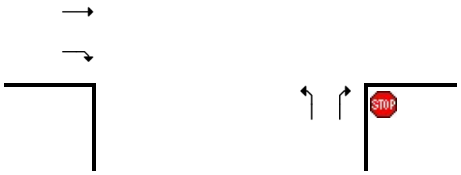
TRUE DATA TO IMPROVE MOBILITY

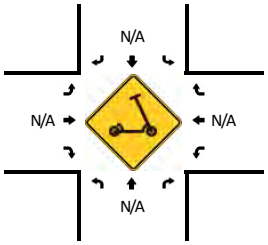












R* = RTOR

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

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

Comments:

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

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

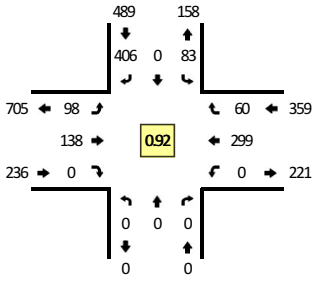
Type of peak hour being reported: Intersection Peak

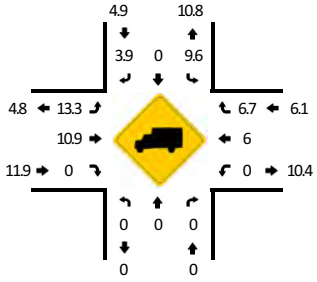
Method for determining peak hour: Total Entering Volume

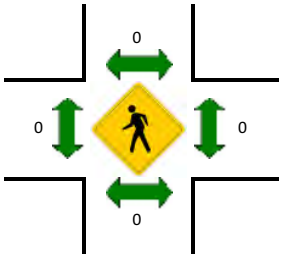
LOCATION: NE Ingle Rd -- NE 28th St
CITY/STATE: Camas, WA

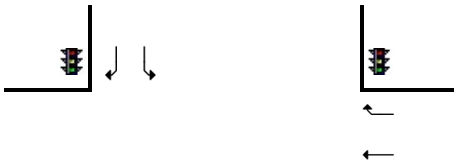
QC JOB #: 16993924
DATE: Tue, May 20 2025

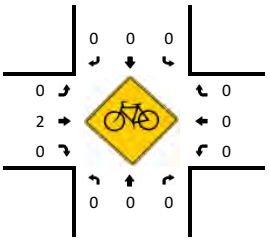
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

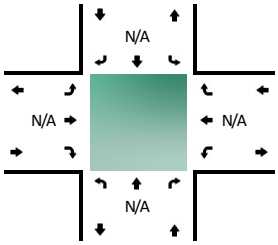




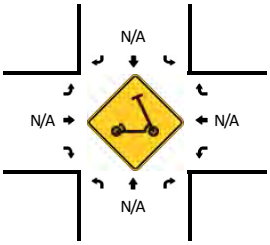












R* = RTOR

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

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

Comments:

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

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

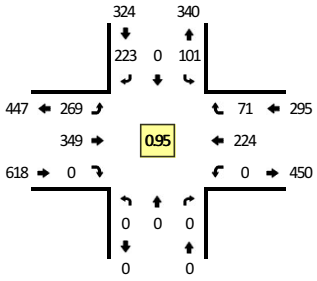
Type of peak hour being reported: Intersection Peak

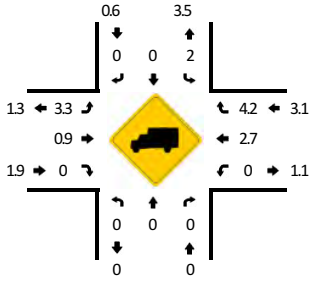
Method for determining peak hour: Total Entering Volume

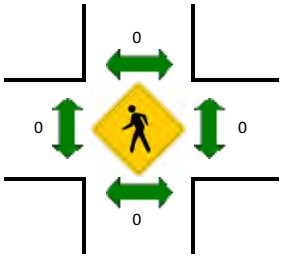
LOCATION: NE Ingle Rd -- NE 28th St
CITY/STATE: Camas, WA

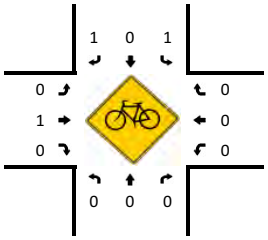
QC JOB #: 16993925
DATE: Tue, May 20 2025

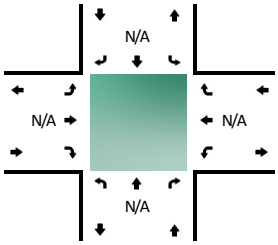
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

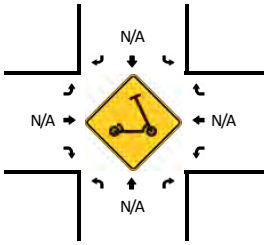












R* = RTOR

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

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

Comments:

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

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

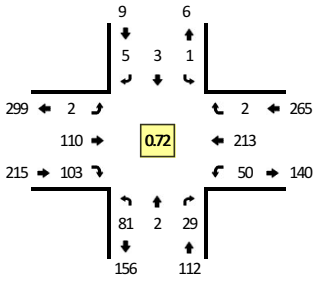
Type of peak hour being reported: Intersection Peak

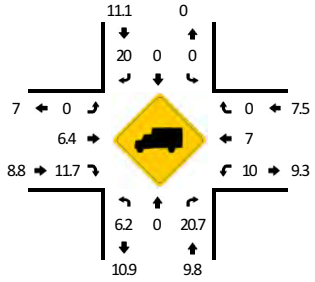
Method for determining peak hour: Total Entering Volume

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

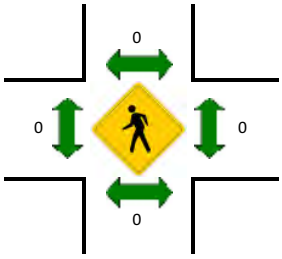
QC JOB #: 16977001
DATE: Tue, Apr 8 2025

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

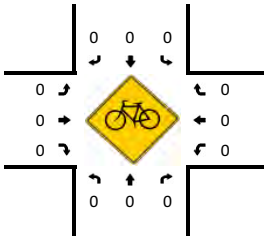


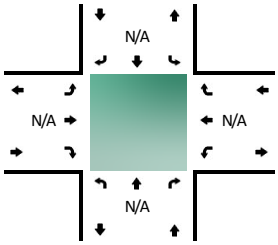


TRUE DATA TO IMPROVE MOBILITY

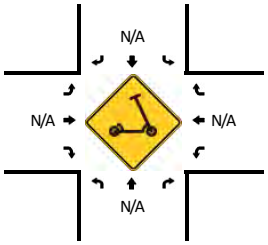












R* = RTOR

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

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

Comments:

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

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

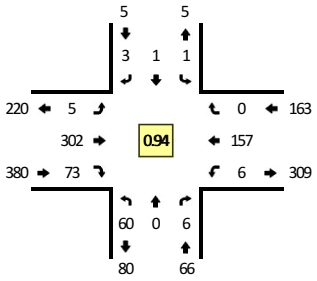
Type of peak hour being reported: Intersection Peak

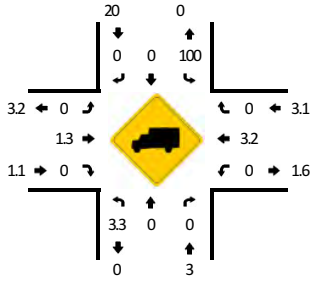
Method for determining peak hour: Total Entering Volume

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

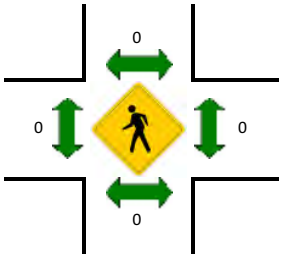
QC JOB #: 16977002
DATE: Tue, Apr 8 2025

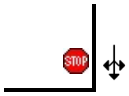
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

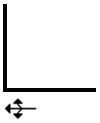


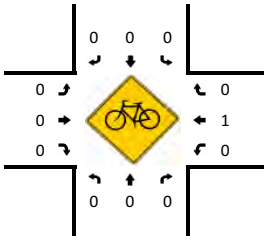


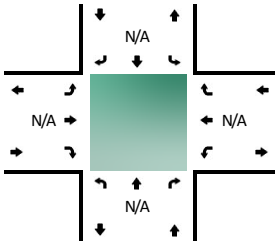
TRUE DATA TO IMPROVE MOBILITY

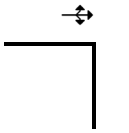


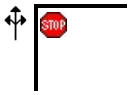


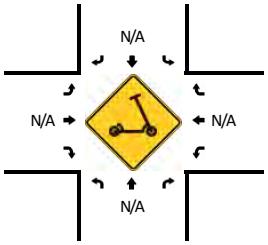












R* = RTOR

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

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

Comments:

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

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: NE 242nd Ave (SR 500) -- NE 28th St

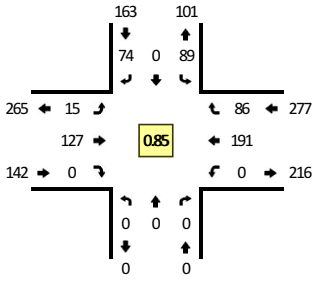
CITY/STATE: Fern Prairie, WA

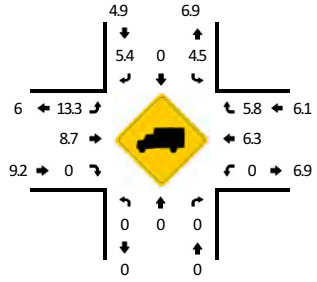
QC JOB #: 16977003

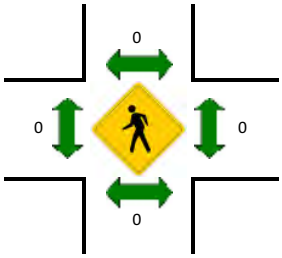
DATE: Tue, Apr 8 2025

Peak-Hour: 7:10 AM -- 8:10 AM

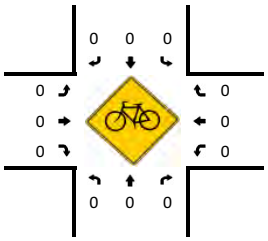
Peak 15-Min: 7:45 AM -- 8:00 AM

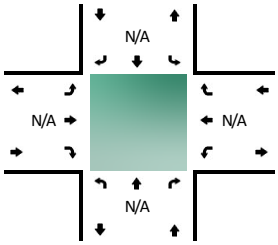




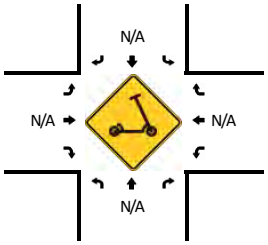












R* = RTOR

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

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

Comments:

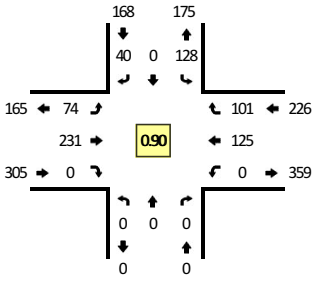
Report generated on 4/16/2025 4:14 PM

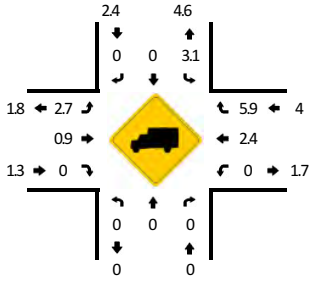
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

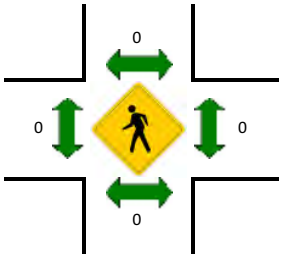
LOCATION: NE 242nd Ave (SR 500) -- NE 28th St | **QC JOB #:** 16977004
CITY/STATE: Fern Prairie, WA | **DATE:** Tue, Apr 8 2025

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

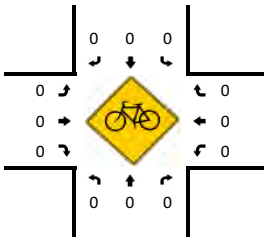


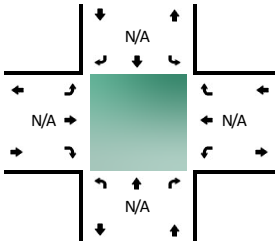


TRUE DATA TO IMPROVE MOBILITY

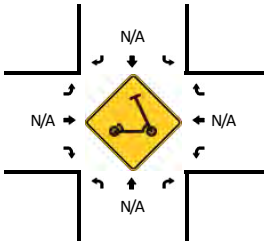












R* = RTOR

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

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

Comments:

Report generated on 4/16/2025 4:14 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

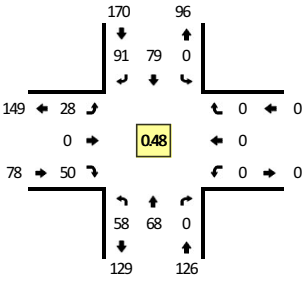
Type of peak hour being reported: Intersection Peak

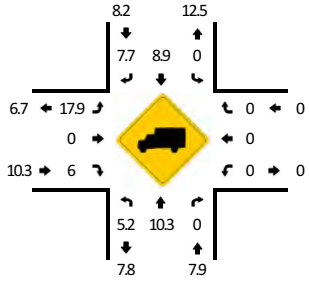
Method for determining peak hour: Total Entering Volume

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

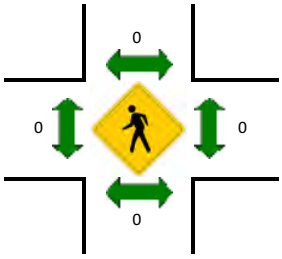
QC JOB #: 16993922
DATE: Tue, Jun 10 2025

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

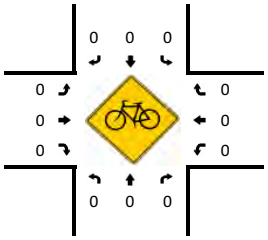


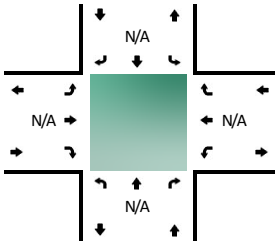


TRUE DATA TO IMPROVE MOBILITY

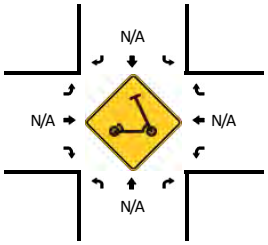












5-Min Count Period Beginning At	NE 232nd Ave (Northbound)				NE 232nd Ave (Southbound)				SE Leadbetter Rd (Eastbound)				SE Leadbetter Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	1	4	0	2	0	1	0	0	0	0	0	8	
7:05 AM	0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

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

Comments:

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

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

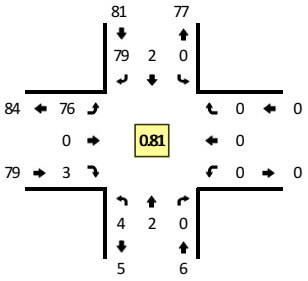
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

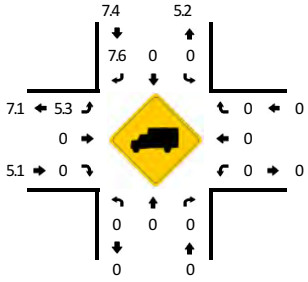
LOCATION: NE 232nd Ave -- SE Leadbetter Rd
CITY/STATE: Camas, WA

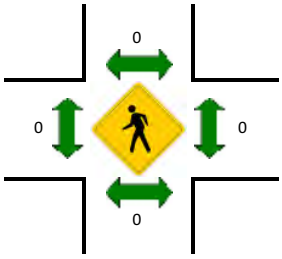
QC JOB #: 16993923
DATE: Tue, Jun 10 2025

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

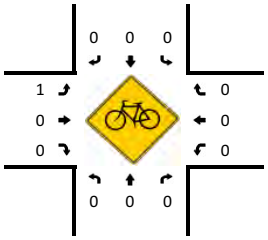


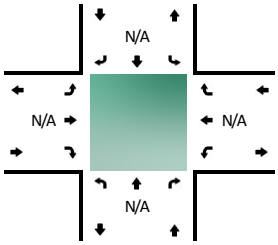




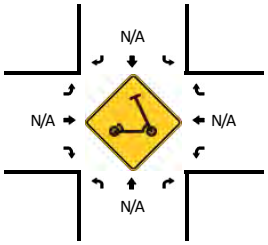












5-Min Count Period Beginning At	NE 232nd Ave (Northbound)				NE 232nd Ave (Southbound)				SE Leadbetter Rd (Eastbound)				SE Leadbetter Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	4	0	3	0	0	0	0	0	0	0	7	
4:05 PM	2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

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

Comments:

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

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

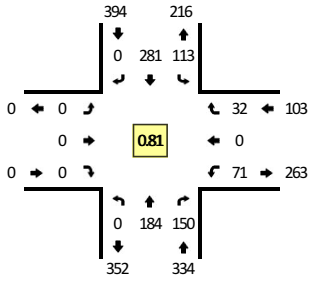
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

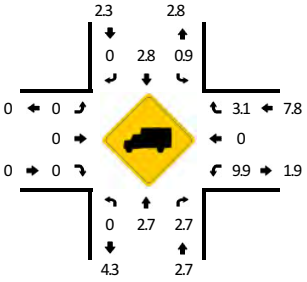
LOCATION: NE Everett St (SR 500) -- NE Everett Dr
CITY/STATE: Camas, WA

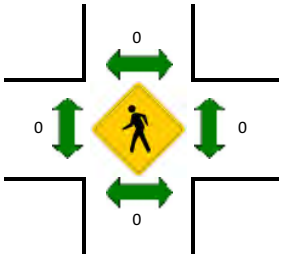
QC JOB #: 16977016
DATE: Tue, Apr 8 2025

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

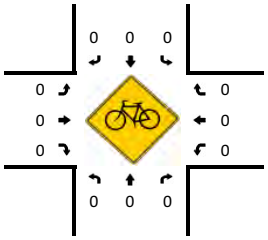


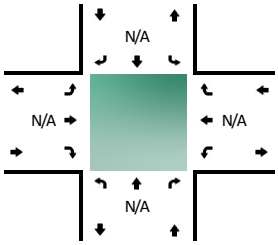




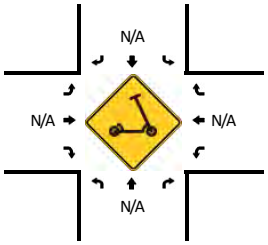












R* = RTOR

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

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

Comments:

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

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: NE Everett St (SR 500) -- NE Everett Dr

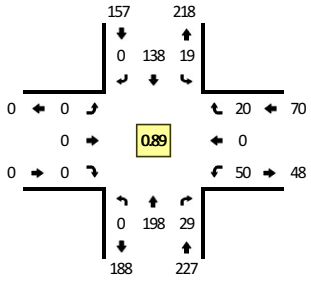
QC JOB #: 16977017

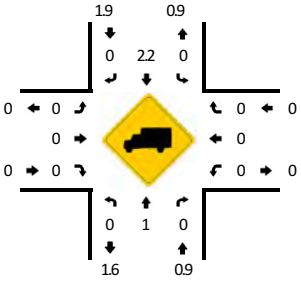
CITY/STATE: Camas, WA

DATE: Tue, Apr 8 2025

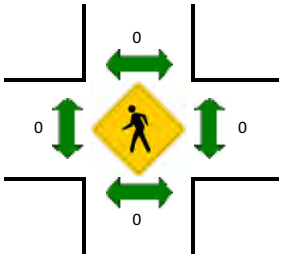
Peak-Hour: 5:00 PM -- 6:00 PM

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

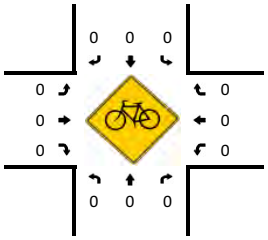


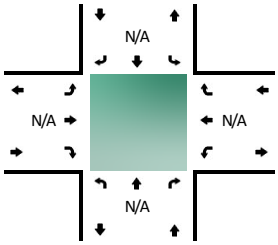


TRUE DATA TO IMPROVE MOBILITY

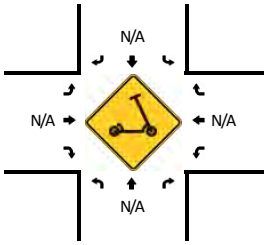












R* = RTOR

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

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

Comments:

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

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: NE Everett St (SR 500) -- SE Leadbetter Rd

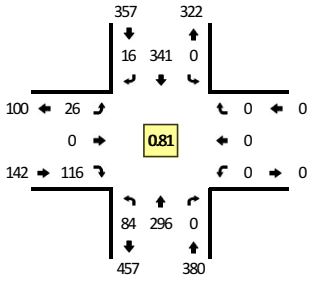
QC JOB #: 16977018

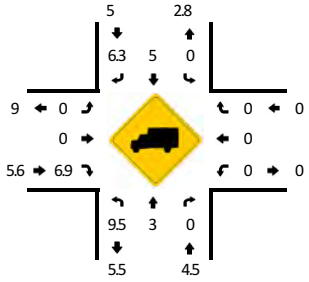
CITY/STATE: Camas, WA

DATE: Tue, Apr 8 2025

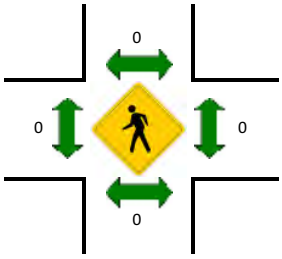
Peak-Hour: 7:50 AM -- 8:50 AM

Peak 15-Min: 8:05 AM -- 8:20 AM

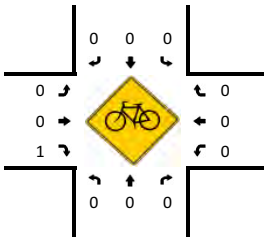


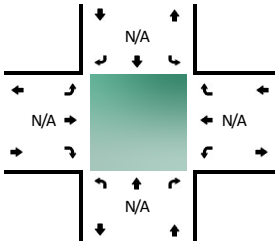


TRUE DATA TO IMPROVE MOBILITY

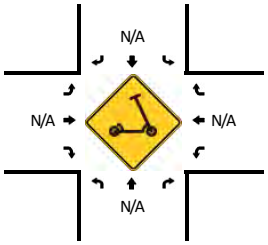












R* = RTOR

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

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

Comments:

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

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

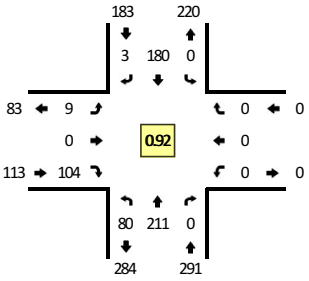
Type of peak hour being reported: Intersection Peak

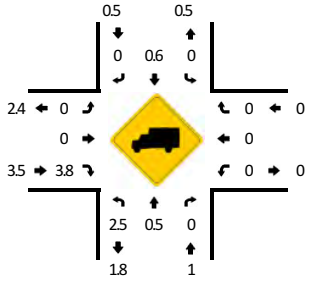
Method for determining peak hour: Total Entering Volume

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

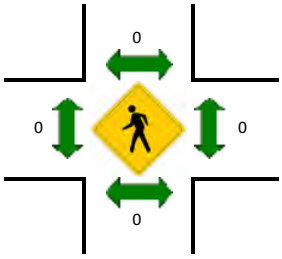
QC JOB #: 16977019
DATE: Tue, Apr 8 2025

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

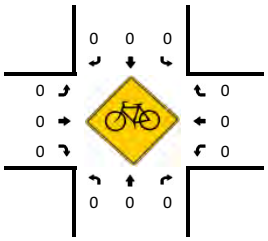


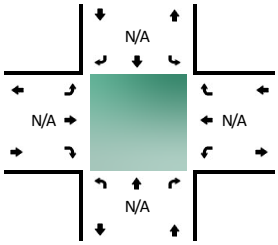


TRUE DATA TO IMPROVE MOBILITY

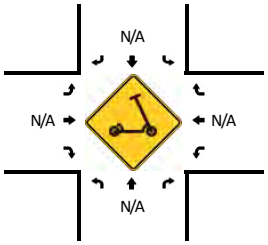












R* = RTOR

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

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

Comments:

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

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

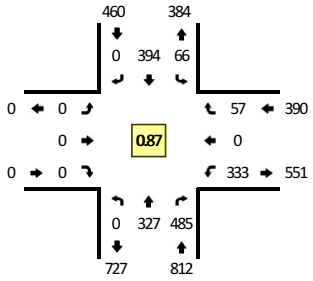
Type of peak hour being reported: Intersection Peak

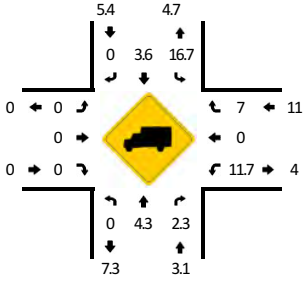
Method for determining peak hour: Total Entering Volume

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

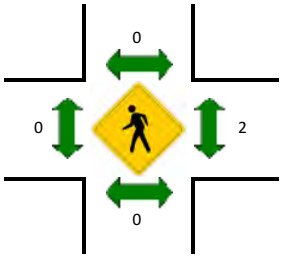
QC JOB #: 16977020
DATE: Tue, Apr 8 2025

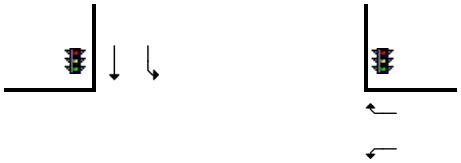
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 8:10 AM -- 8:25 AM

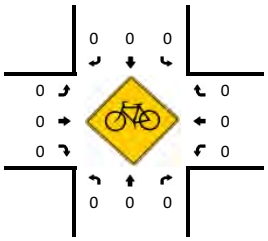


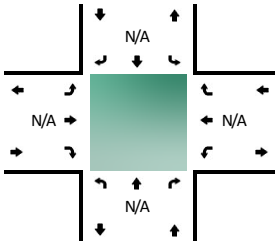


TRUE DATA TO IMPROVE MOBILITY

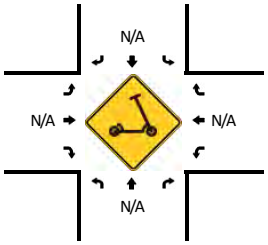












R* = RTOR

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

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

Comments:

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

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

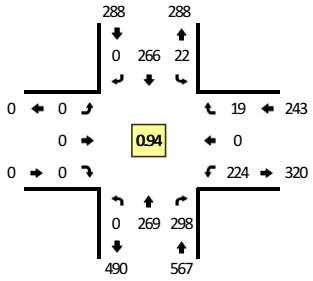
Type of peak hour being reported: Intersection Peak

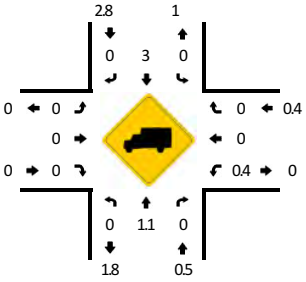
Method for determining peak hour: Total Entering Volume

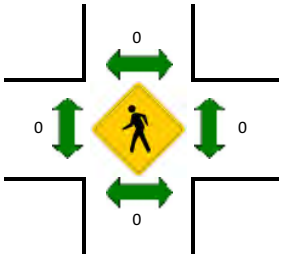
LOCATION: NE Everett St (SR 500) -- NE 43rd Ave
CITY/STATE: Camas, WA

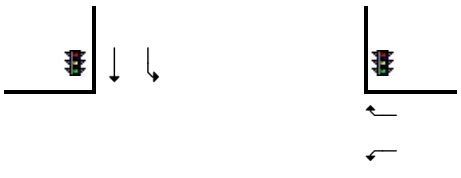
QC JOB #: 16977021
DATE: Tue, Apr 8 2025

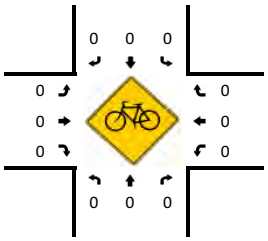
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM

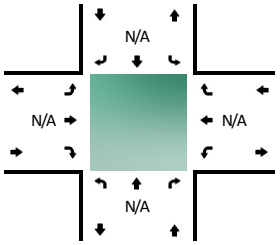




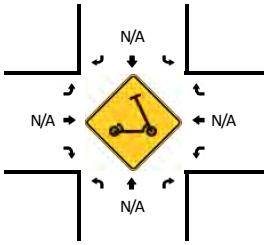












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE 43rd Ave (Eastbound)					NE 43rd Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	23	5	0	3	3	26	0	0	0	0	0	0	0	0	19	0	0	0	0	79	
4:05 PM	0	30	10	0	5	1	25	0	0	0	0	0	0	0	0	17	0	1	0	1	90	
4:10 PM	0	19	10	0	4	2	25	0	0	0	0	0	0	0	0	13	0	3	0	1	77	
4:15 PM	0	23	8	0	4	1	25	0	0	0	0	0	0	0	0	14	0	1	0	1	77	
4:20 PM	0	17	7	0	5	0	18	0	0	0	0	0	0	0	0	15	0	0	0	0	62	
4:25 PM	0	18	7	0	5	2	14	0	0	0	0	0	0	0	0	14	0	0	0	0	60	
4:30 PM	0	20	13	0	8	1	9	0	0	0	0	0	0	0	0	9	0	1	0	1	62	
4:35 PM	0	25	8	0	10	2	15	0	0	0	0	0	0	0	0	15	0	5	0	0	80	
4:40 PM	0	23	15	0	8	1	26	0	0	0	0	0	0	0	0	6	0	1	0	1	81	
4:45 PM	0	18	17	0	7	1	25	0	0	0	0	0	0	0	0	18	0	1	0	1	88	
4:50 PM	0	14	15	0	6	4	29	0	0	0	0	0	0	0	0	17	0	1	0	2	88	
4:55 PM	0	29	16	0	16	1	19	0	0	0	0	0	0	0	0	17	0	1	0	0	99	943
5:00 PM	0	25	13	0	10	5	15	0	0	0	0	0	0	0	0	25	0	0	0	1	94	958
5:05 PM	0	24	10	0	9	0	29	0	0	0	0	0	0	0	0	20	0	4	0	2	98	966
5:10 PM	0	24	7	0	17	1	19	0	0	0	0	0	0	0	0	26	0	1	0	0	95	984
5:15 PM	0	18	17	0	7	5	29	0	0	0	0	0	0	0	0	9	0	1	0	1	87	994
5:20 PM	0	25	11	0	12	1	11	0	0	0	0	0	0	0	0	20	0	0	0	0	80	1012
5:25 PM	0	22	26	0	9	2	21	0	0	0	0	0	0	0	0	14	0	0	0	1	95	1047
5:30 PM	0	23	16	0	8	1	20	0	0	0	0	0	0	0	0	18	0	0	0	0	86	1071
5:35 PM	0	24	13	0	4	0	26	0	0	0	0	0	0	0	0	19	0	2	0	1	89	1080
5:40 PM	0	19	12	0	10	3	17	0	0	0	0	0	0	0	0	21	0	1	0	0	83	1082
5:45 PM	0	23	14	0	13	3	22	0	0	0	0	0	0	0	0	12	0	1	0	1	89	1083
5:50 PM	0	19	13	0	17	1	27	0	0	0	0	0	0	0	0	22	0	0	0	1	100	1095
5:55 PM	0	23	17	0	13	0	30	0	0	0	0	0	0	0	0	18	0	0	0	1	102	1098

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	260	348	0	172	16	316	0	0	0	0	0	0	0	0	208	0	16	0	12	1348
Heavy Trucks	0	0	0			0	12	0			0	0	0			0	0	0			12
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

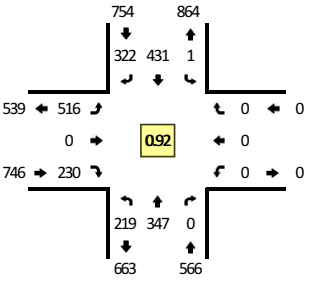
Type of peak hour being reported: Intersection Peak

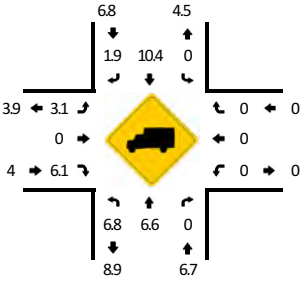
Method for determining peak hour: Total Entering Volume

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

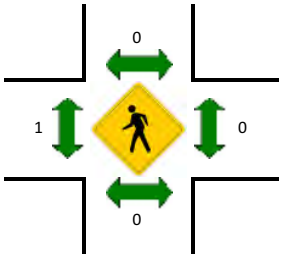
QC JOB #: 16977022
DATE: Tue, Apr 8 2025

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

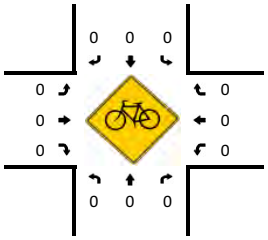


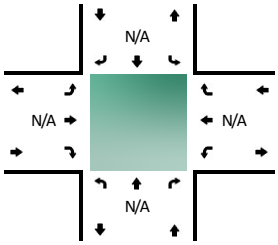


TRUE DATA TO IMPROVE MOBILITY

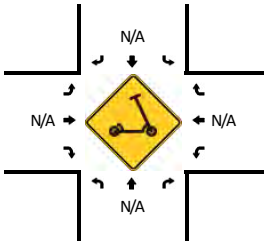












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	9	15	0	0	0	0	12	17	0	0	12	0	8	0	0	0	0	0	0	0	73	
7:05 AM	2	15	0	0	0	0	14	14	0	0	12	0	8	0	0	0	0	0	0	0	65	
7:10 AM	8	11	0	0	0	0	14	19	0	0	14	0	6	0	0	0	0	0	0	0	72	
7:15 AM	14	12	0	0	0	0	11	16	1	0	13	0	10	0	0	0	0	0	0	0	77	
7:20 AM	9	17	0	0	0	0	15	22	1	0	18	0	3	0	0	0	0	0	0	0	85	
7:25 AM	11	15	0	0	0	0	18	10	0	0	16	0	9	0	0	0	0	0	0	0	79	
7:30 AM	9	19	0	0	0	0	22	24	0	0	5	0	9	0	0	0	0	0	0	0	88	
7:35 AM	13	16	0	0	0	0	22	21	0	0	9	0	12	0	0	0	0	0	0	0	93	
7:40 AM	11	20	0	0	0	0	34	25	0	0	22	0	19	0	0	0	0	0	0	0	131	
7:45 AM	22	24	0	0	0	0	31	20	0	0	22	0	20	0	0	0	0	0	0	0	139	
7:50 AM	30	31	0	0	0	0	30	24	0	0	20	0	22	0	0	0	0	0	0	0	157	
7:55 AM	22	28	0	1	0	0	28	19	1	0	38	0	18	0	0	0	0	0	0	0	155	1214
8:00 AM	14	38	0	0	0	0	10	15	0	0	53	0	16	0	0	0	0	0	0	0	146	1287
8:05 AM	20	34	0	0	0	0	35	21	0	0	55	0	19	0	0	0	0	0	0	0	184	1406
8:10 AM	12	28	0	0	0	0	38	37	0	0	54	0	23	0	0	0	0	0	0	0	192	1526
8:15 AM	19	34	0	0	0	0	29	30	0	0	57	0	12	0	0	0	0	0	0	0	181	1630
8:20 AM	15	32	0	1	0	0	36	28	0	0	61	0	16	0	0	0	0	0	0	0	189	1734
8:25 AM	9	29	0	0	0	0	38	28	0	0	53	0	12	0	0	0	0	0	0	0	169	1824
8:30 AM	13	34	0	0	0	0	45	17	0	0	50	0	14	0	0	0	0	0	0	0	173	1909
8:35 AM	19	25	0	0	0	0	51	35	0	0	42	0	27	0	0	0	0	0	0	0	199	2015
8:40 AM	23	18	0	0	0	0	42	24	0	0	19	0	28	0	0	0	0	0	0	0	154	2038
8:45 AM	21	16	0	0	0	0	49	44	0	0	14	0	23	0	0	0	0	0	0	0	167	2066
8:50 AM	22	28	0	1	0	0	43	28	0	0	5	0	29	0	0	0	0	0	0	0	156	2065
8:55 AM	21	30	0	0	0	0	28	12	0	0	8	0	20	0	0	0	0	0	0	0	119	2029

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	184	376	0	4	0	0	412	380	0	0	688	0	204	0	0	0	0	0	0	0	2248
Heavy Trucks	12	28	0			0	20	12			40	0	4			0	0	0			116
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

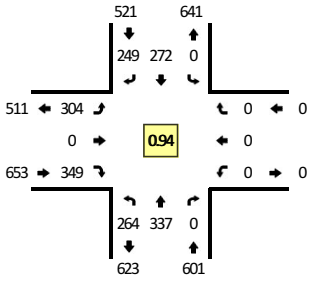
Type of peak hour being reported: Intersection Peak

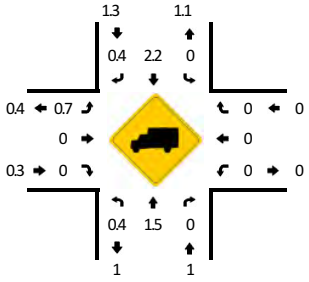
Method for determining peak hour: Total Entering Volume

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

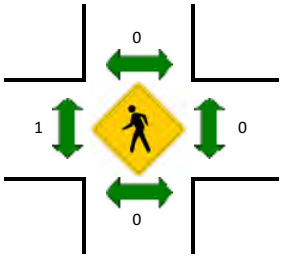
QC JOB #: 16977023
DATE: Tue, Apr 8 2025

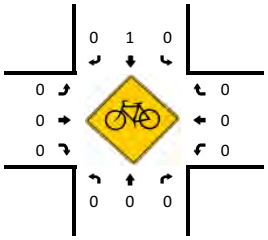
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 4:50 PM -- 5:05 PM

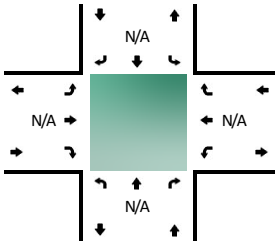


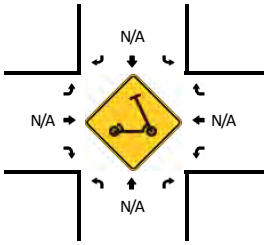


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	20	29	0	0	0	0	23	17	0	0	9	0	24	0	0	0	0	0	0	0	122	
4:05 PM	23	30	0	0	0	0	29	18	0	0	16	0	35	0	0	0	0	0	0	0	151	
4:10 PM	17	28	0	1	0	0	28	13	0	0	20	0	24	0	0	0	0	0	0	0	131	
4:15 PM	25	18	0	0	0	0	29	14	0	0	17	0	29	0	0	0	0	0	0	0	132	
4:20 PM	25	24	0	0	0	0	23	15	0	0	14	0	23	0	0	0	0	0	0	0	124	
4:25 PM	26	21	0	0	0	0	18	12	0	0	8	0	28	0	0	0	0	0	0	0	113	
4:30 PM	27	28	0	0	0	0	14	8	0	0	28	0	23	0	0	0	0	0	0	0	128	
4:35 PM	22	25	0	0	0	0	17	15	0	0	21	0	28	0	0	0	0	0	0	0	128	
4:40 PM	28	25	0	0	0	0	24	16	0	0	21	0	28	0	0	0	0	0	0	0	142	
4:45 PM	19	27	0	0	0	0	21	23	0	0	21	0	26	0	0	0	0	0	0	0	137	
4:50 PM	24	25	0	0	0	0	21	21	0	0	30	0	43	0	0	0	0	0	0	0	164	
4:55 PM	16	32	0	0	0	0	29	17	0	0	28	0	30	0	0	0	0	0	0	0	152	1624
5:00 PM	16	40	0	0	0	0	20	25	0	0	25	0	30	0	0	0	0	0	0	0	156	1658
5:05 PM	32	27	0	0	0	0	23	20	0	0	20	0	26	0	0	0	0	0	0	0	148	1655
5:10 PM	22	37	0	0	0	0	28	23	0	0	19	0	29	0	0	0	0	0	0	0	158	1682
5:15 PM	19	19	0	0	0	0	27	19	0	0	24	0	35	0	0	0	0	0	0	0	143	1693
5:20 PM	21	28	0	1	0	0	10	18	0	0	41	0	31	0	0	0	0	0	0	0	150	1719
5:25 PM	27	23	0	0	0	0	20	20	0	0	27	0	29	0	0	0	0	0	0	0	146	1752
5:30 PM	17	35	0	1	0	0	24	21	0	0	29	0	23	0	0	0	0	0	0	0	150	1774
5:35 PM	21	19	0	0	0	0	25	26	0	0	19	0	19	0	0	0	0	0	0	0	129	1775
5:40 PM	17	24	0	0	0	0	20	18	0	0	33	0	22	0	0	0	0	0	0	0	134	1767
5:45 PM	8	24	0	0	0	0	27	14	0	0	30	0	21	0	0	0	0	0	0	0	124	1754
5:50 PM	20	24	0	1	0	0	25	25	0	0	34	0	32	0	0	0	0	0	0	0	161	1751
5:55 PM	15	35	0	0	0	0	30	18	0	0	20	0	29	0	0	0	0	0	0	0	147	1746

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	224	388	0	0	0	0	280	252	0	0	332	0	412	0	0	0	0	0	0	0	1888
Heavy Trucks	0	4	0			0	0	4			0	0	0			0	0	0			8
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

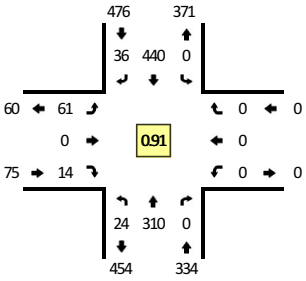
Type of peak hour being reported: Intersection Peak

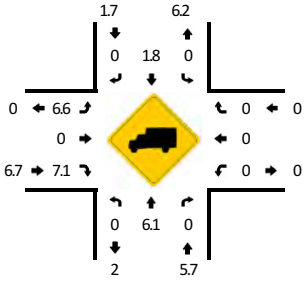
Method for determining peak hour: Total Entering Volume

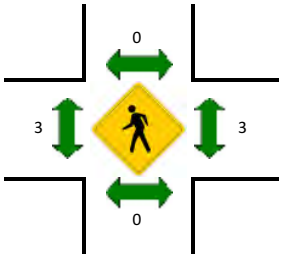
LOCATION: NE Everett St (SR 500) -- NE 17th Ave
CITY/STATE: Camas, WA

QC JOB #: 16977024
DATE: Tue, Apr 8 2025

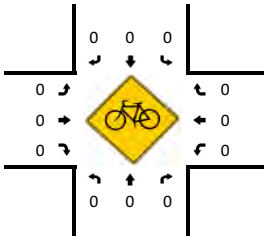
Peak-Hour: 7:55 AM -- 8:55 AM
Peak 15-Min: 8:40 AM -- 8:55 AM

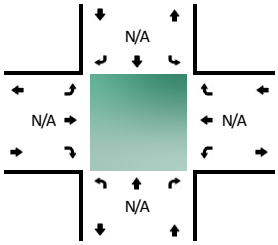




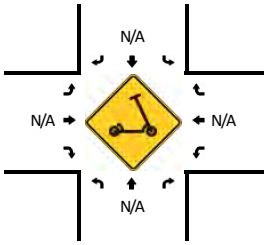












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE 17th Ave (Eastbound)					NE 17th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	2	13	0	0	0	0	16	1	0	0	4	0	3	0	0	0	0	0	0	0	39	
7:05 AM	1	8	0	0	0	0	14	2	0	0	5	0	0	0	0	0	0	0	0	0	30	
7:10 AM	0	13	0	0	0	0	14	1	0	0	3	0	0	0	0	0	0	0	0	0	31	
7:15 AM	1	15	0	0	0	0	12	2	0	0	4	0	0	0	0	0	0	0	0	0	34	
7:20 AM	0	14	0	0	0	0	9	5	0	0	5	0	1	0	0	0	0	0	0	0	34	
7:25 AM	0	15	0	0	0	0	12	3	0	0	4	0	1	0	0	0	0	0	0	0	35	
7:30 AM	1	10	0	0	0	0	16	4	0	0	1	0	0	0	0	0	0	0	0	0	32	
7:35 AM	0	21	0	0	0	0	18	3	0	0	7	0	3	0	0	0	0	0	0	0	52	
7:40 AM	0	12	0	0	0	0	20	1	0	0	3	0	1	0	0	0	0	0	0	0	37	
7:45 AM	4	34	0	0	0	0	30	7	0	0	5	0	4	0	0	0	0	0	0	0	84	
7:50 AM	4	28	0	0	0	0	22	7	0	0	5	0	0	0	0	0	0	0	0	0	66	
7:55 AM	6	17	0	0	0	0	36	4	0	0	11	0	1	0	0	0	0	0	0	0	75	549
8:00 AM	2	35	0	0	0	0	27	3	0	0	6	0	2	0	0	0	0	0	0	0	75	585
8:05 AM	1	25	0	0	0	0	26	1	0	0	8	0	0	0	0	0	0	0	0	0	61	616
8:10 AM	3	24	0	0	0	0	43	1	0	0	6	0	0	0	0	0	0	0	0	0	77	662
8:15 AM	1	26	0	0	0	0	31	4	0	0	6	0	0	0	0	0	0	0	0	0	68	696
8:20 AM	0	23	0	0	0	0	42	2	0	0	5	0	3	0	0	0	0	0	0	0	75	737
8:25 AM	0	16	0	0	0	0	31	3	0	0	8	0	1	0	0	0	0	0	0	0	59	761
8:30 AM	3	27	0	0	0	0	30	1	0	0	1	0	2	0	0	0	0	0	0	0	64	793
8:35 AM	3	31	0	0	0	0	46	5	0	0	2	0	0	0	0	0	0	0	0	0	87	828
8:40 AM	1	29	0	0	0	0	30	5	0	0	2	0	1	0	0	0	0	0	0	0	68	859
8:45 AM	1	27	0	0	0	0	38	4	0	0	4	0	2	0	0	0	0	0	0	0	76	851
8:50 AM	3	30	0	0	0	0	60	3	0	0	2	0	2	0	0	0	0	0	0	0	100	885
8:55 AM	2	32	0	0	0	0	35	2	0	0	1	0	0	0	0	0	0	0	0	0	72	882

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	20	344	0	0	0	0	512	48	0	0	32	0	20	0	0	0	0	0	0	0	976
Heavy Trucks	0	12	0			0	16	0			4	0	0			0	0	0			32
Buses																					
Pedestrians		0					0					4					8				12
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

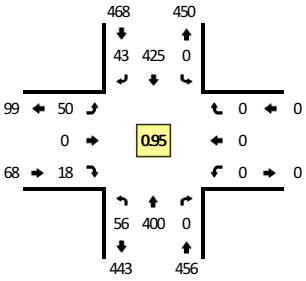
Type of peak hour being reported: Intersection Peak

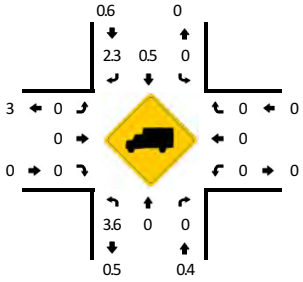
Method for determining peak hour: Total Entering Volume

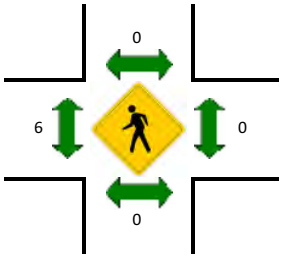
LOCATION: NE Everett St (SR 500) -- NE 17th Ave
CITY/STATE: Camas, WA

QC JOB #: 16977025
DATE: Tue, Apr 8 2025

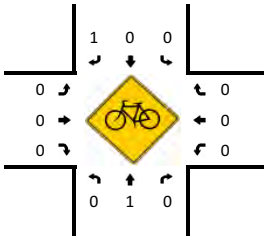
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

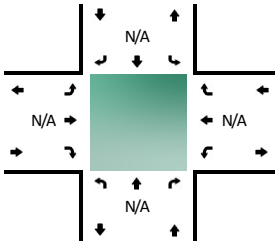




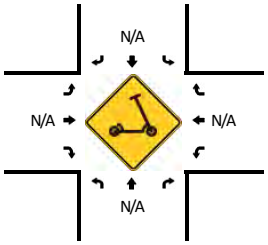












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE 17th Ave (Eastbound)					NE 17th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	4	26	0	0	0	0	29	2	0	0	5	0	1	0	0	0	0	0	0	0	67	
4:05 PM	7	26	0	0	0	0	47	4	0	0	4	0	2	0	0	0	0	0	0	0	90	
4:10 PM	5	36	0	0	0	0	29	3	0	0	6	0	1	0	0	0	0	0	0	0	80	
4:15 PM	3	30	0	0	0	0	38	2	0	0	2	0	4	0	0	0	0	0	0	0	79	
4:20 PM	4	25	0	0	0	0	35	5	0	0	2	0	4	0	0	0	0	0	0	0	75	
4:25 PM	4	23	0	0	0	0	36	2	0	0	2	0	3	0	0	0	0	0	0	0	70	
4:30 PM	4	25	0	0	0	0	27	2	0	0	4	0	2	0	0	0	0	0	0	0	64	
4:35 PM	3	36	0	0	0	0	35	2	0	0	3	0	1	0	0	0	0	0	0	0	80	
4:40 PM	4	30	0	0	0	0	35	1	0	0	2	0	1	0	0	0	0	0	0	0	73	
4:45 PM	3	31	0	0	0	0	33	3	0	0	4	0	4	0	0	0	0	0	0	0	78	
4:50 PM	3	36	0	0	0	0	36	2	0	0	3	0	4	0	0	0	0	0	0	0	84	
4:55 PM	7	30	0	0	0	0	37	4	0	0	2	0	1	0	0	0	0	0	0	0	81	921
5:00 PM	3	42	0	0	0	0	30	5	0	0	7	0	2	0	0	0	0	0	0	0	89	943
5:05 PM	4	39	0	0	0	0	36	3	0	0	7	0	0	0	0	0	0	0	0	0	89	942
5:10 PM	9	33	0	0	0	0	34	3	0	0	2	0	1	0	0	0	0	0	0	0	82	944
5:15 PM	5	25	0	0	0	0	44	4	0	0	3	0	0	0	0	0	0	0	0	0	81	946
5:20 PM	1	37	0	0	0	0	40	8	0	0	6	0	2	0	0	0	0	0	0	0	94	965
5:25 PM	7	27	0	0	0	0	37	5	0	0	8	0	0	0	0	0	0	0	0	0	84	979
5:30 PM	7	34	0	0	0	0	28	3	0	0	3	0	2	0	0	0	0	0	0	0	77	992
5:35 PM	5	29	0	0	0	0	29	6	0	0	5	0	1	0	0	0	0	0	0	0	75	987
5:40 PM	5	25	0	0	0	0	33	2	0	0	6	0	3	0	0	0	0	0	0	0	74	988
5:45 PM	9	20	0	0	0	0	31	8	0	0	4	0	1	0	0	0	0	0	0	0	73	983
5:50 PM	2	34	0	0	0	0	37	6	0	0	2	0	0	0	0	0	0	0	0	0	81	980
5:55 PM	5	29	0	0	0	0	23	7	0	0	4	0	0	0	0	0	0	0	0	0	68	967

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	64	456	0	0	0	0	400	44	0	0	64	0	12	0	0	0	0	0	0	0	1040
Heavy Trucks	0	0	0			0	0	4			0	0	0			0	0	0			4
Buses																					
Pedestrians		0					0					8					0				8
Bicycles	0	4	0			0	0	0			0	0	0			0	0	0			4
Scooters																					

Comments:

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

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

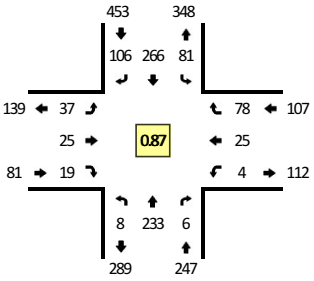
Type of peak hour being reported: Intersection Peak

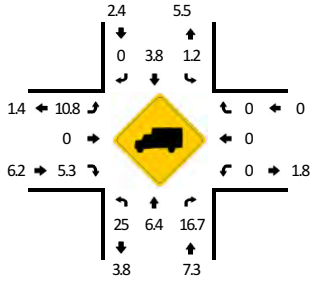
Method for determining peak hour: Total Entering Volume

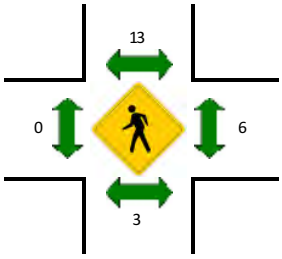
LOCATION: NE Everett St (SR 500) -- NE 15th Ave
CITY/STATE: Camas, WA

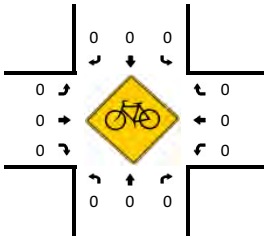
QC JOB #: 16977026
DATE: Tue, Apr 8 2025

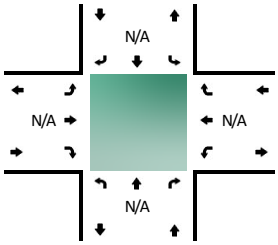
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

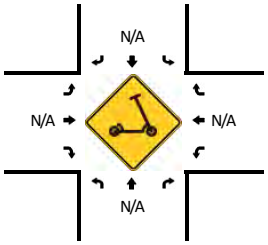












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE 15th Ave (Eastbound)					NE 15th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	12	0	0	0	0	11	8	0	0	1	0	1	0	0	0	0	0	0	0	33	
7:05 AM	0	8	0	0	0	0	6	9	0	0	1	0	2	0	0	1	0	0	0	0	27	
7:10 AM	1	11	0	0	0	0	7	6	0	0	3	1	2	0	0	0	1	0	0	0	32	
7:15 AM	1	14	0	0	0	0	9	4	0	0	1	0	3	0	0	0	2	0	0	0	34	
7:20 AM	0	11	0	0	0	0	6	3	0	0	3	0	0	0	0	0	1	0	0	0	24	
7:25 AM	0	9	1	0	0	1	11	2	0	0	5	0	3	0	0	0	0	1	0	0	33	
7:30 AM	0	11	1	0	0	0	3	12	0	0	1	1	1	0	0	0	0	0	0	0	30	
7:35 AM	2	19	1	0	0	1	9	11	0	0	1	0	1	0	0	0	0	0	0	0	45	
7:40 AM	0	9	2	0	0	7	9	6	0	0	2	1	3	0	0	1	0	1	0	0	41	
7:45 AM	1	29	1	0	0	8	18	8	0	0	0	6	1	0	0	0	3	9	0	0	84	
7:50 AM	0	25	0	0	0	2	10	6	0	0	3	3	3	0	0	0	3	4	0	0	59	
7:55 AM	5	12	0	0	0	10	21	9	0	0	2	3	1	0	0	0	2	6	0	0	71	513
8:00 AM	1	20	0	0	0	6	20	2	0	0	13	1	1	0	0	0	5	5	0	0	74	554
8:05 AM	1	20	0	0	0	5	13	8	0	0	5	1	3	0	0	0	1	1	0	0	58	585
8:10 AM	0	23	0	0	0	3	27	9	0	0	2	0	1	0	0	1	0	1	0	0	67	620
8:15 AM	1	24	1	0	0	5	23	6	0	0	2	1	4	0	0	0	1	2	0	0	70	656
8:20 AM	3	20	1	0	0	3	26	13	0	0	1	0	1	0	0	0	1	2	0	0	71	703
8:25 AM	0	8	1	0	0	3	19	12	0	0	5	2	2	0	0	2	0	3	0	0	57	727
8:30 AM	0	26	0	0	0	7	15	7	0	0	2	5	2	0	0	0	0	4	0	0	68	765
8:35 AM	1	20	0	0	0	16	25	9	0	0	1	7	0	0	0	0	5	11	0	0	95	815
8:40 AM	0	15	1	0	0	13	14	8	0	0	1	3	1	0	0	1	3	14	0	0	74	848
8:45 AM	0	19	1	0	0	9	20	8	0	0	0	2	0	0	0	0	4	9	0	0	72	836
8:50 AM	0	21	1	0	0	10	41	12	0	0	3	2	1	0	0	0	3	11	0	0	105	882
8:55 AM	1	17	0	0	0	1	23	12	0	0	2	1	3	0	0	0	2	15	0	0	77	888

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	4	228	8	0	0	80	336	128	0	0	20	20	16	0	0	0	36	140	0	0	1016
Heavy Trucks	0	16	4			0	16	0			4	0	0			0	0	0			40
Buses																					
Pedestrians		0					20					0					20				40
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

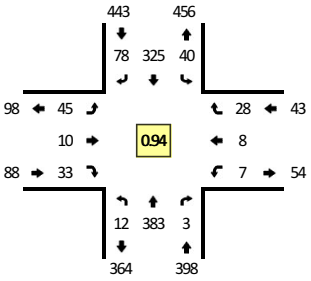
Type of peak hour being reported: Intersection Peak

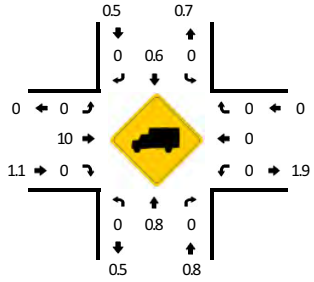
Method for determining peak hour: Total Entering Volume

LOCATION: NE Everett St (SR 500) -- NE 15th Ave
CITY/STATE: Camas, WA

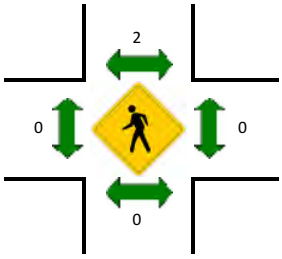
QC JOB #: 16977027
DATE: Tue, Apr 8 2025

Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 4:50 PM -- 5:05 PM

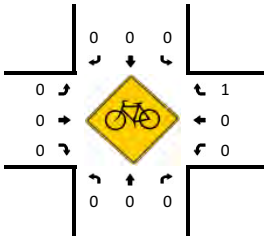


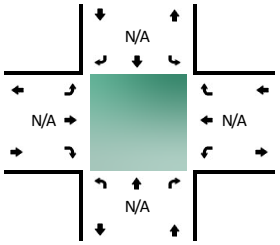


TRUE DATA TO IMPROVE MOBILITY

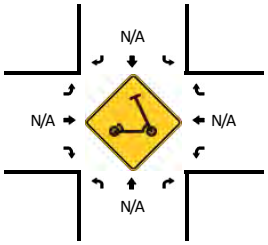












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE 15th Ave (Eastbound)					NE 15th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	2	24	1	0	0	1	23	7	0	0	3	0	1	0	0	0	1	2	0	0	65	
4:05 PM	0	29	0	0	0	2	38	10	0	0	5	0	2	0	0	0	0	1	0	0	87	
4:10 PM	1	33	1	0	0	1	23	4	0	0	6	1	4	0	0	0	1	1	0	0	76	
4:15 PM	3	30	1	0	0	3	34	6	0	0	3	0	1	0	0	0	1	0	0	0	82	
4:20 PM	1	25	2	0	0	2	29	8	0	0	1	0	4	0	0	0	0	2	0	0	74	
4:25 PM	3	21	1	0	0	1	33	4	0	0	7	2	4	0	0	0	1	0	0	0	77	
4:30 PM	1	23	1	0	0	0	24	5	0	0	5	3	4	0	0	2	1	1	0	0	70	
4:35 PM	0	35	0	0	0	3	30	4	0	0	3	1	0	0	0	1	0	0	0	0	77	
4:40 PM	1	27	0	0	0	1	24	9	0	0	6	0	4	0	0	0	0	1	0	0	73	
4:45 PM	3	29	0	0	0	5	29	5	0	0	4	0	3	0	0	0	0	2	0	0	80	
4:50 PM	1	35	0	0	0	4	26	9	0	0	3	3	6	0	0	1	1	0	0	0	89	
4:55 PM	2	33	0	0	0	5	28	5	0	0	4	1	1	0	0	0	1	1	0	0	81	931
5:00 PM	0	36	0	0	0	3	25	5	0	0	8	3	4	0	0	2	1	1	0	0	88	954
5:05 PM	0	38	1	0	0	2	25	10	0	0	2	0	5	0	0	1	1	3	0	0	88	955
5:10 PM	1	31	1	0	0	1	26	7	0	0	3	0	1	0	0	0	2	7	0	0	80	959
5:15 PM	1	21	1	0	0	4	33	3	0	0	6	2	3	0	0	0	0	2	0	0	76	953
5:20 PM	1	32	0	0	0	6	31	10	0	0	0	0	2	0	0	0	1	8	1	0	92	971
5:25 PM	1	26	0	0	0	2	27	6	0	0	4	0	3	0	0	1	0	2	0	0	72	966
5:30 PM	1	40	0	0	0	4	21	5	0	0	2	0	1	0	0	0	1	1	0	0	76	972
5:35 PM	0	27	0	0	0	2	20	9	0	0	5	0	2	0	0	1	1	1	0	0	68	963
5:40 PM	0	23	0	0	0	2	25	9	0	0	7	1	3	0	0	0	0	0	0	0	70	960
5:45 PM	1	27	1	0	0	2	24	5	0	0	3	1	1	0	0	0	1	0	0	0	66	946
5:50 PM	3	29	1	0	0	6	23	8	0	0	6	2	2	0	0	0	0	1	0	0	81	938
5:55 PM	1	28	1	0	0	2	14	5	0	0	5	1	3	0	0	0	1	2	1	0	64	921

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	12	416	0	0	0	48	316	76	0	0	60	28	44	0	0	12	12	8	0	0	1032
Heavy Trucks	0	4	0			0	0	0			0	4	0			0	0	0			8
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	4			4
Scooters																					

Comments:

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

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

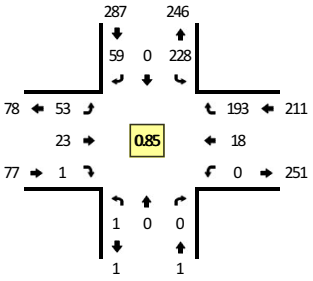
Type of peak hour being reported: Intersection Peak

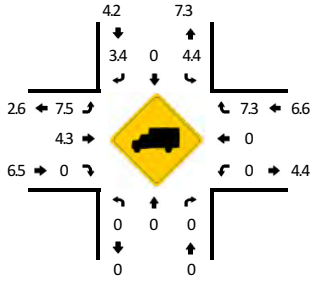
Method for determining peak hour: Total Entering Volume

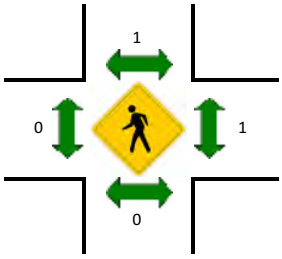
LOCATION: NE Everett St (SR 500) -- NE 14th Ave
CITY/STATE: Camas, WA

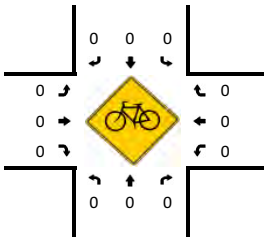
QC JOB #: 16977028
DATE: Tue, Apr 8 2025

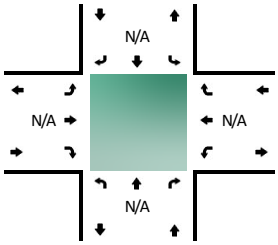
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

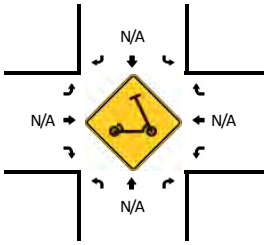












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE 14th Ave (Eastbound)					NE 14th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	8	0	1	0	0	2	1	0	0	0	0	0	9	0	0	21	
7:05 AM	0	0	0	0	0	5	0	3	0	0	1	1	0	0	0	0	0	6	0	0	16	
7:10 AM	0	0	0	0	0	9	0	1	0	0	2	3	0	0	0	0	0	9	0	0	24	
7:15 AM	0	0	0	0	0	9	0	2	0	0	3	1	0	0	0	0	2	13	0	0	30	
7:20 AM	0	0	0	0	0	5	0	1	0	0	2	0	1	0	0	0	2	7	0	0	18	
7:25 AM	0	0	0	0	0	12	0	2	0	0	3	1	0	0	0	0	0	8	0	0	26	
7:30 AM	0	0	0	0	0	4	0	0	0	0	1	1	0	0	0	0	1	11	0	0	18	
7:35 AM	0	0	0	0	0	10	0	1	0	0	4	3	0	0	0	0	0	16	0	0	34	
7:40 AM	0	0	0	0	0	9	0	2	0	0	1	4	0	0	0	0	1	11	0	0	28	
7:45 AM	0	0	0	0	0	14	0	3	0	0	5	1	0	0	0	0	0	23	0	0	46	
7:50 AM	0	0	0	0	0	10	0	4	0	0	6	4	0	0	0	0	3	20	0	0	47	
7:55 AM	0	0	0	0	0	17	0	4	0	0	3	1	0	0	0	0	1	15	0	0	41	349
8:00 AM	0	0	0	0	0	18	0	4	0	0	4	3	0	0	0	0	1	16	0	0	46	374
8:05 AM	0	0	0	0	0	14	0	2	0	0	4	1	0	0	0	0	0	17	0	0	38	396
8:10 AM	0	0	0	0	0	23	0	5	0	0	4	2	0	0	0	0	0	19	0	0	53	425
8:15 AM	0	0	0	0	0	21	0	5	0	0	8	1	0	0	0	0	0	18	0	0	53	448
8:20 AM	1	0	0	0	0	18	0	9	0	0	5	2	0	0	0	0	0	16	0	0	51	481
8:25 AM	0	0	0	0	0	16	0	8	0	0	3	0	0	0	0	0	0	6	0	0	33	488
8:30 AM	0	0	0	0	0	13	0	3	0	0	10	2	0	0	0	0	1	18	0	0	47	517
8:35 AM	0	0	0	0	0	20	0	5	0	0	2	1	0	0	0	0	3	17	0	0	48	531
8:40 AM	0	0	0	0	0	13	0	4	0	0	5	2	0	0	0	0	0	14	0	0	38	541
8:45 AM	0	0	0	0	0	14	0	4	0	0	2	3	1	0	0	0	2	17	0	0	43	538
8:50 AM	0	0	0	0	0	34	0	7	0	0	2	3	0	0	0	0	3	19	0	0	68	559
8:55 AM	0	0	0	0	0	24	0	3	0	0	4	3	0	0	0	0	8	16	0	0	58	576

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	288	0	56	0	0	32	36	4	0	0	0	52	208	0	0	676
Heavy Trucks	0	0	0			16	0	0			0	4	0			0	0	12			32
Buses																					
Pedestrians		0					0					0					4				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

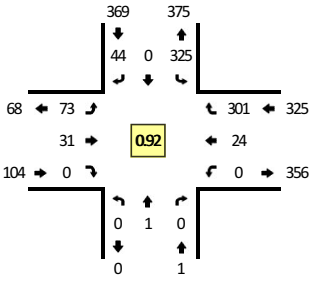
Type of peak hour being reported: Intersection Peak

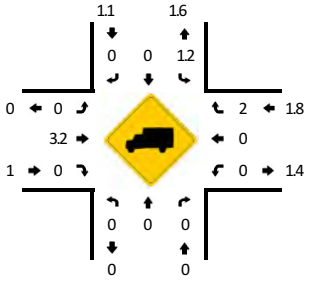
Method for determining peak hour: Total Entering Volume

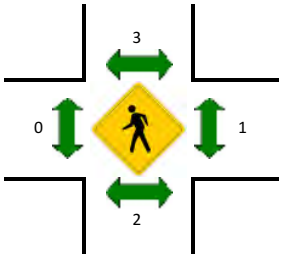
LOCATION: NE Everett St (SR 500) -- NE 14th Ave
CITY/STATE: Camas, WA

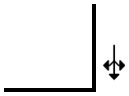
QC JOB #: 16977029
DATE: Tue, Apr 8 2025

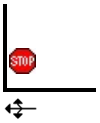
Peak-Hour: 4:10 PM -- 5:10 PM
Peak 15-Min: 4:55 PM -- 5:10 PM

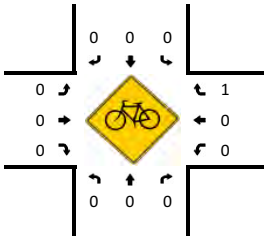


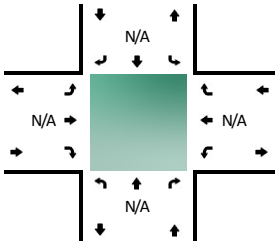


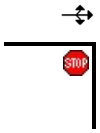


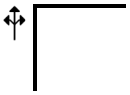


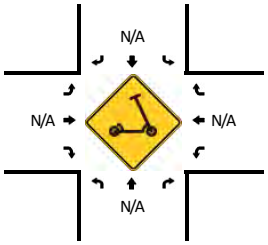












R* = RTOR

5-Min Count Period Beginning At	NE Everett St (SR 500) (Northbound)					NE Everett St (SR 500) (Southbound)					NE 14th Ave (Eastbound)					NE 14th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	0	0	0	18	0	5	0	0	5	2	0	0	0	0	0	22	0	0	52	
4:05 PM	0	0	0	0	0	36	0	4	0	0	3	0	0	0	0	0	0	28	0	0	71	
4:10 PM	0	0	0	0	0	24	0	3	0	0	8	2	0	0	0	0	1	26	0	0	64	
4:15 PM	0	0	0	0	0	28	0	7	0	0	5	2	0	0	0	0	2	28	0	0	72	
4:20 PM	0	0	0	0	0	28	0	2	0	0	7	2	0	0	0	0	0	22	0	0	61	
4:25 PM	0	0	0	0	0	30	0	5	0	0	4	2	0	0	0	0	1	21	0	0	63	
4:30 PM	0	0	0	0	0	27	0	4	0	0	5	7	0	0	0	0	1	20	0	0	64	
4:35 PM	0	0	0	0	0	26	0	6	0	0	4	0	0	0	0	0	3	29	0	0	68	
4:40 PM	0	1	0	0	0	21	0	3	0	0	6	2	0	0	0	0	2	22	0	0	57	
4:45 PM	0	0	0	0	0	30	0	4	0	0	6	1	0	0	0	0	2	23	0	0	66	
4:50 PM	0	0	0	0	0	30	0	2	0	0	3	2	0	0	0	0	2	29	0	0	68	
4:55 PM	0	0	0	0	0	23	0	5	0	0	10	5	0	0	0	0	1	28	0	0	72	778
5:00 PM	0	0	0	0	0	30	0	1	0	0	10	2	0	0	0	0	3	21	0	0	67	793
5:05 PM	0	0	0	0	0	28	0	2	0	0	5	4	0	0	0	0	6	32	0	0	77	799
5:10 PM	0	0	0	0	0	20	0	3	0	0	9	3	0	0	0	0	1	24	0	0	60	795
5:15 PM	0	0	0	0	0	26	0	9	0	0	6	0	0	0	0	0	2	20	0	0	63	786
5:20 PM	0	1	0	0	0	28	0	6	0	0	10	2	0	0	0	0	1	21	0	0	69	794
5:25 PM	0	0	0	0	0	21	0	5	0	0	6	1	0	0	0	0	0	21	0	0	54	785
5:30 PM	0	0	0	0	0	22	0	2	0	0	12	1	0	0	0	0	1	26	0	0	64	785
5:35 PM	0	0	0	0	0	20	0	1	0	0	4	2	0	0	0	0	0	22	0	0	49	766
5:40 PM	0	0	0	0	0	25	0	2	0	0	1	4	0	0	0	0	0	22	0	0	54	763
5:45 PM	0	0	0	0	0	21	1	2	0	0	3	4	0	0	0	0	2	27	0	0	60	757
5:50 PM	0	0	0	0	0	20	0	2	0	0	7	4	0	0	0	0	1	24	0	0	58	747
5:55 PM	0	0	0	0	0	18	0	1	0	0	6	5	0	0	0	0	3	20	0	0	53	728

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	324	0	32	0	0	100	44	0	0	0	0	40	324	0	0	864
Heavy Trucks	0	0	0			0	0	0			0	0	0			0	0	4			4
Buses																					
Pedestrians		0					0					0					4				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

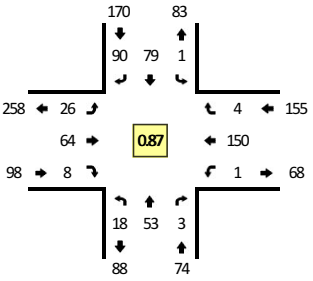
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: NE Dallas St -- NE 6th Ave
CITY/STATE: Camas, WA

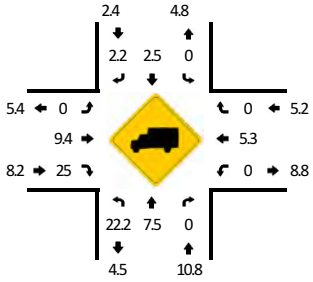
QC JOB #: 16977040
DATE: Tue, Apr 8 2025

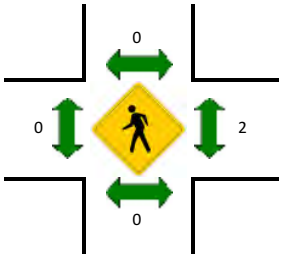
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

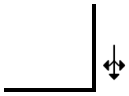


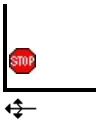


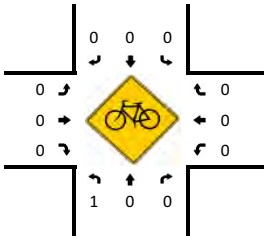
TRUE DATA TO IMPROVE MOBILITY

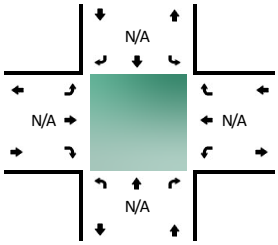


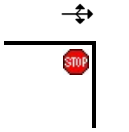


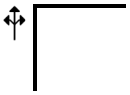


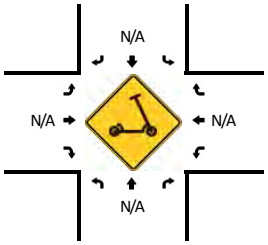












R* = RTOR

5-Min Count Period Beginning At	NE Dallas St (Northbound)					NE Dallas St (Southbound)					NE 6th Ave (Eastbound)					NE 6th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	1	2	0	0	0	0	5	5	0	0	1	4	0	0	0	0	9	0	0	0	27	
7:05 AM	1	2	0	0	0	0	4	3	0	0	1	3	0	0	0	0	8	1	0	0	23	
7:10 AM	1	1	0	0	0	0	3	5	0	0	1	4	0	0	0	0	9	1	0	0	25	
7:15 AM	0	2	0	0	0	1	5	1	0	0	2	5	2	0	0	0	11	0	0	0	29	
7:20 AM	0	1	0	0	0	0	3	2	0	0	0	9	0	0	0	0	11	0	0	0	26	
7:25 AM	3	7	0	0	0	0	5	1	0	0	3	2	1	0	0	2	10	1	0	0	35	
7:30 AM	0	1	0	0	0	0	6	6	0	0	1	4	1	0	0	0	4	0	0	0	23	
7:35 AM	0	3	0	0	0	1	2	4	0	0	2	5	0	0	0	1	10	0	0	0	28	
7:40 AM	2	2	1	0	0	0	6	6	0	0	0	5	0	0	0	2	6	0	0	0	30	
7:45 AM	0	4	0	0	0	0	4	10	0	0	3	6	0	0	0	0	15	0	0	0	42	
7:50 AM	2	6	0	0	0	0	10	7	0	0	1	7	1	0	0	0	14	1	0	0	49	
7:55 AM	3	2	0	0	0	1	9	9	0	0	2	6	1	0	0	0	18	1	0	0	52	389
8:00 AM	0	6	0	0	0	0	8	6	0	0	2	5	0	0	0	0	15	0	0	0	42	404
8:05 AM	4	3	0	0	0	0	5	6	0	0	2	4	1	0	0	0	10	0	0	0	35	416
8:10 AM	1	2	0	0	0	0	5	6	0	0	4	3	2	0	0	1	11	0	0	0	35	426
8:15 AM	1	4	2	0	0	0	8	8	0	0	3	6	0	0	0	0	6	0	0	0	38	435
8:20 AM	0	3	0	0	0	0	4	8	0	0	2	2	0	0	0	0	9	0	0	0	28	437
8:25 AM	2	5	1	0	0	0	8	11	0	0	0	6	0	0	0	0	8	1	0	0	42	444
8:30 AM	3	7	0	0	0	0	7	8	0	0	5	9	0	0	0	0	10	0	0	0	49	470
8:35 AM	0	5	0	0	0	0	6	5	0	0	1	4	2	0	0	0	19	0	0	0	42	484
8:40 AM	2	6	0	0	0	0	5	6	0	0	1	6	1	0	0	0	15	1	0	0	43	497
8:45 AM	2	1	1	0	0	1	11	4	0	0	1	6	0	0	0	0	14	0	0	0	41	496
8:50 AM	2	3	1	0	0	0	16	3	0	0	3	4	1	0	0	0	10	2	0	0	45	492
8:55 AM	1	5	1	1	0	0	10	4	0	0	3	3	0	0	0	1	14	0	0	0	43	483

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	20	48	0	0	0	4	92	104	0	0	24	76	8	0	0	0	188	8	0	0	572
Heavy Trucks	4	0	0			0	4	4			0	0	0			0	28	0			40
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

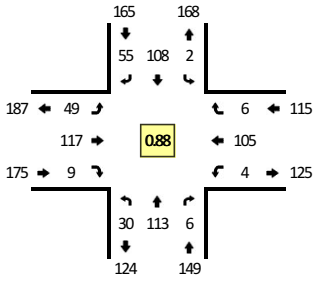
Type of peak hour being reported: Intersection Peak

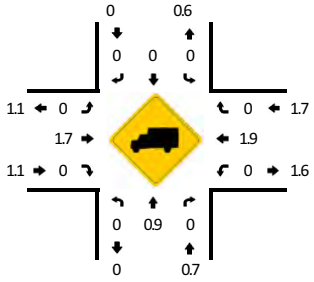
Method for determining peak hour: Total Entering Volume

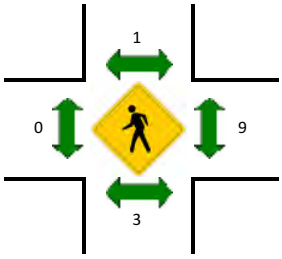
LOCATION: NE Dallas St -- NE 6th Ave
CITY/STATE: Camas, WA

QC JOB #: 16977041
DATE: Tue, Apr 8 2025

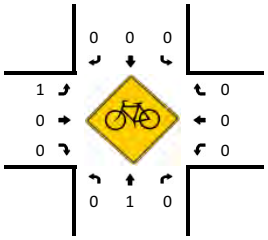
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 4:50 PM -- 5:05 PM

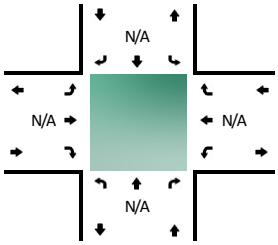




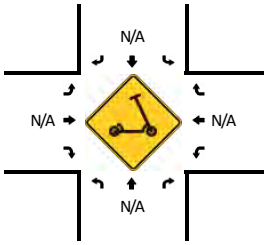












R* = RTOR

5-Min Count Period Beginning At	NE Dallas St (Northbound)					NE Dallas St (Southbound)					NE 6th Ave (Eastbound)					NE 6th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	2	10	1	0	0	0	13	5	0	0	0	4	2	0	0	0	11	0	0	0	48	
4:05 PM	5	11	0	0	0	1	7	4	0	0	5	4	0	0	0	0	12	0	0	0	49	
4:10 PM	3	13	1	0	0	0	8	5	0	0	3	5	0	0	0	0	8	1	0	0	47	
4:15 PM	2	10	0	0	0	1	8	4	0	0	3	10	1	0	0	1	5	0	0	0	45	
4:20 PM	1	9	0	0	0	0	11	5	0	0	3	5	1	0	0	1	6	0	0	0	42	
4:25 PM	3	5	0	0	0	0	10	8	0	0	4	7	2	0	0	0	9	3	0	0	51	
4:30 PM	2	7	0	0	0	0	6	3	0	0	3	6	0	0	0	1	8	1	0	0	37	
4:35 PM	6	11	0	0	0	1	11	3	0	0	1	10	0	0	0	1	6	0	0	0	50	
4:40 PM	5	6	0	0	0	0	8	2	0	0	4	8	0	0	0	1	8	1	0	0	43	
4:45 PM	3	4	0	0	0	0	9	5	0	0	3	9	1	0	0	0	11	1	0	0	46	
4:50 PM	3	6	0	0	0	0	10	7	0	0	4	15	0	0	0	0	11	2	0	0	58	
4:55 PM	0	11	0	1	0	0	8	5	0	0	4	15	2	0	0	0	10	1	0	0	57	573
5:00 PM	2	15	2	0	0	0	8	3	0	0	5	9	2	0	0	0	10	1	0	0	57	582
5:05 PM	2	8	1	0	0	0	8	5	0	0	2	10	0	0	0	0	12	0	0	0	48	581
5:10 PM	0	10	0	1	0	1	10	4	0	0	8	8	1	0	0	0	5	0	0	0	48	582
5:15 PM	0	15	0	0	0	0	10	4	0	0	4	10	0	0	0	0	9	0	0	0	52	589
5:20 PM	3	8	1	0	0	0	11	4	0	0	5	3	0	0	0	0	8	0	0	0	43	590
5:25 PM	2	6	0	0	0	0	7	6	0	0	6	10	0	0	0	0	5	0	0	0	42	581
5:30 PM	1	13	2	1	0	0	8	7	0	0	3	10	3	0	0	2	10	0	0	0	60	604
5:35 PM	1	16	0	0	0	0	5	5	0	0	2	7	1	0	0	0	9	0	0	0	46	600
5:40 PM	2	8	0	1	0	0	9	2	0	0	5	10	0	0	0	0	5	0	0	0	42	599
5:45 PM	1	4	0	0	0	0	8	3	0	0	5	10	0	0	0	0	9	1	0	0	41	594
5:50 PM	3	6	1	1	0	1	5	7	0	0	5	13	1	0	0	0	6	0	0	0	49	585
5:55 PM	2	9	1	1	0	0	5	0	0	0	5	9	0	0	0	0	9	2	0	0	43	571

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	20	128	8	4	0	0	104	60	0	0	52	156	16	0	0	0	124	16	0	0	688
Heavy Trucks	0	4	0			0	0	0			0	4	0			0	0	0			8
Buses																					
Pedestrians		0					0					0					4				4
Bicycles	0	4	0			0	0	0			4	0	0			0	0	0			8
Scooters																					

Comments:

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

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

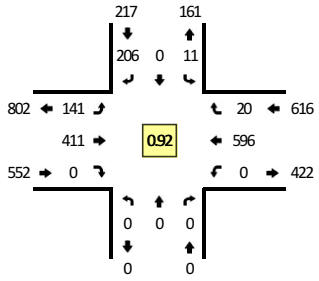
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

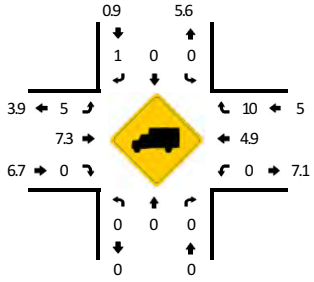
LOCATION: Division St -- NE 6th Ave
CITY/STATE: Camas, WA

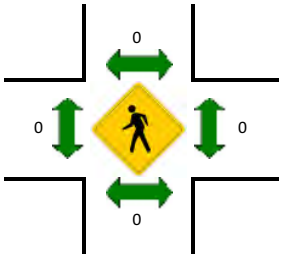
QC JOB #: 16977030
DATE: Tue, Apr 8 2025

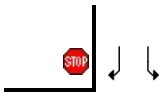
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

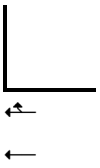


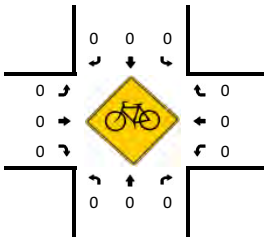


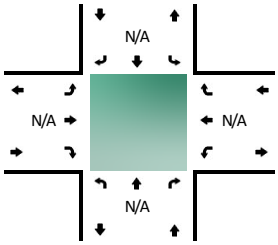


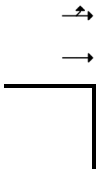




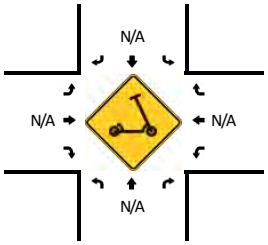












R* = RTOR

5-Min Count Period Beginning At	Division St (Northbound)					Division St (Southbound)					NE 6th Ave (Eastbound)					NE 6th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	1	0	10	0	0	8	19	0	0	0	0	31	0	0	0	69	
7:05 AM	0	0	0	0	0	2	0	12	0	0	4	24	0	0	0	0	37	0	0	0	79	
7:10 AM	0	0	0	0	0	0	0	12	0	0	7	22	0	0	0	0	42	2	0	0	85	
7:15 AM	0	0	0	0	0	1	0	17	0	0	6	26	0	0	0	0	30	1	0	0	81	
7:20 AM	0	0	0	0	0	0	0	14	0	0	4	37	0	0	0	0	48	1	0	0	104	
7:25 AM	0	0	0	0	0	1	0	10	0	0	10	20	0	0	0	0	30	0	0	0	71	
7:30 AM	0	0	0	0	0	2	0	21	0	0	8	25	0	0	0	0	56	1	0	0	113	
7:35 AM	0	0	0	0	0	0	0	26	0	0	10	25	0	0	0	0	53	1	0	0	115	
7:40 AM	0	0	0	0	0	0	0	10	0	0	12	18	0	0	0	0	49	0	0	0	89	
7:45 AM	0	0	0	0	0	0	0	17	0	0	12	36	0	0	0	0	44	0	0	0	109	
7:50 AM	0	0	0	0	0	0	0	24	0	0	14	30	0	0	0	0	55	1	0	0	124	
7:55 AM	0	0	0	0	0	1	0	20	0	0	10	48	0	0	0	0	56	4	0	0	139	1178
8:00 AM	0	0	0	0	0	0	0	13	0	0	13	33	0	0	0	0	53	0	0	0	112	1221
8:05 AM	0	0	0	0	0	2	0	9	0	0	11	25	0	0	0	0	42	1	0	0	90	1232
8:10 AM	0	0	0	0	0	0	0	15	0	0	11	37	0	0	0	0	37	0	0	0	100	1247
8:15 AM	0	0	0	0	0	2	0	16	0	0	11	28	0	0	0	0	49	2	0	0	108	1274
8:20 AM	0	0	0	0	0	0	0	17	0	0	18	37	0	0	0	0	47	4	0	0	123	1293
8:25 AM	0	0	0	0	0	1	0	17	0	0	12	32	0	0	0	0	44	2	0	0	108	1330
8:30 AM	0	0	0	0	0	2	0	19	0	0	5	38	0	0	0	0	61	2	0	0	127	1344
8:35 AM	0	0	0	0	0	2	0	17	0	0	11	30	0	0	0	0	47	2	0	0	109	1338
8:40 AM	0	0	0	0	0	0	0	21	0	0	10	35	0	0	0	0	57	0	0	0	123	1372
8:45 AM	0	0	0	0	0	1	0	18	0	0	15	38	0	0	0	0	48	2	0	0	122	1385
8:50 AM	0	0	0	0	0	0	0	21	0	0	7	49	0	0	0	0	34	1	0	0	112	1373
8:55 AM	0	0	0	0	0	1	0	18	0	0	7	34	0	0	0	0	39	0	0	0	99	1333

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	4	0	228	0	0	148	444	0	0	0	0	656	20	0	0	1500
Heavy Trucks	0	0	0			0	0	8			4	8	0			0	36	4			60
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

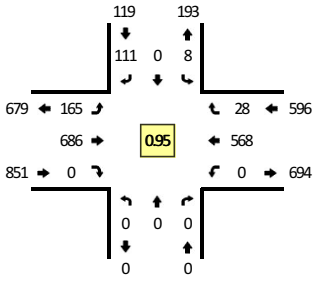
Report generated on 4/16/2025 4:15 PM

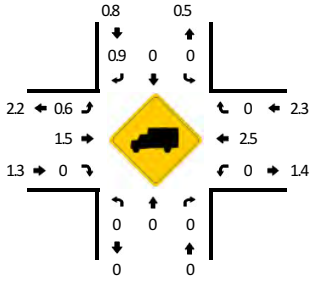
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

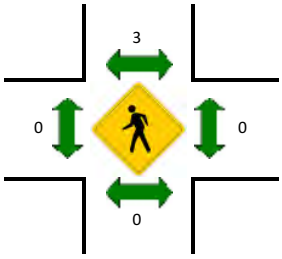
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

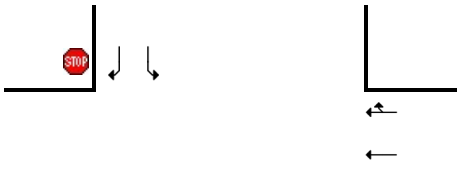
LOCATION: Division St -- NE 6th Ave | **QC JOB #:** 16977031
CITY/STATE: Camas, WA | **DATE:** Tue, Apr 8 2025

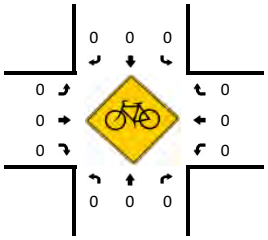
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

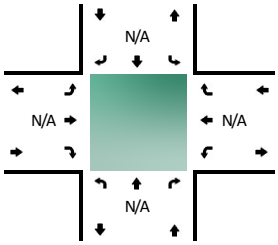




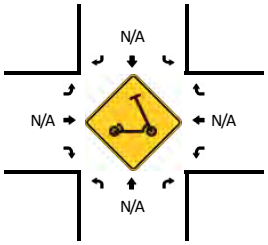












R* = RTOR

5-Min Count Period Beginning At	Division St (Northbound)					Division St (Southbound)					NE 6th Ave (Eastbound)					NE 6th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	0	0	0	2	0	8	0	0	17	54	0	0	0	0	55	1	0	0	137	
4:05 PM	0	0	0	0	0	0	0	8	0	0	8	45	0	0	0	0	53	3	0	0	117	
4:10 PM	0	0	0	0	0	0	0	13	0	0	13	45	0	0	0	0	53	2	0	0	126	
4:15 PM	0	0	0	0	0	2	0	10	0	0	11	55	0	0	0	0	37	1	0	0	116	
4:20 PM	0	0	0	0	0	3	0	15	0	0	10	42	0	0	0	0	43	2	0	0	115	
4:25 PM	0	0	0	0	0	0	0	6	0	0	13	61	0	0	0	0	32	3	0	0	115	
4:30 PM	0	0	0	0	0	0	0	9	0	0	16	37	0	0	0	0	47	3	0	0	112	
4:35 PM	0	0	0	0	0	3	0	10	0	0	14	55	0	0	0	0	34	3	0	0	119	
4:40 PM	0	0	0	0	0	1	0	6	0	0	11	56	0	0	0	0	51	4	0	0	129	
4:45 PM	0	0	0	0	0	1	0	8	0	0	14	52	0	0	0	0	47	2	0	0	124	
4:50 PM	0	0	0	0	0	0	0	11	0	0	16	61	0	0	0	0	52	2	0	0	142	
4:55 PM	0	0	0	0	0	0	0	8	0	0	10	60	0	0	0	0	48	1	0	0	127	1479
5:00 PM	0	0	0	0	0	1	0	12	0	0	15	52	0	0	0	0	39	3	0	0	122	1464
5:05 PM	0	0	0	0	0	0	0	7	0	0	13	61	0	0	0	0	59	2	0	0	142	1489
5:10 PM	0	0	0	0	0	0	0	13	0	0	13	60	0	0	0	0	51	0	0	0	137	1500
5:15 PM	0	0	0	0	0	1	0	5	0	0	17	59	0	0	0	0	47	3	0	0	132	1516
5:20 PM	0	0	0	0	0	1	0	12	0	0	13	48	0	0	0	0	54	6	0	0	134	1535
5:25 PM	0	0	0	0	0	0	0	8	0	0	10	62	0	0	0	0	40	2	0	0	122	1542
5:30 PM	0	0	0	0	0	1	0	12	0	0	15	57	0	0	0	0	37	1	0	0	123	1553
5:35 PM	0	0	0	0	0	2	0	9	0	0	18	58	0	0	0	0	43	2	0	0	132	1566
5:40 PM	0	0	0	0	0	0	0	15	0	0	10	51	0	0	0	0	29	0	0	0	105	1542
5:45 PM	0	0	0	0	0	1	0	7	0	0	15	56	0	0	0	0	42	3	0	0	124	1542
5:50 PM	0	0	0	0	0	1	0	7	0	0	23	74	0	0	0	0	47	5	0	0	157	1557
5:55 PM	0	0	0	0	0	4	0	18	0	0	7	51	0	0	0	0	41	2	0	0	123	1553

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	4	0	100	0	0	172	720	0	0	0	0	628	20	0	0	1644
Heavy Trucks	0	0	0			0	0	0			0	4	0			0	20	0			24
Buses																					
Pedestrians		0					4					0					0				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 4/16/2025 4:15 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

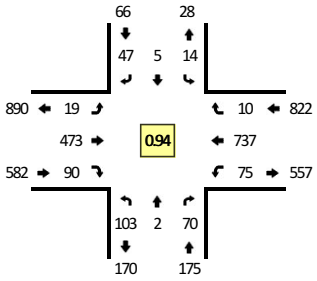
Type of peak hour being reported: Intersection Peak

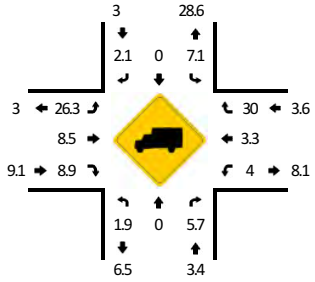
Method for determining peak hour: Total Entering Volume

LOCATION: NW 6th Ave -- SR 14 Ramps
CITY/STATE: Camas, WA

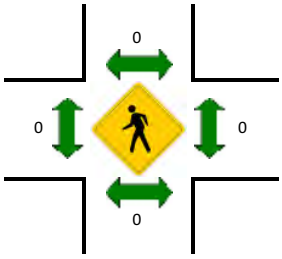
QC JOB #: 16993908
DATE: Tue, May 20 2025

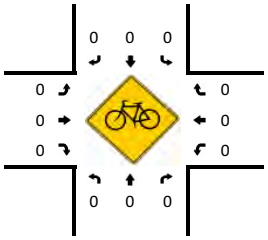
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

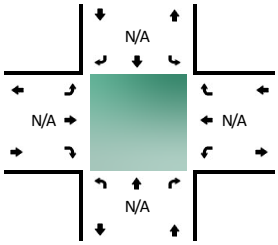


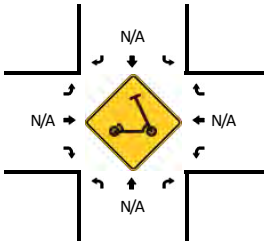


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	NW 6th Ave (Northbound)					NW 6th Ave (Southbound)					SR 14 Ramps (Eastbound)					SR 14 Ramps (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	8	0	5	0	0	0	0	1	0	0	1	18	3	0	0	5	49	0	0	0	90	
7:05 AM	3	0	2	0	0	0	0	0	0	0	1	17	1	0	0	4	55	0	0	0	83	
7:10 AM	4	0	0	0	0	0	0	3	0	0	1	25	5	0	0	7	53	0	0	0	98	
7:15 AM	7	0	4	0	0	2	1	4	0	0	2	23	8	0	0	6	51	0	0	0	108	
7:20 AM	5	0	3	0	0	0	1	1	0	0	1	37	2	0	0	3	56	0	0	0	109	
7:25 AM	10	0	2	0	0	0	2	5	0	0	1	33	1	0	0	8	58	1	0	0	121	
7:30 AM	7	0	1	0	0	0	0	2	0	0	1	28	1	0	0	4	72	0	0	0	116	
7:35 AM	8	0	3	0	0	1	1	4	0	0	0	27	4	0	0	5	74	0	0	0	127	
7:40 AM	3	0	3	0	0	3	0	4	0	0	0	30	3	0	0	6	64	0	0	0	116	
7:45 AM	8	0	7	0	0	3	0	9	0	0	1	48	9	0	0	11	57	0	0	0	153	
7:50 AM	9	1	10	0	0	1	0	4	0	0	0	36	6	0	0	5	58	1	0	0	131	
7:55 AM	12	0	3	0	0	1	1	3	0	0	1	35	7	0	0	14	74	2	0	0	153	1405
8:00 AM	6	0	6	0	0	1	0	1	0	0	3	38	6	0	0	11	69	1	0	0	142	1457
8:05 AM	10	0	7	0	0	3	1	1	0	0	2	36	8	0	0	6	49	1	0	0	124	1498
8:10 AM	7	0	7	0	0	1	0	5	0	0	4	35	9	0	0	6	50	0	0	0	124	1524
8:15 AM	9	0	6	0	0	0	1	8	0	0	0	39	10	1	0	3	69	1	0	0	147	1563
8:20 AM	12	0	4	0	0	2	0	4	0	0	0	38	6	1	0	4	60	0	0	0	131	1585
8:25 AM	9	0	3	0	0	1	0	5	0	0	0	40	10	0	0	2	61	2	0	0	133	1597
8:30 AM	6	1	8	0	0	0	0	0	0	0	3	42	9	0	0	4	57	0	0	0	130	1611
8:35 AM	6	0	4	0	0	1	1	4	0	0	1	46	6	1	0	6	63	2	0	0	141	1625
8:40 AM	9	0	5	0	0	0	1	3	0	0	1	40	4	0	0	3	70	0	0	0	136	1645
8:45 AM	3	0	2	0	0	3	0	2	0	0	3	39	5	0	0	6	64	2	0	0	129	1621
8:50 AM	5	0	7	0	0	2	2	2	0	0	4	41	2	0	0	2	71	0	0	0	138	1628
8:55 AM	7	0	1	0	0	1	0	0	0	0	3	38	2	0	0	7	63	1	0	0	123	1598

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	116	4	80	0	0	20	4	64	0	0	8	476	88	0	0	120	756	12	0	0	1748
Heavy Trucks	8	0	4			0	0	0			4	32	4			8	16	8			84
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

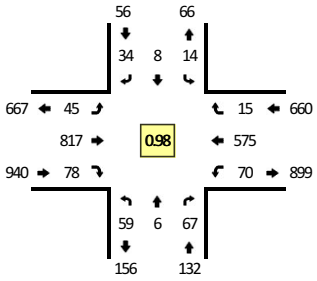
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: NW 6th Ave -- SR 14 Ramps
CITY/STATE: Camas, WA

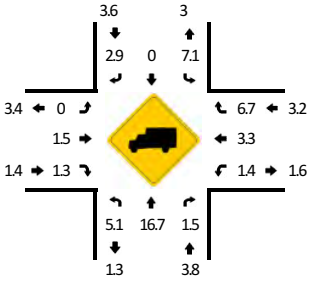
QC JOB #: 16993909
DATE: Tue, May 20 2025

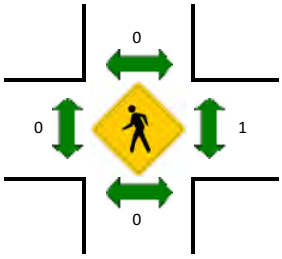
Peak-Hour: 4:20 PM -- 5:20 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

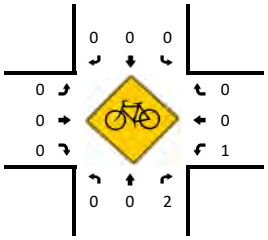


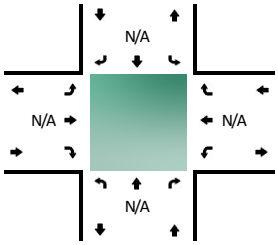


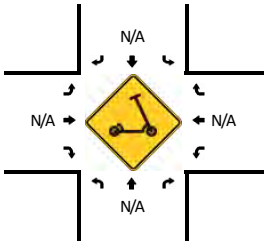
TRUE DATA TO IMPROVE MOBILITY











R* = RTOR

5-Min Count Period Beginning At	NW 6th Ave (Northbound)					NW 6th Ave (Southbound)					SR 14 Ramps (Eastbound)					SR 14 Ramps (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	2	0	7	0	0	2	0	2	0	0	7	64	4	0	0	5	50	2	0	0	145	
4:05 PM	2	0	6	0	0	2	0	2	0	0	4	61	5	0	0	0	66	1	0	0	149	
4:10 PM	3	0	5	0	0	1	1	2	0	0	3	59	6	1	0	8	60	0	1	0	150	
4:15 PM	3	0	5	0	0	0	0	3	0	0	3	65	14	0	0	4	41	1	0	0	139	
4:20 PM	11	0	12	0	0	3	2	3	1	0	3	70	7	0	0	5	41	1	0	0	159	
4:25 PM	6	1	3	1	0	2	1	4	0	0	3	61	6	0	0	7	52	1	0	0	148	
4:30 PM	5	2	4	0	0	0	1	1	0	0	6	60	6	0	0	10	43	2	0	0	140	
4:35 PM	10	1	7	0	0	2	0	2	0	0	6	67	5	1	0	4	57	1	0	0	163	
4:40 PM	2	1	10	0	0	0	0	2	0	0	5	60	11	0	0	8	50	1	1	0	151	
4:45 PM	6	0	6	0	0	0	3	3	0	0	5	58	9	0	0	0	50	2	1	0	143	
4:50 PM	4	1	3	0	0	0	0	3	0	0	2	74	6	0	0	7	46	1	0	0	147	
4:55 PM	1	0	8	0	0	1	0	1	0	0	5	66	5	0	0	9	41	0	0	0	137	1771
5:00 PM	4	0	5	0	0	0	0	3	0	0	4	80	5	0	0	2	52	1	0	0	156	1782
5:05 PM	3	0	1	0	0	2	0	2	0	0	2	69	5	0	0	3	54	2	0	0	143	1776
5:10 PM	2	0	4	1	0	1	1	7	0	0	1	84	5	0	0	3	43	2	0	0	154	1780
5:15 PM	3	0	4	0	0	2	0	3	0	0	2	68	8	0	0	10	46	1	0	0	147	1788
5:20 PM	1	0	3	0	0	0	0	3	0	0	3	66	3	0	0	3	57	2	0	0	141	1770
5:25 PM	4	1	3	0	0	2	0	1	0	0	4	64	12	0	0	4	46	1	1	0	143	1765
5:30 PM	8	1	7	0	0	3	1	3	0	0	3	62	8	1	0	9	45	2	0	0	153	1778
5:35 PM	9	1	4	0	0	0	1	1	0	0	4	61	11	0	0	5	45	2	1	0	145	1760
5:40 PM	5	0	6	0	0	0	0	1	0	0	3	68	7	0	0	6	52	0	0	0	148	1757
5:45 PM	6	0	7	0	0	1	2	0	0	0	5	76	4	0	0	7	31	0	0	0	139	1753
5:50 PM	2	0	2	0	0	2	1	3	0	0	2	69	6	0	0	3	38	1	0	0	129	1735
5:55 PM	3	1	6	0	0	2	0	1	0	0	6	54	9	0	0	3	40	2	1	0	128	1726

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	72	8	92	0	0	8	12	28	0	0	64	740	100	4	0	48	628	16	8	0	1828
Heavy Trucks	4	4	0			0	0	0			0	16	4			0	16	0			44
Buses																					
Pedestrians		0					0					0					4				4
Bicycles	0	0	4			0	0	0			0	0	0			0	0	0			4
Scooters																					

Comments:

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

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

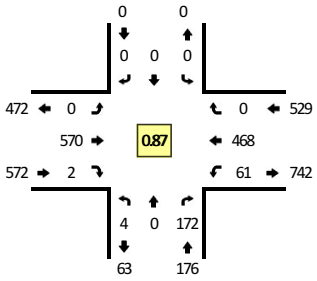
Type of peak hour being reported: Intersection Peak

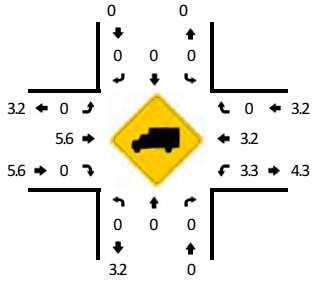
Method for determining peak hour: Total Entering Volume

LOCATION: NW Lacamas Ln -- NW Lake Rd
CITY/STATE: Camas, WA

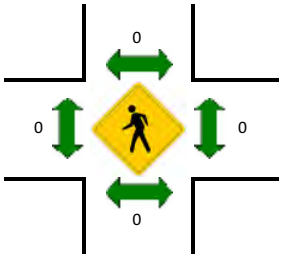
QC JOB #: 16977032
DATE: Tue, Apr 8 2025

Peak-Hour: 7:55 AM -- 8:55 AM
Peak 15-Min: 8:05 AM -- 8:20 AM

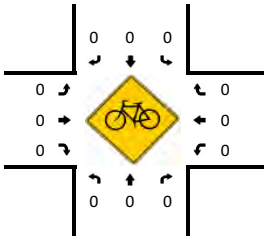


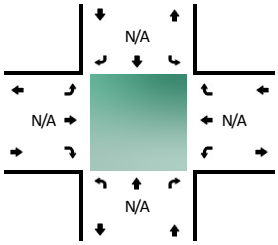


TRUE DATA TO IMPROVE MOBILITY

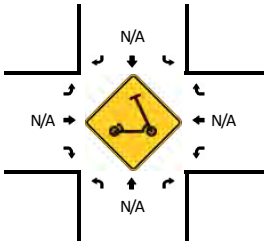












R* = RTOR

5-Min Count Period Beginning At	NW Lacamas Ln (Northbound)					NW Lacamas Ln (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	5	0	0	0	0	0	0	0	0	16	1	0	0	2	21	0	0	0	45	
7:05 AM	0	0	3	0	0	0	0	0	0	0	0	16	1	0	0	3	20	0	0	0	43	
7:10 AM	0	0	6	0	0	0	0	0	0	0	0	17	0	0	0	1	21	0	0	0	45	
7:15 AM	0	0	2	0	0	0	0	0	0	0	0	13	0	0	0	5	27	0	0	0	47	
7:20 AM	0	0	12	0	0	0	0	0	0	0	0	16	0	0	0	2	26	0	0	0	56	
7:25 AM	0	0	6	0	0	0	0	0	0	0	0	12	0	0	0	1	25	0	0	0	44	
7:30 AM	0	0	2	0	0	0	0	0	0	0	0	12	0	0	0	3	26	0	0	0	43	
7:35 AM	0	0	4	0	0	0	0	0	0	0	0	27	0	0	0	2	32	0	0	0	65	
7:40 AM	1	0	9	0	0	0	0	0	0	0	0	28	0	0	0	4	29	0	0	0	71	
7:45 AM	0	0	14	0	0	0	0	0	0	0	0	33	0	0	0	1	41	0	0	0	89	
7:50 AM	0	0	13	0	0	0	0	0	0	0	0	34	0	0	0	6	43	0	0	0	96	
7:55 AM	1	0	10	0	0	0	0	0	0	0	0	49	0	0	0	3	37	0	0	0	100	744
8:00 AM	0	0	26	0	0	0	0	0	0	0	0	44	0	0	0	2	21	0	0	0	93	792
8:05 AM	0	0	17	0	0	0	0	0	0	0	0	61	0	0	0	4	45	0	0	0	127	876
8:10 AM	0	0	23	0	0	0	0	0	0	0	0	62	0	0	0	4	42	0	0	0	131	962
8:15 AM	0	0	14	0	0	0	0	0	0	0	0	52	0	0	0	3	39	0	0	0	108	1023
8:20 AM	2	0	14	0	0	0	0	0	0	0	0	60	0	0	0	11	39	0	0	0	126	1093
8:25 AM	0	0	22	0	0	0	0	0	0	0	0	47	0	0	0	9	30	0	0	0	108	1157
8:30 AM	0	0	21	0	0	0	0	0	0	0	0	53	0	0	0	1	29	0	0	0	104	1218
8:35 AM	0	0	10	0	0	0	0	0	0	0	0	31	1	0	0	3	46	0	0	0	91	1244
8:40 AM	1	0	6	0	0	0	0	0	0	0	0	43	0	0	0	5	41	0	0	0	96	1269
8:45 AM	0	0	3	0	0	0	0	0	0	0	0	30	1	0	0	7	55	0	0	0	96	1276
8:50 AM	0	0	6	0	0	0	0	0	0	0	0	38	0	0	0	9	44	0	0	0	97	1277
8:55 AM	0	0	1	0	0	0	0	0	0	0	0	20	0	0	0	1	35	0	0	0	57	1234

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	216	0	0	0	0	0	0	0	0	700	0	0	0	44	504	0	0	0	1464
Heavy Trucks	0	0	0			0	0	0			0	28	0			4	36	0			68
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

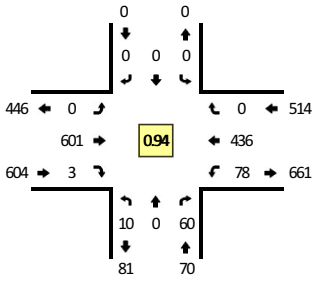
Type of peak hour being reported: Intersection Peak

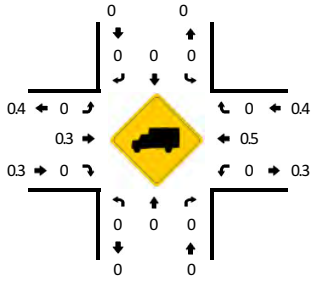
Method for determining peak hour: Total Entering Volume

LOCATION: NW Lacamas Ln -- NW Lake Rd
CITY/STATE: Camas, WA

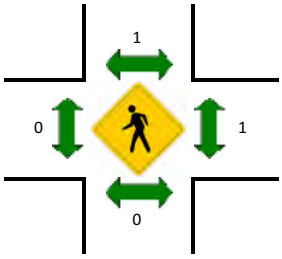
QC JOB #: 16977033
DATE: Tue, Apr 8 2025

Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

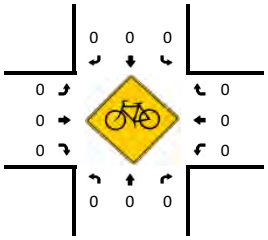


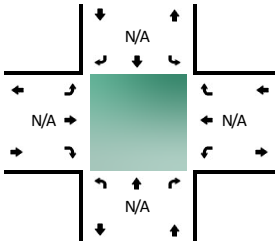


TRUE DATA TO IMPROVE MOBILITY

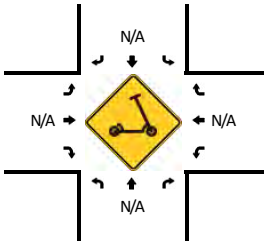












R* = RTOR

5-Min Count Period Beginning At	NW Lacamas Ln (Northbound)					NW Lacamas Ln (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	2	0	0	0	0	0	0	0	0	39	0	0	0	4	36	0	0	0	81	
4:05 PM	0	0	2	0	0	0	0	0	0	0	0	51	1	0	0	3	31	0	0	0	88	
4:10 PM	0	0	1	0	0	0	0	0	0	0	0	41	0	0	0	4	33	0	0	0	79	
4:15 PM	1	0	4	0	0	0	0	0	0	0	0	41	0	0	0	6	30	0	0	0	82	
4:20 PM	1	0	2	0	0	0	0	0	0	0	0	41	0	0	0	6	31	0	0	0	81	
4:25 PM	0	0	4	0	0	0	0	0	0	0	0	27	1	0	0	2	32	0	0	0	66	
4:30 PM	0	0	3	0	0	0	0	0	0	0	0	47	0	0	0	2	39	0	0	0	91	
4:35 PM	0	0	2	0	0	0	0	0	0	0	0	49	0	0	0	1	32	0	0	0	84	
4:40 PM	1	0	2	0	0	0	0	0	0	0	0	45	1	0	0	9	47	0	0	0	105	
4:45 PM	2	0	3	0	0	0	0	0	0	0	0	46	0	0	0	7	34	0	0	0	92	
4:50 PM	1	0	11	0	0	0	0	0	0	0	0	65	0	0	0	8	29	0	0	0	114	
4:55 PM	1	0	3	0	0	0	0	0	0	0	0	54	0	0	0	5	35	0	0	0	98	1061
5:00 PM	0	0	5	0	0	0	0	0	0	0	0	52	0	0	0	6	33	0	0	0	96	1076
5:05 PM	1	0	3	0	0	0	0	0	0	0	0	33	0	0	0	4	55	0	0	0	96	1084
5:10 PM	1	0	4	0	0	0	0	0	0	0	0	55	1	0	0	6	36	0	0	0	103	1108
5:15 PM	0	0	6	0	0	0	0	0	0	0	0	53	1	0	0	6	32	0	0	0	98	1124
5:20 PM	0	0	9	0	0	0	0	0	0	0	0	63	0	0	0	8	34	0	0	0	114	1157
5:25 PM	0	0	5	0	0	0	0	0	0	0	0	47	0	0	0	5	38	0	0	0	95	1186
5:30 PM	2	0	2	0	0	0	0	0	0	0	0	51	0	0	0	5	27	0	0	0	87	1182
5:35 PM	1	0	7	0	0	0	0	0	0	0	0	37	0	0	0	9	36	0	0	0	90	1188
5:40 PM	0	0	1	0	0	0	0	0	0	0	0	56	1	0	0	6	33	0	0	0	97	1180
5:45 PM	0	0	7	0	0	0	0	0	0	0	0	47	0	0	0	5	22	0	0	0	81	1169
5:50 PM	1	0	14	0	0	0	0	0	0	0	0	52	1	0	0	4	33	0	0	0	105	1160
5:55 PM	0	0	7	0	0	0	0	0	0	0	0	45	2	0	0	5	38	0	0	0	97	1159

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	4	0	76	0	0	0	0	0	0	0	0	684	8	0	0	80	408	0	0	0	1260
Heavy Trucks	0	0	0			0	0	0			0	4	0			0	0	0			4
Buses																					
Pedestrians		0					4					0					4				8
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

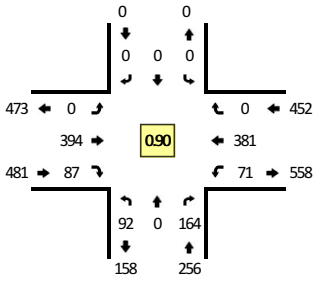
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

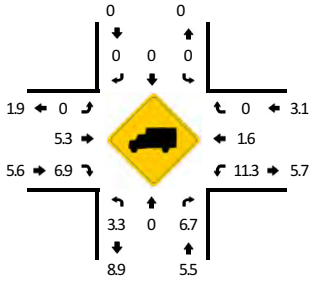
LOCATION: NW Sierra St -- NW Lake Rd
CITY/STATE: Camas, WA

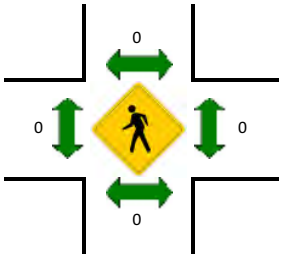
QC JOB #: 16977034
DATE: Tue, Apr 8 2025

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

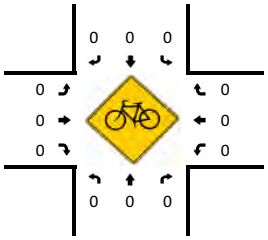


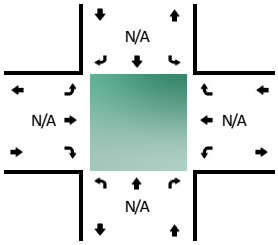




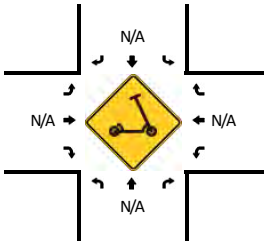












R* = RTOR

5-Min Count Period Beginning At	NW Sierra St (Northbound)					NW Sierra St (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	2	0	4	0	0	0	0	0	0	0	0	16	3	0	0	3	13	0	0	0	41	
7:05 AM	9	0	5	0	0	0	0	0	0	0	0	9	5	0	0	0	25	0	0	0	53	
7:10 AM	7	0	4	0	0	0	0	0	0	0	0	9	4	0	0	3	22	0	0	0	49	
7:15 AM	5	0	3	0	0	0	0	0	0	0	0	14	2	0	0	2	16	0	0	0	42	
7:20 AM	3	0	2	0	0	0	0	0	0	0	0	15	9	0	0	3	23	0	0	0	55	
7:25 AM	3	0	3	0	0	0	0	0	0	0	0	8	2	0	0	4	24	0	0	0	44	
7:30 AM	6	0	3	0	0	0	0	0	0	0	0	7	5	0	0	3	22	0	0	0	46	
7:35 AM	4	0	4	0	0	0	0	0	0	0	0	23	7	0	0	4	22	0	0	0	64	
7:40 AM	9	0	7	0	0	0	0	0	0	0	0	25	6	0	0	4	32	0	0	0	83	
7:45 AM	9	0	7	0	0	0	0	0	0	0	0	16	3	0	0	2	33	0	0	0	70	
7:50 AM	9	0	12	0	0	0	0	0	0	0	0	28	8	0	0	4	42	0	0	0	103	
7:55 AM	10	0	13	0	0	0	0	0	0	0	0	32	4	0	0	8	34	0	0	0	101	751
8:00 AM	11	0	15	0	0	0	0	0	0	0	0	35	7	0	0	3	11	0	0	0	82	792
8:05 AM	8	0	17	0	0	0	0	0	0	0	0	46	8	0	0	10	26	0	0	0	115	854
8:10 AM	8	0	9	0	0	0	0	0	0	0	0	48	8	0	0	3	29	0	0	0	105	910
8:15 AM	8	0	20	0	0	0	0	0	0	0	0	35	3	0	0	5	39	0	0	0	110	978
8:20 AM	5	0	17	0	0	0	0	0	0	0	0	32	6	0	0	5	31	0	0	0	96	1019
8:25 AM	8	0	17	0	0	0	0	0	0	0	0	26	6	0	0	7	28	0	0	0	92	1067
8:30 AM	8	0	16	0	0	0	0	0	0	0	0	32	4	0	0	5	28	0	0	0	93	1114
8:35 AM	5	0	10	0	0	0	0	0	0	0	0	23	9	0	0	5	36	0	0	0	88	1138
8:40 AM	6	0	7	0	0	0	0	0	0	0	0	33	10	0	0	2	43	0	0	0	101	1156
8:45 AM	6	0	11	0	0	0	0	0	0	0	0	24	14	0	0	14	34	0	0	0	103	1189
8:50 AM	8	0	9	0	0	0	0	0	0	0	0	27	9	0	0	15	33	0	0	0	101	1187
8:55 AM	6	0	3	0	0	0	0	0	0	0	0	15	11	0	0	4	33	0	0	0	72	1158

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	96	0	184	0	0	0	0	0	0	0	0	516	76	0	0	72	376	0	0	0	1320
Heavy Trucks	0	0	20			0	0	0			0	20	4			24	4	0			72
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

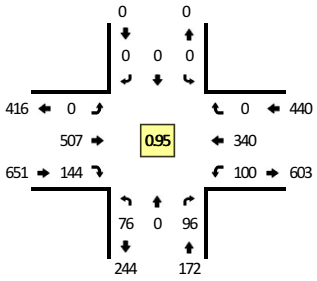
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

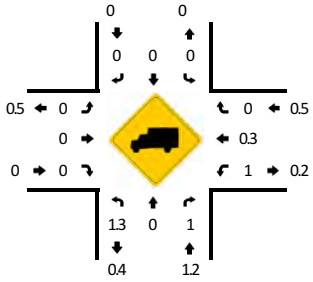
LOCATION: NW Sierra St -- NW Lake Rd
CITY/STATE: Camas, WA

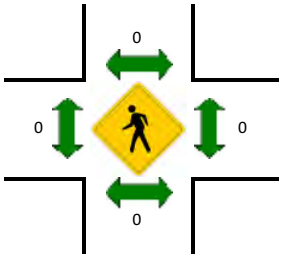
QC JOB #: 16977035
DATE: Tue, Apr 8 2025

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

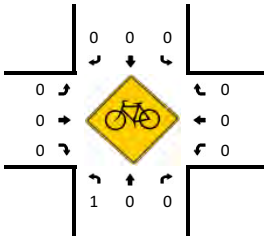


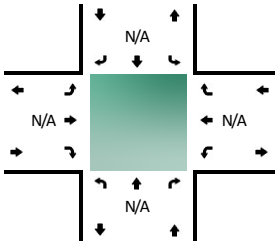




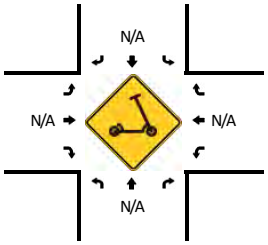












R* = RTOR

5-Min Count Period Beginning At	NW Sierra St (Northbound)					NW Sierra St (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	10	0	10	0	0	0	0	0	0	0	0	40	11	0	0	9	20	0	0	0	100	
4:05 PM	10	0	3	0	0	0	0	0	0	0	0	31	14	0	0	8	26	0	0	0	92	
4:10 PM	8	0	6	0	0	0	0	0	0	0	0	49	12	0	0	5	26	0	0	0	106	
4:15 PM	7	0	6	0	0	0	0	0	0	0	0	31	6	0	0	2	27	0	0	0	79	
4:20 PM	6	0	5	0	0	0	0	0	0	0	0	33	5	0	0	11	24	0	0	0	84	
4:25 PM	3	0	6	0	0	0	0	0	0	0	0	30	7	0	0	6	28	0	0	0	80	
4:30 PM	9	0	3	0	0	0	0	0	0	0	0	34	13	0	0	9	23	0	0	0	91	
4:35 PM	7	0	8	0	0	0	0	0	0	0	0	44	10	0	0	2	34	0	0	0	105	
4:40 PM	11	0	8	0	0	0	0	0	0	0	0	35	13	0	0	13	29	0	0	0	109	
4:45 PM	5	0	6	0	0	0	0	0	0	0	0	48	22	0	0	1	35	0	0	0	117	
4:50 PM	6	0	14	0	0	0	0	0	0	0	0	44	9	0	0	5	26	0	0	0	104	
4:55 PM	6	0	8	0	0	0	0	0	0	0	0	44	6	0	0	13	29	0	0	0	106	1173
5:00 PM	7	0	10	0	0	0	0	0	0	0	0	43	7	0	0	4	19	0	0	0	90	1163
5:05 PM	6	0	6	0	0	0	0	0	0	0	0	33	12	0	0	12	37	0	0	0	106	1177
5:10 PM	5	0	7	0	0	0	0	0	0	0	0	46	13	0	0	13	26	0	0	0	110	1181
5:15 PM	7	0	9	0	0	0	0	0	0	0	0	47	12	0	0	12	29	0	0	0	116	1218
5:20 PM	5	0	10	0	0	0	0	0	0	0	0	53	14	0	0	8	18	0	0	0	108	1242
5:25 PM	2	0	7	0	0	0	0	0	0	0	0	36	13	0	0	8	35	0	0	0	101	1263
5:30 PM	5	0	7	0	0	0	0	0	0	0	0	38	14	0	0	4	23	0	0	0	91	1263
5:35 PM	5	0	12	0	0	0	0	0	0	0	0	34	12	0	0	6	27	0	0	0	96	1254
5:40 PM	8	0	13	0	0	0	0	0	0	0	0	35	11	0	0	5	31	0	0	0	103	1248
5:45 PM	8	0	7	0	0	0	0	0	0	0	0	45	11	0	0	7	18	0	0	0	96	1227
5:50 PM	6	0	6	0	0	0	0	0	0	0	0	45	7	0	0	5	20	0	0	0	89	1212
5:55 PM	12	0	8	0	0	0	0	0	0	0	0	38	9	0	0	6	33	0	0	0	106	1212

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	68	0	104	0	0	0	0	0	0	0	0	584	156	0	0	132	292	0	0	0	1336
Heavy Trucks	0	0	0			0	0	0			0	0	0			0	0	0			0
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

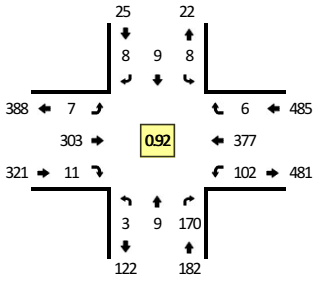
Type of peak hour being reported: Intersection Peak

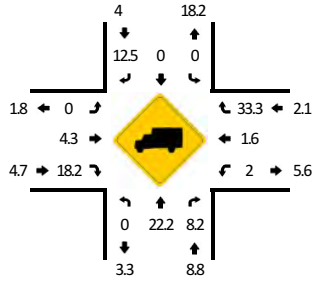
Method for determining peak hour: Total Entering Volume

LOCATION: NW Leadbetter Dr -- NW Lake Rd
CITY/STATE: Camas, WA

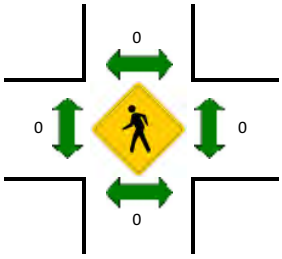
QC JOB #: 16977036
DATE: Tue, Apr 8 2025

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

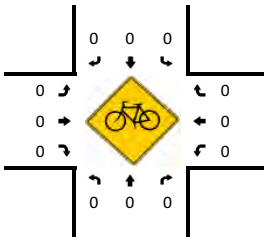


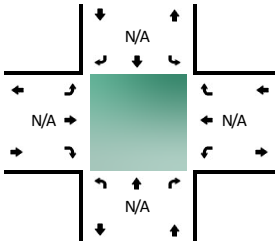


TRUE DATA TO IMPROVE MOBILITY

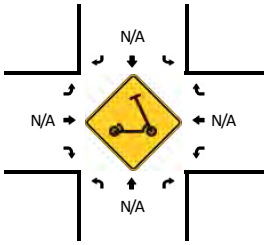












R* = RTOR

5-Min Count Period Beginning At	NW Leadbetter Dr (Northbound)					NW Leadbetter Dr (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	1	0	8	0	0	0	1	1	0	0	0	15	0	0	0	4	10	0	0	0	40	
7:05 AM	0	0	2	0	0	0	0	3	0	0	0	9	0	0	0	7	23	0	0	0	44	
7:10 AM	0	0	3	0	0	0	3	1	0	0	0	10	0	0	0	7	22	0	0	0	46	
7:15 AM	0	0	4	0	0	0	0	2	0	0	1	14	0	0	0	6	16	0	0	0	43	
7:20 AM	0	0	4	0	0	1	1	0	0	0	0	21	0	0	0	12	13	0	0	0	52	
7:25 AM	0	0	1	0	0	0	3	1	0	0	0	8	0	0	0	12	16	0	0	0	41	
7:30 AM	0	2	1	0	0	0	0	0	0	0	0	11	0	0	0	7	17	0	0	0	38	
7:35 AM	0	1	6	0	0	1	2	0	0	0	0	25	1	0	0	4	26	0	0	0	66	
7:40 AM	0	0	6	0	0	3	2	2	0	0	1	20	3	0	0	9	28	0	0	0	74	
7:45 AM	0	0	10	0	0	0	1	0	0	0	1	11	0	0	0	13	28	0	0	0	64	
7:50 AM	0	1	16	0	0	1	1	1	0	0	1	25	1	0	0	13	39	0	0	0	99	
7:55 AM	0	0	16	0	0	0	1	0	0	0	0	18	2	0	0	7	40	0	0	0	84	691
8:00 AM	0	0	21	0	0	1	1	0	0	0	0	22	2	0	0	3	22	1	0	0	73	724
8:05 AM	3	1	24	0	0	0	0	2	0	0	0	30	0	0	0	9	29	0	0	0	98	778
8:10 AM	0	1	18	0	0	1	1	1	0	0	0	30	0	0	0	5	37	1	0	0	95	827
8:15 AM	0	0	16	0	0	0	1	0	0	0	2	24	0	0	0	11	29	0	0	0	83	867
8:20 AM	0	0	15	0	0	1	0	0	0	0	1	21	0	0	0	8	26	1	0	0	73	888
8:25 AM	0	0	13	0	0	0	0	1	0	0	0	22	0	0	0	5	36	0	0	0	77	924
8:30 AM	0	1	9	0	0	1	0	0	0	0	0	23	0	0	0	10	23	2	0	0	69	955
8:35 AM	0	1	11	0	0	1	1	2	0	0	1	20	1	0	0	9	28	1	0	0	76	965
8:40 AM	0	3	8	0	0	0	0	0	0	0	1	39	2	0	0	15	35	0	0	0	103	994
8:45 AM	0	1	3	0	0	2	3	1	0	0	1	29	3	0	0	7	33	0	0	0	83	1013
8:50 AM	0	1	7	0	0	0	1	2	0	0	1	31	1	0	0	10	33	0	0	0	87	1001
8:55 AM	0	0	4	0	0	0	2	0	0	0	1	21	5	0	0	3	31	3	0	0	70	987

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	12	8	232	0	0	4	8	12	0	0	8	336	0	0	0	100	380	4	0	0	1104
Heavy Trucks	0	0	16			0	0	4			0	8	0			4	8	0			40
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

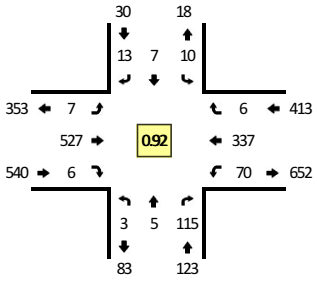
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

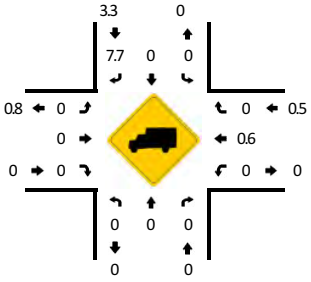
LOCATION: NW Leadbetter Dr -- NW Lake Rd
CITY/STATE: Camas, WA

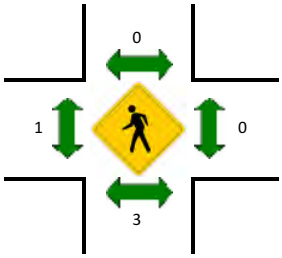
QC JOB #: 16977037
DATE: Tue, Apr 8 2025

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

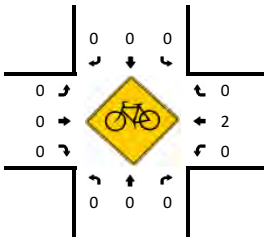


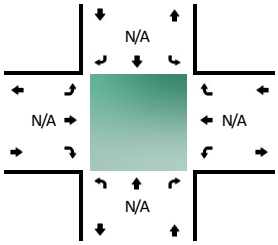




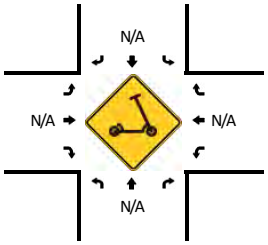












R* = RTOR

5-Min Count Period Beginning At	NW Leadbetter Dr (Northbound)					NW Leadbetter Dr (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	2	1	10	0	0	0	1	1	0	0	0	48	0	0	0	5	21	0	0	0	89	
4:05 PM	0	0	8	0	0	1	0	1	0	0	0	31	0	0	0	4	32	1	0	0	78	
4:10 PM	0	1	4	0	0	0	0	0	0	0	0	46	2	0	0	4	28	1	0	0	86	
4:15 PM	0	0	6	0	0	0	0	1	0	0	1	36	2	0	0	4	33	0	0	0	83	
4:20 PM	0	2	5	0	0	0	0	0	0	0	0	29	0	0	0	1	30	0	0	0	67	
4:25 PM	0	1	5	0	0	0	1	0	0	0	3	39	3	0	0	6	25	0	0	0	83	
4:30 PM	0	0	4	0	0	1	0	0	0	0	1	41	1	0	0	6	23	0	0	0	77	
4:35 PM	0	1	13	0	0	1	1	2	0	0	1	38	0	0	0	9	34	1	0	0	101	
4:40 PM	0	0	5	0	0	2	0	1	0	0	0	47	1	0	0	6	32	0	0	0	94	
4:45 PM	2	0	13	0	0	1	0	2	0	0	0	53	0	0	0	1	33	2	0	0	107	
4:50 PM	0	0	10	0	0	0	1	2	0	0	0	42	2	0	0	2	33	0	0	0	92	
4:55 PM	0	0	13	0	0	0	1	1	0	0	2	39	0	0	0	8	29	0	0	0	93	1050
5:00 PM	1	0	8	0	0	1	0	1	0	0	0	36	0	0	0	5	17	1	0	0	70	1031
5:05 PM	0	2	7	0	0	0	0	1	0	0	2	39	1	0	0	10	35	1	0	0	98	1051
5:10 PM	0	0	12	0	0	2	1	1	0	0	1	47	1	0	0	4	25	0	0	0	94	1059
5:15 PM	0	1	7	0	0	2	0	0	0	0	1	53	0	0	0	6	30	0	0	0	100	1076
5:20 PM	0	0	11	0	0	0	2	0	0	0	0	48	0	0	0	3	21	0	0	0	85	1094
5:25 PM	0	0	5	0	0	1	1	2	0	0	0	46	0	0	0	10	24	1	0	0	90	1101
5:30 PM	0	1	11	0	0	0	0	0	0	0	0	39	1	0	0	6	24	0	0	0	82	1106
5:35 PM	1	1	10	0	0	1	0	0	0	0	0	36	0	0	0	3	27	0	0	0	79	1084
5:40 PM	0	3	4	0	0	1	1	0	0	0	2	38	0	0	0	1	38	0	0	0	88	1078
5:45 PM	1	0	8	0	0	0	1	2	0	0	0	51	1	0	0	6	17	1	0	0	88	1059
5:50 PM	0	0	11	0	0	1	1	1	0	0	0	36	1	0	0	4	16	2	0	0	73	1040
5:55 PM	0	1	6	0	0	1	1	1	0	0	0	40	0	0	0	8	37	0	0	0	95	1042

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	8	4	124	0	0	16	4	20	0	0	4	552	4	0	0	64	396	12	0	0	1208
Heavy Trucks	0	0	0			0	0	0			0	0	0			0	4	0			4
Buses																					
Pedestrians		8					0					4					0				12
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

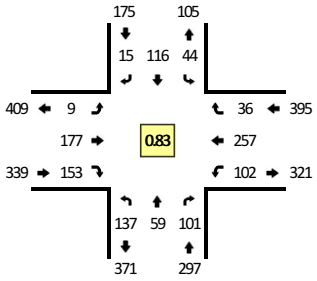
Type of peak hour being reported: Intersection Peak

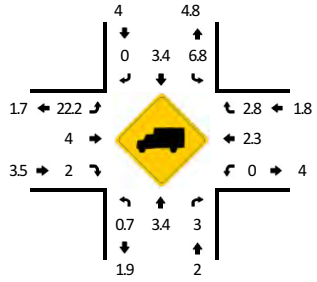
Method for determining peak hour: Total Entering Volume

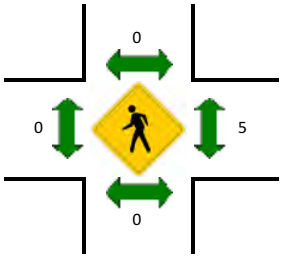
LOCATION: NW Parker St -- NW Lake Rd
CITY/STATE: Camas, WA

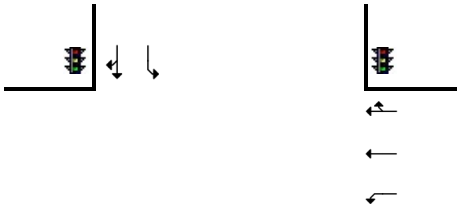
QC JOB #: 16977038
DATE: Tue, Apr 8 2025

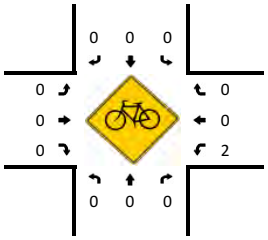
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

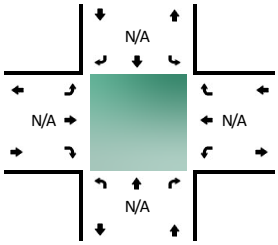


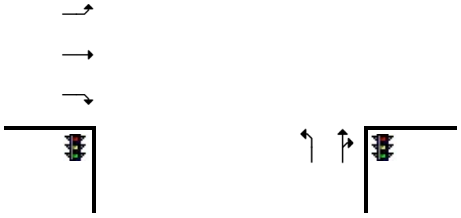


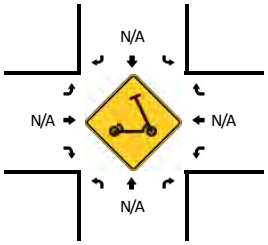












R* = RTOR

5-Min Count Period Beginning At	NW Parker St (Northbound)					NW Parker St (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	8	4	0	0	0	3	5	0	0	0	2	11	5	0	2	1	11	0	0	1	53	
7:05 AM	6	5	0	0	0	1	8	1	0	1	0	7	1	0	0	2	23	2	0	0	57	
7:10 AM	2	4	1	0	0	5	9	1	0	0	1	6	2	0	3	5	16	0	0	0	55	
7:15 AM	5	3	2	0	0	3	7	2	0	0	1	10	5	0	1	4	15	2	0	0	60	
7:20 AM	4	2	0	0	1	4	5	1	0	1	0	14	2	0	0	4	10	0	0	1	49	
7:25 AM	5	3	0	0	0	1	5	1	0	0	1	4	2	0	3	6	13	0	0	1	45	
7:30 AM	6	4	1	0	1	3	2	0	0	0	0	8	5	0	2	1	12	1	0	0	46	
7:35 AM	3	5	4	0	1	4	5	1	0	1	0	21	8	0	2	7	19	2	0	0	83	
7:40 AM	5	4	2	0	2	3	10	0	0	1	1	11	9	0	4	10	21	1	0	0	84	
7:45 AM	7	5	2	0	1	5	12	0	0	0	2	8	13	0	10	6	18	1	0	1	91	
7:50 AM	10	6	3	0	1	1	19	2	0	0	0	17	21	0	13	4	27	2	0	3	129	
7:55 AM	7	10	5	0	2	3	19	1	0	0	1	12	12	0	12	17	19	1	0	2	123	875
8:00 AM	15	5	4	0	1	7	10	1	0	0	1	15	8	0	8	7	25	3	0	0	110	932
8:05 AM	16	6	4	0	1	6	10	0	0	0	1	24	5	0	3	4	16	2	0	3	101	976
8:10 AM	8	5	5	0	3	2	10	1	1	1	1	13	6	0	2	13	22	0	0	3	96	1017
8:15 AM	7	4	9	0	1	3	10	3	0	0	0	11	9	0	1	8	25	2	0	0	93	1050
8:20 AM	4	4	3	0	1	2	4	0	0	0	2	16	4	0	5	8	22	3	0	3	81	1082
8:25 AM	16	5	8	0	4	5	9	0	0	1	0	10	3	0	2	6	25	3	0	0	97	1134
8:30 AM	8	1	4	0	0	4	9	2	0	0	1	10	4	0	2	9	17	1	0	0	72	1160
8:35 AM	11	5	4	0	3	3	7	0	0	0	0	19	5	0	3	7	13	2	0	1	83	1160
8:40 AM	15	5	7	0	6	4	3	2	0	0	1	19	9	0	5	9	18	0	0	1	104	1180
8:45 AM	20	3	16	0	6	3	6	1	0	0	1	11	3	0	8	10	28	1	0	0	117	1206
8:50 AM	15	9	9	0	6	3	4	0	0	1	1	12	5	0	6	11	30	1	0	0	113	1190
8:55 AM	13	8	3	0	7	1	5	0	0	0	1	11	4	0	4	9	19	3	0	1	89	1156

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	128	84	64	0	16	44	192	16	0	0	8	176	296	0	132	112	284	44	0	20	1616
Heavy Trucks	0	0	0			4	4	0			0	4	0			0	8	0			20
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

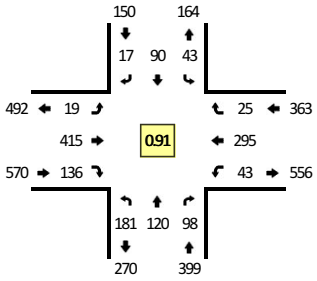
Type of peak hour being reported: Intersection Peak

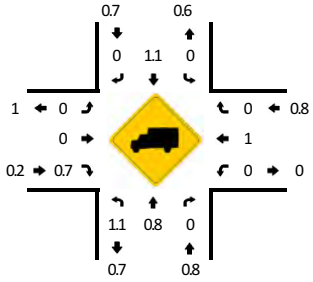
Method for determining peak hour: Total Entering Volume

LOCATION: NW Parker St -- NW Lake Rd
CITY/STATE: Camas, WA

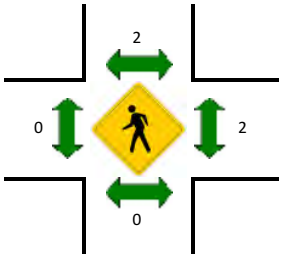
QC JOB #: 16977039
DATE: Tue, Apr 8 2025

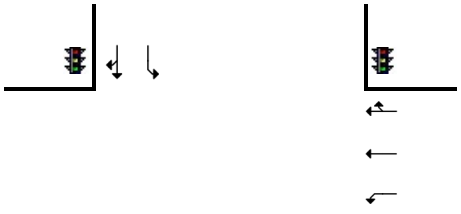
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

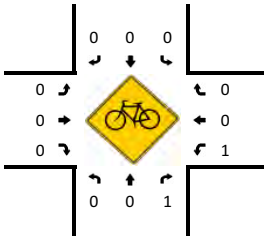


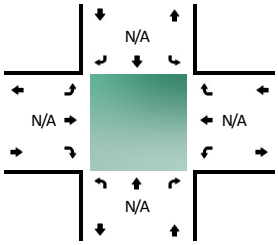


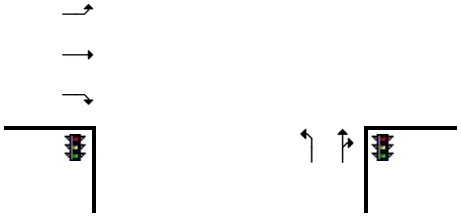
TRUE DATA TO IMPROVE MOBILITY

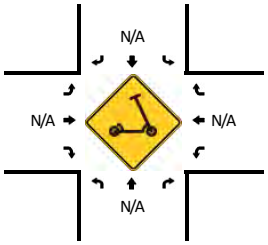












R* = RTOR

5-Min Count Period Beginning At	NW Parker St (Northbound)					NW Parker St (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	9	3	4	0	2	3	8	1	0	0	2	41	6	0	2	2	24	2	0	0	109	
4:05 PM	12	11	4	0	3	3	9	1	0	0	1	30	4	0	1	3	24	1	0	1	108	
4:10 PM	9	11	5	0	2	3	5	3	0	3	5	32	4	0	0	5	26	1	0	2	116	
4:15 PM	14	4	2	0	4	5	2	1	0	1	1	26	3	0	3	2	26	1	0	0	95	
4:20 PM	10	10	5	0	0	3	9	0	0	3	1	25	3	0	5	5	28	3	0	0	110	
4:25 PM	9	7	3	0	0	0	3	1	0	1	1	46	7	0	5	2	18	0	0	0	103	
4:30 PM	9	7	4	0	1	5	9	0	0	0	4	29	14	0	7	1	27	0	0	1	118	
4:35 PM	16	7	4	0	2	4	8	0	0	0	2	32	12	0	0	6	30	3	0	0	126	
4:40 PM	15	12	3	0	2	2	9	1	0	1	1	41	8	0	4	4	27	0	0	1	131	
4:45 PM	20	9	19	0	1	13	8	0	0	0	0	28	6	0	5	1	35	3	0	0	148	
4:50 PM	22	5	5	0	2	1	4	2	0	0	2	30	4	0	5	6	33	0	0	0	121	
4:55 PM	8	11	4	0	3	3	3	1	0	0	2	25	8	0	3	5	21	1	0	1	99	1384
5:00 PM	15	19	7	1	1	0	10	1	0	2	1	33	6	0	1	2	18	0	0	0	117	1392
5:05 PM	17	11	4	0	0	6	10	0	0	0	3	37	9	0	2	4	26	4	0	3	136	1420
5:10 PM	19	10	6	0	4	0	10	1	0	0	1	44	5	0	3	9	21	1	0	0	134	1438
5:15 PM	15	10	8	0	2	3	4	3	0	0	1	35	3	0	5	2	18	2	0	1	112	1455
5:20 PM	13	12	8	0	0	4	9	3	0	1	1	46	5	0	2	1	21	2	0	1	129	1474
5:25 PM	11	7	7	0	1	2	6	0	0	1	1	35	11	0	8	2	18	1	0	0	111	1482
5:30 PM	8	8	9	0	2	1	5	0	0	0	5	23	9	0	3	0	24	0	0	1	98	1462
5:35 PM	13	10	2	0	1	1	11	1	0	0	2	38	10	0	12	4	21	1	0	1	128	1464
5:40 PM	12	11	4	0	2	1	11	1	0	0	0	39	7	0	5	9	25	2	0	1	130	1463
5:45 PM	5	8	6	0	2	5	11	0	0	0	1	36	17	0	7	7	21	2	0	0	128	1443
5:50 PM	16	8	2	0	0	3	7	0	0	1	2	30	13	0	5	3	8	0	0	0	98	1420
5:55 PM	19	6	1	0	1	2	3	0	0	0	0	30	3	0	6	6	25	4	0	1	107	1428

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	204	112	124	0	20	76	100	8	0	4	12	404	140	0	36	44	368	28	0	4	1684
Heavy Trucks	4	0	0			0	0	0			0	0	0			0	4	0			8
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			4	0	0			4
Scooters																					

Comments:

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

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

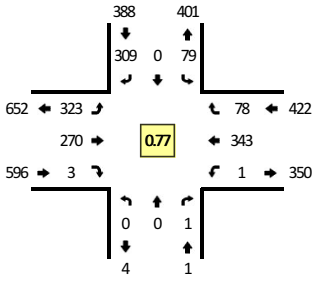
Type of peak hour being reported: Intersection Peak

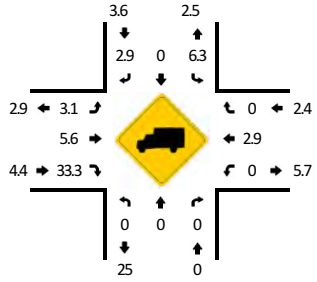
Method for determining peak hour: Total Entering Volume

LOCATION: NW Friberg-Strunk St -- NW Lake Rd
CITY/STATE: Vancouver, WA

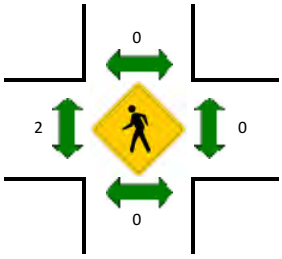
QC JOB #: 16993920
DATE: Tue, May 20 2025

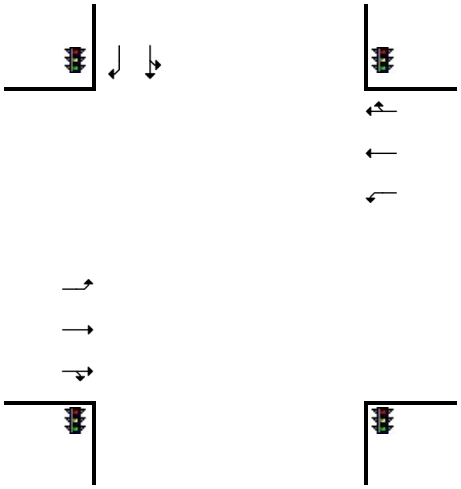
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:35 AM -- 8:50 AM

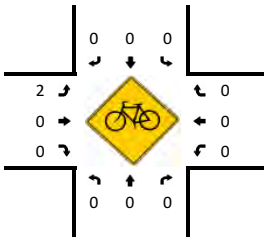


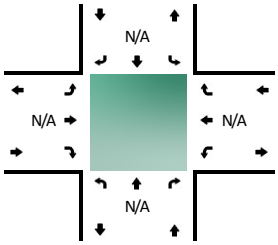


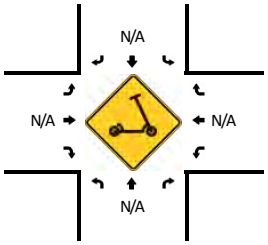
TRUE DATA TO IMPROVE MOBILITY











R* = RTOR

5-Min Count Period Beginning At	NW Friberg-Strunk St (Northbound)					NW Friberg-Strunk St (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	4	0	3	0	2	4	10	0	0	0	0	15	4	0	0	42	
7:05 AM	0	0	0	0	0	4	0	2	0	7	4	9	0	0	0	0	15	4	0	1	46	
7:10 AM	1	0	0	0	0	4	0	3	0	1	8	15	0	0	0	0	16	1	0	0	49	
7:15 AM	0	0	0	0	0	5	0	1	0	5	8	9	0	0	0	0	18	5	0	2	53	
7:20 AM	0	0	0	0	0	2	0	3	0	2	6	20	0	0	0	0	9	2	0	0	44	
7:25 AM	0	0	0	0	0	11	0	5	0	2	2	16	0	0	0	0	18	6	0	1	61	
7:30 AM	0	0	0	0	0	9	0	5	0	6	6	16	0	0	0	0	23	0	0	2	67	
7:35 AM	0	0	0	0	0	8	0	1	0	3	5	25	0	0	0	0	19	1	1	0	63	
7:40 AM	0	0	0	0	0	7	0	1	0	7	7	11	1	0	0	0	24	1	0	0	59	
7:45 AM	0	0	0	0	0	10	0	2	0	0	6	23	0	0	0	0	23	4	0	2	70	
7:50 AM	0	0	0	0	1	8	0	7	0	7	9	34	0	0	0	0	21	6	1	2	96	
7:55 AM	0	0	0	0	0	11	0	3	0	2	10	25	0	0	0	0	28	2	0	2	83	733
8:00 AM	0	0	0	0	0	13	0	4	0	3	11	36	0	0	0	0	32	3	0	3	105	796
8:05 AM	0	0	0	0	0	4	0	5	0	6	20	24	0	0	0	0	28	2	0	2	91	841
8:10 AM	0	0	0	0	1	7	0	6	0	7	25	26	1	0	0	1	17	6	0	2	99	891
8:15 AM	0	0	0	0	0	6	0	3	0	10	25	28	0	0	0	0	21	3	0	1	97	935
8:20 AM	0	0	0	0	0	7	0	17	0	12	29	15	0	0	0	0	27	3	0	1	111	1002
8:25 AM	0	0	0	0	0	4	0	18	0	12	37	10	1	0	0	0	26	7	0	2	117	1058
8:30 AM	0	0	0	0	0	6	0	19	0	20	31	16	0	0	0	0	33	6	0	0	131	1122
8:35 AM	0	0	0	0	0	6	0	31	0	27	46	24	1	0	0	0	17	4	0	0	156	1215
8:40 AM	0	0	0	0	0	3	0	18	0	27	48	25	0	0	0	0	31	9	0	0	161	1317
8:45 AM	0	0	0	0	0	6	0	24	0	17	25	17	0	0	0	0	43	6	0	3	141	1388
8:50 AM	0	0	0	0	0	11	0	8	0	6	16	28	0	0	0	0	33	3	0	2	107	1399
8:55 AM	0	0	0	0	0	6	0	4	0	5	10	21	0	0	0	0	35	7	0	3	91	1407

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	60	0	576	0	284	476	264	4	0	0	0	364	88	0	12	2128
Heavy Trucks	0	0	0			0	0	20			8	8	0			0	8	0			44
Buses																					
Pedestrians		0					0					4					0				4
Bicycles	0	0	0			0	0	0			4	0	0			0	0	0			4
Scooters																					

Comments:

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

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

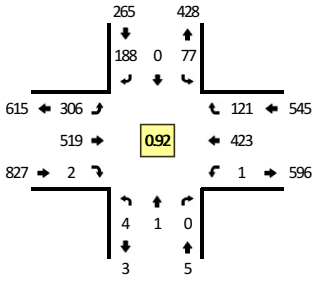
Type of peak hour being reported: Intersection Peak

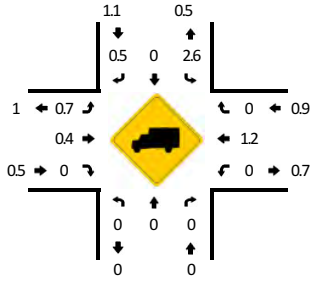
Method for determining peak hour: Total Entering Volume

LOCATION: NW Friberg-Strunk St -- NW Lake Rd
CITY/STATE: Vancouver, WA

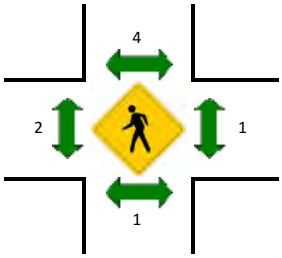
QC JOB #: 16993921
DATE: Tue, May 20 2025

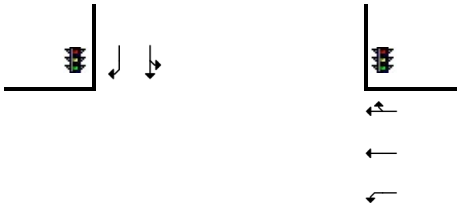
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

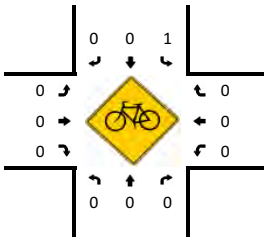


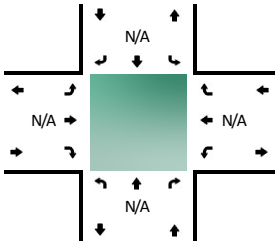


TRUE DATA TO IMPROVE MOBILITY

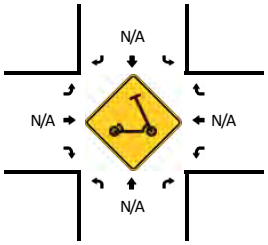












R* = RTOR

5-Min Count Period Beginning At	NW Friberg-Strunk St (Northbound)					NW Friberg-Strunk St (Southbound)					NW Lake Rd (Eastbound)					NW Lake Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	0	0	0	2	0	6	0	16	16	45	0	0	0	0	32	2	0	3	122	
4:05 PM	1	0	0	0	0	5	0	12	0	10	15	42	0	0	0	0	28	2	0	3	118	
4:10 PM	0	0	0	0	0	8	0	4	0	10	29	34	0	0	0	0	41	2	1	0	129	
4:15 PM	0	0	0	0	1	5	0	4	0	7	21	29	1	0	0	0	35	5	0	2	110	
4:20 PM	2	1	0	0	0	8	0	3	0	11	23	37	0	0	0	0	29	7	0	2	123	
4:25 PM	0	0	0	0	0	6	0	8	0	9	25	36	0	0	0	0	36	6	0	3	129	
4:30 PM	0	0	0	0	0	3	0	0	0	10	31	44	0	0	0	0	35	6	0	2	131	
4:35 PM	0	0	0	0	0	4	0	14	0	12	20	52	0	0	0	0	44	6	0	4	156	
4:40 PM	0	0	0	0	0	5	0	8	0	7	22	28	0	0	0	0	39	9	0	9	127	
4:45 PM	0	0	0	0	0	7	0	10	0	14	23	28	0	0	0	1	38	9	0	4	134	
4:50 PM	0	0	0	0	0	8	0	6	0	12	25	37	0	0	0	0	38	13	0	1	140	
4:55 PM	0	1	0	0	0	8	0	2	0	8	23	51	0	0	0	0	27	4	0	0	124	1543
5:00 PM	0	0	0	0	0	10	0	5	0	10	26	38	0	0	0	0	23	5	0	1	118	1539
5:05 PM	0	0	0	0	0	4	0	4	0	12	30	47	0	0	0	0	34	2	0	3	136	1557
5:10 PM	2	0	0	0	0	11	0	10	0	4	21	59	0	0	1	0	47	8	0	1	164	1592
5:15 PM	1	0	0	0	0	5	0	1	0	6	28	57	0	0	0	0	20	8	0	4	130	1612
5:20 PM	1	0	0	0	0	6	0	8	0	8	32	42	1	0	0	0	42	11	0	2	153	1642
5:25 PM	0	0	0	0	0	7	0	5	0	7	21	53	0	0	0	0	26	6	0	1	126	1639
5:30 PM	0	0	0	0	0	9	0	5	0	5	28	32	0	0	0	0	27	7	0	1	114	1622
5:35 PM	0	0	0	0	0	10	0	7	0	3	16	39	0	0	0	0	32	8	0	3	118	1584
5:40 PM	0	0	0	0	0	18	0	15	0	5	24	49	0	0	0	0	31	5	0	0	147	1604
5:45 PM	0	0	0	0	0	11	0	4	0	6	22	38	0	0	1	0	31	6	1	1	121	1591
5:50 PM	0	0	0	0	0	5	0	3	0	9	31	41	0	0	0	0	20	6	0	0	115	1566
5:55 PM	0	0	0	0	0	5	0	8	0	6	27	38	0	0	0	0	24	3	0	3	114	1556

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	16	0	0	0	0	88	0	148	0	72	324	632	8	0	4	0	436	136	0	28	1892
Heavy Trucks	0	0	0			0	0	0			0	4	0			0	12	0			16
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

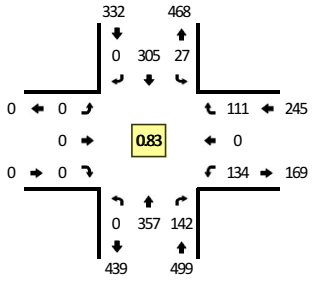
Type of peak hour being reported: Intersection Peak

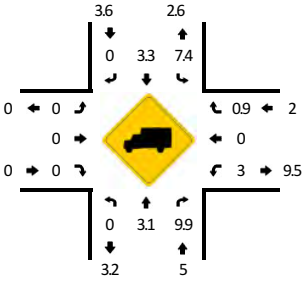
Method for determining peak hour: Total Entering Volume

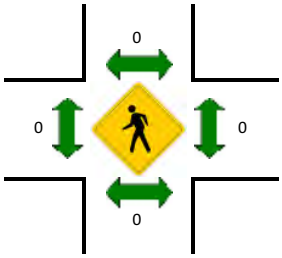
LOCATION: NW Parker St -- NW Leadbetter Dr
CITY/STATE: Camas, WA

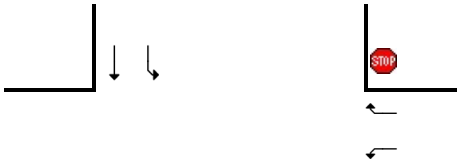
QC JOB #: 16993916
DATE: Tue, May 20 2025

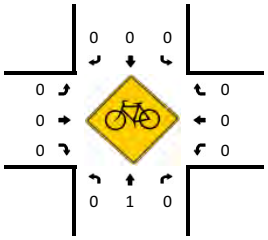
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 8:35 AM -- 8:50 AM

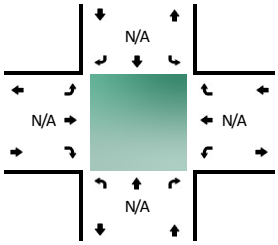




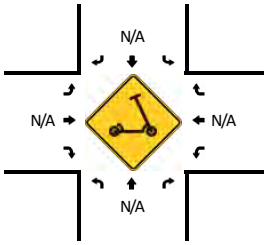












R* = RTOR

5-Min Count Period Beginning At	NW Parker St (Northbound)					NW Parker St (Southbound)					NW Leadbetter Dr (Eastbound)					NW Leadbetter Dr (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	6	5	0	0	1	8	0	0	0	0	0	0	0	0	2	0	0	0	0	22	
7:05 AM	0	11	4	0	0	3	13	0	0	0	0	0	0	0	0	5	0	2	0	0	38	
7:10 AM	0	11	8	0	0	2	7	0	0	0	0	0	0	0	0	4	0	1	0	0	33	
7:15 AM	0	8	4	0	0	0	9	0	0	0	0	0	0	0	0	12	0	2	0	0	35	
7:20 AM	0	13	4	0	0	1	10	0	0	0	0	0	0	0	0	5	0	2	0	0	35	
7:25 AM	0	17	6	0	0	1	16	0	0	0	0	0	0	0	0	12	0	3	0	0	55	
7:30 AM	0	11	3	0	0	0	11	0	0	0	0	0	0	0	0	4	0	1	0	0	30	
7:35 AM	0	20	11	0	0	1	13	0	0	0	0	0	0	0	0	12	0	2	0	0	59	
7:40 AM	0	22	3	0	0	6	15	0	0	0	0	0	0	0	0	4	0	3	0	0	53	
7:45 AM	0	22	20	0	0	5	16	0	0	0	0	0	0	0	0	12	0	10	0	0	85	
7:50 AM	0	36	23	0	0	2	18	0	0	0	0	0	0	0	0	18	0	5	0	0	102	
7:55 AM	0	25	24	0	0	10	18	0	0	0	0	0	0	0	0	11	0	11	0	0	99	646
8:00 AM	0	28	11	0	0	0	18	0	0	0	0	0	0	0	0	19	0	14	0	0	90	714
8:05 AM	0	24	13	0	0	1	17	0	0	0	0	0	0	0	0	18	0	12	0	0	85	761
8:10 AM	0	23	15	0	0	4	16	0	0	0	0	0	0	0	0	7	0	4	0	0	69	797
8:15 AM	0	21	6	0	0	1	21	0	0	0	0	0	0	0	0	9	0	3	0	0	61	823
8:20 AM	0	21	7	0	0	0	25	0	0	0	0	0	0	0	0	12	0	2	0	0	67	855
8:25 AM	0	26	15	0	0	1	27	0	0	0	0	0	0	0	0	7	0	5	0	0	81	881
8:30 AM	0	26	17	0	0	2	31	0	0	0	0	0	0	0	0	13	0	10	0	0	99	950
8:35 AM	0	34	2	0	0	0	40	0	0	0	0	0	0	0	0	7	0	15	0	0	98	989
8:40 AM	0	52	3	0	0	3	29	0	0	0	0	0	0	0	0	6	0	10	0	0	103	1039
8:45 AM	0	41	6	0	0	3	45	0	0	0	0	0	0	0	0	7	0	20	0	0	122	1076
8:50 AM	0	36	3	0	0	1	29	0	0	0	0	0	0	0	0	7	0	11	0	0	87	1061
8:55 AM	0	33	6	0	0	3	48	0	0	0	0	0	0	0	0	6	0	5	0	0	101	1063

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	508	44	0	0	24	456	0	0	0	0	0	0	0	0	80	0	180	0	0	1292
Heavy Trucks	0	4	4			0	4	0			0	0	0			0	0	0			12
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

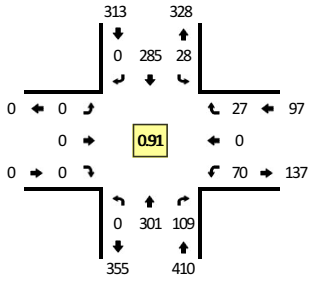
Type of peak hour being reported: Intersection Peak

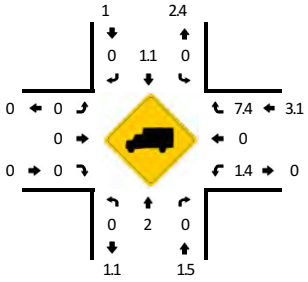
Method for determining peak hour: Total Entering Volume

LOCATION: NW Parker St -- NW Leadbetter Dr
CITY/STATE: Camas, WA

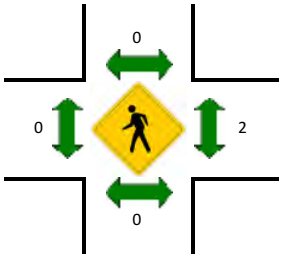
QC JOB #: 16993917
DATE: Tue, May 20 2025

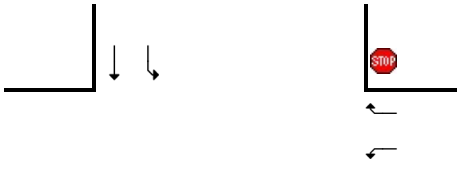
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

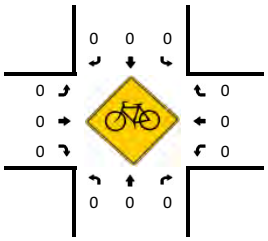


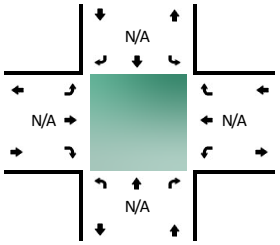


TRUE DATA TO IMPROVE MOBILITY

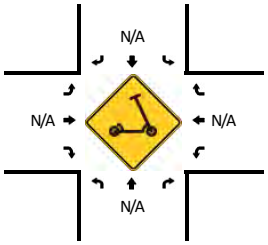












R* = RTOR

5-Min Count Period Beginning At	NW Parker St (Northbound)					NW Parker St (Southbound)					NW Leadbetter Dr (Eastbound)					NW Leadbetter Dr (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	17	9	0	0	1	18	0	0	0	0	0	0	0	0	5	0	2	0	0	52	
4:05 PM	0	25	10	0	0	3	18	0	0	0	0	0	0	0	0	5	0	1	0	0	62	
4:10 PM	0	16	7	0	0	0	21	0	0	0	0	0	0	0	0	3	0	1	0	0	48	
4:15 PM	0	16	4	0	0	1	16	0	0	0	0	0	0	0	0	7	0	1	0	0	45	
4:20 PM	0	21	9	0	0	2	14	0	0	0	0	0	0	0	0	5	0	4	0	0	55	
4:25 PM	0	23	11	0	0	2	14	0	0	0	0	0	0	0	0	9	0	1	0	0	60	
4:30 PM	0	22	7	0	0	1	20	0	0	0	0	0	0	0	0	6	0	3	0	0	59	
4:35 PM	0	23	8	0	0	4	18	0	0	0	0	0	0	0	0	3	0	6	0	0	62	
4:40 PM	0	37	7	0	0	1	18	0	0	0	0	0	0	0	0	6	0	3	0	0	72	
4:45 PM	0	35	8	0	0	2	37	0	0	0	0	0	0	0	0	5	0	1	0	0	88	
4:50 PM	0	24	7	0	0	5	19	0	0	0	0	0	0	0	0	8	0	3	0	0	66	
4:55 PM	0	21	11	0	0	2	20	0	0	0	0	0	0	0	0	4	0	0	0	0	58	727
5:00 PM	0	18	12	0	0	1	40	0	0	0	0	0	0	0	0	5	0	5	0	0	81	756
5:05 PM	0	21	9	0	0	3	20	0	0	0	0	0	0	0	0	4	0	1	0	0	58	752
5:10 PM	0	21	12	0	0	2	32	0	0	0	0	0	0	0	0	5	0	1	0	0	73	777
5:15 PM	0	27	10	0	0	2	21	0	0	0	0	0	0	0	0	10	0	2	0	0	72	804
5:20 PM	0	29	7	0	0	3	26	0	0	0	0	0	0	0	0	5	0	1	0	0	71	820
5:25 PM	0	14	13	0	0	3	21	0	0	0	0	0	0	0	0	5	0	2	0	0	58	818
5:30 PM	0	17	7	0	0	1	12	0	0	0	0	0	0	0	0	6	0	3	0	0	46	805
5:35 PM	0	26	9	0	0	1	28	0	0	0	0	0	0	0	0	6	0	1	0	0	71	814
5:40 PM	0	23	9	0	0	1	21	0	0	0	0	0	0	0	0	4	0	2	0	0	60	802
5:45 PM	0	20	10	0	0	3	18	0	0	0	0	0	0	0	0	7	0	1	0	0	59	773
5:50 PM	0	31	8	0	0	1	19	0	0	0	0	0	0	0	0	3	0	4	0	0	66	773
5:55 PM	0	18	13	0	0	2	23	0	0	0	0	0	0	0	0	1	0	3	0	0	60	775

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	384	88	0	0	32	296	0	0	0	0	0	0	0	0	76	0	28	0	0	904
Heavy Trucks	0	0	0			0	4	0			0	0	0			0	0	0			4
Buses																					
Pedestrians		0					0					0					4				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

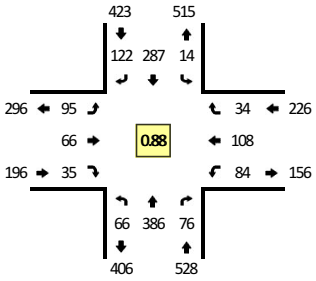
Type of peak hour being reported: Intersection Peak

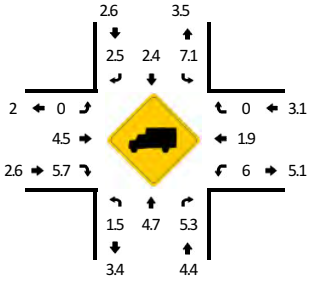
Method for determining peak hour: Total Entering Volume

LOCATION: NW Parker St -- NW 38th Ave
CITY/STATE: Camas, WA

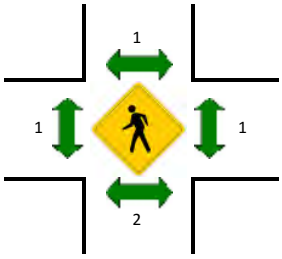
QC JOB #: 17043029
DATE: Thu, May 15 2025

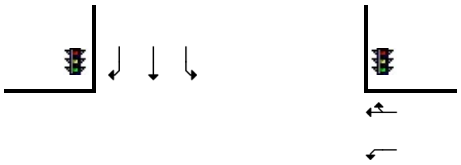
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

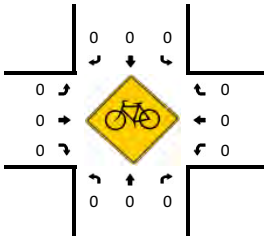


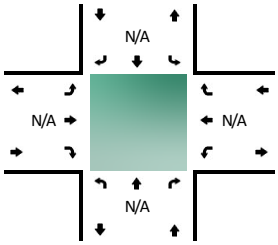


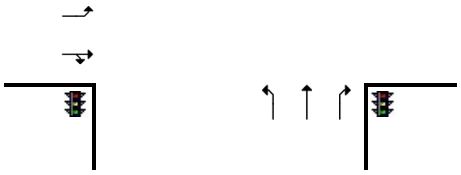
TRUE DATA TO IMPROVE MOBILITY

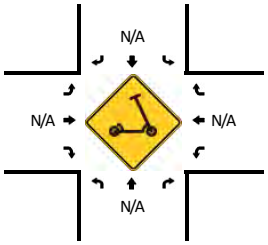












R* = RTOR

5-Min Count Period Beginning At	NW Parker St (Northbound)					NW Parker St (Southbound)					NW 38th Ave (Eastbound)					NW 38th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	1	9	1	0	1	0	9	4	0	2	3	2	3	0	0	8	11	1	0	0	55	
7:05 AM	4	12	1	0	0	0	13	5	0	3	5	1	0	0	0	9	8	0	0	0	61	
7:10 AM	2	10	1	0	1	1	10	3	0	0	1	4	0	0	1	11	4	0	0	1	50	
7:15 AM	6	20	0	0	0	0	18	4	0	0	4	1	0	0	1	6	5	0	0	0	65	
7:20 AM	5	15	1	0	0	0	14	3	0	1	1	4	2	0	1	7	10	0	0	1	65	
7:25 AM	2	14	0	0	2	1	11	5	0	2	5	2	0	0	0	9	7	0	0	0	60	
7:30 AM	2	5	1	0	2	1	7	1	0	3	5	1	1	0	0	8	9	3	0	0	49	
7:35 AM	5	25	2	0	2	2	12	5	0	0	7	3	1	0	1	7	7	1	0	1	81	
7:40 AM	7	10	4	0	0	1	17	0	0	6	7	8	4	0	1	9	16	1	0	0	91	
7:45 AM	3	26	2	0	4	2	18	5	0	4	13	5	1	0	1	10	9	2	0	1	106	
7:50 AM	7	40	1	0	3	1	17	11	0	3	15	9	7	0	0	8	7	2	0	1	132	
7:55 AM	6	45	8	0	6	1	27	6	0	1	8	8	3	0	1	7	9	1	0	0	137	952
8:00 AM	8	25	3	0	2	1	26	6	0	5	15	8	2	0	1	6	11	0	0	0	119	1016
8:05 AM	12	24	5	0	3	1	28	7	0	1	5	4	0	0	0	4	16	1	0	0	111	1066
8:10 AM	3	22	0	0	1	1	24	10	0	1	8	6	3	0	1	7	8	1	0	0	96	1112
8:15 AM	5	25	2	0	2	0	19	3	0	4	3	5	3	0	0	5	6	2	0	1	85	1132
8:20 AM	5	25	2	0	1	1	25	5	0	5	6	4	0	0	0	11	8	2	0	0	100	1167
8:25 AM	3	30	6	0	1	0	18	10	0	1	11	6	4	0	2	9	9	1	0	2	113	1220
8:30 AM	4	37	7	0	3	0	22	4	0	2	9	6	2	0	0	6	8	2	0	2	114	1285
8:35 AM	6	35	2	0	2	2	27	8	0	2	8	1	2	0	3	5	6	4	0	1	114	1318
8:40 AM	3	45	3	0	4	3	24	11	0	4	5	5	0	0	1	8	10	4	0	0	130	1357
8:45 AM	4	33	5	0	4	3	30	8	0	4	2	4	0	0	0	8	10	5	0	2	122	1373
8:50 AM	5	34	1	0	4	4	35	6	0	7	4	3	2	0	0	6	10	1	0	0	122	1363
8:55 AM	3	11	2	0	2	3	35	3	0	0	4	7	2	0	0	8	6	2	0	1	89	1315

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	84	440	92	0	44	12	280	128	0	36	152	100	56	0	8	84	108	16	0	4	1644
Heavy Trucks	4	8	8			4	4	0			0	0	0			12	4	0			44
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 5/22/2025 4:30 PM

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

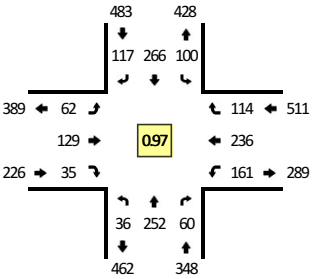
Type of peak hour being reported: Intersection Peak

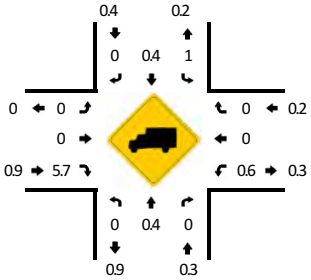
Method for determining peak hour: Total Entering Volume

LOCATION: NW Parker St -- NW 38th Ave
CITY/STATE: Camas, WA

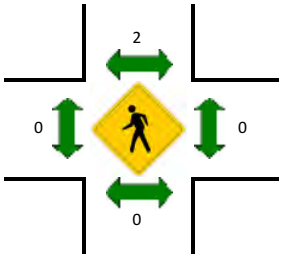
QC JOB #: 17043030
DATE: Thu, May 15 2025

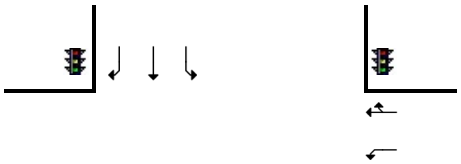
Peak-Hour: 4:50 PM -- 5:50 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

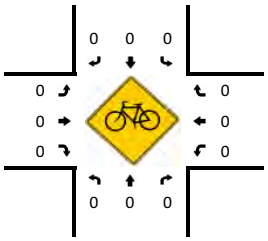


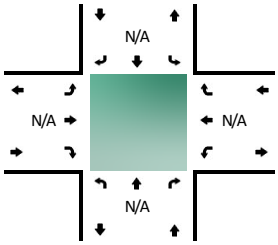


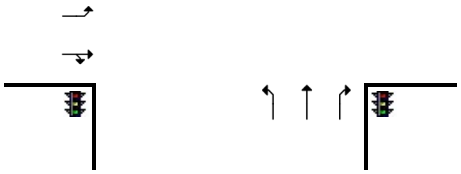
TRUE DATA TO IMPROVE MOBILITY

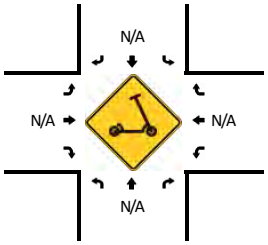












R* = RTOR

5-Min Count Period Beginning At	NW Parker St (Northbound)					NW Parker St (Southbound)					NW 38th Ave (Eastbound)					NW 38th Ave (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	3	12	0	0	2	5	21	3	0	4	9	9	0	0	0	9	14	9	0	2	102	
4:05 PM	2	16	1	0	1	2	16	7	0	3	6	16	1	0	1	10	17	3	0	1	103	
4:10 PM	1	13	6	0	3	13	16	4	0	7	5	9	1	0	0	11	13	5	0	2	109	
4:15 PM	1	9	1	0	3	3	25	3	0	3	5	16	0	0	0	12	23	9	0	2	115	
4:20 PM	1	17	4	0	3	10	16	3	0	4	5	7	1	0	1	4	11	8	0	5	100	
4:25 PM	4	12	4	0	6	4	13	3	0	2	5	11	3	0	0	9	23	8	0	2	109	
4:30 PM	1	17	4	0	2	9	22	0	0	4	4	7	1	0	0	9	16	5	0	1	102	
4:35 PM	3	11	5	0	2	7	20	3	0	3	6	11	1	0	0	11	11	8	0	0	102	
4:40 PM	3	15	0	0	2	9	23	2	0	6	5	6	4	0	0	9	16	8	0	4	112	
4:45 PM	3	24	4	0	6	3	20	3	0	4	6	8	0	0	1	13	16	9	0	1	121	
4:50 PM	4	24	1	0	2	8	18	8	0	6	4	14	1	0	1	18	21	6	0	1	137	
4:55 PM	3	18	1	0	2	9	14	3	0	4	6	12	1	0	0	17	16	10	0	5	121	1333
5:00 PM	3	28	1	0	2	8	18	2	0	6	7	13	3	0	1	13	25	10	0	2	142	1373
5:05 PM	2	28	2	0	5	3	19	2	0	3	7	14	2	0	0	14	17	4	0	1	123	1393
5:10 PM	1	15	5	0	4	8	22	1	0	4	4	11	4	0	2	19	24	12	0	2	138	1422
5:15 PM	1	17	4	0	6	7	30	5	0	7	7	11	1	0	0	11	21	8	0	0	136	1443
5:20 PM	3	13	3	0	2	15	27	6	0	6	6	9	4	0	0	9	15	8	0	3	129	1472
5:25 PM	8	21	4	0	1	9	23	6	0	7	6	6	1	0	1	12	24	9	0	3	141	1504
5:30 PM	5	20	3	0	2	11	19	4	0	6	3	8	1	0	2	18	17	8	0	2	129	1531
5:35 PM	4	18	1	0	0	5	28	1	0	11	4	10	2	0	2	6	21	8	0	1	122	1551
5:40 PM	2	24	2	0	4	6	24	3	0	6	6	14	2	0	0	13	17	3	0	2	128	1567
5:45 PM	0	26	0	0	3	11	24	7	0	3	2	7	3	0	1	11	18	5	0	1	122	1568
5:50 PM	2	21	3	0	2	5	27	3	0	5	6	14	4	0	2	13	20	9	0	0	136	1567
5:55 PM	3	27	4	0	2	3	22	3	0	5	5	10	2	0	0	7	14	6	0	1	114	1560

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	48	204	80	0	36	124	320	148	0	80	76	104	28	0	4	128	240	124	0	24	1768
Heavy Trucks	0	0	0			0	0	0			0	0	0			0	0	0			0
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 5/22/2025 4:30 PM

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

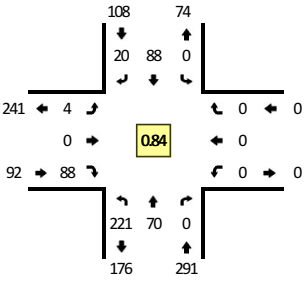
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SE 283rd Ave -- SE 15th St/SE Nourse Rd
CITY/STATE: Camas, WA

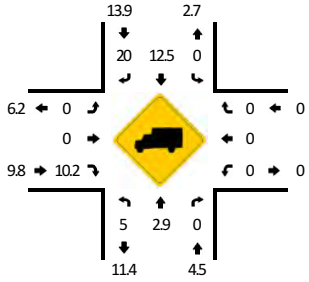
QC JOB #: 16993932
DATE: Tue, May 20 2025

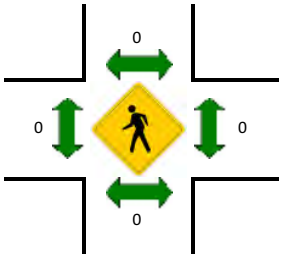
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 8:15 AM -- 8:30 AM



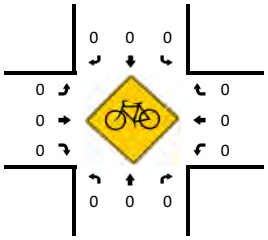


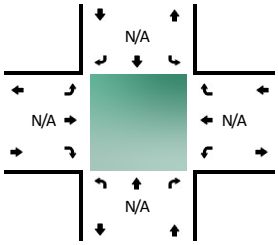
TRUE DATA TO IMPROVE MOBILITY



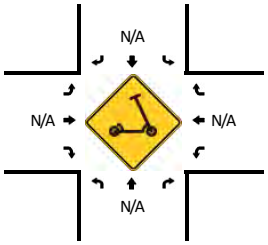












R* = RTOR

5-Min Count Period Beginning At	SE 283rd Ave (Northbound)					SE 283rd Ave (Southbound)					SE 15th St/SE Nourse Rd (Eastbound)					SE 15th St/SE Nourse Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	4	4	0	0	0	0	2	0	0	0	1	0	3	0	0	0	0	0	0	0	14	
7:05 AM	6	3	0	0	0	0	4	0	0	0	1	0	1	0	0	0	0	0	0	0	15	
7:10 AM	7	7	0	0	0	0	3	2	0	0	1	0	4	0	0	0	0	0	0	0	24	
7:15 AM	4	7	0	0	0	0	2	1	0	0	0	0	3	0	0	0	0	0	0	0	17	
7:20 AM	4	4	0	0	0	0	6	0	0	0	0	0	1	0	0	0	0	0	0	0	15	
7:25 AM	9	2	0	0	0	0	4	2	0	0	0	0	1	0	0	0	0	0	0	0	18	
7:30 AM	11	2	0	0	0	0	4	0	0	0	0	0	1	0	0	0	0	0	0	0	18	
7:35 AM	10	2	0	0	0	0	5	1	0	0	0	0	6	0	0	0	0	0	0	0	24	
7:40 AM	8	10	0	0	0	0	9	1	0	0	0	0	5	0	0	0	0	0	0	0	33	
7:45 AM	10	7	0	0	0	0	11	1	0	0	1	0	6	0	0	0	0	0	0	0	36	
7:50 AM	18	5	0	0	0	0	9	0	0	0	2	0	11	0	0	0	0	0	0	0	45	
7:55 AM	19	7	0	0	0	0	6	4	0	0	0	0	12	0	0	0	0	0	0	0	48	307
8:00 AM	22	9	0	0	0	0	7	0	0	0	0	0	4	0	0	0	0	0	0	0	42	335
8:05 AM	20	3	0	0	0	0	6	3	0	0	1	0	8	0	0	0	0	0	0	0	41	361
8:10 AM	18	6	0	0	0	0	8	2	0	0	0	0	6	0	0	0	0	0	0	0	40	377
8:15 AM	22	9	0	0	0	0	11	2	0	0	0	0	9	0	0	0	0	0	0	0	53	413
8:20 AM	28	5	0	0	0	0	6	4	0	0	0	0	4	0	0	0	0	0	0	0	47	445
8:25 AM	26	5	0	0	0	0	5	1	0	0	0	0	10	0	0	0	0	0	0	0	47	474
8:30 AM	20	2	0	0	0	0	5	1	0	0	0	0	7	0	0	0	0	0	0	0	35	491
8:35 AM	5	4	0	0	0	0	5	1	0	0	1	0	8	0	0	0	0	0	0	0	24	491
8:40 AM	2	7	0	0	0	0	5	0	0	0	0	0	7	0	0	0	0	0	0	0	21	479
8:45 AM	4	4	0	0	0	0	7	1	0	0	0	0	4	0	0	0	0	0	0	0	20	463
8:50 AM	2	1	0	0	0	0	9	1	0	0	0	0	4	0	0	0	0	0	0	0	17	435
8:55 AM	2	2	0	0	0	0	7	0	0	0	1	0	4	0	0	0	0	0	0	0	16	403

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	304	76	0	0	0	0	88	28	0	0	0	0	92	0	0	0	0	0	0	0	588
Heavy Trucks	28	4	0			0	12	4			0	0	12			0	0	0			60
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

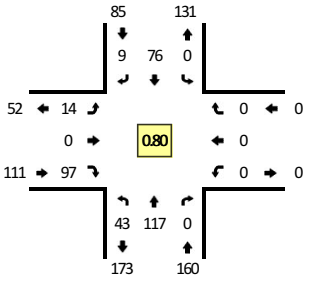
Type of peak hour being reported: Intersection Peak

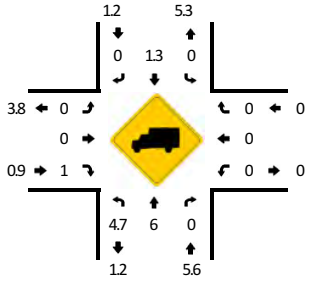
Method for determining peak hour: Total Entering Volume

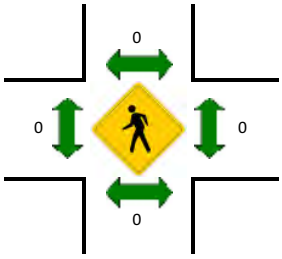
LOCATION: SE 283rd Ave -- SE 15th St/SE Nourse Rd
CITY/STATE: Camas, WA

QC JOB #: 16993933
DATE: Tue, May 20 2025

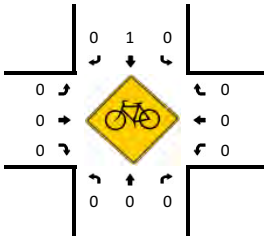
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

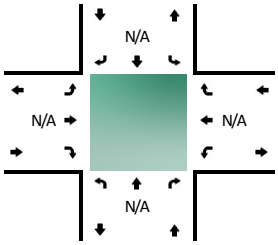




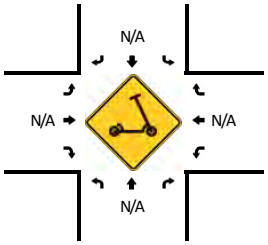












R* = RTOR

5-Min Count Period Beginning At	SE 283rd Ave (Northbound)					SE 283rd Ave (Southbound)					SE 15th St/SE Nourse Rd (Eastbound)					SE 15th St/SE Nourse Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	5	13	0	0	0	0	5	2	0	0	3	0	13	0	0	0	0	0	0	0	41	
4:05 PM	4	12	0	0	0	0	9	0	0	0	1	0	8	0	0	0	0	0	0	0	34	
4:10 PM	2	13	0	0	0	0	4	2	0	0	3	0	12	0	0	0	0	0	0	0	36	
4:15 PM	3	8	0	0	0	0	2	0	0	0	0	0	7	0	0	0	0	0	0	0	20	
4:20 PM	3	14	0	0	0	0	11	3	0	0	1	0	9	0	0	0	0	0	0	0	41	
4:25 PM	3	4	0	0	0	0	3	0	0	0	3	0	4	0	0	0	0	0	0	0	17	
4:30 PM	4	12	0	0	0	0	6	0	0	0	0	0	5	0	0	0	0	0	0	0	27	
4:35 PM	0	8	0	0	0	0	4	1	0	0	0	0	6	0	0	0	0	0	0	0	19	
4:40 PM	7	16	0	0	0	0	8	1	0	0	0	0	9	0	0	0	0	0	0	0	41	
4:45 PM	2	3	0	0	0	0	7	0	0	0	1	0	9	0	0	0	0	0	0	0	22	
4:50 PM	3	9	0	0	0	0	9	0	0	0	1	0	8	0	0	0	0	0	0	0	30	
4:55 PM	7	5	0	0	0	0	8	0	0	0	1	0	7	0	0	0	0	0	0	0	28	356
5:00 PM	4	10	0	0	0	0	6	1	0	0	1	0	9	0	0	0	0	0	0	0	31	346
5:05 PM	6	5	0	0	0	0	10	0	0	0	0	0	4	0	0	0	0	0	0	0	25	337
5:10 PM	4	10	0	0	0	0	2	0	0	0	1	0	5	0	0	0	0	0	0	0	22	323
5:15 PM	1	4	0	0	0	0	11	0	0	0	1	0	8	0	0	0	0	0	0	0	25	328
5:20 PM	8	6	0	0	0	0	10	1	0	0	1	0	0	0	0	0	0	0	0	0	26	313
5:25 PM	2	9	0	0	0	0	7	0	0	0	1	0	5	0	0	0	0	0	0	0	24	320
5:30 PM	7	6	0	0	0	0	13	0	0	0	2	0	10	0	0	0	0	0	0	0	38	331
5:35 PM	3	8	0	0	0	0	12	1	0	0	2	0	8	0	0	0	0	0	0	0	34	346
5:40 PM	4	8	0	0	0	0	7	0	0	0	1	0	4	0	0	0	0	0	0	0	24	329
5:45 PM	5	7	0	0	0	0	11	0	0	0	0	0	6	0	0	0	0	0	0	0	29	336
5:50 PM	12	8	0	0	0	0	8	4	0	0	0	0	5	0	0	0	0	0	0	0	37	343
5:55 PM	11	9	0	0	0	0	1	0	0	0	1	0	3	0	0	0	0	0	0	0	25	340

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	44	152	0	0	0	0	72	16	0	0	28	0	132	0	0	0	0	0	0	0	444
Heavy Trucks	8	12	0			0	0	0			0	0	4			0	0	0			24
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

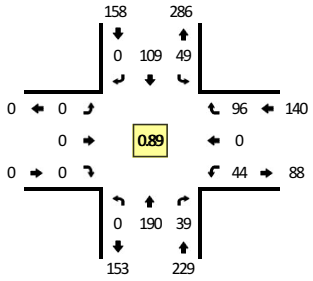
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

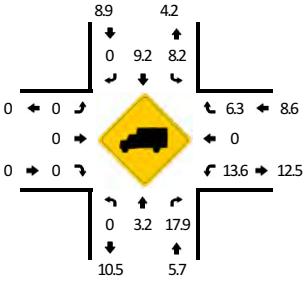
LOCATION: SE 283rd Ave -- SE 23rd St
CITY/STATE: Camas, WA

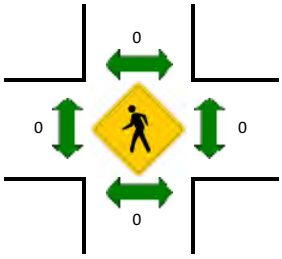
QC JOB #: 17021001
DATE: Tue, Apr 22 2025

Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 8:20 AM -- 8:35 AM

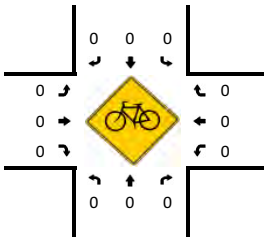


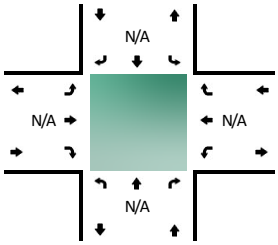




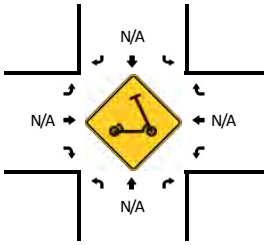












5-Min Count Period Beginning At	SE 283rd Ave (Northbound)				SE 283rd Ave (Southbound)				SE 23rd St (Eastbound)				SE 23rd St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	9	2	0	1	5	0	0	0	0	0	0	2	0	0	0	19	
7:05 AM	0	6	1	0	0	4	0	0	0	0	0	0	2	0	1	0	14	
7:10 AM	0	9	1	0	2	11	0	0	0	0	0	0	3	0	2	0	28	
7:15 AM	0	7	2	0	3	7	0	0	0	0	0	0	4	0	1	0	24	
7:20 AM	0	6	4	0	1	10	0	0	0	0	0	0	2	0	4	0	27	
7:25 AM	0	6	1	0	6	3	0	0	0	0	0	0	0	0	6	0	22	
7:30 AM	0	2	4	0	1	8	0	0	0	0	0	0	4	0	6	0	25	
7:35 AM	0	7	6	0	0	10	0	0	0	0	0	0	5	0	2	0	30	
7:40 AM	0	11	6	0	1	3	0	0	0	0	0	0	5	0	8	0	34	
7:45 AM	0	9	2	0	2	12	0	0	0	0	0	0	6	0	7	0	38	
7:50 AM	0	16	4	0	3	15	0	0	0	0	0	0	6	0	8	0	52	
7:55 AM	0	20	3	0	2	9	0	0	0	0	0	0	7	0	11	0	52	365
8:00 AM	0	16	4	0	0	10	0	0	0	0	0	0	2	0	8	0	40	386
8:05 AM	0	17	1	0	7	9	0	0	0	0	0	0	2	0	9	0	45	417
8:10 AM	0	19	4	0	4	7	0	0	0	0	0	0	4	0	7	0	45	434
8:15 AM	0	18	2	0	9	3	0	0	0	0	0	0	3	0	5	0	40	450
8:20 AM	0	18	0	0	7	7	0	0	0	0	0	0	1	0	13	0	46	469
8:25 AM	0	24	6	0	7	10	0	0	0	0	0	0	2	0	9	0	58	505
8:30 AM	0	17	2	0	2	12	0	0	0	0	0	0	2	0	9	0	44	524
8:35 AM	0	5	5	0	5	12	0	0	0	0	0	0	4	0	2	0	33	527
8:40 AM	0	6	3	0	5	8	0	0	0	0	0	0	2	0	2	0	26	519
8:45 AM	0	4	5	0	6	6	0	0	0	0	0	0	4	0	5	0	30	511
8:50 AM	0	8	3	0	4	7	0	0	0	0	0	0	6	0	2	0	30	489
8:55 AM	0	2	6	0	5	10	0	0	0	0	0	0	2	0	1	0	26	463

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	236	32	0	64	116	0	0	0	0	0	0	20	0	124	0	592
Heavy Trucks	0	12	8		8	16	0		0	0	0		0	0	4		48
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 4/29/2025 4:15 PM

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

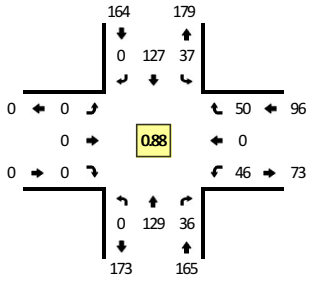
Type of peak hour being reported: Intersection Peak

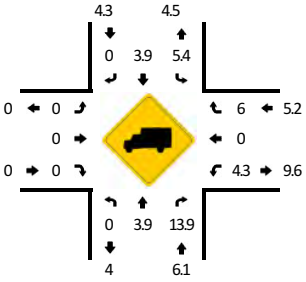
Method for determining peak hour: Total Entering Volume

LOCATION: SE 283rd Ave -- SE 23rd St
CITY/STATE: Camas, WA

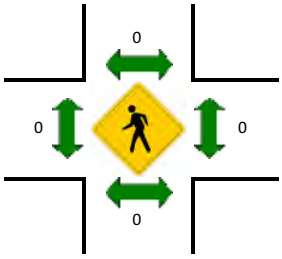
QC JOB #: 17021002
DATE: Tue, Apr 22 2025

Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:20 PM -- 4:35 PM

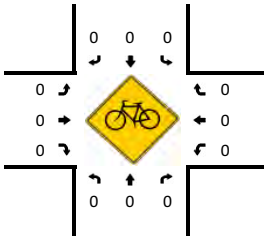


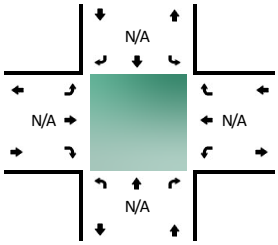


TRUE DATA TO IMPROVE MOBILITY

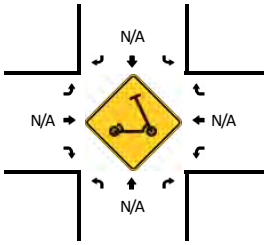












5-Min Count Period Beginning At	SE 283rd Ave (Northbound)				SE 283rd Ave (Southbound)				SE 23rd St (Eastbound)				SE 23rd St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	16	4	0	1	11	0	0	0	0	0	0	3	0	4	0	39	
4:05 PM	0	16	2	0	5	12	0	0	0	0	0	0	2	0	2	0	39	
4:10 PM	0	11	5	0	1	12	0	0	0	0	0	0	3	0	3	0	35	
4:15 PM	0	11	1	0	3	6	0	0	0	0	0	0	3	0	3	0	27	
4:20 PM	0	17	2	0	3	13	0	0	0	0	0	0	7	0	7	0	49	
4:25 PM	0	9	5	0	2	8	0	0	0	0	0	0	5	0	6	0	35	
4:30 PM	0	9	4	0	4	11	0	0	0	0	0	0	3	0	6	0	37	
4:35 PM	0	3	3	0	1	11	0	0	0	0	0	0	3	0	4	0	25	
4:40 PM	0	13	3	0	2	11	0	0	0	0	0	0	4	0	4	0	37	
4:45 PM	0	10	2	0	5	10	0	0	0	0	0	0	5	0	2	0	34	
4:50 PM	0	9	2	0	4	14	0	0	0	0	0	0	4	0	4	0	37	
4:55 PM	0	5	3	0	6	8	0	0	0	0	0	0	4	0	5	0	31	425
5:00 PM	0	6	4	0	3	7	0	0	0	0	0	0	7	0	5	0	32	418
5:05 PM	0	7	0	0	3	12	0	0	0	0	0	0	8	0	2	0	32	411
5:10 PM	0	13	3	0	2	10	0	0	0	0	0	0	4	0	2	0	34	410
5:15 PM	0	10	6	0	3	11	0	0	0	0	0	0	1	0	1	0	32	415
5:20 PM	0	9	0	0	5	7	0	0	0	0	0	0	3	0	1	0	25	391
5:25 PM	0	7	5	0	5	13	0	0	0	0	0	0	2	0	2	0	34	390
5:30 PM	0	9	4	0	8	10	0	0	0	0	0	0	2	0	3	0	36	389
5:35 PM	0	10	4	0	4	7	0	0	0	0	0	0	1	0	2	0	28	392
5:40 PM	0	11	2	0	2	14	0	0	0	0	0	0	5	0	6	0	40	395
5:45 PM	0	10	0	0	6	8	0	0	0	0	0	0	2	0	3	0	29	390
5:50 PM	0	11	2	0	3	12	0	0	0	0	0	0	2	0	8	0	38	391
5:55 PM	0	15	2	0	6	12	0	0	0	0	0	0	2	0	0	0	37	397

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	140	44	0	36	128	0	0	0	0	0	0	60	0	76	0	484
Heavy Trucks	0	8	8		0	4	0		0	0	0		0	0	0		20
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 4/29/2025 4:15 PM

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

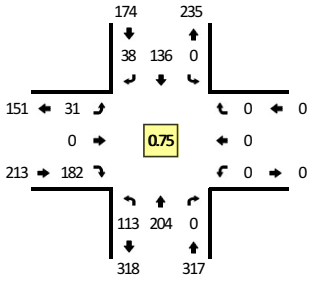
Type of peak hour being reported: Intersection Peak

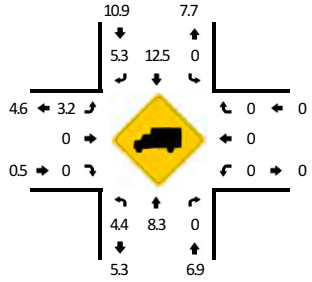
Method for determining peak hour: Total Entering Volume

LOCATION: NE Woodburn Dr -- SE Crown Rd
CITY/STATE: Camas, WA

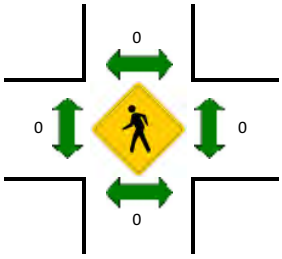
QC JOB #: 16993934
DATE: Tue, May 20 2025

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

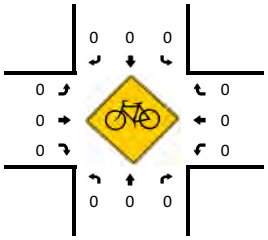


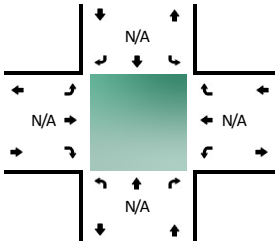


TRUE DATA TO IMPROVE MOBILITY

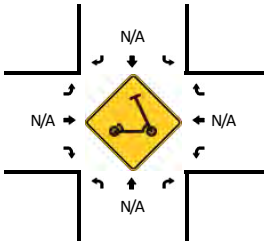












R* = RTOR

5-Min Count Period Beginning At	NE Woodburn Dr (Northbound)					NE Woodburn Dr (Southbound)					SE Crown Rd (Eastbound)					SE Crown Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	3	11	0	0	0	0	2	0	0	0	0	0	13	0	0	0	0	0	0	0	29	
7:05 AM	9	6	0	0	0	0	5	0	0	0	0	0	6	0	0	0	0	0	0	0	26	
7:10 AM	4	10	0	0	0	0	4	1	0	0	1	0	11	0	0	0	0	0	0	0	31	
7:15 AM	3	11	0	0	0	0	5	1	0	0	0	0	4	0	0	0	0	0	0	0	24	
7:20 AM	3	6	0	0	0	0	8	0	0	0	1	0	8	0	0	0	0	0	0	0	26	
7:25 AM	5	8	0	0	0	0	6	0	0	0	0	0	10	0	0	0	0	0	0	0	29	
7:30 AM	2	8	0	0	0	0	5	3	0	0	0	0	5	0	0	0	0	0	0	0	23	
7:35 AM	8	10	0	0	0	0	11	1	0	0	0	0	9	0	0	0	0	0	0	0	39	
7:40 AM	11	13	0	0	0	0	11	4	0	0	4	0	13	0	0	0	0	0	0	0	56	
7:45 AM	18	13	0	0	0	0	11	9	0	0	3	0	23	0	0	0	0	0	0	0	77	
7:50 AM	14	13	0	0	0	0	12	9	0	0	5	0	26	0	0	0	0	0	0	0	79	
7:55 AM	20	12	0	0	0	0	16	4	0	0	5	0	22	0	0	0	0	0	0	0	79	518
8:00 AM	15	16	0	0	0	0	5	4	0	0	5	0	31	0	0	0	0	0	0	0	76	565
8:05 AM	7	21	0	0	0	0	8	2	0	0	4	0	17	0	0	0	0	0	0	0	59	598
8:10 AM	4	17	0	0	0	0	12	1	0	0	3	0	6	0	0	0	0	0	0	0	43	610
8:15 AM	3	16	0	0	0	0	17	1	0	0	2	0	9	0	0	0	0	0	0	0	48	634
8:20 AM	8	36	0	0	0	0	6	1	0	0	0	0	6	0	0	0	0	0	0	0	57	665
8:25 AM	3	20	0	0	0	0	15	1	0	0	0	0	5	0	0	0	0	0	0	0	44	680
8:30 AM	2	17	0	0	0	0	12	1	0	0	0	0	15	0	0	0	0	0	0	0	47	704
8:35 AM	4	6	0	0	0	0	17	0	0	0	0	0	11	0	0	0	0	0	0	0	38	703
8:40 AM	1	9	0	0	0	0	19	0	0	0	0	0	9	0	0	0	0	0	0	0	38	685
8:45 AM	2	7	0	0	0	0	8	1	0	0	0	0	9	0	0	0	0	0	0	0	27	635
8:50 AM	8	6	0	0	0	0	10	1	0	0	0	0	11	0	0	0	0	0	0	0	36	592
8:55 AM	3	3	0	0	0	0	8	1	0	0	0	0	11	0	0	0	0	0	0	0	26	539

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	208	152	0	0	0	0	156	88	0	0	52	0	284	0	0	0	0	0	0	0	940
Heavy Trucks	0	16	0			0	16	0			0	0	0			0	0	0			32
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

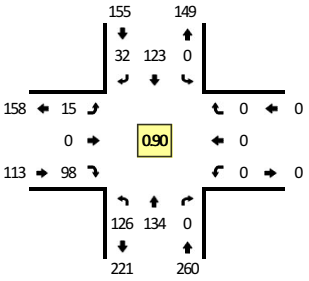
Type of peak hour being reported: Intersection Peak

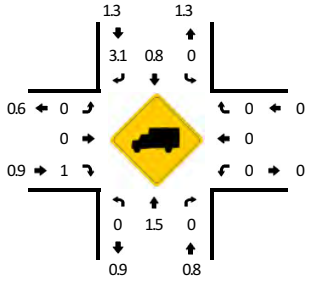
Method for determining peak hour: Total Entering Volume

LOCATION: NE Woodburn Dr -- SE Crown Rd
CITY/STATE: Camas, WA

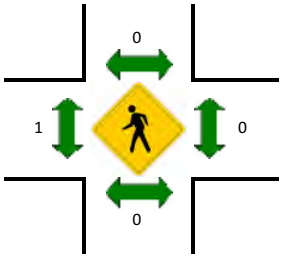
QC JOB #: 16993935
DATE: Tue, May 20 2025

Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

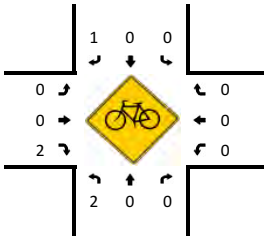


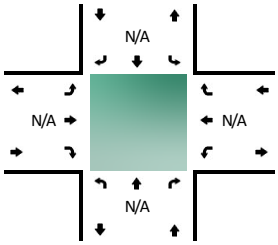


TRUE DATA TO IMPROVE MOBILITY

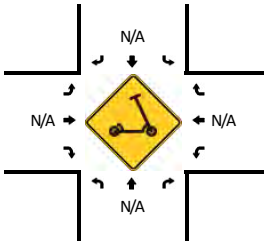












R* = RTOR

5-Min Count Period Beginning At	NE Woodburn Dr (Northbound)					NE Woodburn Dr (Southbound)					SE Crown Rd (Eastbound)					SE Crown Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	9	13	0	0	0	0	9	0	0	0	2	0	6	0	0	0	0	0	0	0	39	
4:05 PM	2	11	0	0	0	0	11	3	0	0	0	0	3	0	0	0	0	0	0	0	30	
4:10 PM	17	13	0	0	0	0	12	2	0	0	0	0	7	0	0	0	0	0	0	0	51	
4:15 PM	10	13	0	0	0	0	10	1	0	0	2	0	10	0	0	0	0	0	0	0	46	
4:20 PM	8	14	0	0	0	0	17	3	0	0	4	0	15	0	0	0	0	0	0	0	61	
4:25 PM	11	7	0	0	0	0	11	0	0	0	2	0	8	0	0	0	0	0	0	0	39	
4:30 PM	9	8	0	0	0	0	10	2	0	0	1	0	9	0	0	0	0	0	0	0	39	
4:35 PM	9	9	0	0	0	0	4	1	0	0	0	0	9	0	0	0	0	0	0	0	32	
4:40 PM	9	14	0	0	0	0	9	2	0	0	2	0	2	0	0	0	0	0	0	0	38	
4:45 PM	12	7	0	0	0	0	11	2	0	0	3	0	7	0	0	0	0	0	0	0	42	
4:50 PM	5	12	0	0	0	0	10	3	0	0	2	0	12	0	0	0	0	0	0	0	44	
4:55 PM	3	11	0	0	0	0	11	4	0	0	1	0	7	0	0	0	0	0	0	0	37	498
5:00 PM	9	9	0	0	0	0	10	2	0	0	1	0	2	0	0	0	0	0	0	0	33	492
5:05 PM	17	14	0	0	0	0	15	1	0	0	1	0	9	0	0	0	0	0	0	0	57	519
5:10 PM	10	10	0	0	0	0	8	0	0	0	0	0	13	0	0	0	0	0	0	0	41	509
5:15 PM	12	9	0	0	0	0	16	0	0	0	2	0	10	0	0	0	0	0	0	0	49	512
5:20 PM	13	13	0	0	0	0	11	2	0	0	1	0	8	0	0	0	0	0	0	0	48	499
5:25 PM	8	9	0	0	0	0	6	4	0	0	0	0	7	0	0	0	0	0	0	0	34	494
5:30 PM	11	11	0	0	0	0	13	2	0	0	0	0	9	0	0	0	0	0	0	0	46	501
5:35 PM	7	9	0	0	0	0	12	7	0	0	2	0	8	0	0	0	0	0	0	0	45	514
5:40 PM	7	7	0	0	0	0	9	3	0	0	5	0	8	0	0	0	0	0	0	0	39	515
5:45 PM	13	10	0	0	0	0	9	2	0	0	0	0	4	0	0	0	0	0	0	0	38	511
5:50 PM	11	19	0	0	0	0	8	4	0	0	2	0	10	0	0	0	0	0	0	0	54	521
5:55 PM	8	14	0	0	0	0	6	5	0	0	1	0	10	0	0	0	0	0	0	0	44	528

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	156	132	0	0	0	0	156	4	0	0	12	0	128	0	0	0	0	0	0	0	588
Heavy Trucks	0	0	0			0	0	0			0	0	0			0	0	0			0
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	4	0	0			0	0	0			0	0	8			0	0	0			12
Scooters																					

Comments:

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

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

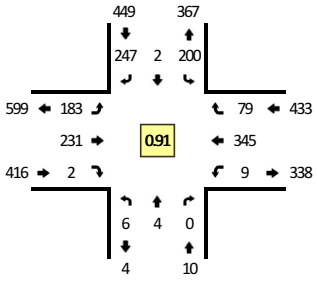
Type of peak hour being reported: Intersection Peak

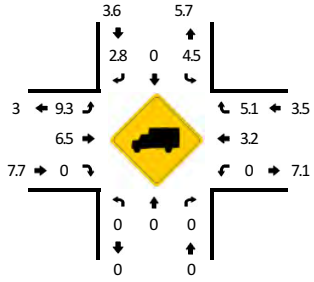
Method for determining peak hour: Total Entering Volume

LOCATION: SE Crown Rd -- NE 3rd St
CITY/STATE: Camas, WA

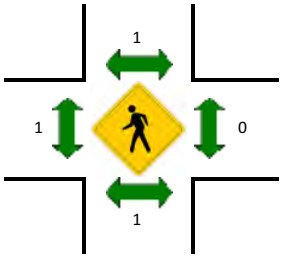
QC JOB #: 16993936
DATE: Tue, May 20 2025

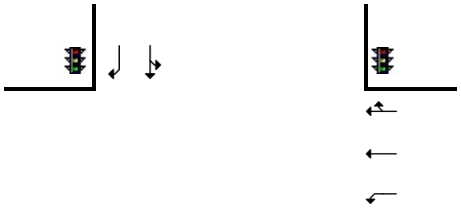
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

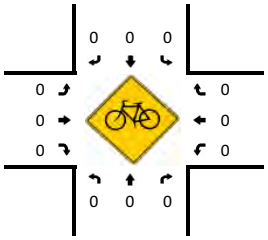


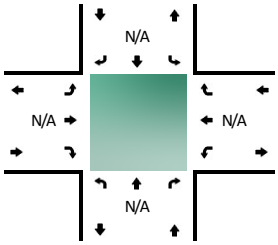


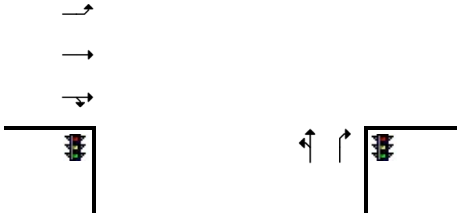
TRUE DATA TO IMPROVE MOBILITY

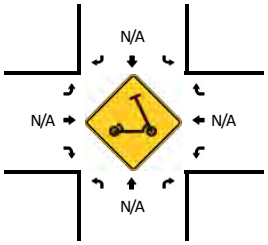












R* = RTOR

5-Min Count Period Beginning At	SE Crown Rd (Northbound)					SE Crown Rd (Southbound)					NE 3rd St (Eastbound)					NE 3rd St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	2	0	22	3	0	8	5	0	0	0	0	21	5	2	0	68	
7:05 AM	0	0	0	0	0	3	0	14	2	0	11	14	0	0	0	0	23	6	0	0	73	
7:10 AM	0	0	0	0	0	4	0	12	3	0	4	6	1	0	0	0	13	5	2	0	50	
7:15 AM	2	0	0	0	0	5	0	19	8	0	7	7	0	0	0	1	21	6	0	0	76	
7:20 AM	1	0	0	0	0	7	0	15	7	0	9	6	1	0	0	0	17	4	0	0	67	
7:25 AM	1	0	0	0	0	3	0	17	6	0	8	8	0	0	0	0	19	3	0	0	65	
7:30 AM	0	0	0	0	0	2	0	22	1	0	9	13	0	0	0	0	16	5	0	0	68	
7:35 AM	0	0	0	0	0	4	0	20	5	0	10	14	0	0	0	0	10	5	2	0	70	
7:40 AM	0	0	0	0	0	7	0	20	8	0	16	15	0	0	0	0	27	10	3	0	106	
7:45 AM	0	0	0	0	0	11	0	14	9	0	10	16	1	0	0	0	29	8	2	0	100	
7:50 AM	1	0	0	0	0	13	1	23	13	0	12	12	0	0	0	0	29	11	2	0	117	
7:55 AM	1	1	0	0	0	13	0	18	11	0	19	21	1	0	0	0	30	5	0	0	120	980
8:00 AM	0	0	0	0	0	15	0	14	10	0	16	24	0	0	0	0	35	8	0	0	122	1034
8:05 AM	0	2	0	0	0	10	0	15	16	0	15	20	0	0	0	0	18	7	1	0	104	1065
8:10 AM	0	0	0	0	0	5	0	21	5	0	10	17	0	0	0	0	33	11	0	0	102	1117
8:15 AM	0	0	0	0	0	4	0	22	1	0	24	19	0	0	0	0	31	9	3	0	113	1154
8:20 AM	0	1	0	0	0	7	0	22	6	0	17	28	0	0	0	0	21	8	1	0	111	1198
8:25 AM	1	0	0	0	0	5	0	15	6	0	14	16	0	1	0	0	21	6	1	0	86	1219
8:30 AM	0	0	0	0	0	5	0	22	6	0	12	10	0	0	0	0	38	3	0	0	96	1247
8:35 AM	2	0	0	0	0	8	0	30	8	0	12	18	1	0	0	0	37	2	1	0	119	1296
8:40 AM	1	0	0	0	0	6	0	30	6	0	15	11	0	0	0	0	27	4	0	0	100	1290
8:45 AM	0	0	0	0	0	7	1	15	14	0	16	35	0	0	0	0	25	5	0	0	118	1308
8:50 AM	1	0	0	0	0	5	1	16	11	0	11	28	0	0	0	0	34	2	0	0	109	1300
8:55 AM	1	0	0	0	0	7	0	12	11	0	12	23	0	0	0	0	23	5	1	0	95	1275

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	8	4	0	0	0	164	4	220	136	0	188	228	4	0	0	0	376	96	8	0	1436
Heavy Trucks	0	0	0			24	0	4			24	12	0			0	4	8			76
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

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

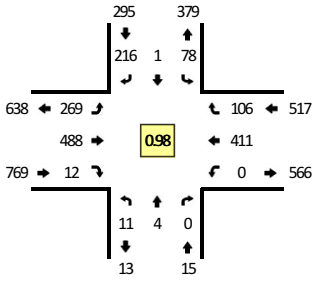
Type of peak hour being reported: Intersection Peak

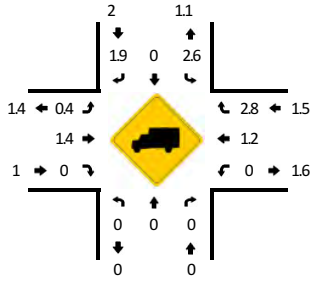
Method for determining peak hour: Total Entering Volume

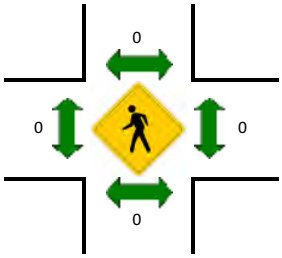
LOCATION: SE Crown Rd -- NE 3rd St
CITY/STATE: Camas, WA

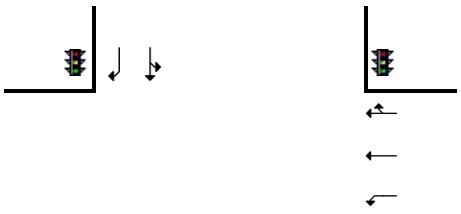
QC JOB #: 16993937
DATE: Tue, May 20 2025

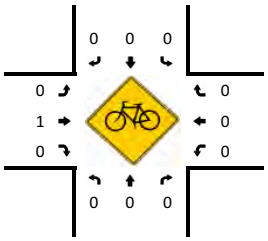
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

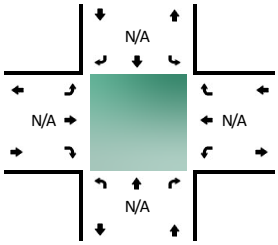


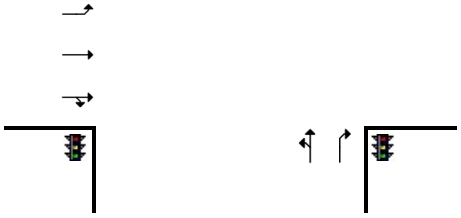


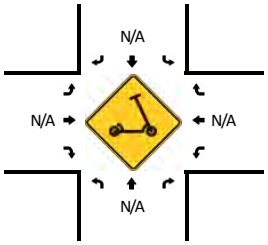












R* = RTOR

5-Min Count Period Beginning At	SE Crown Rd (Northbound)					SE Crown Rd (Southbound)					NE 3rd St (Eastbound)					NE 3rd St (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	1	0	0	0	0	6	0	13	0	6	17	36	0	0	0	0	43	9	0	2	133	
4:05 PM	0	0	0	0	0	9	0	12	0	3	26	43	0	0	1	0	25	11	0	0	130	
4:10 PM	0	0	0	0	0	10	0	4	0	3	23	31	0	0	0	0	31	6	0	0	108	
4:15 PM	2	1	0	0	0	7	1	8	0	2	21	38	1	0	0	0	36	6	0	2	125	
4:20 PM	0	0	0	0	0	7	0	13	0	9	15	36	0	0	0	0	31	7	0	2	120	
4:25 PM	0	0	0	0	0	12	1	12	0	6	21	39	0	0	0	0	32	4	0	0	127	
4:30 PM	1	0	0	0	0	10	0	10	0	4	20	35	2	0	0	0	33	9	0	0	124	
4:35 PM	3	0	0	0	0	1	0	15	0	7	23	52	2	0	0	0	41	6	0	4	154	
4:40 PM	1	1	0	0	0	8	0	9	0	3	14	39	2	0	0	0	27	10	0	3	117	
4:45 PM	1	0	0	0	0	7	0	8	0	3	26	41	0	0	1	0	24	8	0	2	121	
4:50 PM	1	0	0	0	0	9	0	18	0	6	20	42	0	0	0	0	40	10	0	2	148	
4:55 PM	0	0	0	0	0	8	1	17	0	2	10	36	0	0	0	0	48	9	0	0	131	1538
5:00 PM	0	0	0	0	0	4	0	11	0	1	22	40	1	0	0	0	27	14	0	0	120	1525
5:05 PM	0	1	0	0	0	6	0	13	0	5	27	45	1	0	1	0	31	10	0	0	140	1535
5:10 PM	0	0	0	0	0	7	0	14	0	3	21	42	1	0	1	0	34	2	0	0	125	1552
5:15 PM	0	0	0	0	0	11	0	12	0	8	27	35	0	0	0	0	42	7	0	0	142	1569
5:20 PM	0	2	0	0	0	10	0	16	0	8	26	35	1	0	0	0	28	3	0	0	129	1578
5:25 PM	4	0	0	0	0	2	0	16	0	1	28	36	0	0	0	0	38	10	0	0	135	1586
5:30 PM	1	0	0	0	0	5	0	15	0	5	25	45	0	0	1	0	31	6	0	0	134	1596
5:35 PM	0	0	0	0	0	6	0	12	0	3	20	32	0	0	0	0	38	7	0	0	118	1560
5:40 PM	0	0	0	0	0	7	0	15	0	4	29	30	0	0	0	0	36	5	0	2	128	1571
5:45 PM	1	1	0	0	0	7	0	11	0	7	22	35	1	0	0	0	40	9	0	0	134	1584
5:50 PM	2	0	0	0	0	2	0	9	0	2	22	39	1	0	0	0	24	9	0	3	113	1549
5:55 PM	2	1	0	0	0	6	0	16	0	8	24	41	1	0	1	0	30	6	0	0	136	1554

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	4	0	0	0	96	0	220	0	64	300	488	16	0	8	0	428	76	0	0	1700
Heavy Trucks	0	0	0			4	0	0			0	8	0			0	12	0			24
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

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

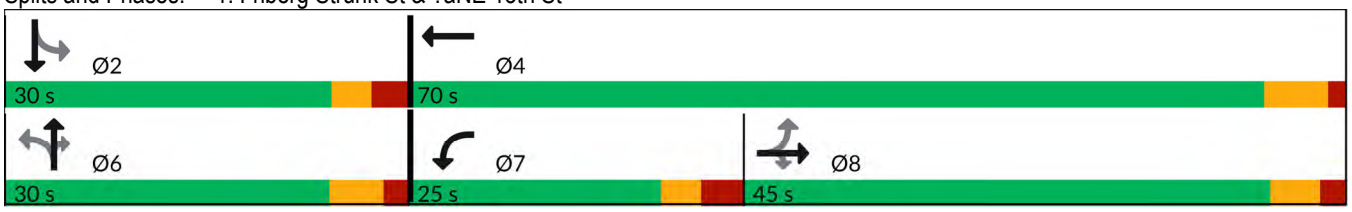
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix D : Existing Conditions Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Configurations									
Traffic Volume (vph)	1	161	285	256	299	86	2	92	5
Future Volume (vph)	1	161	285	256	299	86	2	92	5
Turn Type	Perm	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases		8		7	4		6		2
Permitted Phases	8		8			6		6	
Detector Phase	8	8	8	7	4	6	6	6	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.6	23.6	23.6	11.0	24.1	23.8	23.8	23.8	25.6
Total Split (s)	45.0	45.0	45.0	25.0	70.0	30.0	30.0	30.0	30.0
Total Split (%)	45.0%	45.0%	45.0%	25.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.6	3.6	3.6	3.0	4.7	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	3.0	1.4	1.8	1.8	1.8	2.6
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		5.6	5.6	6.0	6.1		5.8	5.8	5.6
Lead/Lag	Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	Min	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)		13.2	13.2	19.4	38.2		10.1	10.1	10.3
Actuated g/C Ratio		0.22	0.22	0.32	0.63		0.17	0.17	0.17
v/c Ratio		0.62	0.59	0.61	0.33		0.56	0.33	0.03
Control Delay (s/veh)		30.8	7.1	26.4	6.7		35.6	8.5	21.0
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		30.8	7.1	26.4	6.7		35.6	8.5	21.0
LOS		C	A	C	A		D	A	C
Approach Delay (s/veh)		15.7			15.8		21.7		21.0
Approach LOS		B			B		C		C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 60.4	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay (s/veh): 16.7	Intersection LOS: B
Intersection Capacity Utilization 52.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Friberg Strunk St & ?áNE 13th St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	161	285	256	299	0	86	2	92	0	5	1
Future Volume (veh/h)	1	161	285	256	299	0	86	2	92	0	5	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	0.96	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	401	1604	1811	1796	1826	1900	1682	1900	1826	1900	1604	1900
Adj Flow Rate, veh/h	1	199	352	316	369	0	106	2	114	0	6	1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	100	20	6	7	5	0	10	0	5	0	20	0
Cap, veh/h	74	459	431	378	1151	0	318	3	195	0	170	28
Arrive On Green	0.29	0.29	0.29	0.22	0.63	0.00	0.13	0.13	0.13	0.00	0.13	0.13
Sat Flow, veh/h	1	1601	1502	1711	1826	0	1357	26	1535	0	1338	223
Grp Volume(v), veh/h	200	0	352	316	369	0	108	0	114	0	0	7
Grp Sat Flow(s),veh/h/ln	1602	0	1502	1711	1826	0	1382	0	1535	0	0	1561
Q Serve(g_s), s	0.0	0.0	10.7	8.6	4.6	0.0	3.5	0.0	3.4	0.0	0.0	0.2
Cycle Q Clear(g_c), s	5.0	0.0	10.7	8.6	4.6	0.0	3.7	0.0	3.4	0.0	0.0	0.2
Prop In Lane	0.00		1.00	1.00		0.00	0.98		1.00	0.00		0.14
Lane Grp Cap(c), veh/h	534	0	431	378	1151	0	321	0	195	0	0	198
V/C Ratio(X)	0.37	0.00	0.82	0.84	0.32	0.00	0.34	0.00	0.59	0.00	0.00	0.04
Avail Cap(c_a), veh/h	1360	0	1208	663	2381	0	845	0	758	0	0	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	14.2	0.0	16.3	18.2	4.2	0.0	20.4	0.0	20.2	0.0	0.0	18.8
Incr Delay (d2), s/veh	0.2	0.0	1.5	1.9	0.1	0.0	0.2	0.0	1.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	3.2	3.1	0.9	0.0	1.0	0.0	1.1	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.4	0.0	17.7	20.1	4.3	0.0	20.6	0.0	21.2	0.0	0.0	18.8
LnGrp LOS	B		B	C	A		C		C			B
Approach Vol, veh/h		552			685			222			7	
Approach Delay, s/veh		16.5			11.6			20.9			18.8	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	2	4	6	7	8
Phs Duration (G+Y+Rc), s	12.0	37.0	12.0	16.8	20.2
Change Period (Y+Rc), s	* 5.8	6.1	5.8	6.0	* 6.1
Max Green Setting (Gmax), s	* 24	63.9	24.2	19.0	* 39
Max Q Clear Time (g_c+I1), s	2.2	6.6	5.7	10.6	12.7
Green Ext Time (p_c), s	0.0	1.4	0.5	0.3	1.4

Intersection Summary	
HCM 7th Control Delay, s/veh	14.9
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	180	61	162	550	19	57
Future Vol, veh/h	180	61	162	550	19	57
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	55	-	105	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	4	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	14	20	8	5	37	4
Mvmt Flow	198	67	178	604	21	63

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	266	0	1159	199
Stage 1	-	-	-	-	199	-
Stage 2	-	-	-	-	960	-
Critical Hdwy	-	-	4.18	-	6.77	6.24
Critical Hdwy Stg 1	-	-	-	-	5.77	-
Critical Hdwy Stg 2	-	-	-	-	5.77	-
Follow-up Hdwy	-	-	2.272	-	3.833	3.336
Pot Cap-1 Maneuver	-	-	1264	-	185	837
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	322	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1263	-	159	836
Mov Cap-2 Maneuver	-	-	-	-	159	-
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	276	-

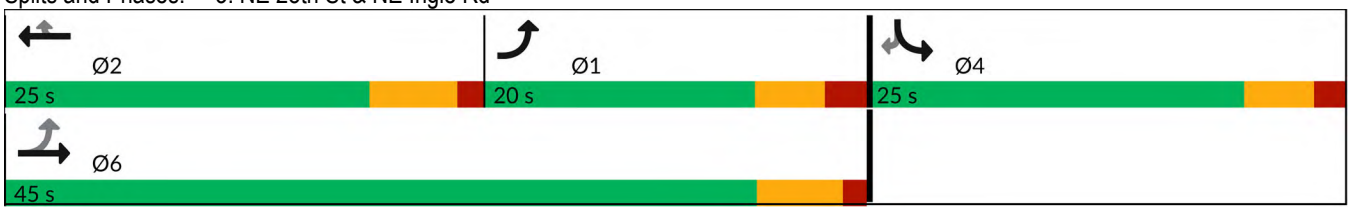
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.89	15.01
HCM LOS			C

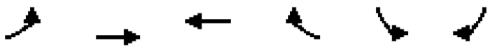
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	159	836	-	-	1263	-
HCM Lane V/C Ratio	0.132	0.075	-	-	0.141	-
HCM Ctrl Dly (s/v)	31.1	9.7	-	-	8.3	-
HCM Lane LOS	D	A	-	-	A	-
HCM 95th %tile Q(veh)	0.4	0.2	-	-	0.5	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	98	138	299	60	83	406
Future Volume (vph)	98	138	299	60	83	406
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	10.8	15.7	24.9	24.9	10.3	10.3
Total Split (s)	20.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	28.6%	64.3%	35.7%	35.7%	35.7%	35.7%
Yellow Time (s)	3.6	4.5	4.5	4.5	3.6	3.6
All-Red Time (s)	2.2	1.2	1.4	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.7	5.9	5.9	5.3	5.3
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effct Green (s)	23.0	21.5	13.2	13.2	8.0	8.0
Actuated g/C Ratio	0.56	0.52	0.32	0.32	0.19	0.19
v/c Ratio	0.18	0.17	0.58	0.13	0.30	0.69
Control Delay (s/veh)	6.7	5.9	18.1	4.9	18.8	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.7	5.9	18.1	4.9	18.8	8.8
LOS	A	A	B	A	B	A
Approach Delay (s/veh)		6.2	15.9		10.5	
Approach LOS		A	B		B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 41.2	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay (s/veh): 11.4	Intersection LOS: B
Intersection Capacity Utilization 50.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: NE 28th St & NE Ingle Rd





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	98	138	299	60	83	406
Future Volume (veh/h)	98	138	299	60	83	406
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1707	1737	1811	1796	1752	1841
Adj Flow Rate, veh/h	107	150	325	65	90	441
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	13	11	6	7	10	4
Cap, veh/h	304	761	417	351	537	503
Arrive On Green	0.08	0.44	0.23	0.23	0.32	0.32
Sat Flow, veh/h	1626	1737	1811	1522	1668	1560
Grp Volume(v), veh/h	107	150	325	65	90	441
Grp Sat Flow(s),veh/h/ln	1626	1737	1811	1522	1668	1560
Q Serve(g_s), s	0.0	2.5	7.8	1.6	1.8	12.4
Cycle Q Clear(g_c), s	0.0	2.5	7.8	1.6	1.8	12.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	304	761	417	351	537	503
V/C Ratio(X)	0.35	0.20	0.78	0.19	0.17	0.88
Avail Cap(c_a), veh/h	671	1473	746	627	709	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	8.0	16.7	14.3	11.3	14.8
Incr Delay (d2), s/veh	0.3	0.0	1.2	0.1	0.1	8.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.6	2.7	0.5	0.5	4.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	19.8	8.0	17.9	14.4	11.3	23.4
LnGrp LOS	B	A	B	B	B	C
Approach Vol, veh/h		257	390		531	
Approach Delay, s/veh		12.9	17.4		21.3	
Approach LOS		B	B		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.5	16.6		20.2		26.1
Change Period (Y+Rc), s	5.8	5.9		5.3		* 5.8
Max Green Setting (Gmax), s	14.2	19.1		19.7		* 39
Max Q Clear Time (g_c+I1), s	2.0	9.8		14.4		4.5
Green Ext Time (p_c), s	0.1	0.9		0.6		0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	18.2
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	110	103	50	213	2	81	2	29	1	3	5
Future Vol, veh/h	2	110	103	50	213	2	81	2	29	1	3	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	0	6	12	10	7	0	6	0	21	0	0	20
Mvmt Flow	3	153	143	69	296	3	113	3	40	1	4	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	299	0	0	296	0	0	667	667	224	596	738	297
Stage 1	-	-	-	-	-	-	230	230	-	436	436	-
Stage 2	-	-	-	-	-	-	437	438	-	160	301	-
Critical Hdwy	4.1	-	-	4.2	-	-	7.16	6.5	6.41	7.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.29	-	-	3.554	4	3.489	3.5	4	3.48
Pot Cap-1 Maneuver	1274	-	-	1221	-	-	367	382	770	418	348	702
Stage 1	-	-	-	-	-	-	764	718	-	603	583	-
Stage 2	-	-	-	-	-	-	591	582	-	847	668	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1274	-	-	1221	-	-	334	355	770	366	324	702
Mov Cap-2 Maneuver	-	-	-	-	-	-	334	355	-	366	324	-
Stage 1	-	-	-	-	-	-	762	716	-	562	543	-
Stage 2	-	-	-	-	-	-	541	543	-	798	667	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.07	1.53	20.12	12.86
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	392	15	-	-	339	-	-	470
HCM Lane V/C Ratio	0.397	0.002	-	-	0.057	-	-	0.027
HCM Ctrl Dly (s/v)	20.1	7.8	0	-	8.1	0	-	12.9
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.9	0	-	-	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	15	127	0	0	191	86	0	0	0	89	0	74
Future Vol, veh/h	15	127	0	0	191	86	0	0	0	89	0	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	13	9	0	0	6	6	0	0	0	4	0	5
Mvmt Flow	18	149	0	0	225	101	0	0	0	105	0	87

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	326	0	0	149	0	0	409	511	149	460	460	275
Stage 1	-	-	-	-	-	-	185	185	-	275	275	-
Stage 2	-	-	-	-	-	-	225	326	-	185	185	-
Critical Hdwy	4.23	-	-	4.1	-	-	7.1	6.5	6.2	7.14	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.317	-	-	2.2	-	-	3.5	4	3.3	3.536	4	3.345
Pot Cap-1 Maneuver	1174	-	-	1444	-	-	556	469	902	508	501	756
Stage 1	-	-	-	-	-	-	822	751	-	727	686	-
Stage 2	-	-	-	-	-	-	782	652	-	812	751	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1174	-	-	1444	-	-	484	461	902	500	493	756
Mov Cap-2 Maneuver	-	-	-	-	-	-	484	461	-	500	493	-
Stage 1	-	-	-	-	-	-	808	738	-	727	686	-
Stage 2	-	-	-	-	-	-	692	652	-	799	738	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.86	0	0	13.99
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	190	-	-	1444	-	-	591
HCM Lane V/C Ratio	-	0.015	-	-	-	-	-	0.325
HCM Ctrl Dly (s/v)	0	8.1	0	-	0	-	-	14
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1.4

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	50	58	68	79	91
Future Vol, veh/h	28	50	58	68	79	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-4	-4	-
Peak Hour Factor	48	48	48	48	48	48
Heavy Vehicles, %	18	6	5	10	9	8
Mvmt Flow	58	104	121	142	165	190

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	643	259	354	0	-	0
Stage 1	259	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Critical Hdwy	6.98	6.46	4.15	-	-	-
Critical Hdwy Stg 1	5.98	-	-	-	-	-
Critical Hdwy Stg 2	5.98	-	-	-	-	-
Follow-up Hdwy	3.662	3.354	2.245	-	-	-
Pot Cap-1 Maneuver	385	759	1188	-	-	-
Stage 1	727	-	-	-	-	-
Stage 2	628	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	343	759	1188	-	-	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	647	-	-	-	-	-
Stage 2	628	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	14.81	3.85	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	829	-	528	-	-
HCM Lane V/C Ratio	0.102	-	0.308	-	-
HCM Ctrl Dly (s/v)	8.4	0	14.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.3	-	1.3	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	71	32	184	150	113	281
Future Vol, veh/h	71	32	184	150	113	281
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	140	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	-2
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	10	3	3	3	1	3
Mvmt Flow	88	40	227	185	140	347

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	946	320	0	0	412	0
Stage 1	320	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Critical Hdwy	6.5	6.23	-	-	4.11	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.327	-	-	2.209	-
Pot Cap-1 Maneuver	281	719	-	-	1152	-
Stage 1	719	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	247	719	-	-	1152	-
Mov Cap-2 Maneuver	247	-	-	-	-	-
Stage 1	719	-	-	-	-	-
Stage 2	455	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	24.45	0	2.45
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	310	1152	-
HCM Lane V/C Ratio	-	-	0.41	0.121	-
HCM Ctrl Dly (s/v)	-	-	24.4	8.6	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.9	0.4	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	116	84	296	341	16
Future Vol, veh/h	26	116	84	296	341	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	110	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	4	-4	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	7	10	3	5	6
Mvmt Flow	32	143	104	365	421	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1004	431	441	0	-	0
Stage 1	431	-	-	-	-	-
Stage 2	573	-	-	-	-	-
Critical Hdwy	6.8	6.47	4.2	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.363	2.29	-	-	-
Pot Cap-1 Maneuver	242	599	1078	-	-	-
Stage 1	629	-	-	-	-	-
Stage 2	533	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	219	599	1078	-	-	-
Mov Cap-2 Maneuver	219	-	-	-	-	-
Stage 1	568	-	-	-	-	-
Stage 2	533	-	-	-	-	-

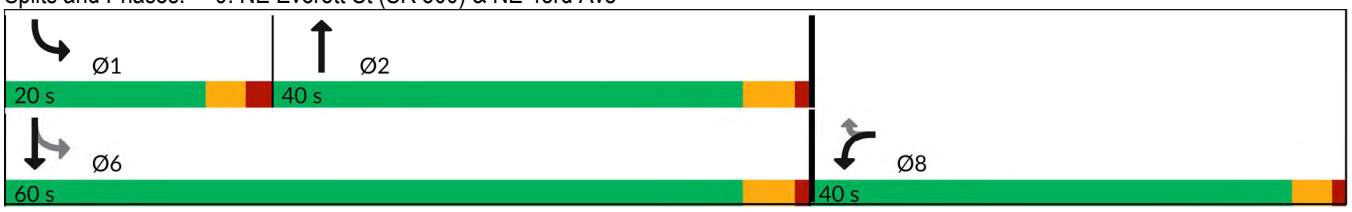
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	17.81	1.92	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1078	-	455	-	-
HCM Lane V/C Ratio	0.096	-	0.386	-	-
HCM Ctrl Dly (s/v)	8.7	-	17.8	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.3	-	1.8	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	333	57	327	485	66	394
Future Volume (vph)	333	57	327	485	66	394
Turn Type	Prot	Perm	NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		Free	6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	23.0	23.0	30.0		10.0	50.0
Total Split (s)	40.0	40.0	40.0		20.0	60.0
Total Split (%)	40.0%	40.0%	40.0%		20.0%	60.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0
All-Red Time (s)	1.0	1.0	1.0		2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	Min		None	Min
Act Effct Green (s)	22.3	22.3	23.2	65.3	32.7	32.7
Actuated g/C Ratio	0.34	0.34	0.36	1.00	0.50	0.50
v/c Ratio	0.71	0.12	0.61	0.38	0.20	0.50
Control Delay (s/veh)	29.1	5.7	24.9	0.7	10.8	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	29.1	5.7	24.9	0.7	10.8	13.6
LOS	C	A	C	A	B	B
Approach Delay (s/veh)	25.7		10.5			13.2
Approach LOS	C		B			B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 65.3	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay (s/veh): 14.8	Intersection LOS: B
Intersection Capacity Utilization 51.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: NE Everett St (SR 500) & NE 43rd Ave





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	333	57	327	485	66	394
Future Volume (veh/h)	333	57	327	485	66	394
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1799	1874	1746	1776	1802	1997
Adj Flow Rate, veh/h	383	43	376	0	76	453
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	12	7	4	2	17	4
Cap, veh/h	486	450	588		412	1014
Arrive On Green	0.28	0.28	0.34	0.00	0.06	0.51
Sat Flow, veh/h	1713	1588	1746	1505	1716	1997
Grp Volume(v), veh/h	383	43	376	0	76	453
Grp Sat Flow(s),veh/h/ln	1713	1588	1746	1505	1716	1997
Q Serve(g_s), s	8.9	0.9	7.9	0.0	1.1	6.2
Cycle Q Clear(g_c), s	8.9	0.9	7.9	0.0	1.1	6.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	486	450	588		412	1014
V/C Ratio(X)	0.79	0.10	0.64		0.18	0.45
Avail Cap(c_a), veh/h	1429	1325	1417		913	2546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	14.3	11.4	12.1	0.0	8.3	6.8
Incr Delay (d2), s/veh	2.9	0.1	2.5	0.0	0.2	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.3	2.8	0.0	0.3	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	17.2	11.5	14.6	0.0	8.6	7.1
LnGrp LOS	B	B	B		A	A
Approach Vol, veh/h	426		376			529
Approach Delay, s/veh	16.6		14.6			7.3
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	7.4	19.5			26.9	16.2
Change Period (Y+Rc), s	5.0	5.0			5.0	4.0
Max Green Setting (Gmax), s	15.0	35.0			55.0	36.0
Max Q Clear Time (g_c+I1), s	3.1	9.9			8.2	10.9
Green Ext Time (p_c), s	0.1	4.5			4.0	1.4

Intersection Summary	
HCM 7th Control Delay, s/veh	12.3
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

MOVEMENT SUMMARY

Site 10 NE Everett St & NW Lake Rd_ExistingAM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett Street															
3	L2	All MCs	231	0.0	231	0.0	0.311	13.4	LOS B	2.0	50.9	0.75	0.74	0.75	31.5
8	T1	All MCs	463	6.0	463	6.0	0.528	8.0	LOS A	4.6	120.8	0.85	0.73	0.94	34.2
Approach			694	4.0	694	4.0	0.528	9.8	LOS A	4.6	120.8	0.82	0.73	0.88	33.2
North: NE Everett Street															
4	T1	All MCs	454	10.0	454	10.0	0.398	5.1	LOS A	2.8	75.9	0.54	0.49	0.54	34.9
14	R2	All MCs	339	2.0	339	2.0	0.269	4.8	LOS A	1.7	44.3	0.47	0.51	0.47	35.2
Approach			793	6.6	793	6.6	0.398	5.0	LOS A	2.8	75.9	0.51	0.50	0.51	35.0
West: NW Lake Road															
5	L2	All MCs	561	3.0	561	3.0	0.542	13.5	LOS B	4.7	119.0	0.78	0.74	0.84	31.4
12	R2	All MCs	250	6.0	250	6.0	0.253	6.3	LOS A	1.6	41.3	0.64	0.61	0.64	34.7
Approach			811	3.9	811	3.9	0.542	11.3	LOS B	4.7	119.0	0.73	0.70	0.78	32.3
All Vehicles			2297	4.9	2297	4.9	0.542	8.7	LOS A	4.7	120.8	0.68	0.64	0.71	33.5

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	61	14	24	310	440	36
Future Vol, veh/h	61	14	24	310	440	36
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	7	7	0	6	2	0
Mvmt Flow	67	15	26	341	484	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	900	506	526	0	-	0
Stage 1	506	-	-	-	-	-
Stage 2	393	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.1	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.2	-	-	-
Pot Cap-1 Maneuver	303	556	1051	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	671	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	294	555	1048	-	-	-
Mov Cap-2 Maneuver	416	-	-	-	-	-
Stage 1	579	-	-	-	-	-
Stage 2	669	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	15.16	0.61	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1048	-	436	-	-
HCM Lane V/C Ratio	0.025	-	0.189	-	-
HCM Ctrl Dly (s/v)	8.5	-	15.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	25	19	4	25	78	8	233	6	81	266	106
Future Vol, veh/h	37	25	19	4	25	78	8	233	6	81	266	106
Conflicting Peds, #/hr	13	0	3	3	0	13	0	0	6	6	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	11	0	5	0	0	0	25	6	17	1	4	0
Mvmt Flow	43	29	22	5	29	90	9	268	7	93	306	122

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	866	852	370	805	909	290	428	0	0	281	0	0
Stage 1	553	553	-	296	296	-	-	-	-	-	-	-
Stage 2	314	299	-	509	614	-	-	-	-	-	-	-
Critical Hdwy	7.21	6.5	6.25	7.1	6.5	6.2	4.35	-	-	4.11	-	-
Critical Hdwy Stg 1	6.21	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.21	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.599	4	3.345	3.5	4	3.3	2.425	-	-	2.209	-	-
Pot Cap-1 Maneuver	264	299	669	303	277	754	1019	-	-	1288	-	-
Stage 1	502	518	-	717	672	-	-	-	-	-	-	-
Stage 2	678	670	-	550	486	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	188	273	668	241	253	741	1019	-	-	1281	-	-
Mov Cap-2 Maneuver	188	273	-	241	253	-	-	-	-	-	-	-
Stage 1	465	480	-	707	663	-	-	-	-	-	-	-
Stage 2	559	660	-	463	451	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	26.88	14.92	0.28	1.44
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1019	-	-	256	485	1281	-	-
HCM Lane V/C Ratio	0.009	-	-	0.364	0.254	0.073	-	-
HCM Ctrl Dly (s/v)	8.6	-	-	26.9	14.9	8	-	-
HCM Lane LOS	A	-	-	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.6	1	0.2	-	-

Intersection	
Int Delay, s/veh	10.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	23	1	0	18	193	1	0	0	228	0	59
Future Vol, veh/h	53	23	1	0	18	193	1	0	0	228	0	59
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	8	4	0	0	0	7	0	0	0	4	0	3
Mvmt Flow	62	27	1	0	21	227	1	0	0	268	0	69

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	585	575	35	-	609	2	69	0	0	1	0	0
Stage 1	571	571	-	-	3	-	-	-	-	-	-	-
Stage 2	14	3	-	-	606	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.54	6.2	-	6.5	6.27	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.18	5.54	-	-	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.54	-	-	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.036	3.3	-	4	3.363	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	414	426	1044	0	412	1068	1544	-	-	1609	-	-
Stage 1	495	502	-	0	897	-	-	-	-	-	-	-
Stage 2	991	889	-	0	490	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	254	351	1044	-	340	1066	1544	-	-	1607	-	-
Mov Cap-2 Maneuver	254	351	-	-	340	-	-	-	-	-	-	-
Stage 1	409	414	-	-	896	-	-	-	-	-	-	-
Stage 2	760	888	-	-	404	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	23.89	10.51	7.33	6.11
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1544	-	-	280	901	1192	-	-
HCM Lane V/C Ratio	0.001	-	-	0.324	0.275	0.167	-	-
HCM Ctrl Dly (s/v)	7.3	0	-	23.9	10.5	7.7	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.4	1.1	0.6	-	-

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	26	64	8	1	150	4	18	53	3	1	79	90
Future Vol, veh/h	26	64	8	1	150	4	18	53	3	1	79	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	4	-	-	-6	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	9	25	0	5	0	22	8	0	0	3	2
Mvmt Flow	30	74	9	1	172	5	21	61	3	1	91	103

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	333	253	143	236	303	65	194	0	0	66	0	0
Stage 1	145	145	-	106	106	-	-	-	-	-	-	-
Stage 2	189	108	-	130	197	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.59	6.45	7.1	6.55	6.2	4.32	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.59	-	6.1	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.59	-	6.1	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.081	3.525	3.5	4.045	3.3	2.398	-	-	2.2	-	-
Pot Cap-1 Maneuver	624	639	848	723	605	1005	1268	-	-	1548	-	-
Stage 1	863	764	-	904	802	-	-	-	-	-	-	-
Stage 2	818	793	-	879	733	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	435	626	848	620	593	1003	1268	-	-	1545	-	-
Mov Cap-2 Maneuver	435	626	-	620	593	-	-	-	-	-	-	-
Stage 1	862	763	-	887	787	-	-	-	-	-	-	-
Stage 2	625	778	-	785	732	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.83	13.51	1.92	0.04
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	433	-	-	572	600	10	-	-
HCM Lane V/C Ratio	0.016	-	-	0.197	0.297	0.001	-	-
HCM Ctrl Dly (s/v)	7.9	0	-	12.8	13.5	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	1.2	0	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	141	411	596	20	11	206
Future Vol, veh/h	141	411	596	20	11	206
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-8	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	7	5	10	0	1
Mvmt Flow	153	447	648	22	12	224

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	670	0	-	0	1189	335
Stage 1	-	-	-	-	659	-
Stage 2	-	-	-	-	530	-
Critical Hdwy	4.2	-	-	-	5.2	6.12
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	2.25	-	-	-	3.5	3.31
Pot Cap-1 Maneuver	897	-	-	-	312	715
Stage 1	-	-	-	-	646	-
Stage 2	-	-	-	-	709	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	897	-	-	-	251	715
Mov Cap-2 Maneuver	-	-	-	-	251	-
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	709	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	3.36	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	785	-	-	-	251	715
HCM Lane V/C Ratio	0.171	-	-	-	0.048	0.313
HCM Ctrl Dly (s/v)	9.8	1.1	-	-	20.1	12.3
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.6	-	-	-	0.1	1.3

MOVEMENT SUMMARY

Site 16 [NW Norwood St & NW 6th Ave_ExistingAM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NW 6th Avenue															
3	L2	All MCs	110	2.0	110	2.0	0.228	13.0	LOS B	1.3	32.8	0.65	0.70	0.65	32.6
8	T1	All MCs	2	0.0	2	0.0	0.228	6.6	LOS A	1.3	32.8	0.65	0.70	0.65	33.3
18	R2	All MCs	74	6.0	74	6.0	0.228	7.2	LOS A	1.3	32.8	0.65	0.70	0.65	32.9
Approach			186	3.6	186	3.6	0.228	10.6	LOS B	1.3	32.8	0.65	0.70	0.65	32.7
East: NW 6th Avenue															
1	L2	All MCs	80	4.0	80	4.0	0.748	11.6	LOS B	8.5	218.0	0.68	0.51	0.68	33.6
6	T1	All MCs	784	3.0	784	3.0	0.748	5.2	LOS A	8.5	218.0	0.68	0.51	0.68	34.4
16	R2	All MCs	11	30.0	11	30.0	0.748	6.5	LOS A	8.5	218.0	0.68	0.51	0.68	33.5
Approach			874	3.4	874	3.4	0.748	5.8	LOS A	8.5	218.0	0.68	0.51	0.68	34.3
North: NW Norwood Street															
7	L2	All MCs	15	7.0	15	7.0	0.142	17.6	LOS B	0.9	23.5	0.87	0.78	0.87	31.6
4	T1	All MCs	5	0.0	5	0.0	0.142	10.5	LOS B	0.9	23.5	0.87	0.78	0.87	32.4
14	R2	All MCs	50	2.0	50	2.0	0.142	10.9	LOS B	0.9	23.5	0.87	0.78	0.87	32.1
Approach			70	2.9	70	2.9	0.142	12.3	LOS B	0.9	23.5	0.87	0.78	0.87	32.0
West: NW 6th Avenue															
5	L2	All MCs	20	26.0	20	26.0	0.542	11.3	LOS B	4.4	117.2	0.43	0.43	0.43	33.8
2	T1	All MCs	503	8.0	503	8.0	0.542	4.5	LOS A	4.4	117.2	0.43	0.43	0.43	35.3
12	R2	All MCs	96	9.0	96	9.0	0.542	4.7	LOS A	4.4	117.2	0.43	0.43	0.43	34.9
Approach			619	8.7	619	8.7	0.542	4.8	LOS A	4.4	117.2	0.43	0.43	0.43	35.2
All Vehicles			1750	5.3	1750	5.3	0.748	6.2	LOS A	8.5	218.0	0.60	0.51	0.60	34.3

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	570	2	61	468	4	172
Future Vol, veh/h	570	2	61	468	4	172
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	105	-	85	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-6	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	0	3	3	0	0
Mvmt Flow	655	2	70	538	5	198

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	657	0	1334	656
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	678	-
Critical Hdwy	-	-	4.13	-	5.2	5.6
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	925	-	267	523
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	637	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	925	-	247	523
Mov Cap-2 Maneuver	-	-	-	-	247	-
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	588	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.06	16.09
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	247	523	-	-	925	-
HCM Lane V/C Ratio	0.019	0.378	-	-	0.076	-
HCM Ctrl Dly (s/v)	19.9	16	-	-	9.2	-
HCM Lane LOS	C	C	-	-	A	-
HCM 95th %tile Q(veh)	0.1	1.7	-	-	0.2	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	394	87	71	381	92	164
Future Vol, veh/h	394	87	71	381	92	164
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	7	11	2	3	7
Mvmt Flow	438	97	79	423	102	182

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	534	0	1067	486
Stage 1	-	-	-	-	486	-
Stage 2	-	-	-	-	581	-
Critical Hdwy	-	-	4.21	-	6.43	6.27
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.299	-	3.527	3.363
Pot Cap-1 Maneuver	-	-	989	-	245	571
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	557	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	989	-	225	571
Mov Cap-2 Maneuver	-	-	-	-	225	-
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	513	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.41	21.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	225	571	-	-	989	-
HCM Lane V/C Ratio	0.454	0.319	-	-	0.08	-
HCM Ctrl Dly (s/v)	33.6	14.2	-	-	9	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	2.2	1.4	-	-	0.3	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	303	11	102	377	6	3	9	170	8	9	8
Future Vol, veh/h	7	303	11	102	377	6	3	9	170	8	9	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	130	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	18	2	2	33	0	22	8	0	0	12
Mvmt Flow	8	329	12	111	410	7	3	10	185	9	10	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	416	0	0	341	0	0	987	989	335	984	991	413
Stage 1	-	-	-	-	-	-	351	351	-	635	635	-
Stage 2	-	-	-	-	-	-	636	638	-	349	357	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.1	6.72	6.28	7.1	6.5	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.72	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.72	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4.198	3.372	3.5	4	3.408
Pot Cap-1 Maneuver	1154	-	-	1218	-	-	228	228	693	229	248	618
Stage 1	-	-	-	-	-	-	670	599	-	470	476	-
Stage 2	-	-	-	-	-	-	469	441	-	671	632	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1154	-	-	1218	-	-	195	206	693	145	224	618
Mov Cap-2 Maneuver	-	-	-	-	-	-	195	206	-	145	224	-
Stage 1	-	-	-	-	-	-	666	595	-	427	432	-
Stage 2	-	-	-	-	-	-	411	401	-	481	628	-

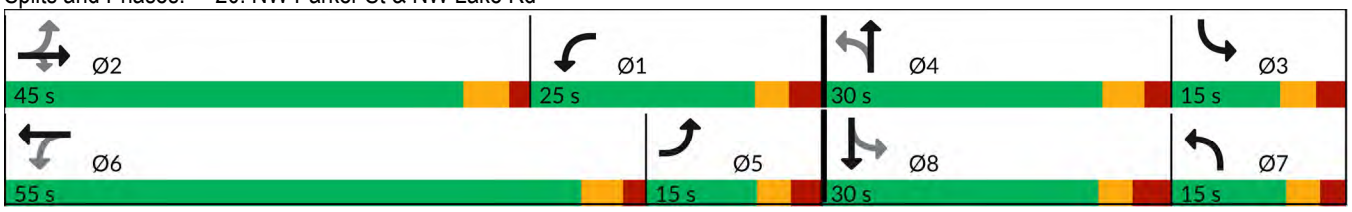
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.18	1.74	13.97	22.64
HCM LOS			B	C

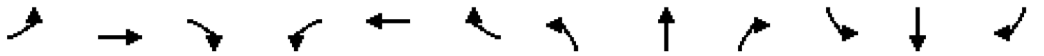
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	598	1154	-	-	1218	-	-	231
HCM Lane V/C Ratio	0.331	0.007	-	-	0.091	-	-	0.118
HCM Ctrl Dly (s/v)	14	8.1	-	-	8.3	-	-	22.6
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.4	0	-	-	0.3	-	-	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	9	177	153	102	257	137	59	44	116
Future Volume (vph)	9	177	153	102	257	137	59	44	116
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		1	6	7	4	3	8
Permitted Phases	2		2	6		4		8	
Detector Phase	5	2	2	1	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	26.7	26.7	10.7	20.5	10.2	29.2	10.6	33.3
Total Split (s)	15.0	45.0	45.0	25.0	55.0	15.0	30.0	15.0	30.0
Total Split (%)	13.0%	39.1%	39.1%	21.7%	47.8%	13.0%	26.1%	13.0%	26.1%
Yellow Time (s)	3.0	4.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0
All-Red Time (s)	2.5	1.7	1.7	2.7	1.9	2.2	2.3	2.6	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.7	5.7	5.7	5.5	5.2	5.9	5.6	6.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)	17.9	12.0	12.0	20.4	18.3	21.7	16.9	16.6	9.8
Actuated g/C Ratio	0.32	0.22	0.22	0.37	0.33	0.39	0.30	0.30	0.18
v/c Ratio	0.03	0.54	0.37	0.26	0.31	0.30	0.36	0.13	0.49
Control Delay (s/veh)	13.8	27.1	6.3	15.2	16.0	13.9	15.5	12.9	28.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.8	27.1	6.3	15.2	16.0	13.9	15.5	12.9	28.0
LOS	B	C	A	B	B	B	B	B	C
Approach Delay (s/veh)		17.4			15.8		14.7		24.2
Approach LOS		B			B		B		C

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 55.5	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay (s/veh): 17.2	Intersection LOS: B
Intersection Capacity Utilization 49.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 20: NW Parker St & NW Lake Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	177	153	102	257	36	137	59	101	44	116	15
Future Volume (veh/h)	9	177	153	102	257	36	137	59	101	44	116	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1574	1841	1870	1900	1870	1856	1885	1856	1856	1796	1856	1900
Adj Flow Rate, veh/h	11	213	107	123	310	24	165	71	87	53	140	16
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	22	4	2	0	2	3	1	3	3	7	3	0
Cap, veh/h	385	311	268	397	553	43	405	121	149	386	251	29
Arrive On Green	0.11	0.17	0.17	0.10	0.17	0.17	0.09	0.16	0.16	0.09	0.15	0.15
Sat Flow, veh/h	1499	1841	1585	1810	3343	257	1795	754	924	1711	1632	186
Grp Volume(v), veh/h	11	213	107	123	164	170	165	0	158	53	0	156
Grp Sat Flow(s),veh/h/ln	1499	1841	1585	1810	1777	1824	1795	0	1679	1711	0	1818
Q Serve(g_s), s	0.0	5.3	2.9	0.0	4.1	4.1	0.0	0.0	4.2	0.0	0.0	3.8
Cycle Q Clear(g_c), s	0.0	5.3	2.9	0.0	4.1	4.1	0.0	0.0	4.2	0.0	0.0	3.8
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.55	1.00		0.10
Lane Grp Cap(c), veh/h	385	311	268	397	294	302	405	0	270	386	0	279
V/C Ratio(X)	0.03	0.68	0.40	0.31	0.56	0.56	0.41	0.00	0.59	0.14	0.00	0.56
Avail Cap(c_a), veh/h	514	1497	1289	933	1820	1868	604	0	837	559	0	891
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.0	18.9	17.9	18.8	18.5	18.6	18.9	0.0	18.8	17.9	0.0	18.9
Incr Delay (d2), s/veh	0.0	1.0	0.4	0.2	0.6	0.6	0.7	0.0	0.8	0.2	0.0	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.0	1.0	1.1	1.5	1.6	1.6	0.0	1.5	0.5	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.0	19.9	18.3	18.9	19.2	19.2	19.6	0.0	19.5	18.0	0.0	19.6
LnGrp LOS	B	B	B	B	B	B	B		B	B		B
Approach Vol, veh/h		331			457			323			209	
Approach Delay, s/veh		19.2			19.1			19.6			19.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	13.9	10.1	13.7	11.1	13.5	10.1	13.7
Change Period (Y+Rc), s	5.7	5.7	* 5.6	5.9	5.7	* 5.5	5.6	* 6.3
Max Green Setting (Gmax), s	19.3	39.3	* 9.4	24.1	9.5	* 50	9.8	* 24
Max Q Clear Time (g_c+I1), s	2.0	7.3	2.0	6.2	2.0	6.1	2.0	5.8
Green Ext Time (p_c), s	0.1	0.9	0.0	0.5	0.0	1.2	0.2	0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	19.3
HCM 7th LOS	B

Notes

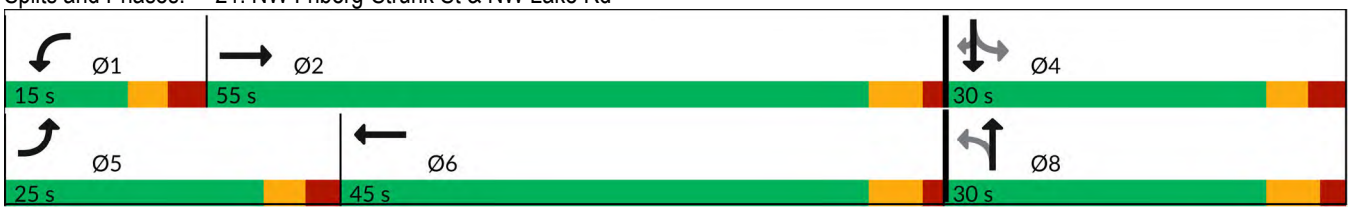
User approved pedestrian interval to be less than phase max green.

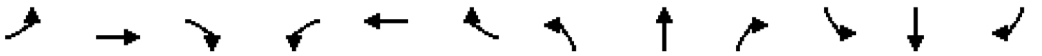
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	323	270	1	343	0	79	0	309
Future Volume (vph)	323	270	1	343	0	79	0	309
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						4		4
Detector Phase	5	2	1	6	8	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.6	23.5	10.8	26.6	34.0	33.9	33.9	33.9
Total Split (s)	25.0	55.0	15.0	45.0	30.0	30.0	30.0	30.0
Total Split (%)	25.0%	55.0%	15.0%	45.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.6	1.5	2.8	1.6	2.0	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.6	5.5	5.8	5.6	6.0		5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	19.6	37.5	5.1	13.9	9.1		9.2	9.2
Actuated g/C Ratio	0.33	0.62	0.08	0.23	0.15		0.15	0.15
v/c Ratio	0.73	0.17	0.01	0.67	0.00		0.50	0.70
Control Delay (s/veh)	30.0	6.3	29.0	24.3	0.0		32.7	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	30.0	6.3	29.0	24.3	0.0		32.7	10.2
LOS	C	A	C	C	A		C	B
Approach Delay (s/veh)		19.1		24.3			14.8	
Approach LOS		B		C			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 60.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay (s/veh): 19.5	Intersection LOS: B
Intersection Capacity Utilization 55.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 21: NW Friberg-Strunk St & NW Lake Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	323	270	3	1	343	78	0	0	1	79	0	309
Future Volume (veh/h)	323	270	3	1	343	78	0	0	1	79	0	309
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1811	1411	1900	1856	1900	1900	1900	1900	1811	1900	1856
Adj Flow Rate, veh/h	419	351	4	1	445	101	0	0	1	103	0	401
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	3	6	33	0	3	0	0	0	0	6	0	3
Cap, veh/h	460	1618	18	3	595	134	0	0	458	512	0	447
Arrive On Green	0.26	0.46	0.46	0.00	0.21	0.21	0.00	0.00	0.28	0.28	0.00	0.28
Sat Flow, veh/h	1767	3485	40	1810	2858	644	0	0	1607	1433	0	1569
Grp Volume(v), veh/h	419	173	182	1	273	273	0	0	1	103	0	401
Grp Sat Flow(s),veh/h/ln	1767	1721	1804	1810	1763	1740	0	0	1607	1433	0	1569
Q Serve(g_s), s	16.0	4.2	4.2	0.0	10.1	10.3	0.0	0.0	0.0	3.9	0.0	17.1
Cycle Q Clear(g_c), s	16.0	4.2	4.2	0.0	10.1	10.3	0.0	0.0	0.0	3.9	0.0	17.1
Prop In Lane	1.00		0.02	1.00		0.37	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	460	799	837	3	367	362	0	0	458	512	0	447
V/C Ratio(X)	0.91	0.22	0.22	0.39	0.74	0.75	0.00	0.00	0.00	0.20	0.00	0.90
Avail Cap(c_a), veh/h	492	1222	1281	239	996	983	0	0	553	599	0	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.0	11.1	11.1	34.8	25.9	25.9	0.0	0.0	17.8	19.2	0.0	23.9
Incr Delay (d2), s/veh	19.6	0.1	0.0	31.3	1.1	1.2	0.0	0.0	0.0	0.1	0.0	14.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	1.4	1.4	0.0	4.1	4.2	0.0	0.0	0.0	1.2	0.0	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	44.6	11.2	11.2	66.1	27.0	27.1	0.0	0.0	17.8	19.3	0.0	38.0
LnGrp LOS	D	B	B	E	C	C			B	B		D
Approach Vol, veh/h		774			547			1			504	
Approach Delay, s/veh		29.3			27.1			17.8			34.2	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	38.0		25.9	23.7	20.1		25.9				
Change Period (Y+Rc), s	5.8	* 5.6		* 6	5.6	5.6		6.0				
Max Green Setting (Gmax), s	9.2	* 50		* 24	19.4	39.4		24.0				
Max Q Clear Time (g_c+I1), s	2.0	6.2		19.1	18.0	12.3		2.0				
Green Ext Time (p_c), s	0.0	1.2		0.6	0.1	2.2		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh	30.0	
HCM 7th LOS	C	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	5.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	134	111	357	142	27	305
Future Vol, veh/h	134	111	357	142	27	305
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	175	0	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	2	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	3	1	3	10	7	3
Mvmt Flow	161	134	430	171	33	367

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	948	516	0	0	601	0
Stage 1	516	-	-	-	-	-
Stage 2	433	-	-	-	-	-
Critical Hdwy	6.03	6.01	-	-	4.17	-
Critical Hdwy Stg 1	5.03	-	-	-	-	-
Critical Hdwy Stg 2	5.03	-	-	-	-	-
Follow-up Hdwy	3.527	3.309	-	-	2.263	-
Pot Cap-1 Maneuver	320	578	-	-	952	-
Stage 1	633	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	309	578	-	-	952	-
Mov Cap-2 Maneuver	309	-	-	-	-	-
Stage 1	633	-	-	-	-	-
Stage 2	661	-	-	-	-	-

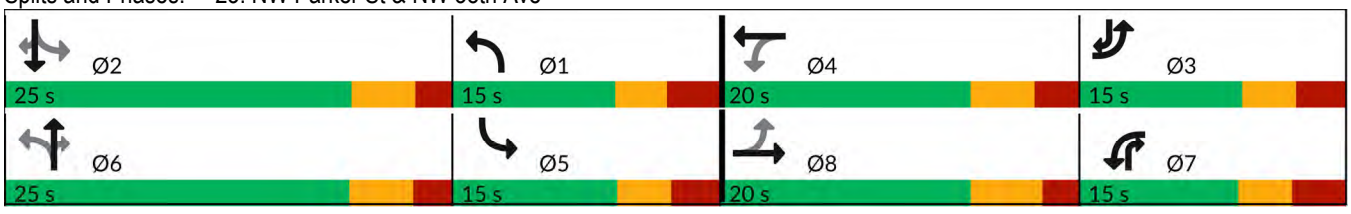
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	21.63	0	0.73
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	309	578	952	-
HCM Lane V/C Ratio	-	-	0.522	0.232	0.034	-
HCM Ctrl Dly (s/v)	-	-	28.7	13.1	8.9	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	2.8	0.9	0.1	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	95	66	84	108	66	386	76	14	287	122
Future Volume (vph)	95	66	84	108	66	386	76	14	287	122
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	7	4	1	6	7	5	2	3
Permitted Phases	8		4		6		6	2		2
Detector Phase	3	8	7	4	1	6	7	5	2	3
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.8	24.0	11.0	23.0	10.9	20.0	11.0	10.7	20.0	10.8
Total Split (s)	15.0	20.0	15.0	20.0	15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	20.0%	26.7%	20.0%	26.7%	20.0%	33.3%	20.0%	20.0%	33.3%	20.0%
Yellow Time (s)	3.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0	3.6	3.0
All-Red Time (s)	2.8	2.0	3.0	2.4	2.9	2.1	3.0	2.7	2.0	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.0	6.0	6.0	5.9	5.7	6.0	5.7	5.6	5.8
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	None	Max	None
Act Effct Green (s)	12.2	7.9	14.8	9.4	29.7	29.7	33.1	27.9	25.9	28.2
Actuated g/C Ratio	0.22	0.14	0.26	0.17	0.52	0.52	0.58	0.49	0.46	0.50
v/c Ratio	0.32	0.45	0.25	0.54	0.13	0.48	0.09	0.04	0.37	0.16
Control Delay (s/veh)	17.5	25.5	16.3	28.3	11.3	18.9	1.1	11.1	19.1	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.5	25.5	16.3	28.3	11.3	18.9	1.1	11.1	19.1	2.9
LOS	B	C	B	C	B	B	A	B	B	A
Approach Delay (s/veh)		21.6		23.9		15.4			14.1	
Approach LOS		C		C		B			B	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 56.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay (s/veh): 17.3	Intersection LOS: B
Intersection Capacity Utilization 57.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 23: NW Parker St & NW 38th Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	66	35	84	108	34	66	386	76	14	287	122
Future Volume (veh/h)	95	66	35	84	108	34	66	386	76	14	287	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1826	1811	1811	1870	1900	1870	1826	1826	1796	1945	1870
Adj Flow Rate, veh/h	108	75	40	95	123	39	75	439	86	16	326	139
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	5	6	6	2	0	2	5	5	7	2	2
Cap, veh/h	296	117	62	350	174	55	434	581	655	346	622	637
Arrive On Green	0.08	0.10	0.10	0.11	0.13	0.13	0.08	0.32	0.32	0.08	0.32	0.32
Sat Flow, veh/h	1882	1116	595	1725	1358	431	1781	1826	1545	1711	1945	1583
Grp Volume(v), veh/h	108	0	115	95	0	162	75	439	86	16	326	139
Grp Sat Flow(s),veh/h/ln	1882	0	1712	1725	0	1789	1781	1826	1545	1711	1945	1583
Q Serve(g_s), s	0.0	0.0	3.9	0.0	0.0	5.3	0.0	13.1	0.0	0.0	8.3	0.0
Cycle Q Clear(g_c), s	0.0	0.0	3.9	0.0	0.0	5.3	0.0	13.1	0.0	0.0	8.3	0.0
Prop In Lane	1.00		0.35	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	296	0	179	350	0	229	434	581	655	346	622	637
V/C Ratio(X)	0.36	0.00	0.64	0.27	0.00	0.71	0.17	0.76	0.13	0.05	0.52	0.22
Avail Cap(c_a), veh/h	427	0	395	424	0	413	554	581	655	468	622	637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	0.0	26.0	23.6	0.0	25.4	17.9	18.5	10.7	20.5	16.8	11.9
Incr Delay (d2), s/veh	0.3	0.0	1.4	0.2	0.0	1.5	0.1	8.8	0.4	0.0	3.1	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.5	1.2	0.0	2.2	0.8	6.3	0.7	0.2	3.8	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.7	0.0	27.5	23.8	0.0	26.9	17.9	27.4	11.1	20.5	20.0	12.7
LnGrp LOS	C		C	C		C	B	C	B	C	B	B
Approach Vol, veh/h		223			257			600			481	
Approach Delay, s/veh		26.6			25.7			23.9			17.9	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	25.0	11.0	13.8	10.9	25.0	12.4	12.3
Change Period (Y+Rc), s	5.9	5.6	6.0	* 6	5.9	* 5.7	6.0	6.0
Max Green Setting (Gmax), s	9.1	19.4	9.2	* 14	9.3	* 19	9.0	14.0
Max Q Clear Time (g_c+I1), s	2.0	10.3	2.0	7.3	2.0	15.1	2.0	5.9
Green Ext Time (p_c), s	0.0	1.0	0.1	0.3	0.0	0.8	0.1	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	22.7
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	88	221	70	88	20
Future Vol, veh/h	4	88	221	70	88	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	10	5	3	12	20
Mvmt Flow	5	105	263	83	105	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	726	117	129	0	-	0
Stage 1	117	-	-	-	-	-
Stage 2	610	-	-	-	-	-
Critical Hdwy	6.4	6.3	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.39	2.245	-	-	-
Pot Cap-1 Maneuver	394	914	1439	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	319	914	1439	-	-	-
Mov Cap-2 Maneuver	319	-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	546	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.89	6.12	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1367	-	846	-	-
HCM Lane V/C Ratio	0.183	-	0.13	-	-
HCM Ctrl Dly (s/v)	8.1	0	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.7	-	0.4	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	96	190	39	49	109
Future Vol, veh/h	44	96	190	39	49	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	14	6	3	18	8	9
Mvmt Flow	49	108	213	44	55	122

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	468	235	0	0	257	0
Stage 1	235	-	-	-	-	-
Stage 2	233	-	-	-	-	-
Critical Hdwy	6.54	6.26	-	-	4.18	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.354	-	-	2.272	-
Pot Cap-1 Maneuver	532	794	-	-	1273	-
Stage 1	776	-	-	-	-	-
Stage 2	779	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	507	794	-	-	1273	-
Mov Cap-2 Maneuver	507	-	-	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	742	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.96	0	2.47
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	674	558	-
HCM Lane V/C Ratio	-	-	0.233	0.043	-
HCM Ctrl Dly (s/v)	-	-	12	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	182	113	204	136	38
Future Vol, veh/h	31	182	113	204	136	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	2	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	3	0	4	8	12	5
Mvmt Flow	41	243	151	272	181	51

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	780	207	232	0	-	0
Stage 1	207	-	-	-	-	-
Stage 2	573	-	-	-	-	-
Critical Hdwy	6.83	6.4	4.14	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.527	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	332	829	1324	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	527	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	295	829	1324	-	-	-
Mov Cap-2 Maneuver	295	-	-	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	527	-	-	-	-	-

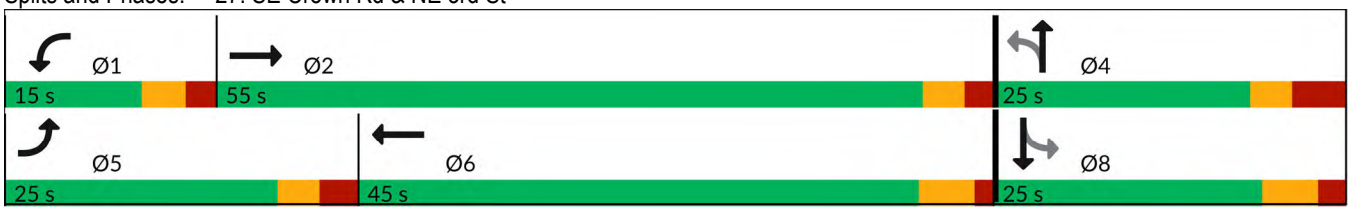
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	12.3	2.88	0
HCM LOS	B		

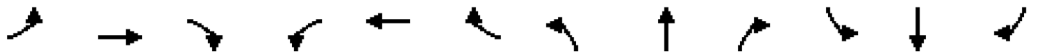
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1324	-	295	829	-	-
HCM Lane V/C Ratio	0.114	-	0.14	0.293	-	-
HCM Ctrl Dly (s/v)	8.1	-	19.2	11.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.5	1.2	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	183	231	9	345	6	4	200	2	247
Future Volume (vph)	183	231	9	345	6	4	200	2	247
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Free
Protected Phases	5	2	1	6		4		8	
Permitted Phases					4		8		Free
Detector Phase	5	2	1	6	4	4	8	8	
Switch Phase									
Minimum Initial (s)	2.0	8.0	5.0	8.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	7.6	23.0	10.2	20.3	32.8	32.8	35.0	35.0	
Total Split (s)	25.0	55.0	15.0	45.0	25.0	25.0	25.0	25.0	
Total Split (%)	26.3%	57.9%	15.8%	47.4%	26.3%	26.3%	26.3%	26.3%	
Yellow Time (s)	3.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.6	2.0	2.2	1.3	3.8	3.8	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	
Total Lost Time (s)	5.6	5.0	5.2	5.3		6.8		6.0	
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	
Act Effct Green (s)	11.9	28.8	5.4	12.6		13.9		14.8	56.8
Actuated g/C Ratio	0.21	0.51	0.10	0.22		0.24		0.26	1.00
v/c Ratio	0.61	0.15	0.06	0.62		0.03		0.62	0.17
Control Delay (s/veh)	30.2	9.1	29.6	23.3		18.8		28.8	0.2
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay (s/veh)	30.2	9.1	29.6	23.3		18.8		28.8	0.2
LOS	C	A	C	C		B		C	A
Approach Delay (s/veh)		18.4		23.4		18.8		13.1	
Approach LOS		B		C		B		B	

Intersection Summary	
Cycle Length: 95	
Actuated Cycle Length: 56.8	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay (s/veh): 18.3	Intersection LOS: B
Intersection Capacity Utilization 54.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: SE Crown Rd & NE 3rd St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	231	2	9	345	79	6	4	0	200	2	247
Future Volume (veh/h)	183	231	2	9	345	79	6	4	0	200	2	247
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1743	1788	1952	1979	1934	1904	1952	1952	1952	1995	2058	2011
Adj Flow Rate, veh/h	201	254	2	10	379	87	7	4	0	220	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	9	6	0	0	3	5	0	0	0	4	0	3
Cap, veh/h	255	1245	10	25	624	142	331	159		472	3	
Arrive On Green	0.15	0.36	0.36	0.01	0.21	0.21	0.19	0.19	0.00	0.19	0.19	0.00
Sat Flow, veh/h	1660	3454	27	1884	2972	675	972	851	1654	1551	14	1704
Grp Volume(v), veh/h	201	125	131	10	233	233	11	0	0	222	0	0
Grp Sat Flow(s),veh/h/ln	1660	1698	1783	1884	1837	1810	1823	0	1654	1565	0	1704
Q Serve(g_s), s	4.6	2.0	2.0	0.2	4.5	4.6	0.0	0.0	0.0	5.1	0.0	0.0
Cycle Q Clear(g_c), s	4.6	2.0	2.0	0.2	4.5	4.6	0.2	0.0	0.0	5.3	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.37	0.64		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	255	612	643	25	385	380	490	0		474	0	
V/C Ratio(X)	0.79	0.20	0.20	0.40	0.60	0.61	0.02	0.00		0.47	0.00	
Avail Cap(c_a), veh/h	818	2157	2264	469	1853	1826	936	0		935	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.0	8.7	8.7	19.3	14.1	14.1	13.1	0.0	0.0	15.1	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.1	0.1	3.9	0.6	0.6	0.0	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.5	0.5	0.1	1.5	1.5	0.1	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.1	8.7	8.7	23.2	14.6	14.7	13.1	0.0	0.0	15.4	0.0	0.0
LnGrp LOS	B	A	A	C	B	B	B			B		
Approach Vol, veh/h		457			476			11			222	
Approach Delay, s/veh		12.9			14.9			13.1			15.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	19.5		14.2	11.6	13.6		14.2				
Change Period (Y+Rc), s	5.2	* 5.3		6.8	5.6	5.3		* 6.8				
Max Green Setting (Gmax), s	9.8	* 50		18.2	19.4	39.7		* 19				
Max Q Clear Time (g_c+I1), s	2.2	4.0		2.2	6.6	6.6		7.3				
Green Ext Time (p_c), s	0.0	0.9		0.0	0.2	1.7		0.6				

Intersection Summary	
HCM 7th Control Delay, s/veh	14.2
HCM 7th LOS	B

Notes

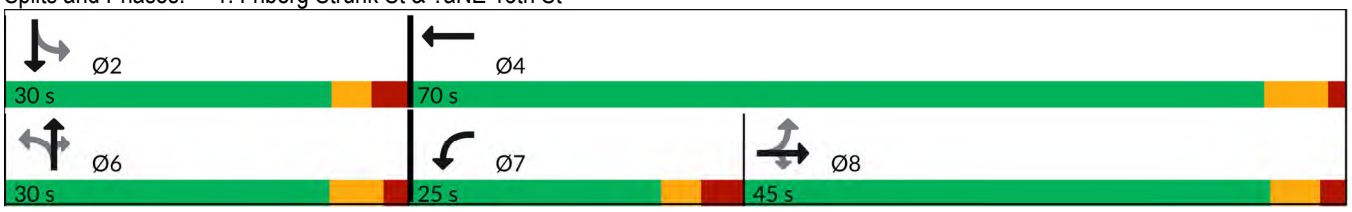
User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	1	271	76	161	303	118	8	273	1	5
Future Volume (vph)	1	271	76	161	303	118	8	273	1	5
Turn Type	Perm	NA	Perm	Prot	NA	Perm	NA	Perm	Perm	NA
Protected Phases		8		7	4		6			2
Permitted Phases	8		8			6		6	2	
Detector Phase	8	8	8	7	4	6	6	6	2	2
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.6	23.6	23.6	11.0	24.1	23.8	23.8	23.8	25.6	25.6
Total Split (s)	45.0	45.0	45.0	25.0	70.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	45.0%	45.0%	45.0%	25.0%	70.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.6	3.6	3.6	3.0	4.7	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	3.0	1.4	1.8	1.8	1.8	2.6	2.6
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)		5.6	5.6	6.0	6.1		5.8	5.8		5.6
Lead/Lag	Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	Min	Min	Min	None	Min	None	None	None	None	None
Act Effct Green (s)		14.4	14.4	10.5	30.8		10.9	10.9		11.1
Actuated g/C Ratio		0.27	0.27	0.19	0.57		0.20	0.20		0.20
v/c Ratio		0.63	0.17	0.52	0.33		0.54	0.54		0.03
Control Delay (s/veh)		25.5	4.7	28.1	7.5		30.2	7.4		17.9
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay (s/veh)		25.5	4.7	28.1	7.5		30.2	7.4		17.9
LOS		C	A	C	A		C	A		B
Approach Delay (s/veh)		21.0			14.6		14.6			17.9
Approach LOS		C			B		B			B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 54.3	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay (s/veh): 16.4	Intersection LOS: B
Intersection Capacity Utilization 58.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Friberg Strunk St & ?áNE 13th St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	271	76	161	303	3	118	8	273	1	5	3
Future Volume (veh/h)	1	271	76	161	303	3	118	8	273	1	5	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	0.96	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	401	1885	1856	1885	1841	1900	1781	1900	1900	1900	1900	1411
Adj Flow Rate, veh/h	1	291	82	173	326	3	127	9	294	1	5	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	100	1	3	1	4	0	3	0	0	0	0	33
Cap, veh/h	85	411	343	226	883	8	479	29	380	106	263	138
Arrive On Green	0.22	0.22	0.22	0.13	0.48	0.48	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	2	1882	1572	1795	1821	17	1339	122	1610	53	1117	585
Grp Volume(v), veh/h	292	0	82	173	0	329	136	0	294	9	0	0
Grp Sat Flow(s),veh/h/ln	1884	0	1572	1795	0	1838	1461	0	1610	1755	0	0
Q Serve(g_s), s	0.0	0.0	1.8	4.0	0.0	4.8	3.1	0.0	7.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.1	0.0	1.8	4.0	0.0	4.8	3.3	0.0	7.3	0.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.01	0.93		1.00	0.11		0.33
Lane Grp Cap(c), veh/h	496	0	343	226	0	891	508	0	380	508	0	0
V/C Ratio(X)	0.59	0.00	0.24	0.77	0.00	0.37	0.27	0.00	0.77	0.02	0.00	0.00
Avail Cap(c_a), veh/h	1825	0	1454	801	0	2757	991	0	915	1069	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.4	0.0	13.7	18.0	0.0	6.9	13.7	0.0	15.2	12.5	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.1	2.1	0.0	0.1	0.1	0.0	1.3	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.5	1.5	0.0	1.2	0.9	0.0	2.3	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.8	0.0	13.9	20.1	0.0	7.0	13.8	0.0	16.5	12.5	0.0	0.0
LnGrp LOS	B		B	C		A	B		B	B		
Approach Vol, veh/h		374			502			430			9	
Approach Delay, s/veh		15.4			11.5			15.6			12.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	4	6	7	8
Phs Duration (G+Y+Rc), s	15.8	26.7	15.8	11.4	15.4
Change Period (Y+Rc), s	* 5.8	6.1	5.8	6.0	* 6.1
Max Green Setting (Gmax), s	* 24	63.9	24.2	19.0	* 39
Max Q Clear Time (g_c+I1), s	2.2	6.8	9.3	6.0	8.1
Green Ext Time (p_c), s	0.0	1.3	0.8	0.2	1.2

Intersection Summary	
HCM 7th Control Delay, s/veh	14.0
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	3.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	511	36	71	403	65	137
Future Vol, veh/h	511	36	71	403	65	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	55	-	105	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	4	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	6	1	2	6	4
Mvmt Flow	527	37	73	415	67	141

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	564	0	1089	527
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	562	-
Critical Hdwy	-	-	4.11	-	6.46	6.24
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.209	-	3.554	3.336
Pot Cap-1 Maneuver	-	-	1013	-	234	547
Stage 1	-	-	-	-	584	-
Stage 2	-	-	-	-	563	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1013	-	217	547
Mov Cap-2 Maneuver	-	-	-	-	217	-
Stage 1	-	-	-	-	584	-
Stage 2	-	-	-	-	522	-

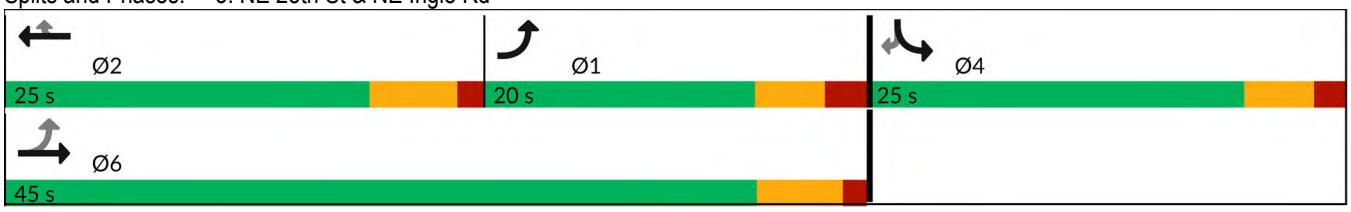
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.32	18.65
HCM LOS			C

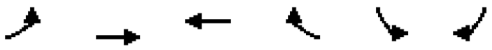
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	217	547	-	-	1013	-
HCM Lane V/C Ratio	0.308	0.258	-	-	0.072	-
HCM Ctrl Dly (s/v)	28.8	13.9	-	-	8.8	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	1.3	1	-	-	0.2	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	269	349	224	71	101	223
Future Volume (vph)	269	349	224	71	101	223
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	10.8	15.7	24.9	24.9	10.3	10.3
Total Split (s)	20.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	28.6%	64.3%	35.7%	35.7%	35.7%	35.7%
Yellow Time (s)	3.6	4.5	4.5	4.5	3.6	3.6
All-Red Time (s)	2.2	1.2	1.4	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.7	5.9	5.9	5.3	5.3
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effct Green (s)	22.0	22.1	11.0	11.0	7.2	7.2
Actuated g/C Ratio	0.54	0.55	0.27	0.27	0.18	0.18
v/c Ratio	0.42	0.37	0.49	0.17	0.36	0.51
Control Delay (s/veh)	8.7	6.9	16.6	5.0	18.5	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.7	6.9	16.6	5.0	18.5	7.3
LOS	A	A	B	A	B	A
Approach Delay (s/veh)		7.7	13.8		10.8	
Approach LOS		A	B		B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 40.4	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay (s/veh): 10.0	Intersection LOS: A
Intersection Capacity Utilization 46.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: NE 28th St & NE Ingle Rd





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	269	349	224	71	101	223
Future Volume (veh/h)	269	349	224	71	101	223
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1885	1856	1841	1870	1900
Adj Flow Rate, veh/h	283	367	236	75	106	235
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	3	4	2	0
Cap, veh/h	496	987	470	395	347	314
Arrive On Green	0.12	0.52	0.25	0.25	0.20	0.20
Sat Flow, veh/h	1767	1885	1856	1560	1781	1610
Grp Volume(v), veh/h	283	367	236	75	106	235
Grp Sat Flow(s),veh/h/ln	1767	1885	1856	1560	1781	1610
Q Serve(g_s), s	0.0	4.5	4.3	1.5	2.0	5.4
Cycle Q Clear(g_c), s	0.0	4.5	4.3	1.5	2.0	5.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	496	987	470	395	347	314
V/C Ratio(X)	0.57	0.37	0.50	0.19	0.31	0.75
Avail Cap(c_a), veh/h	918	1877	898	755	889	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.6	5.6	12.6	11.6	13.6	15.0
Incr Delay (d2), s/veh	0.4	0.1	0.3	0.1	0.2	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.9	1.3	0.4	0.7	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	15.0	5.6	12.9	11.6	13.8	16.3
LnGrp LOS	B	A	B	B	B	B
Approach Vol, veh/h		650	311		341	
Approach Delay, s/veh		9.7	12.6		15.5	
Approach LOS		A	B		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.6	15.9		13.0		26.5
Change Period (Y+Rc), s	5.8	5.9		5.3		* 5.8
Max Green Setting (Gmax), s	14.2	19.1		19.7		* 39
Max Q Clear Time (g_c+I1), s	2.0	6.3		7.4		6.5
Green Ext Time (p_c), s	0.3	0.7		0.5		1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	11.9
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	302	73	6	157	0	60	0	6	1	1	3
Future Vol, veh/h	5	302	73	6	157	0	60	0	6	1	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	1	0	0	3	0	3	0	0	100	0	0
Mvmt Flow	5	321	78	6	167	0	64	0	6	1	1	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	167	0	0	399	0	0	551	551	360	512	589	167
Stage 1	-	-	-	-	-	-	371	371	-	180	180	-
Stage 2	-	-	-	-	-	-	180	180	-	332	410	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.13	6.5	6.2	8.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	7.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	7.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.527	4	3.3	4.4	4	3.3
Pot Cap-1 Maneuver	1423	-	-	1171	-	-	443	445	689	348	423	882
Stage 1	-	-	-	-	-	-	647	623	-	639	754	-
Stage 2	-	-	-	-	-	-	819	754	-	517	599	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1423	-	-	1171	-	-	436	440	689	341	419	882
Mov Cap-2 Maneuver	-	-	-	-	-	-	436	440	-	341	419	-
Stage 1	-	-	-	-	-	-	644	620	-	635	750	-
Stage 2	-	-	-	-	-	-	810	750	-	510	596	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.1	0.3	14.45	11.34
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	451	23	-	-	66	-	-	573
HCM Lane V/C Ratio	0.156	0.004	-	-	0.005	-	-	0.009
HCM Ctrl Dly (s/v)	14.4	7.5	0	-	8.1	0	-	11.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	74	231	0	0	125	101	0	0	0	128	0	40
Future Vol, veh/h	74	231	0	0	125	101	0	0	0	128	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	1	0	0	2	6	0	0	0	3	0	0
Mvmt Flow	82	257	0	0	139	112	0	0	0	142	0	44

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	251	0	0	257	0	0	560	672	257	616	616	195
Stage 1	-	-	-	-	-	-	421	421	-	195	195	-
Stage 2	-	-	-	-	-	-	139	251	-	421	421	-
Critical Hdwy	4.13	-	-	4.1	-	-	7.1	6.5	6.2	7.13	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.13	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.13	5.5	-
Follow-up Hdwy	2.227	-	-	2.2	-	-	3.5	4	3.3	3.527	4	3.3
Pot Cap-1 Maneuver	1308	-	-	1320	-	-	442	380	787	401	409	851
Stage 1	-	-	-	-	-	-	614	592	-	804	743	-
Stage 2	-	-	-	-	-	-	869	703	-	608	592	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1308	-	-	1320	-	-	388	352	787	372	379	851
Mov Cap-2 Maneuver	-	-	-	-	-	-	388	352	-	372	379	-
Stage 1	-	-	-	-	-	-	569	549	-	804	743	-
Stage 2	-	-	-	-	-	-	824	703	-	564	549	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.93	0	0	19.67
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	437	-	-	1320	-	-	429
HCM Lane V/C Ratio	-	0.063	-	-	-	-	-	0.435
HCM Ctrl Dly (s/v)	0	7.9	0	-	0	-	-	19.7
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.2	-	-	0	-	-	2.2

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	76	3	4	2	2	79
Future Vol, veh/h	76	3	4	2	2	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-4	-4	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	5	0	0	0	0	8
Mvmt Flow	94	4	5	2	2	98

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	64	51	100	0	-	0
Stage 1	51	-	-	-	-	-
Stage 2	12	-	-	-	-	-
Critical Hdwy	6.85	6.4	4.1	-	-	-
Critical Hdwy Stg 1	5.85	-	-	-	-	-
Critical Hdwy Stg 2	5.85	-	-	-	-	-
Follow-up Hdwy	3.545	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	928	1020	1505	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	925	1020	1505	-	-	-
Mov Cap-2 Maneuver	925	-	-	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	1001	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.33	4.93	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	928	-	-
HCM Lane V/C Ratio	0.003	-	0.105	-	-
HCM Ctrl Dly (s/v)	7.4	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	20	198	29	19	138
Future Vol, veh/h	50	20	198	29	19	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	140	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	2	-	-	-2
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	1	0	0	2
Mvmt Flow	56	22	222	33	21	155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	437	239	0	0	255	0
Stage 1	239	-	-	-	-	-
Stage 2	198	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	581	805	-	-	1322	-
Stage 1	806	-	-	-	-	-
Stage 2	840	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	572	805	-	-	1322	-
Mov Cap-2 Maneuver	572	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	827	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.61	0	0.94
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	623	1322	-
HCM Lane V/C Ratio	-	-	0.126	0.016	-
HCM Ctrl Dly (s/v)	-	-	11.6	7.8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	104	80	211	180	3
Future Vol, veh/h	9	104	80	211	180	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	110	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	4	-4	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	2	0	1	0
Mvmt Flow	10	113	87	229	196	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	601	197	199	0	-	0
Stage 1	197	-	-	-	-	-
Stage 2	403	-	-	-	-	-
Critical Hdwy	6.8	6.44	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.218	-	-	-
Pot Cap-1 Maneuver	437	830	1373	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	649	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	409	830	1373	-	-	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	649	-	-	-	-	-

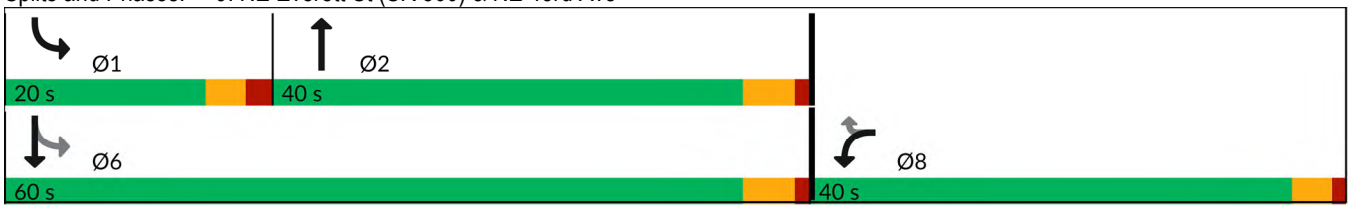
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.59	2.14	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1373	-	767	-	-
HCM Lane V/C Ratio	0.063	-	0.16	-	-
HCM Ctrl Dly (s/v)	7.8	-	10.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	224	19	269	298	22	266
Future Volume (vph)	224	19	269	298	22	266
Turn Type	Prot	Perm	NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		Free	6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	23.0	23.0	30.0		10.0	50.0
Total Split (s)	40.0	40.0	40.0		20.0	60.0
Total Split (%)	40.0%	40.0%	40.0%		20.0%	60.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0
All-Red Time (s)	1.0	1.0	1.0		2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	Min		None	Min
Act Effct Green (s)	12.2	12.2	17.7	41.0	19.3	19.3
Actuated g/C Ratio	0.30	0.30	0.43	1.00	0.47	0.47
v/c Ratio	0.46	0.04	0.37	0.21	0.04	0.33
Control Delay (s/veh)	15.6	7.0	11.6	0.3	6.7	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.6	7.0	11.6	0.3	6.7	8.5
LOS	B	A	B	A	A	A
Approach Delay (s/veh)	14.9		5.7			8.4
Approach LOS	B		A			A

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 41	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.46	
Intersection Signal Delay (s/veh): 8.4	Intersection LOS: A
Intersection Capacity Utilization 38.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: NE Everett St (SR 500) & NE 43rd Ave





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	224	19	269	298	22	266
Future Volume (veh/h)	224	19	269	298	22	266
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1979	1979	1791	1806	2057	2012
Adj Flow Rate, veh/h	238	-1	286	0	23	283
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	1	0	0	3
Cap, veh/h	340	303	565		516	1027
Arrive On Green	0.18	0.00	0.32	0.00	0.02	0.51
Sat Flow, veh/h	1884	1677	1791	1530	1959	2012
Grp Volume(v), veh/h	238	-1	286	0	23	283
Grp Sat Flow(s),veh/h/ln	1884	1677	1791	1530	1959	2012
Q Serve(g_s), s	3.5	0.0	3.8	0.0	0.2	2.3
Cycle Q Clear(g_c), s	3.5	0.0	3.8	0.0	0.2	2.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	340	303	565		516	1027
V/C Ratio(X)	0.70	0.00	0.51		0.04	0.28
Avail Cap(c_a), veh/h	2328	2071	2151		1479	3798
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	11.2	0.0	8.1	0.0	5.8	4.1
Incr Delay (d2), s/veh	2.6	0.0	1.5	0.0	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.1	0.0	0.0	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	13.8	0.0	9.6	0.0	5.8	4.2
LnGrp LOS	B		A		A	A
Approach Vol, veh/h	237		286			306
Approach Delay, s/veh	13.9		9.6			4.4
Approach LOS	B		A			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.7	14.2			19.9	9.3
Change Period (Y+Rc), s	5.0	5.0			5.0	4.0
Max Green Setting (Gmax), s	15.0	35.0			55.0	36.0
Max Q Clear Time (g_c+I1), s	2.2	5.8			4.3	5.5
Green Ext Time (p_c), s	0.0	3.4			2.3	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	8.9
HCM 7th LOS	A

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

MOVEMENT SUMMARY

Site 10 NE Everett St & NW Lake Rd_ExistingPM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett Street															
3	L2	All MCs	281	0.0	281	0.0	0.264	11.5	LOS B	1.6	39.6	0.53	0.66	0.53	32.0
8	T1	All MCs	359	1.0	359	1.0	0.295	4.9	LOS A	1.9	47.1	0.53	0.50	0.53	35.3
Approach			639	0.6	639	0.6	0.295	7.8	LOS A	1.9	47.1	0.53	0.57	0.53	33.7
North: NE Everett Street															
4	T1	All MCs	289	2.0	289	2.0	0.234	4.9	LOS A	1.4	35.9	0.48	0.48	0.48	35.3
14	R2	All MCs	265	0.0	265	0.0	0.208	4.9	LOS A	1.2	31.1	0.46	0.52	0.46	35.3
Approach			554	1.0	554	1.0	0.234	4.9	LOS A	1.4	35.9	0.47	0.50	0.47	35.3
West: NW Lake Road															
5	L2	All MCs	323	1.0	323	1.0	0.258	11.1	LOS B	1.6	39.8	0.49	0.64	0.49	32.0
12	R2	All MCs	371	0.0	371	0.0	0.292	5.0	LOS A	1.8	46.2	0.50	0.53	0.50	35.2
Approach			695	0.5	695	0.5	0.292	7.8	LOS A	1.8	46.2	0.49	0.58	0.49	33.6
All Vehicles			1888	0.7	1888	0.7	0.295	6.9	LOS A	1.9	47.1	0.50	0.55	0.50	34.1

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	18	56	400	425	43
Future Vol, veh/h	50	18	56	400	425	43
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	4	0	0	2
Mvmt Flow	53	19	59	421	447	45

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1015	476	499	0	-	0
Stage 1	476	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.14	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	266	593	1055	-	-	-
Stage 1	629	-	-	-	-	-
Stage 2	589	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	249	590	1050	-	-	-
Mov Cap-2 Maneuver	382	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	586	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	15.29	1.06	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1050	-	421	-	-
HCM Lane V/C Ratio	0.056	-	0.17	-	-
HCM Ctrl Dly (s/v)	8.6	-	15.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	10	33	7	8	28	12	383	3	40	325	78
Future Vol, veh/h	45	10	33	7	8	28	12	383	3	40	325	78
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	10	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	48	11	35	7	9	30	13	407	3	43	346	83

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	912	909	387	871	948	411	429	0	0	411	0	0
Stage 1	472	472	-	435	435	-	-	-	-	-	-	-
Stage 2	439	436	-	436	514	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.6	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.6	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.6	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.09	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	257	267	665	274	263	645	1142	-	-	1159	-	-
Stage 1	576	546	-	604	584	-	-	-	-	-	-	-
Stage 2	600	566	-	603	539	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	225	254	665	237	250	644	1142	-	-	1159	-	-
Mov Cap-2 Maneuver	225	254	-	237	250	-	-	-	-	-	-	-
Stage 1	555	525	-	597	578	-	-	-	-	-	-	-
Stage 2	557	560	-	539	519	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	21.95	14.89	0.25	0.74
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1142	-	-	305	410	1159	-	-
HCM Lane V/C Ratio	0.011	-	-	0.307	0.112	0.037	-	-
HCM Ctrl Dly (s/v)	8.2	-	-	22	14.9	8.2	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	14.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	31	0	0	24	301	0	1	0	325	0	44
Future Vol, veh/h	73	31	0	0	24	301	0	1	0	325	0	44
Conflicting Peds, #/hr	3	0	2	2	0	3	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	3	0	0	0	2	0	0	0	1	0	0
Mvmt Flow	79	34	0	0	26	327	0	1	0	353	0	48

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	748	733	26	-	756	5	48	0	0	2	0	0
Stage 1	730	730	-	-	2	-	-	-	-	-	-	-
Stage 2	17	2	-	-	754	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.53	6.2	-	6.5	6.22	4.1	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.53	-	-	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.53	-	-	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.027	3.3	-	4	3.318	2.2	-	-	2.209	-	-
Pot Cap-1 Maneuver	331	347	1056	0	340	1078	1572	-	-	1627	-	-
Stage 1	417	426	-	0	898	-	-	-	-	-	-	-
Stage 2	1007	892	-	0	420	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	164	269	1054	-	263	1074	1572	-	-	1625	-	-
Mov Cap-2 Maneuver	164	269	-	-	263	-	-	-	-	-	-	-
Stage 1	323	330	-	-	897	-	-	-	-	-	-	-
Stage 2	678	891	-	-	326	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	50.65	11.87	0	6.9
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1572	-	-	186	875	1321	-	-
HCM Lane V/C Ratio	-	-	-	0.609	0.404	0.217	-	-
HCM Ctrl Dly (s/v)	0	-	-	50.7	11.9	7.8	0	-
HCM Lane LOS	A	-	-	F	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	3.4	2	0.8	-	-

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	49	117	9	4	105	6	30	113	6	2	108	55
Future Vol, veh/h	49	117	9	4	105	6	30	113	6	2	108	55
Conflicting Peds, #/hr	1	0	3	3	0	1	0	0	9	9	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	4	-	-	-6	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	2	0	0	2	0	0	1	0	0	0	0
Mvmt Flow	56	133	10	5	119	7	34	128	7	2	123	63

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	416	371	157	406	399	142	185	0	0	144	0	0
Stage 1	159	159	-	209	209	-	-	-	-	-	-	-
Stage 2	257	212	-	197	190	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.1	6.52	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.5	4.018	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	551	559	894	559	539	911	1402	-	-	1451	-	-
Stage 1	848	767	-	798	729	-	-	-	-	-	-	-
Stage 2	752	727	-	810	743	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	411	539	891	403	520	903	1402	-	-	1438	-	-
Mov Cap-2 Maneuver	411	539	-	403	520	-	-	-	-	-	-	-
Stage 1	847	765	-	770	704	-	-	-	-	-	-	-
Stage 2	603	701	-	658	742	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	16.68	14.09	1.54	0.09
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	359	-	-	505	526	20	-	-
HCM Lane V/C Ratio	0.024	-	-	0.394	0.249	0.002	-	-
HCM Ctrl Dly (s/v)	7.6	0	-	16.7	14.1	7.5	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.9	1	0	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	165	686	568	28	8	111
Future Vol, veh/h	165	686	568	28	8	111
Conflicting Peds, #/hr	3	0	0	3	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-8	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	2	0	0	1
Mvmt Flow	174	722	598	29	8	117

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	630	0	-	0	1324	317
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	708	-
Critical Hdwy	4.12	-	-	-	5.2	6.12
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	2.21	-	-	-	3.5	3.31
Pot Cap-1 Maneuver	955	-	-	-	270	732
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	623	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	952	-	-	-	207	730
Mov Cap-2 Maneuver	-	-	-	-	207	-
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	621	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	3.06	0	11.69
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	698	-	-	-	207	730
HCM Lane V/C Ratio	0.182	-	-	-	0.041	0.16
HCM Ctrl Dly (s/v)	9.6	1.5	-	-	23.1	10.9
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.7	-	-	-	0.1	0.6

MOVEMENT SUMMARY

Site 16 [NW Norwood St & NW 6th Ave_ExistingPM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing AM
Site Category: (None)
Roundabout
Sensitivity Analysis (Critical Gap & Follow-up Headway): Results for Parameter Scale = 120.0 %

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NW 6th Avenue															
3	L2	All MCs	60	5.0	60	5.0	0.419	22.5	LOS C	2.6	67.3	0.93	0.90	1.07	29.1
8	T1	All MCs	6	17.0	6	17.0	0.419	17.8	LOS B	2.6	67.3	0.93	0.90	1.07	29.5
18	R2	All MCs	68	1.0	68	1.0	0.419	15.8	LOS B	2.6	67.3	0.93	0.90	1.07	29.5
Approach			135	3.5	135	3.5	0.419	18.9	LOS B	2.6	67.3	0.93	0.90	1.07	29.3
East: NW 6th Avenue															
1	L2	All MCs	71	1.0	71	1.0	0.701	12.2	LOS B	7.1	182.0	0.63	0.49	0.63	33.8
6	T1	All MCs	587	3.0	587	3.0	0.701	5.9	LOS A	7.1	182.0	0.63	0.49	0.63	34.5
16	R2	All MCs	15	7.0	15	7.0	0.701	6.2	LOS A	7.1	182.0	0.63	0.49	0.63	34.1
Approach			673	2.9	673	2.9	0.701	6.6	LOS A	7.1	182.0	0.63	0.49	0.63	34.4
North: NW Norwood Street															
7	L2	All MCs	14	7.0	14	7.0	0.120	17.0	LOS B	0.6	14.7	0.72	0.74	0.72	31.7
4	T1	All MCs	8	0.0	8	0.0	0.120	10.1	LOS B	0.6	14.7	0.72	0.74	0.72	32.6
14	R2	All MCs	35	3.0	35	3.0	0.120	10.5	LOS B	0.6	14.7	0.72	0.74	0.72	32.2
Approach			57	3.6	57	3.6	0.120	12.1	LOS B	0.6	14.7	0.72	0.74	0.72	32.2
West: NW 6th Avenue															
5	L2	All MCs	46	0.0	46	0.0	0.959	20.9	LOS E	31.4	791.3	1.00	0.85	1.16	30.7
2	T1	All MCs	834	1.0	834	1.0	0.959	14.7	LOS E	31.4	791.3	1.00	0.85	1.16	31.2
12	R2	All MCs	80	1.0	80	1.0	0.959	14.9	LOS E	31.4	791.3	1.00	0.85	1.16	31.0
Approach			959	1.0	959	1.0	0.959	15.0	LOS B	31.4	791.3	1.00	0.85	1.16	31.2
All Vehicles			1824	1.9	1824	1.9	0.959	12.1	LOS B	31.4	791.3	0.85	0.72	0.94	32.2

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	601	3	78	436	10	60
Future Vol, veh/h	601	3	78	436	10	60
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	105	-	85	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-6	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	639	3	83	464	11	64

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	643	0	1271	642
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	630	-
Critical Hdwy	-	-	4.1	-	5.2	5.6
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	952	-	286	532
Stage 1	-	-	-	-	654	-
Stage 2	-	-	-	-	660	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	952	-	261	531
Mov Cap-2 Maneuver	-	-	-	-	261	-
Stage 1	-	-	-	-	654	-
Stage 2	-	-	-	-	602	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.39	13.66
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	261	531	-	-	952	-
HCM Lane V/C Ratio	0.041	0.12	-	-	0.087	-
HCM Ctrl Dly (s/v)	19.4	12.7	-	-	9.1	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.4	-	-	0.3	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	511	145	95	340	72	100
Future Vol, veh/h	511	145	95	340	72	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	3	1
Mvmt Flow	538	153	100	358	76	105

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	691	0	1172	614
Stage 1	-	-	-	-	614	-
Stage 2	-	-	-	-	558	-
Critical Hdwy	-	-	4.11	-	6.43	6.21
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.209	-	3.527	3.309
Pot Cap-1 Maneuver	-	-	909	-	212	494
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	571	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	909	-	188	494
Mov Cap-2 Maneuver	-	-	-	-	188	-
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	508	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.06	23.54
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	188	494	-	-	909	-
HCM Lane V/C Ratio	0.403	0.213	-	-	0.11	-
HCM Ctrl Dly (s/v)	36.4	14.3	-	-	9.5	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	1.8	0.8	-	-	0.4	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	527	6	70	337	6	3	5	115	10	7	13
Future Vol, veh/h	7	527	6	70	337	6	3	5	115	10	7	13
Conflicting Peds, #/hr	0	0	3	3	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	130	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	1	0	0	0	0	0	0	8
Mvmt Flow	8	573	7	76	366	7	3	5	125	11	8	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	373	0	0	582	0	0	1118	1119	579	1113	1119	371
Stage 1	-	-	-	-	-	-	594	594	-	522	522	-
Stage 2	-	-	-	-	-	-	523	525	-	591	598	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.372
Pot Cap-1 Maneuver	1197	-	-	1002	-	-	186	208	519	188	208	662
Stage 1	-	-	-	-	-	-	495	496	-	542	534	-
Stage 2	-	-	-	-	-	-	541	533	-	497	494	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1197	-	-	999	-	-	160	191	517	127	191	661
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	191	-	127	191	-
Stage 1	-	-	-	-	-	-	490	491	-	500	494	-
Stage 2	-	-	-	-	-	-	481	492	-	370	490	-

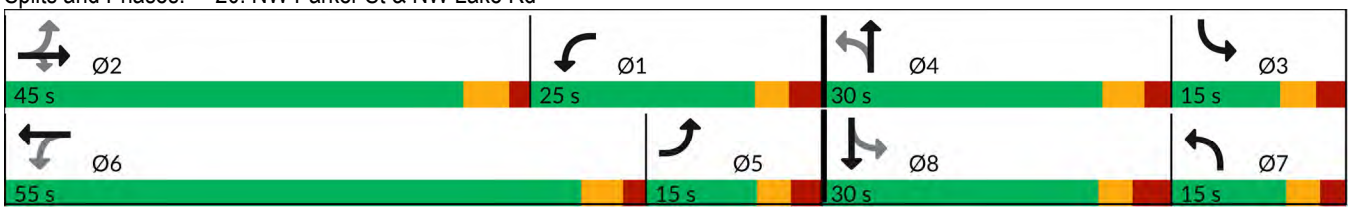
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.1	1.51	16	23.96
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	460	1197	-	-	999	-	-	222
HCM Lane V/C Ratio	0.291	0.006	-	-	0.076	-	-	0.147
HCM Ctrl Dly (s/v)	16	8	-	-	8.9	-	-	24
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.2	-	-	0.5

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	19	415	136	43	295	181	120	43	90
Future Volume (vph)	19	415	136	43	295	181	120	43	90
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		1	6	7	4	3	8
Permitted Phases	2		2	6		4		8	
Detector Phase	5	2	2	1	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	26.7	26.7	10.7	20.5	10.2	29.2	10.6	33.3
Total Split (s)	15.0	45.0	45.0	25.0	55.0	15.0	30.0	15.0	30.0
Total Split (%)	13.0%	39.1%	39.1%	21.7%	47.8%	13.0%	26.1%	13.0%	26.1%
Yellow Time (s)	3.0	4.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0
All-Red Time (s)	2.5	1.7	1.7	2.7	1.9	2.2	2.3	2.6	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.7	5.7	5.7	5.5	5.2	5.9	5.6	6.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)	26.5	22.4	22.4	28.1	24.1	22.5	16.5	14.7	9.7
Actuated g/C Ratio	0.42	0.35	0.35	0.44	0.38	0.36	0.26	0.23	0.15
v/c Ratio	0.04	0.68	0.22	0.13	0.26	0.37	0.50	0.15	0.41
Control Delay (s/veh)	14.6	25.8	2.3	14.0	17.7	19.9	25.8	18.7	33.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.6	25.8	2.3	14.0	17.7	19.9	25.8	18.7	33.3
LOS	B	C	A	B	B	B	C	B	C
Approach Delay (s/veh)		19.9			17.3		23.1		29.2
Approach LOS		B			B		C		C

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 63.2	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay (s/veh): 21.0	Intersection LOS: C
Intersection Capacity Utilization 62.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 20: NW Parker St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	415	136	43	295	25	181	120	98	43	90	17
Future Volume (veh/h)	19	415	136	43	295	25	181	120	98	43	90	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1885	1900	1885	1885	1900	1900	1885	1900
Adj Flow Rate, veh/h	21	456	79	47	324	9	199	132	76	47	99	17
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	1	0	1	0	1	1	0	0	1	0
Cap, veh/h	588	559	468	287	521	14	361	186	107	211	174	30
Arrive On Green	0.24	0.29	0.29	0.09	0.15	0.15	0.09	0.17	0.17	0.05	0.11	0.11
Sat Flow, veh/h	1810	1900	1592	1810	3559	99	1795	1121	645	1810	1565	269
Grp Volume(v), veh/h	21	456	79	47	163	170	199	0	208	47	0	116
Grp Sat Flow(s),veh/h/ln	1810	1900	1592	1810	1791	1867	1795	0	1766	1810	0	1834
Q Serve(g_s), s	0.0	12.6	2.1	0.0	4.8	4.8	0.0	0.0	6.3	0.0	0.0	3.4
Cycle Q Clear(g_c), s	0.0	12.6	2.1	0.0	4.8	4.8	0.0	0.0	6.3	0.0	0.0	3.4
Prop In Lane	1.00		1.00	1.00		0.05	1.00		0.37	1.00		0.15
Lane Grp Cap(c), veh/h	588	559	468	287	262	273	361	0	293	211	0	204
V/C Ratio(X)	0.04	0.82	0.17	0.16	0.62	0.62	0.55	0.00	0.71	0.22	0.00	0.57
Avail Cap(c_a), veh/h	588	1323	1108	746	1570	1637	504	0	754	429	0	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.6	18.5	14.8	23.5	22.6	22.6	22.7	0.0	22.3	25.7	0.0	23.8
Incr Delay (d2), s/veh	0.0	1.1	0.1	0.1	0.9	0.9	1.3	0.0	1.2	0.5	0.0	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.0	0.7	0.5	1.9	2.0	2.3	0.0	2.4	0.6	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.6	19.6	14.9	23.6	23.5	23.5	24.0	0.0	23.5	26.2	0.0	24.8
LnGrp LOS	B	B	B	C	C	C	C		C	C		C
Approach Vol, veh/h		556			380			407			163	
Approach Delay, s/veh		18.8			23.5			23.7			25.2	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	22.3	8.2	15.3	19.2	13.8	10.9	12.6
Change Period (Y+Rc), s	5.7	5.7	* 5.6	5.9	5.7	* 5.5	5.6	* 6.3
Max Green Setting (Gmax), s	19.3	39.3	* 9.4	24.1	9.5	* 50	9.8	* 24
Max Q Clear Time (g_c+I1), s	2.0	14.6	2.0	8.3	2.0	6.8	2.0	5.4
Green Ext Time (p_c), s	0.0	1.9	0.0	0.6	0.0	1.2	0.3	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	22.0
HCM 7th LOS	C

Notes

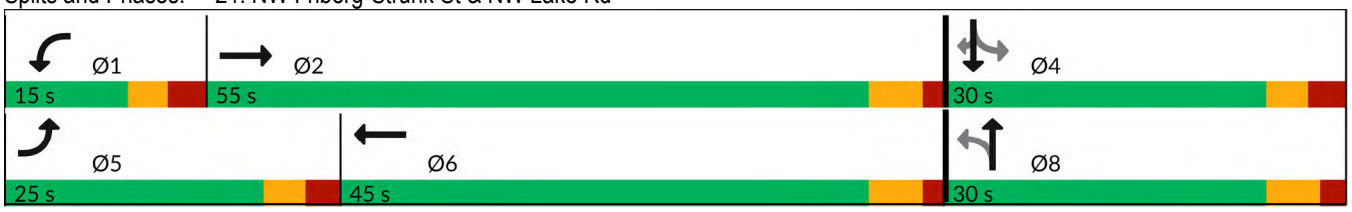
User approved pedestrian interval to be less than phase max green.

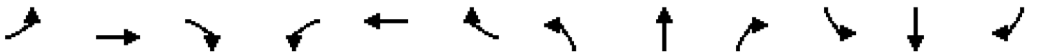
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	306	519	1	423	4	1	77	0	188
Future Volume (vph)	306	519	1	423	4	1	77	0	188
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2	1	6		8		4	
Permitted Phases					8		4		4
Detector Phase	5	2	1	6	8	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.6	23.5	10.8	26.6	34.0	34.0	33.9	33.9	33.9
Total Split (s)	25.0	55.0	15.0	45.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	25.0%	55.0%	15.0%	45.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.6	1.5	2.8	1.6	2.0	2.0	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.6	5.5	5.8	5.6		6.0		5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	None	None	None	None	None
Act Effct Green (s)	18.0	36.4	5.1	14.4		8.1		8.2	8.2
Actuated g/C Ratio	0.31	0.63	0.09	0.25		0.14		0.14	0.14
v/c Ratio	0.60	0.25	0.01	0.67		0.03		0.43	0.51
Control Delay (s/veh)	23.8	6.1	29.0	22.5		23.6		31.6	9.5
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay (s/veh)	23.8	6.1	29.0	22.5		23.6		31.6	9.5
LOS	C	A	C	C		C		C	A
Approach Delay (s/veh)		12.7		22.5		23.6		15.9	
Approach LOS		B		C		C		B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 58	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay (s/veh): 16.5	Intersection LOS: B
Intersection Capacity Utilization 53.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 21: NW Friberg-Strunk St & NW Lake Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	306	519	2	1	423	121	4	1	0	77	0	188
Future Volume (veh/h)	306	519	2	1	423	121	4	1	0	77	0	188
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1900	1900	1900	1885	1900	1900	1900	1900	1856	1900	1885
Adj Flow Rate, veh/h	333	564	2	1	460	132	4	1	0	84	0	204
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	0	0	0	1	0	0	0	0	3	0	1
Cap, veh/h	399	1732	6	4	694	198	273	55	0	415	0	283
Arrive On Green	0.22	0.47	0.47	0.00	0.25	0.25	0.18	0.18	0.00	0.18	0.00	0.18
Sat Flow, veh/h	1795	3689	13	1810	2746	782	799	308	0	1518	0	1592
Grp Volume(v), veh/h	333	276	290	1	299	293	5	0	0	84	0	204
Grp Sat Flow(s),veh/h/ln	1795	1805	1898	1810	1791	1737	1106	0	0	1518	0	1592
Q Serve(g_s), s	8.8	4.7	4.7	0.0	7.4	7.5	0.0	0.0	0.0	0.0	0.0	6.0
Cycle Q Clear(g_c), s	8.8	4.7	4.7	0.0	7.4	7.5	2.0	0.0	0.0	2.0	0.0	6.0
Prop In Lane	1.00		0.01	1.00		0.45	0.80		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	399	847	891	4	453	439	327	0	0	415	0	283
V/C Ratio(X)	0.84	0.33	0.33	0.27	0.66	0.67	0.02	0.00	0.00	0.20	0.00	0.72
Avail Cap(c_a), veh/h	704	1806	1898	336	1426	1383	724	0	0	859	0	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.4	8.2	8.2	24.7	16.6	16.6	16.8	0.0	0.0	17.5	0.0	19.2
Incr Delay (d2), s/veh	1.8	0.1	0.1	14.2	0.6	0.7	0.0	0.0	0.0	0.1	0.0	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	1.3	1.4	0.0	2.7	2.7	0.0	0.0	0.0	0.7	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	20.2	8.3	8.3	38.9	17.2	17.3	16.8	0.0	0.0	17.6	0.0	20.5
LnGrp LOS	C	A	A	D	B	B	B			B		C
Approach Vol, veh/h		899			593			5			288	
Approach Delay, s/veh		12.7			17.3			16.8			19.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	28.8		14.8	16.6	18.1		14.8				
Change Period (Y+Rc), s	5.8	* 5.6		* 6	5.6	5.6		6.0				
Max Green Setting (Gmax), s	9.2	* 50		* 24	19.4	39.4		24.0				
Max Q Clear Time (g_c+I1), s	2.0	6.7		8.0	10.8	9.5		4.0				
Green Ext Time (p_c), s	0.0	2.0		0.5	0.3	2.5		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh	15.4	
HCM 7th LOS	B	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	70	27	301	109	28	285
Future Vol, veh/h	70	27	301	109	28	285
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	175	0	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	2	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	7	2	0	0	1
Mvmt Flow	77	30	331	120	31	313

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	767	393	0	0	453	0
Stage 1	393	-	-	-	-	-
Stage 2	375	-	-	-	-	-
Critical Hdwy	6.01	6.07	-	-	4.1	-
Critical Hdwy Stg 1	5.01	-	-	-	-	-
Critical Hdwy Stg 2	5.01	-	-	-	-	-
Follow-up Hdwy	3.509	3.363	-	-	2.2	-
Pot Cap-1 Maneuver	405	660	-	-	1119	-
Stage 1	715	-	-	-	-	-
Stage 2	727	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	393	658	-	-	1117	-
Mov Cap-2 Maneuver	393	-	-	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	707	-	-	-	-	-

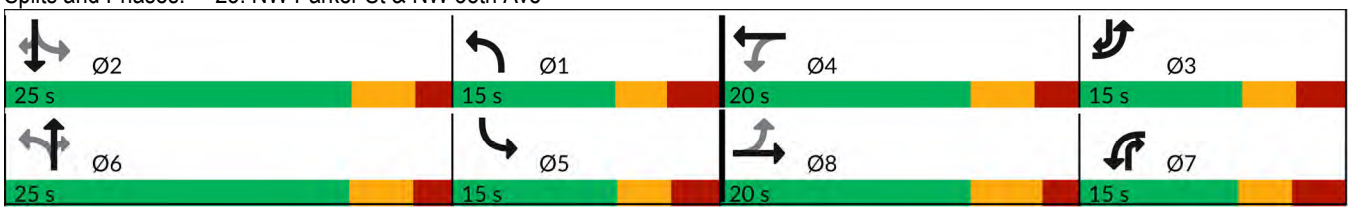
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	14.81	0	0.74
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	393	658	1117	-
HCM Lane V/C Ratio	-	-	0.196	0.045	0.028	-
HCM Ctrl Dly (s/v)	-	-	16.4	10.7	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.1	0.1	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	62	129	161	236	36	252	60	100	266	117
Future Volume (vph)	62	129	161	236	36	252	60	100	266	117
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	7	4	1	6	7	5	2	3
Permitted Phases	8		4		6		6	2		2
Detector Phase	3	8	7	4	1	6	7	5	2	3
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.8	24.0	11.0	23.0	10.9	20.0	11.0	10.7	20.0	10.8
Total Split (s)	15.0	20.0	15.0	20.0	15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	20.0%	26.7%	20.0%	26.7%	20.0%	33.3%	20.0%	20.0%	33.3%	20.0%
Yellow Time (s)	3.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0	3.6	3.0
All-Red Time (s)	2.8	2.0	3.0	2.4	2.9	2.1	3.0	2.7	2.0	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.0	6.0	6.0	5.9	5.7	6.0	5.7	5.6	5.8
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	None	Max	None
Act Effct Green (s)	13.9	9.8	20.5	14.4	24.7	19.8	37.4	27.2	23.9	32.2
Actuated g/C Ratio	0.22	0.16	0.33	0.23	0.39	0.32	0.60	0.43	0.38	0.51
v/c Ratio	0.22	0.59	0.34	0.86	0.08	0.45	0.06	0.21	0.37	0.14
Control Delay (s/veh)	16.6	32.0	17.8	47.2	11.8	22.5	0.3	13.3	18.4	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.6	32.0	17.8	47.2	11.8	22.5	0.3	13.3	18.4	2.6
LOS	B	C	B	D	B	C	A	B	B	A
Approach Delay (s/veh)		27.7		37.9		17.6			13.5	
Approach LOS		C		D		B			B	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 62.7	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay (s/veh): 24.4	Intersection LOS: C
Intersection Capacity Utilization 61.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 23: NW Parker St & NW 38th Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	129	35	161	236	114	36	252	60	100	266	117
Future Volume (veh/h)	62	129	35	161	236	114	36	252	60	100	266	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1900	1811	1885	1900	1900	1900	1900	1900	1885	1976	1900
Adj Flow Rate, veh/h	64	133	36	166	243	118	37	260	62	103	274	121
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	6	1	0	0	0	0	0	1	0	0
Cap, veh/h	248	181	49	408	252	123	418	548	719	429	573	587
Arrive On Green	0.07	0.13	0.13	0.16	0.21	0.21	0.07	0.29	0.29	0.07	0.29	0.29
Sat Flow, veh/h	1882	1437	389	1795	1206	586	1810	1900	1610	1795	1976	1610
Grp Volume(v), veh/h	64	0	169	166	0	361	37	260	62	103	274	121
Grp Sat Flow(s),veh/h/ln	1882	0	1826	1795	0	1791	1810	1900	1610	1795	1976	1610
Q Serve(g_s), s	0.0	0.0	6.0	0.7	0.0	13.4	0.0	7.5	0.0	0.0	7.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	6.0	0.7	0.0	13.4	0.0	7.5	0.0	0.0	7.6	0.0
Prop In Lane	1.00		0.21	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	0	230	408	0	375	418	548	719	429	573	587
V/C Ratio(X)	0.26	0.00	0.73	0.41	0.00	0.96	0.09	0.47	0.09	0.24	0.48	0.21
Avail Cap(c_a), veh/h	366	0	382	408	0	375	529	548	719	545	573	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	0.0	28.2	23.7	0.0	26.2	19.6	19.6	10.7	20.8	19.6	14.6
Incr Delay (d2), s/veh	0.2	0.0	1.7	0.2	0.0	36.5	0.0	2.9	0.2	0.1	2.8	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	2.5	2.1	0.0	9.1	0.4	3.5	0.5	1.2	3.7	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.8	0.0	29.9	23.9	0.0	62.7	19.6	22.5	10.9	20.9	22.4	15.4
LnGrp LOS	C		C	C		E	B	C	B	C	C	B
Approach Vol, veh/h		233			527			359			498	
Approach Delay, s/veh		29.6			50.5			20.2			20.4	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	25.0	11.0	20.0	10.9	25.0	16.6	14.4
Change Period (Y+Rc), s	5.9	5.6	6.0	* 6	5.9	* 5.7	6.0	6.0
Max Green Setting (Gmax), s	9.1	19.4	9.2	* 14	9.3	* 19	9.0	14.0
Max Q Clear Time (g_c+I1), s	2.0	9.6	2.0	15.4	2.0	9.5	2.7	8.0
Green Ext Time (p_c), s	0.0	0.9	0.0	0.0	0.1	0.7	0.1	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	31.5
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	97	43	117	76	9
Future Vol, veh/h	14	97	43	117	76	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	1	5	6	1	0
Mvmt Flow	18	121	54	146	95	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	354	101	106	0	-	0
Stage 1	101	-	-	-	-	-
Stage 2	254	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.245	-	-	-
Pot Cap-1 Maneuver	648	958	1466	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	793	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	622	958	1466	-	-	-
Mov Cap-2 Maneuver	622	-	-	-	-	-
Stage 1	891	-	-	-	-	-
Stage 2	793	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.75	2.03	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	484	-	896	-	-
HCM Lane V/C Ratio	0.037	-	0.155	-	-
HCM Ctrl Dly (s/v)	7.5	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	46	50	129	36	37	127
Future Vol, veh/h	46	50	129	36	37	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	4	6	4	14	5	4
Mvmt Flow	52	57	147	41	42	144

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	395	167	0	0	188	0
Stage 1	167	-	-	-	-	-
Stage 2	228	-	-	-	-	-
Critical Hdwy	6.44	6.26	-	-	4.15	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.354	-	-	2.245	-
Pot Cap-1 Maneuver	606	867	-	-	1369	-
Stage 1	858	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	585	867	-	-	1369	-
Mov Cap-2 Maneuver	585	-	-	-	-	-
Stage 1	858	-	-	-	-	-
Stage 2	778	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.04	0	1.74
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	705	406	-
HCM Lane V/C Ratio	-	-	0.155	0.031	-
HCM Ctrl Dly (s/v)	-	-	11	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	98	126	134	123	32
Future Vol, veh/h	15	98	126	134	123	32
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	1	0	1	1	3
Mvmt Flow	17	109	140	149	137	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	584	155	173	0	-	0
Stage 1	155	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Critical Hdwy	6.8	6.41	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.2	-	-	-
Pot Cap-1 Maneuver	447	885	1416	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	402	884	1415	-	-	-
Mov Cap-2 Maneuver	402	-	-	-	-	-
Stage 1	777	-	-	-	-	-
Stage 2	630	-	-	-	-	-

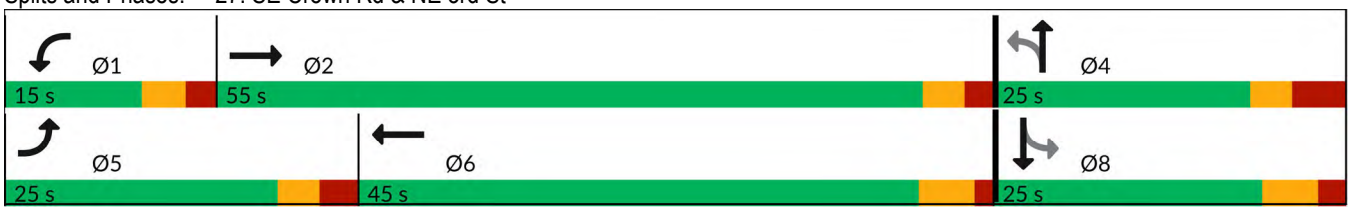
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.26	3.79	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1415	-	402	884	-	-
HCM Lane V/C Ratio	0.099	-	0.041	0.123	-	-
HCM Ctrl Dly (s/v)	7.8	-	14.3	9.6	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	0.4	-	-

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR	Ø1
Lane Configurations									
Traffic Volume (vph)	269	488	411	11	4	78	1	216	
Future Volume (vph)	269	488	411	11	4	78	1	216	
Turn Type	Prot	NA	NA	Perm	NA	Perm	NA	Free	
Protected Phases	5	2	6		4		8		1
Permitted Phases				4		8		Free	
Detector Phase	5	2	6	4	4	8	8		
Switch Phase									
Minimum Initial (s)	2.0	8.0	8.0	2.0	2.0	2.0	2.0		5.0
Minimum Split (s)	7.6	23.0	20.3	32.8	32.8	35.0	35.0		10.2
Total Split (s)	25.0	55.0	45.0	25.0	25.0	25.0	25.0		15.0
Total Split (%)	26.3%	57.9%	47.4%	26.3%	26.3%	26.3%	26.3%		16%
Yellow Time (s)	3.0	3.0	4.0	3.0	3.0	4.0	4.0		3.0
All-Red Time (s)	2.6	2.0	1.3	3.8	3.8	2.0	2.0		2.2
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0		
Total Lost Time (s)	5.6	5.0	5.3		6.8		6.0		
Lead/Lag	Lead	Lag	Lag						Lead
Lead-Lag Optimize?	Yes	Yes	Yes						Yes
Recall Mode	None	None	None	None	None	None	None		None
Act Effct Green (s)	13.5	34.9	13.1		7.3		8.0	49.2	
Actuated g/C Ratio	0.27	0.71	0.27		0.15		0.16	1.00	
v/c Ratio	0.58	0.21	0.57		0.07		0.36	0.13	
Control Delay (s/veh)	23.1	4.1	18.8		23.0		27.0	0.2	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)	23.1	4.1	18.8		23.0		27.0	0.2	
LOS	C	A	B		C		C	A	
Approach Delay (s/veh)		10.7	18.8		23.0		7.4		
Approach LOS		B	B		C		A		

Intersection Summary	
Cycle Length: 95	
Actuated Cycle Length: 49.2	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay (s/veh): 12.8	Intersection LOS: B
Intersection Capacity Utilization 54.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: SE Crown Rd & NE 3rd St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	269	488	12	0	411	106	11	4	0	78	1	216
Future Volume (veh/h)	269	488	12	0	411	106	11	4	0	78	1	216
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1876	1862	1952	1979	1964	1934	1952	1952	1952	2011	2058	2027
Adj Flow Rate, veh/h	274	498	12	0	419	108	11	4	0	80	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	0	0	1	3	0	0	0	3	0	2
Cap, veh/h	351	2086	50	5	698	178	265	32		308	1	
Arrive On Green	0.20	0.59	0.59	0.00	0.24	0.24	0.07	0.07	0.00	0.07	0.07	0.00
Sat Flow, veh/h	1787	3528	85	1884	2942	751	1320	480	1654	1584	20	1717
Grp Volume(v), veh/h	274	249	261	0	264	263	15	0	0	81	0	0
Grp Sat Flow(s),veh/h/ln	1787	1769	1844	1884	1865	1828	1800	0	1654	1603	0	1717
Q Serve(g_s), s	5.2	2.4	2.4	0.0	4.5	4.5	0.0	0.0	0.0	1.5	0.0	0.0
Cycle Q Clear(g_c), s	5.2	2.4	2.4	0.0	4.5	4.5	0.3	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.41	0.73		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	351	1046	1091	5	442	434	297	0		310	0	
V/C Ratio(X)	0.78	0.24	0.24	0.00	0.60	0.61	0.05	0.00		0.26	0.00	
Avail Cap(c_a), veh/h	978	2493	2600	521	2088	2047	1002	0		1040	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.5	3.4	3.4	0.0	12.0	12.0	15.5	0.0	0.0	16.2	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.2	0.2	0.0	1.3	1.3	0.1	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.0	3.5	3.5	0.0	12.5	12.6	15.6	0.0	0.0	16.4	0.0	0.0
LnGrp LOS	B	A	A		B	B	B			B		
Approach Vol, veh/h		784			527			15			81	
Approach Delay, s/veh		7.5			12.5			15.6			16.4	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	26.3		9.2	12.6	13.7		9.2				
Change Period (Y+Rc), s	5.2	* 5.3		6.8	5.6	5.3		* 6.8				
Max Green Setting (Gmax), s	9.8	* 50		18.2	19.4	39.7		* 19				
Max Q Clear Time (g_c+I1), s	0.0	4.4		2.3	7.2	6.5		3.7				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.3	1.9		0.2				

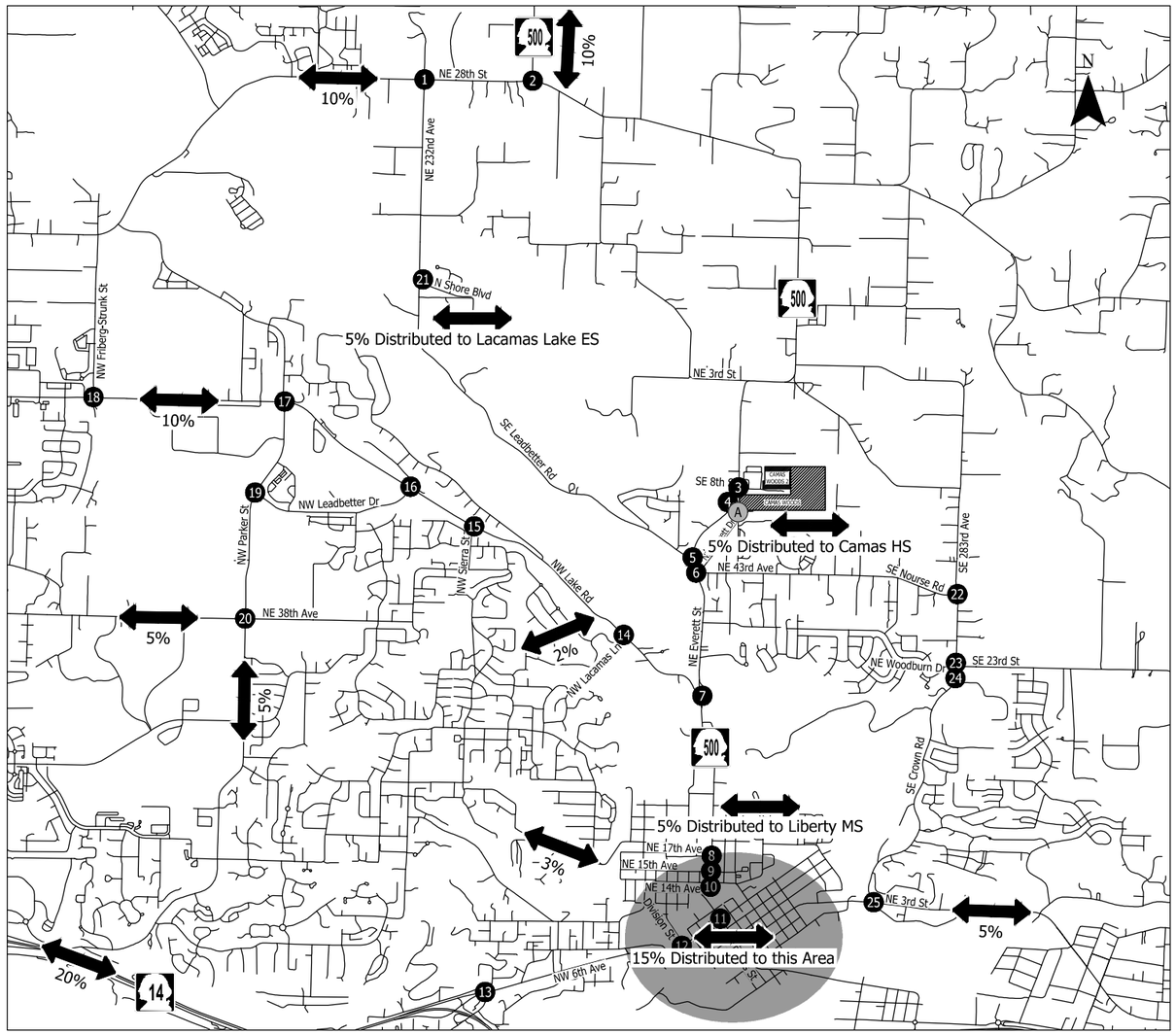
Intersection Summary		
HCM 7th Control Delay, s/veh	10.0	
HCM 7th LOS	A	

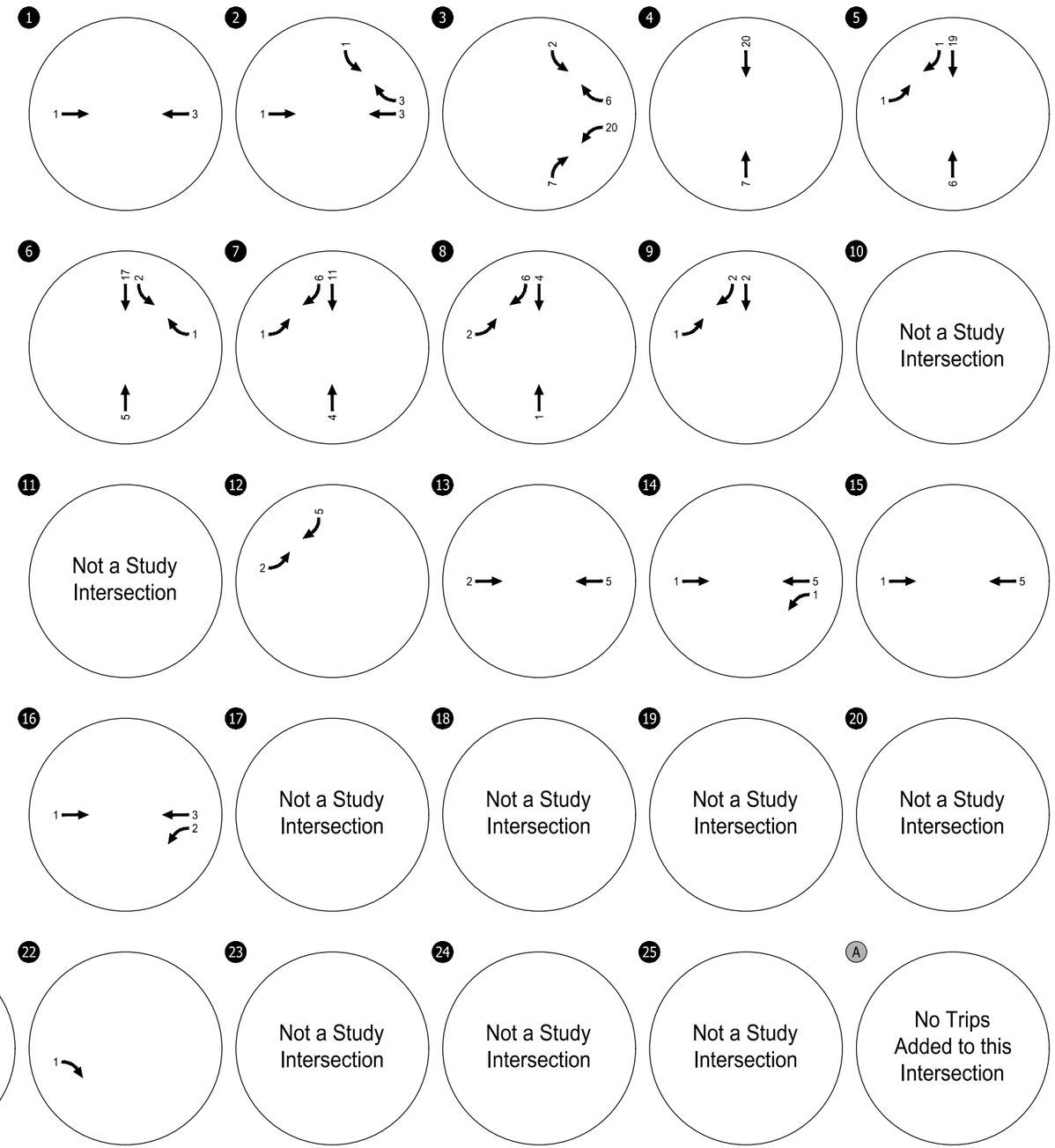
Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix E : In-Process Data





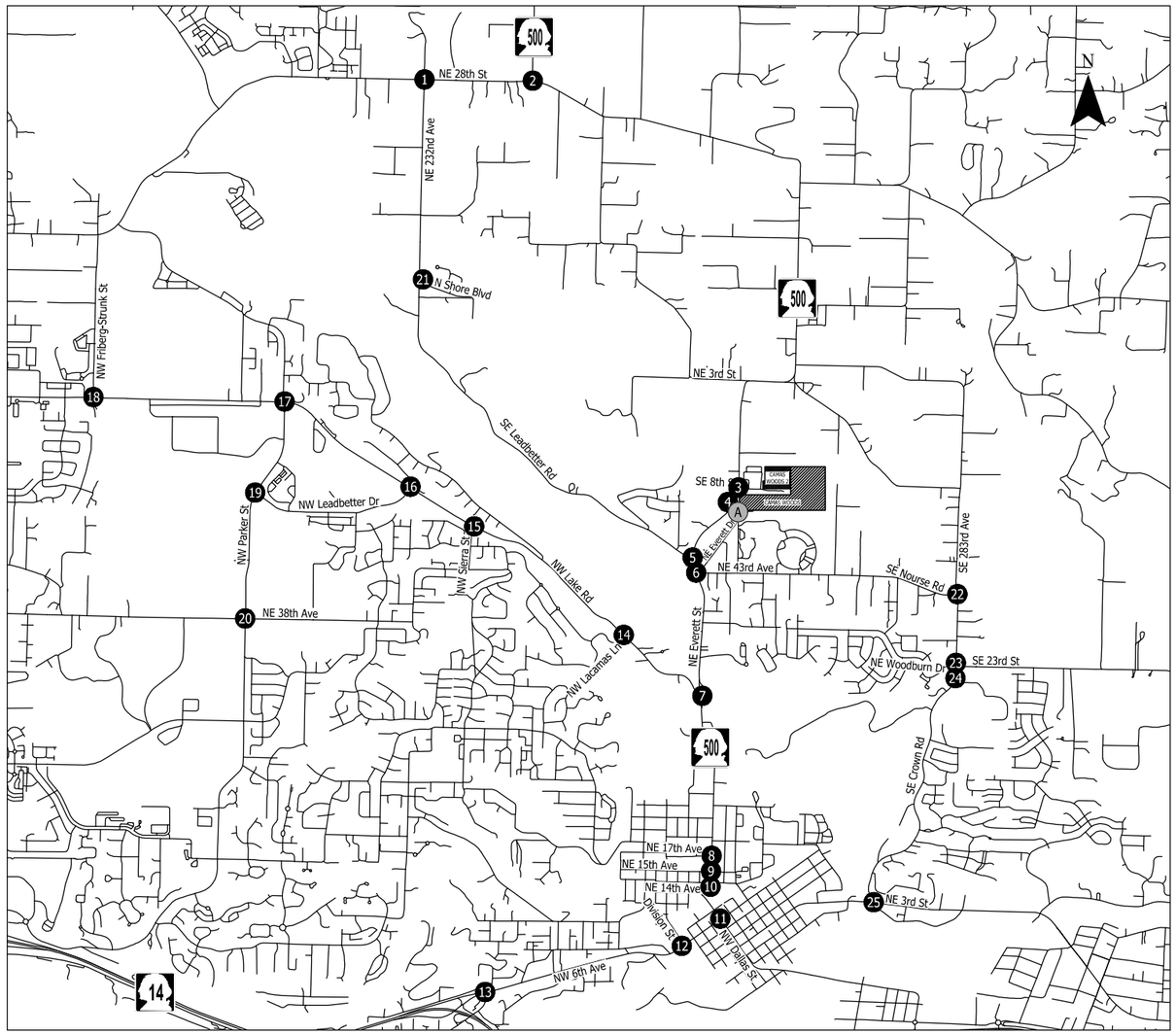
Site-Generated Trip Assignment
Weekday AM Peak Hour
Camas, Washington

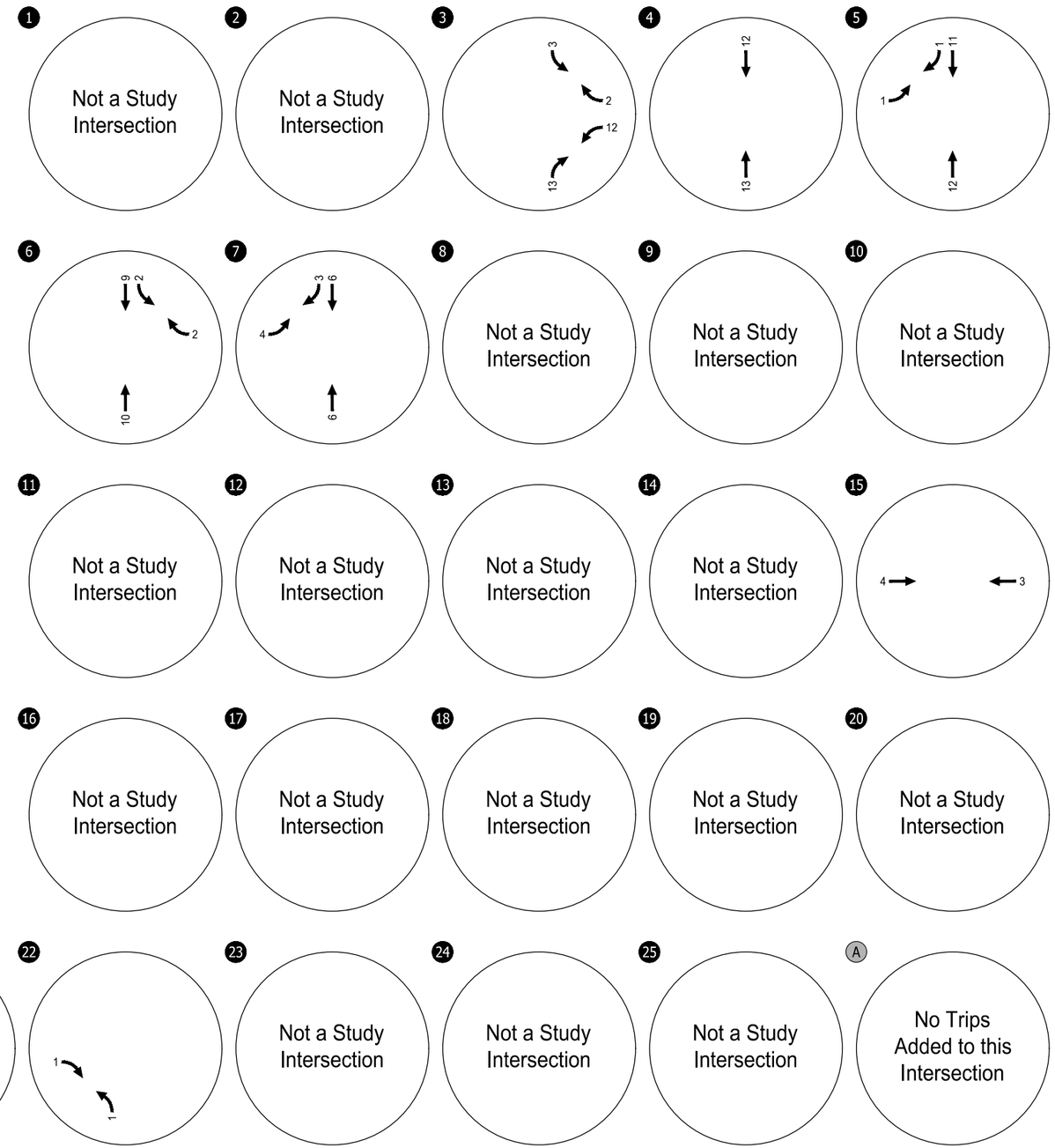
Figure 3

- # Study Intersections
- (A) Site Driveway
- XX% Trip Distribution Percentage

KITTELSON & ASSOCIATES

H:\30\30088 - Camas Woods\report\figs\30088_figureset_Phase3.dwg Mar 04, 2025 - 9:12am - rdoubleday Layout Tab: Fig3 Phase 3 AM Trips





Site-Generated Trip Assignment
Weekday School PM Peak Hour
Camas, Washington

Figure 4

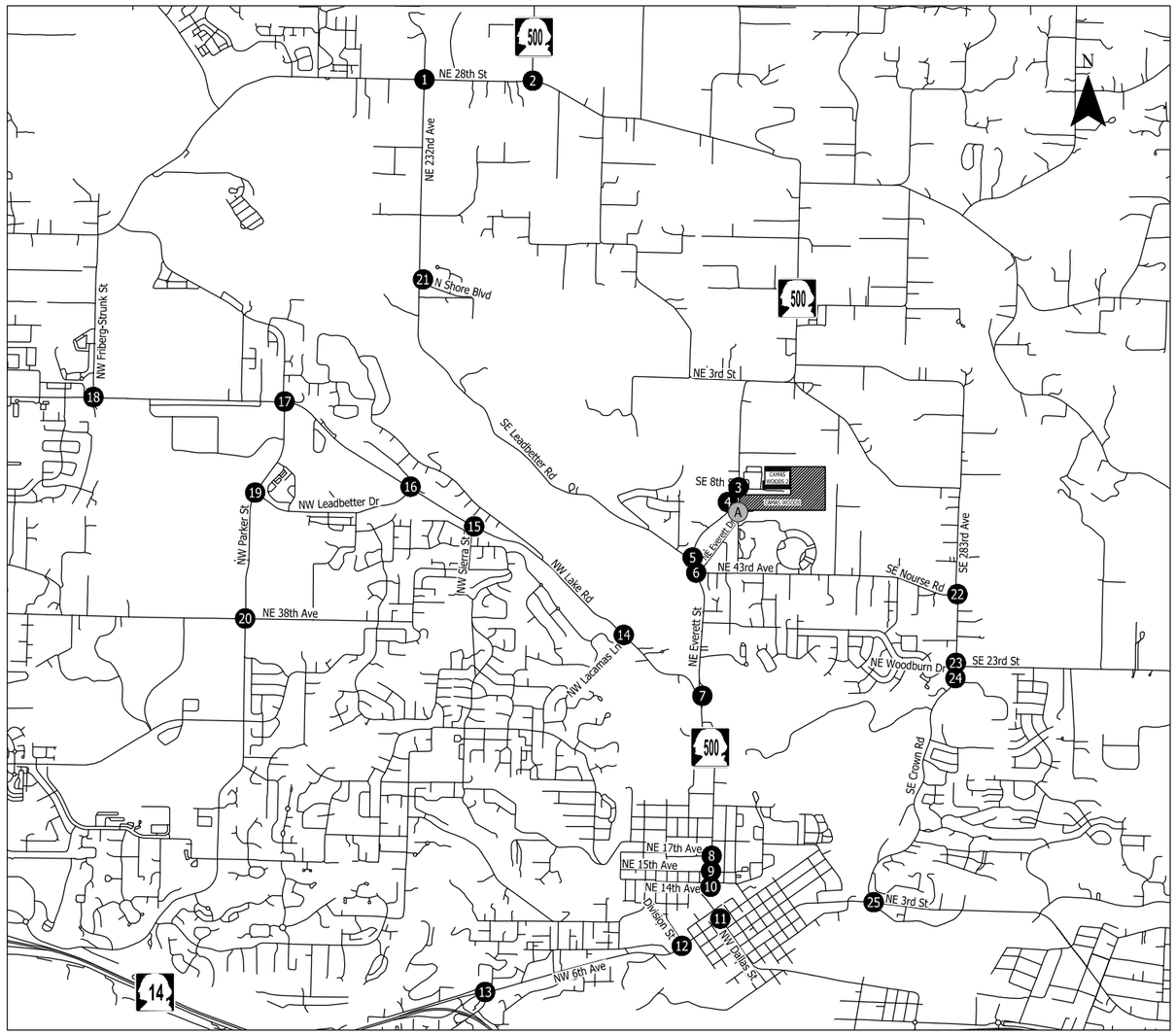
(#) Study Intersections

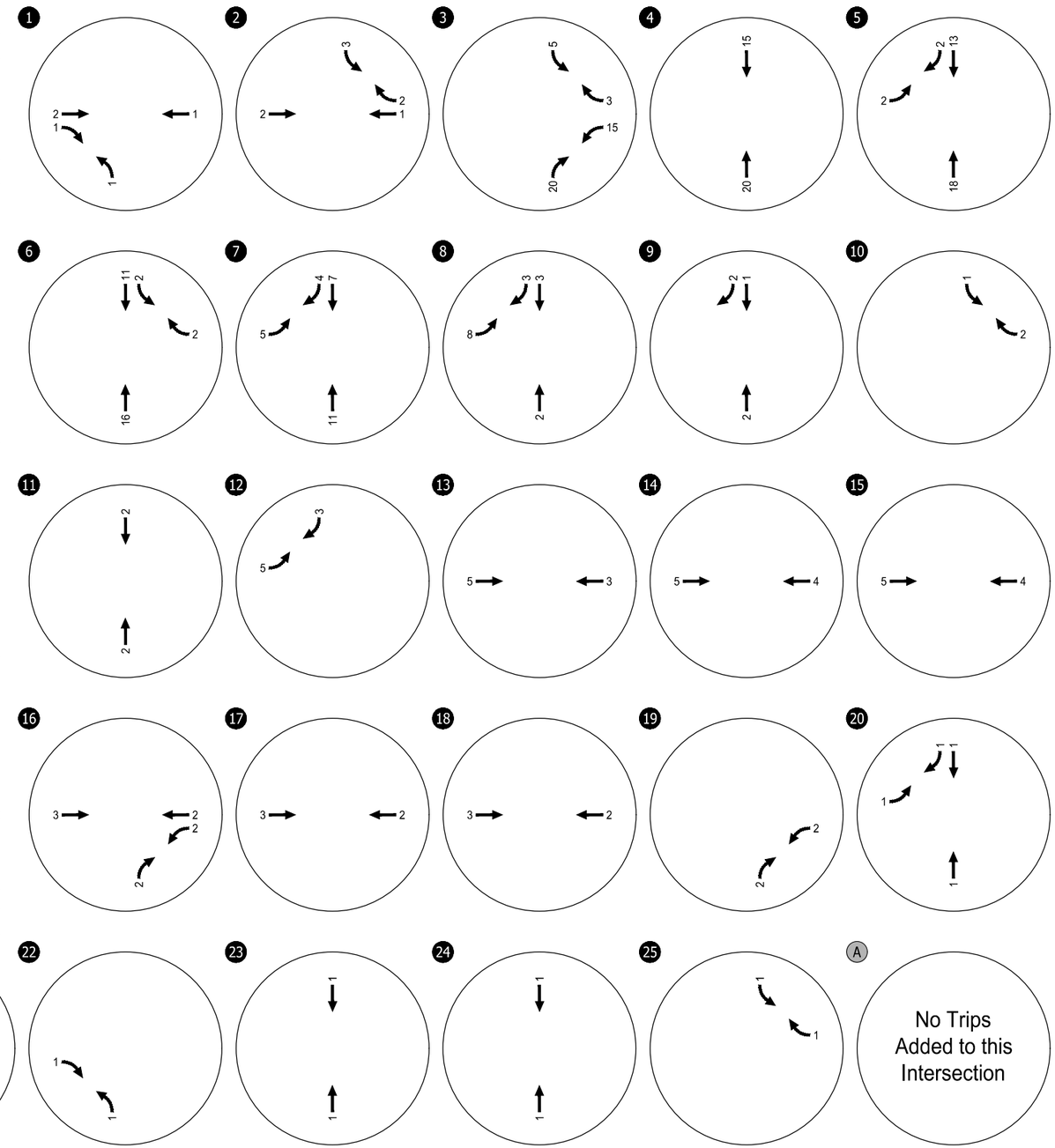
(A) Site Driveway

XX% Trip Distribution Percentage

KITTELSON & ASSOCIATES

H:\30\30088 - Camas Woods\report\figs\30088_figureset_Phase3.dwg Mar 04, 2025 - 9:13am - rdoubleday Layout Tab: Fig4 Phase 3 School PM Trips





Site-Generated Trip Assignment
Weekday PM Peak Hour
Camas, Washington

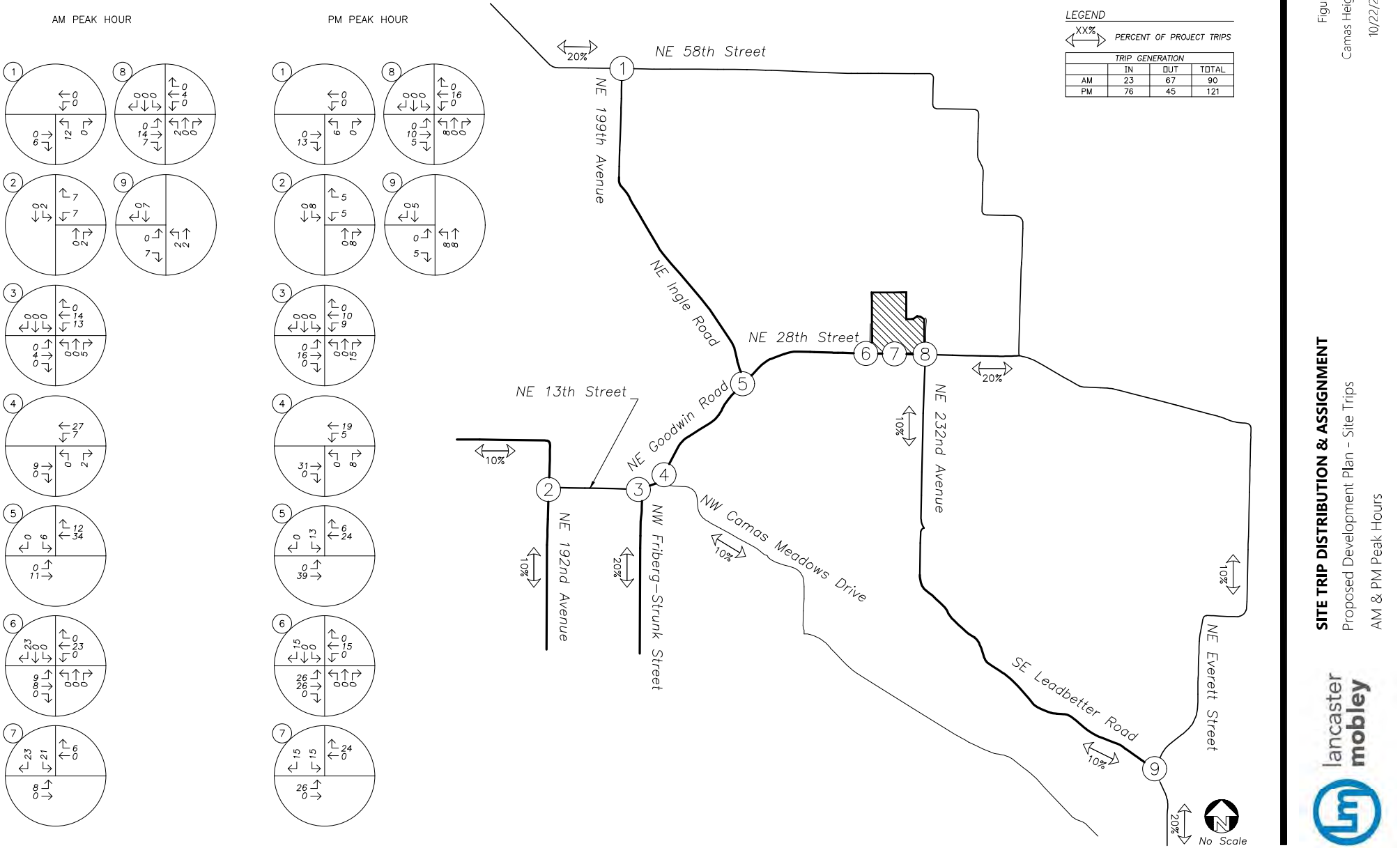
Figure 5

- # Study Intersections
- A Site Driveway
- XX% Trip Distribution Percentage

KITTELSON & ASSOCIATES

H:\30\30088 - Camas Woods\report\figs\30088_figureset_Phase3.dwg Mar 04, 2025 - 9:13am - rdoubleday Layout Tab: Fig5 Phase 3 PM Trips

0% Build-Out



SITE TRIP DISTRIBUTION & ASSIGNMENT

Proposed Development Plan - Site Trips

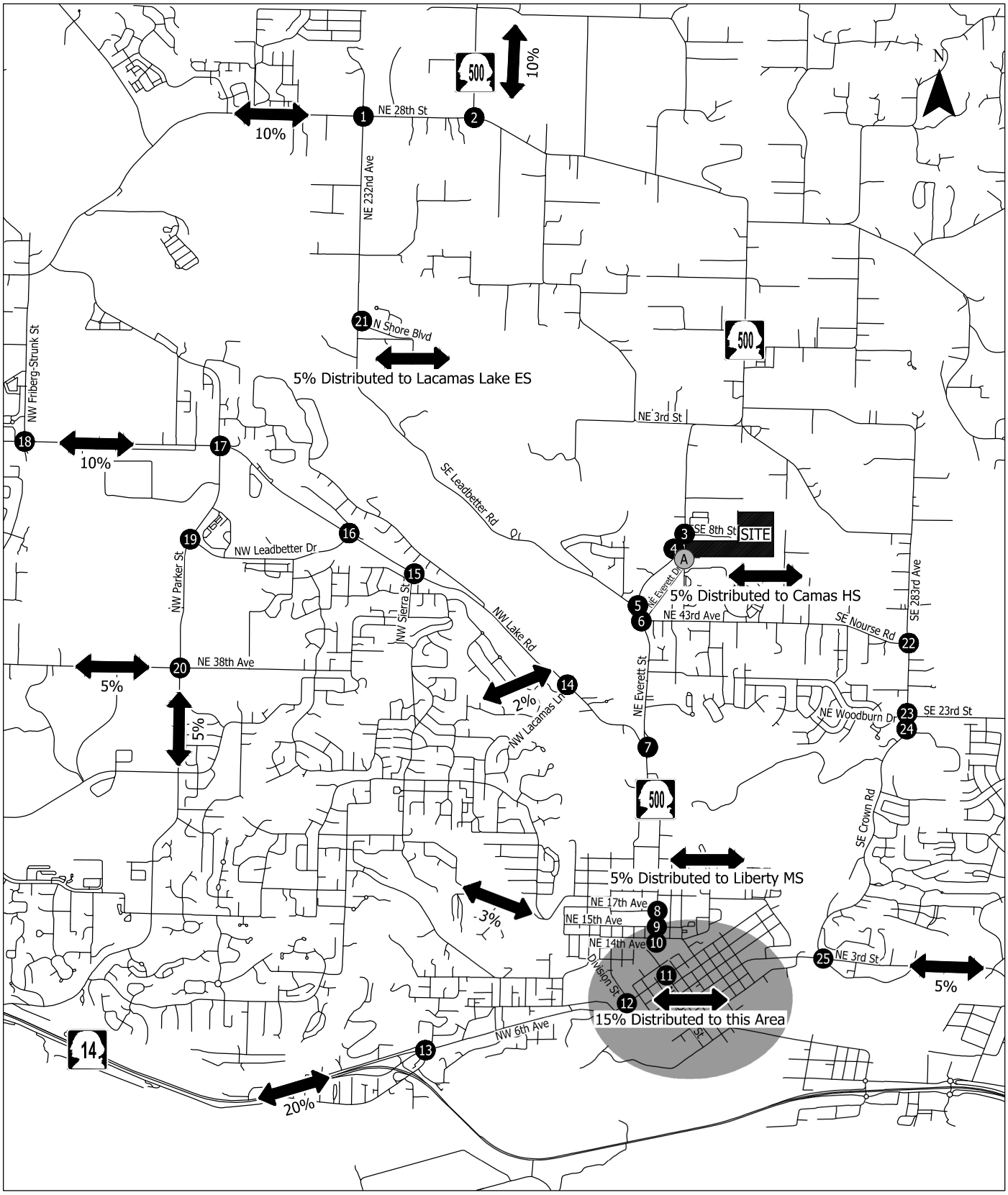
AM & PM Peak Hours

Figure 3

Camas Heights

10/22/2021

lancaster mobley



Study Intersections

A Site Driveway

Trip Distribution Percentage

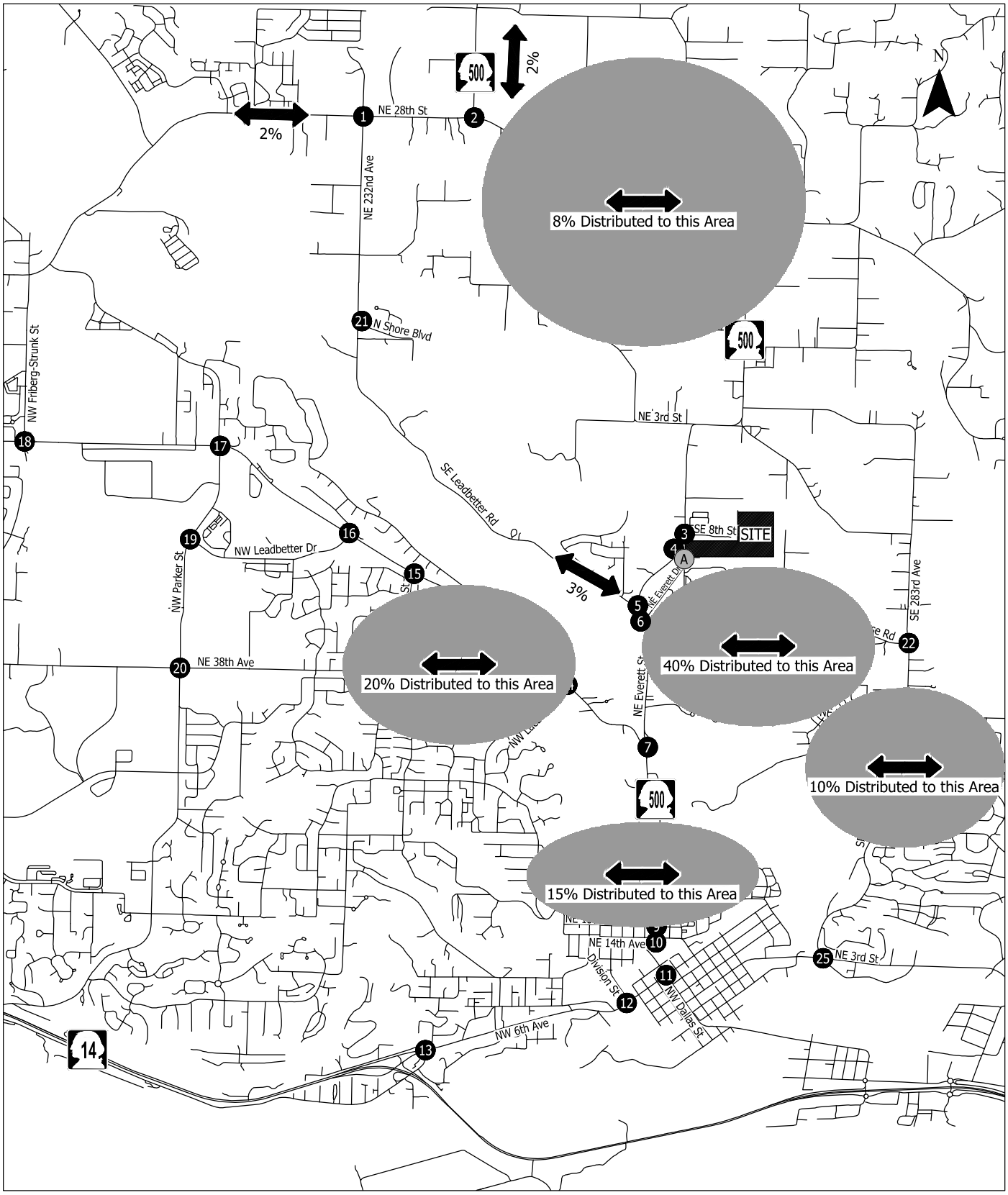
XX%

Estimated Residential Site Trip Distribution Pattern Camas, Washington

Figure 10

KITTELSON & ASSOCIATES

C:\Users\rdoubleday\appdata\local\temp\AcPublish_23824\30088_figureset.dwg Oct 10, 2024 - 3:29pm - rdoubleday Layout Tab: Fig10 Residential Trip Distribution



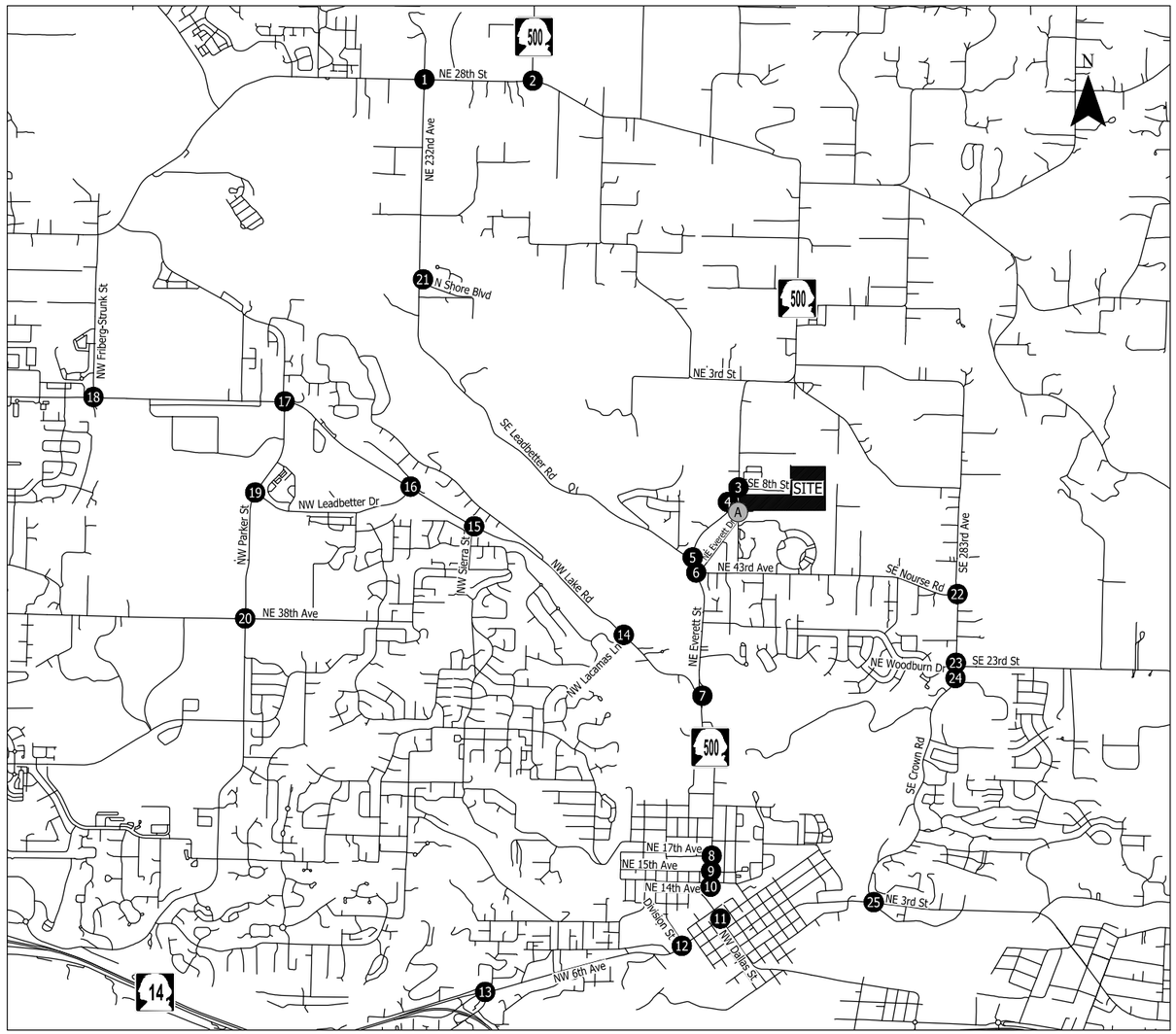
Estimated Commercial Site Trip Distribution Pattern Camas, Washington

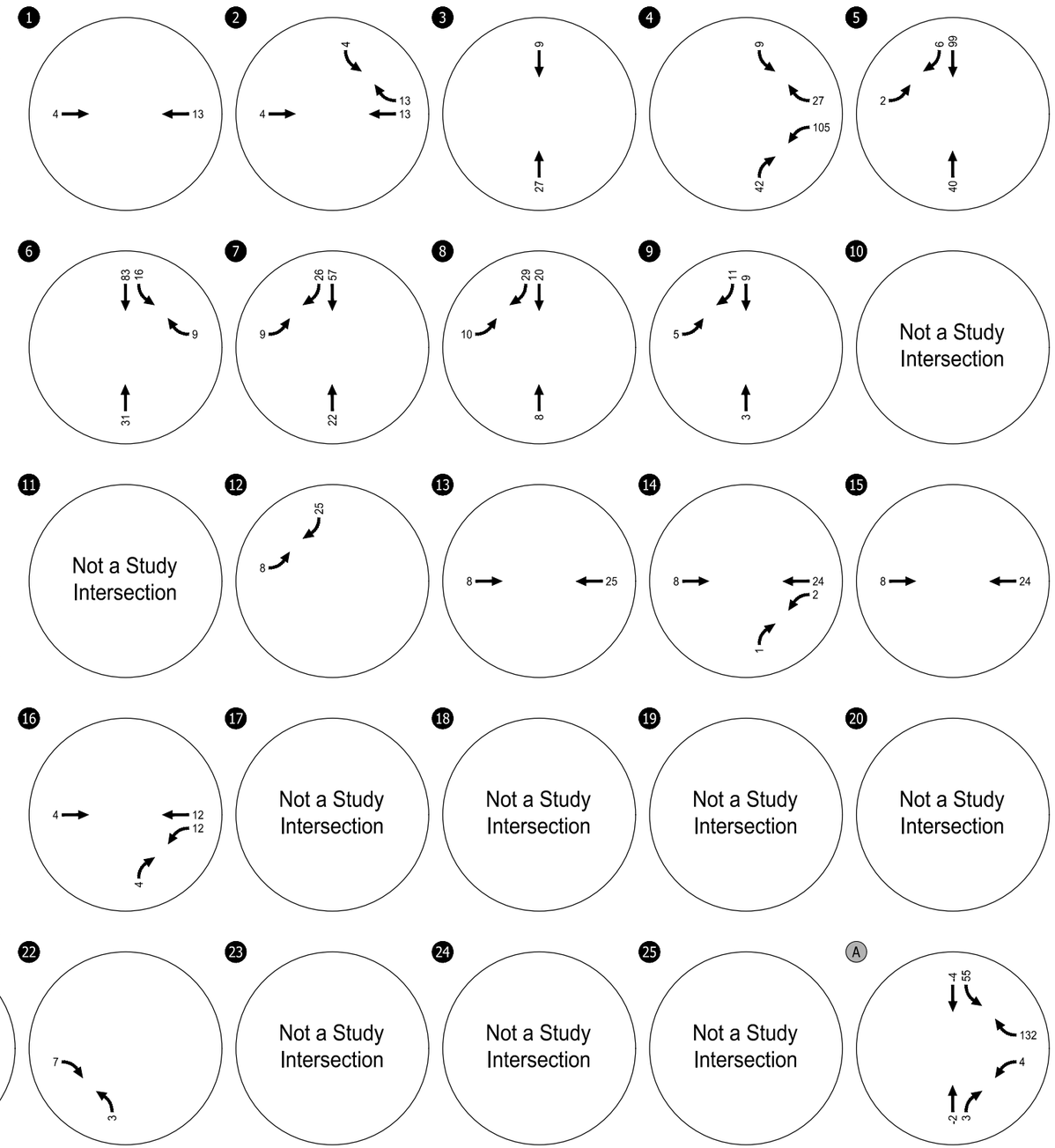
Figure 11

- # Study Intersections
- A Site Driveway
- XX% Trip Distribution Percentage

KITTELSON & ASSOCIATES

C:\Users\rdoubleday\appdata\local\temp\AcPublish_23824\30088_figureset.dwg Oct 10, 2024 - 3:29pm - rdoubleday Layout Tab: Fig11 Commercial Trip Distribution





Note: Negative volumes reflect pass-by trips

Study Intersections

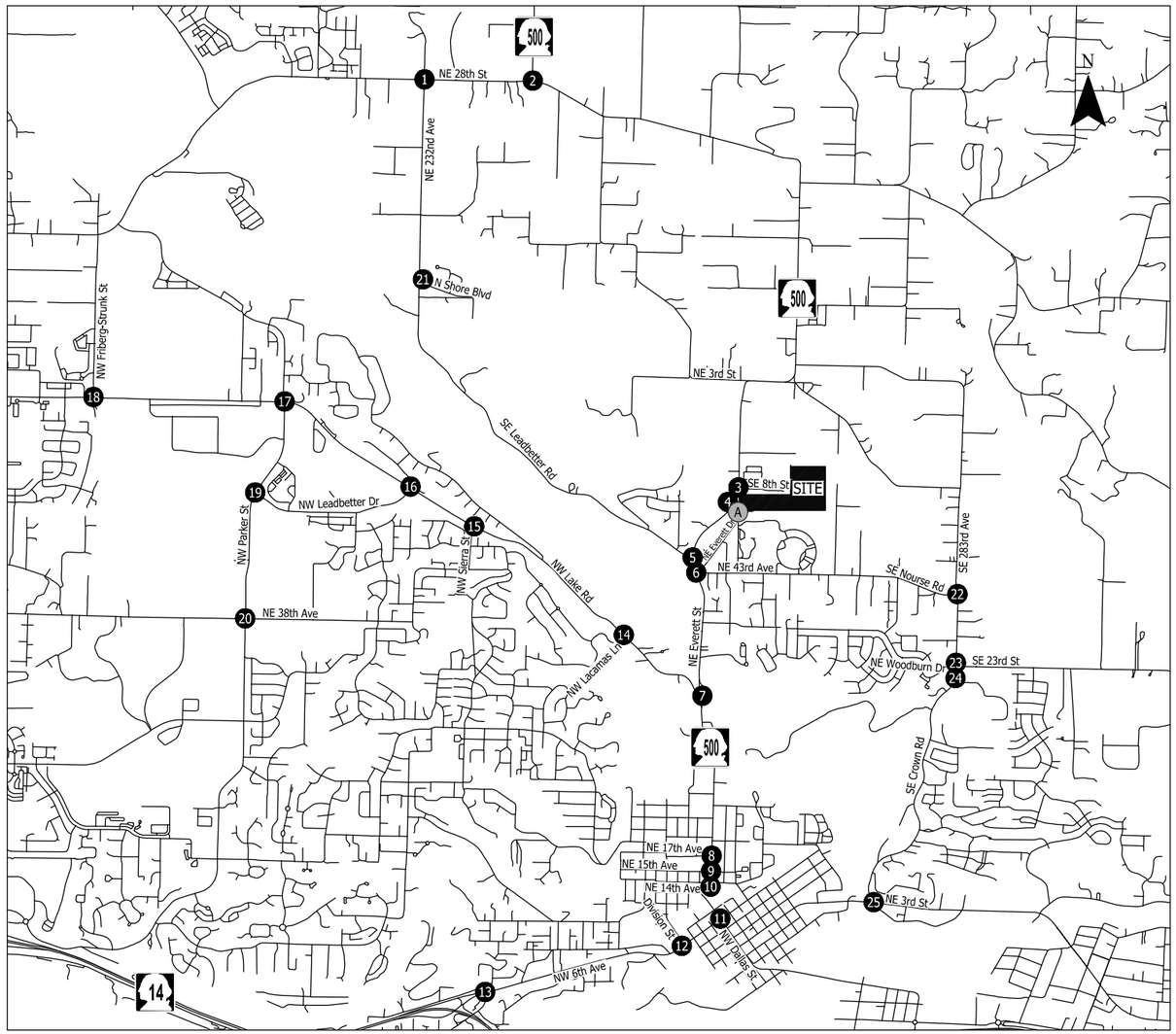
A Site Driveway

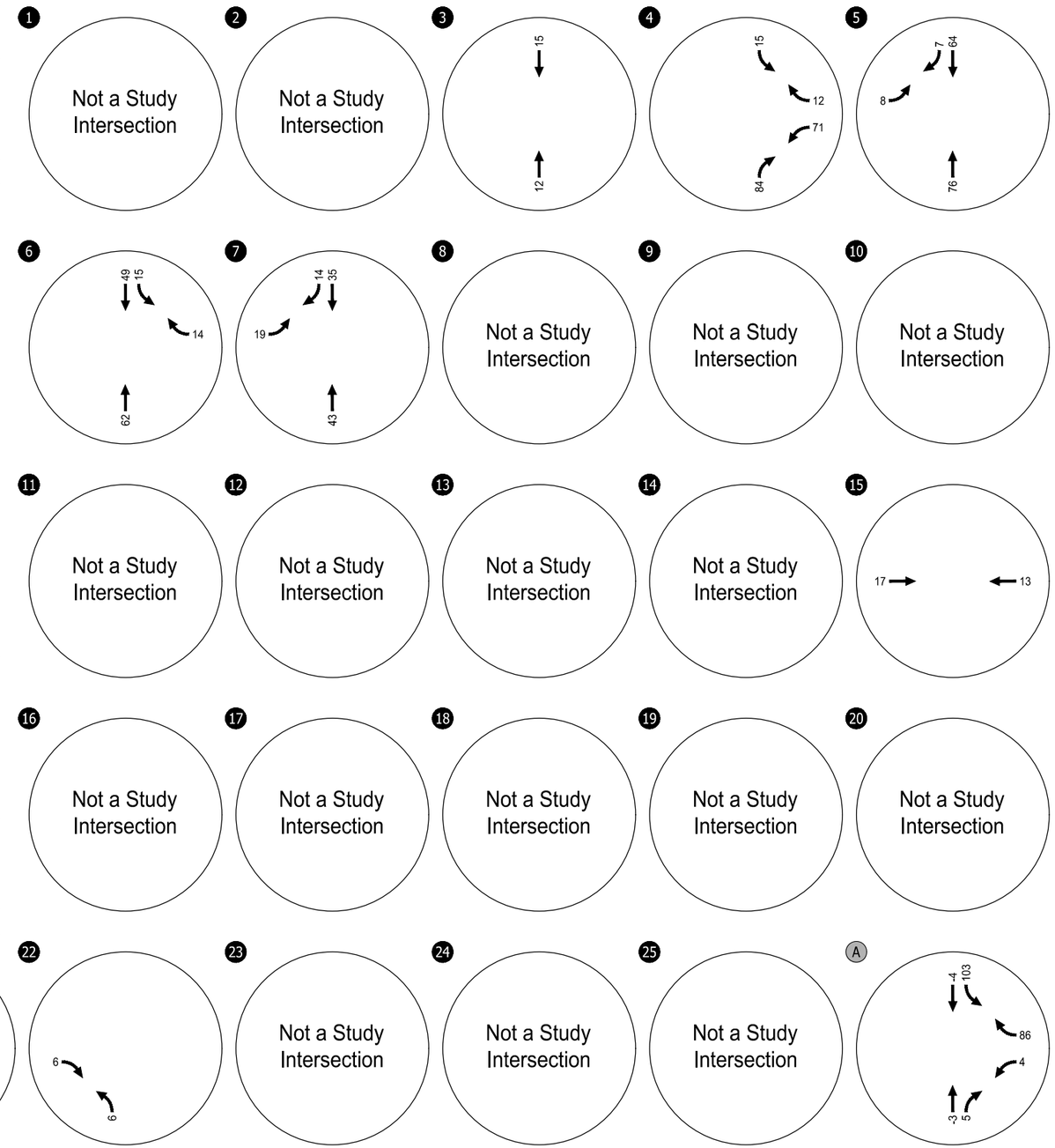
Weekday AM Peak Hour
Site-Generated Trip Assignment
Camas, Washington

Figure
12

KITTELSON & ASSOCIATES

C:\Users\rdoubleday\appdata\local\temp\AcPublish_23824\30088_figureset.dwg Oct 10, 2024 - 3:29pm - rdoubleday Layout Tab: Fig12 AM Trip Assignment





Note: Negative volumes reflact pass-by trips

(#) Study Intersections

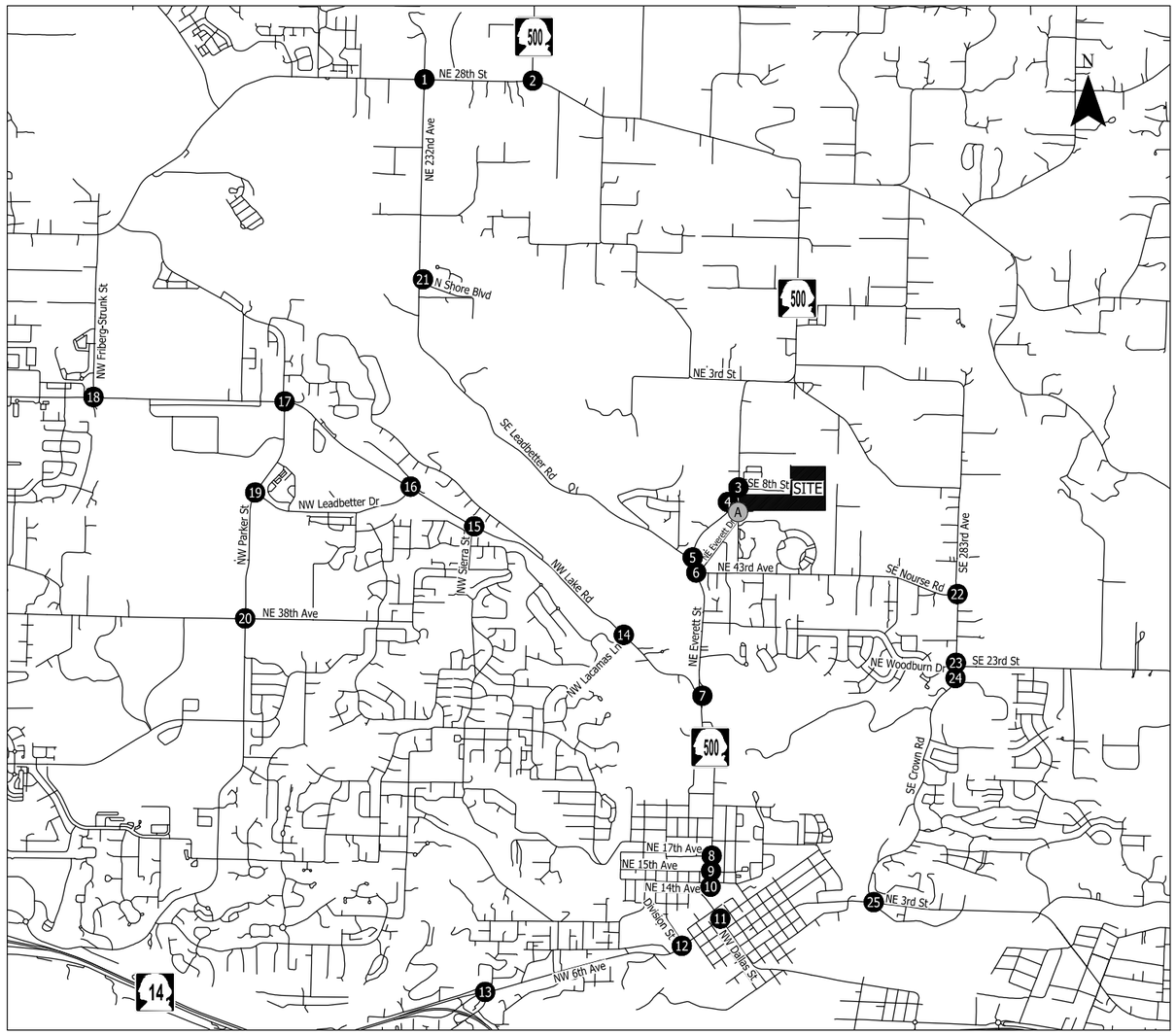
(A) Site Driveway

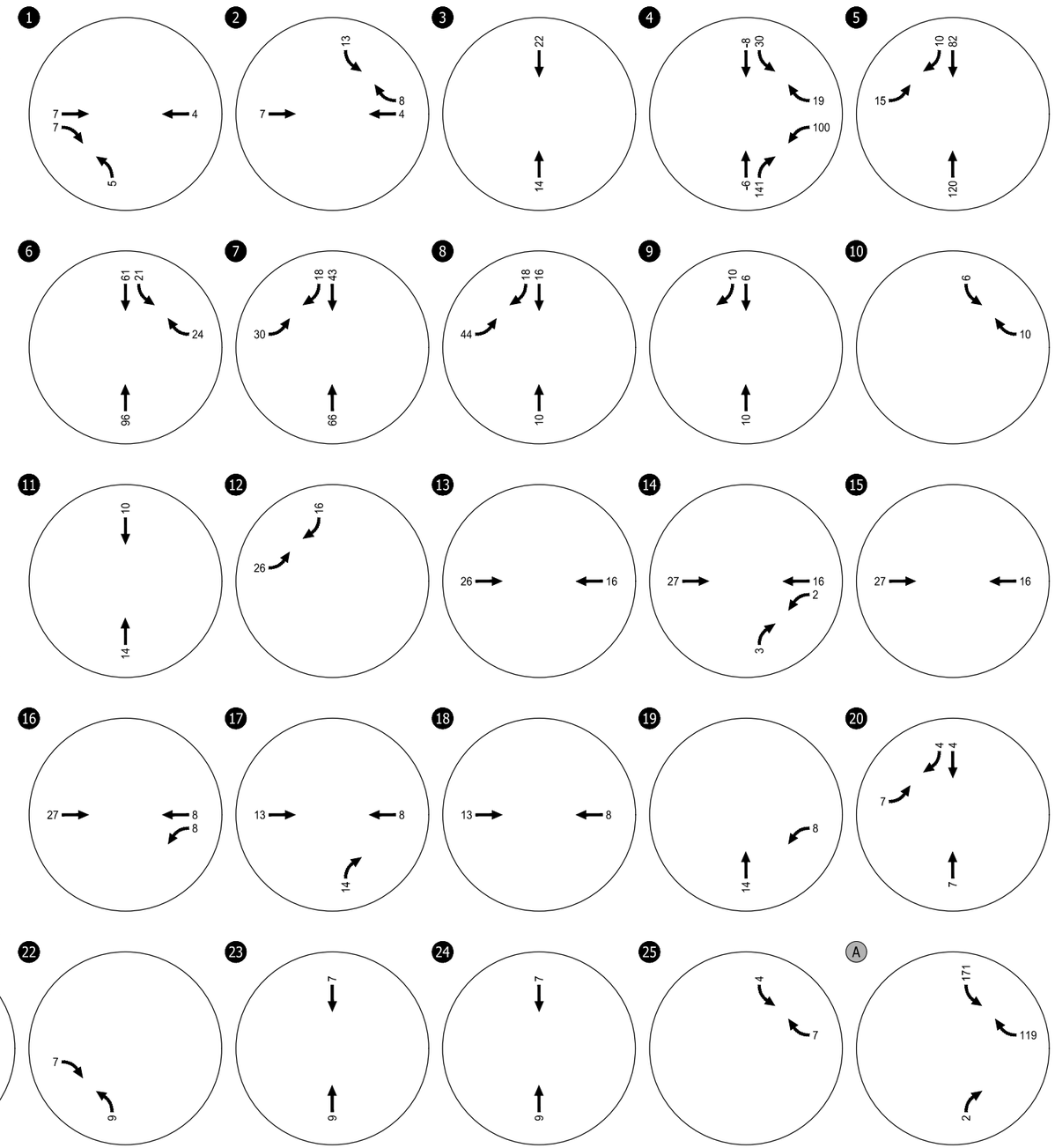
Weekday School PM Peak Hour
Site-Generated Trip Assignment
Camas, Washington

Figure
13

KITTELSON & ASSOCIATES

C:\Users\rdoubleday\appdata\local\temp\AcPublish_23824\30088_figureset.dwg Oct 10, 2024 - 3:30pm - rdoubleday Layout Tab: Fig13 School PM Trip Assignment





Note: Negative volumes reflact pass-by trips

(#) Study Intersections

(A) Site Driveway

Weekday PM Peak Hour
Site-Generated Trip Assignment
Camas, Washington

Figure
14

KITTELSON & ASSOCIATES

C:\Users\rdoubleday\appdata\local\temp\AcPublish_23824\130088_figureset.dwg Oct 10, 2024 - 3:30pm - rdoubleday Layout Tab: Fig14 PM Trip Assignment

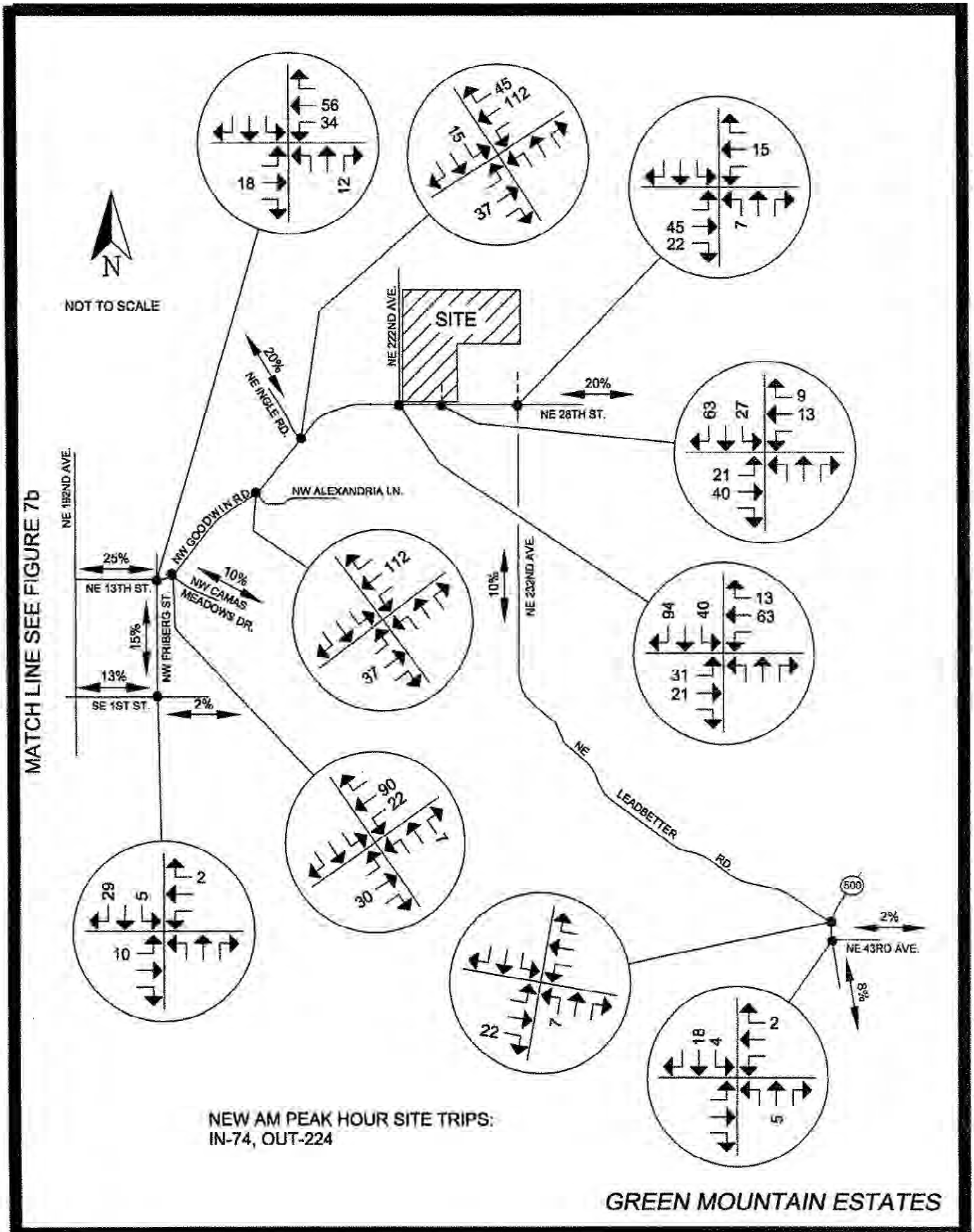


FIGURE 7a
SITE TRAFFIC DISTRIBUTION/
ASSIGNMENT, AM PEAK HOUR

KELLY ENGINEERING
316 E. Fourth Plain, A-2, Vancouver, WA 98663
Phone: 360-433-7530

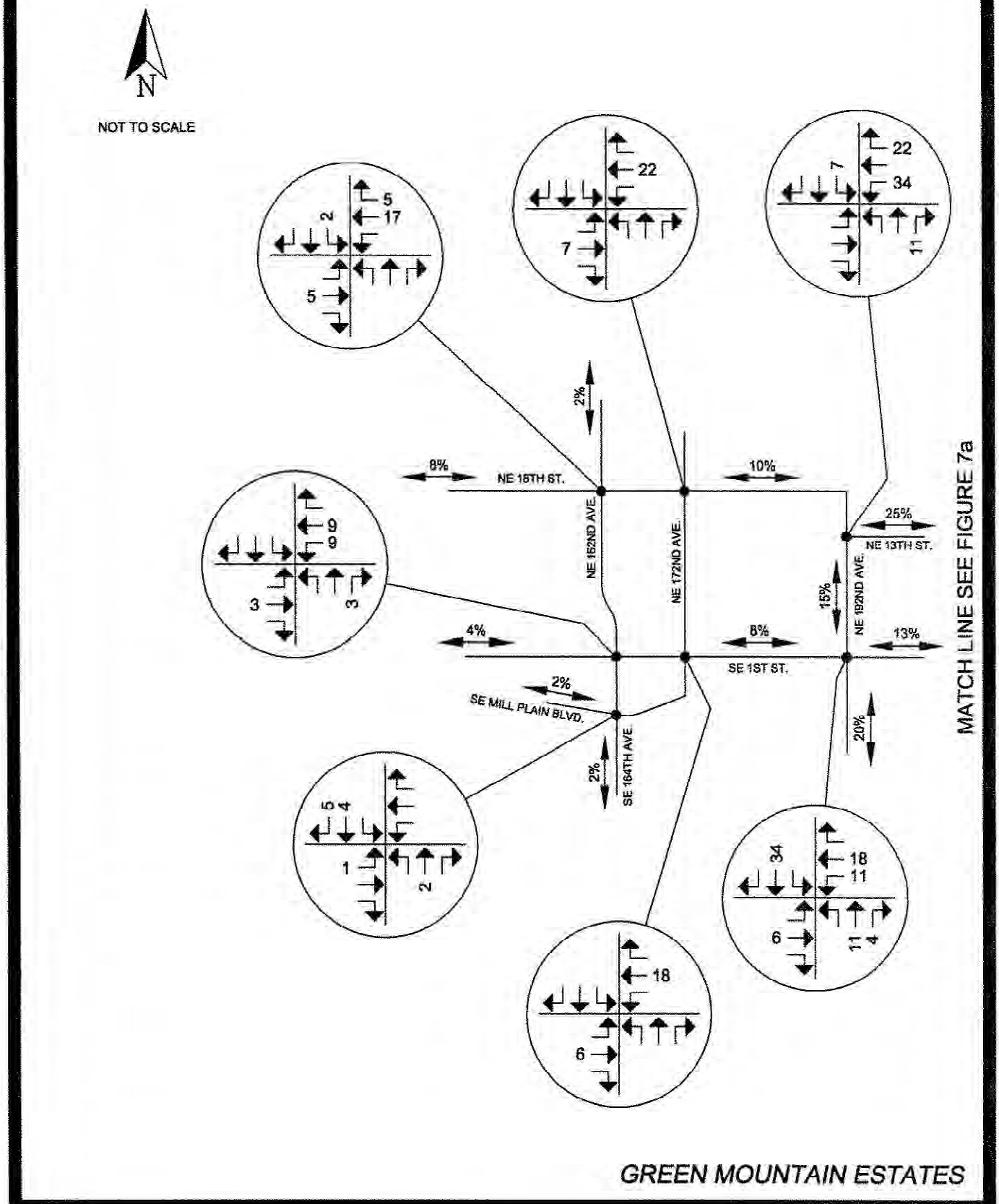


FIGURE 7b
SITE TRAFFIC DISTRIBUTION/ ASSIGNMENT, AM PEAK HOUR

KELLY ENGINEERING
316 E. Fourth Plain, A-2, Vancouver, WA 98663
Phone: 360-433-7530

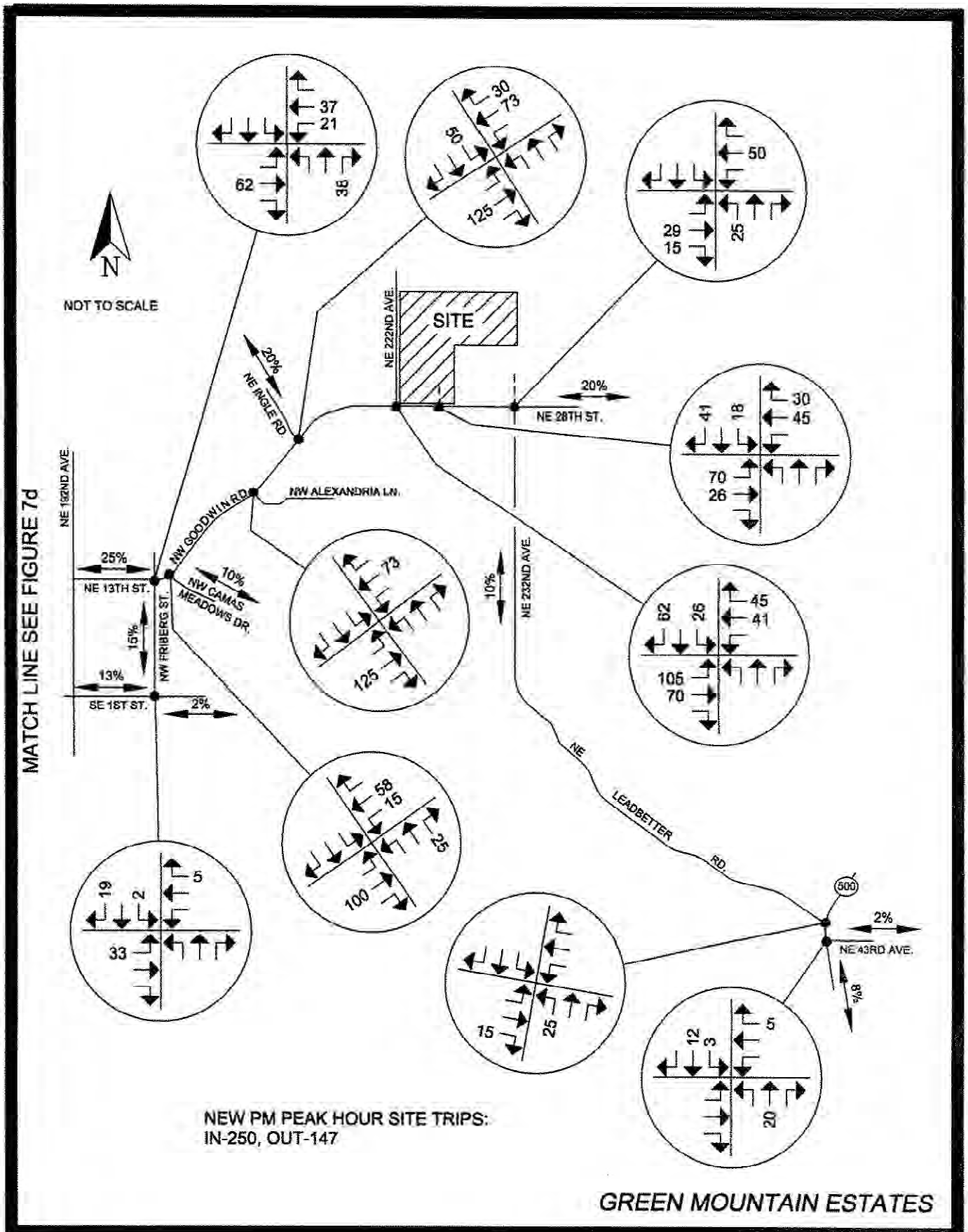


FIGURE 7c
SITE TRAFFIC DISTRIBUTION/ ASSIGNMENT, PM PEAK HOUR

KELLY ENGINEERING
316 E. Fourth Plain, A-2, Vancouver, WA 98663
Phone: 360-433-7530

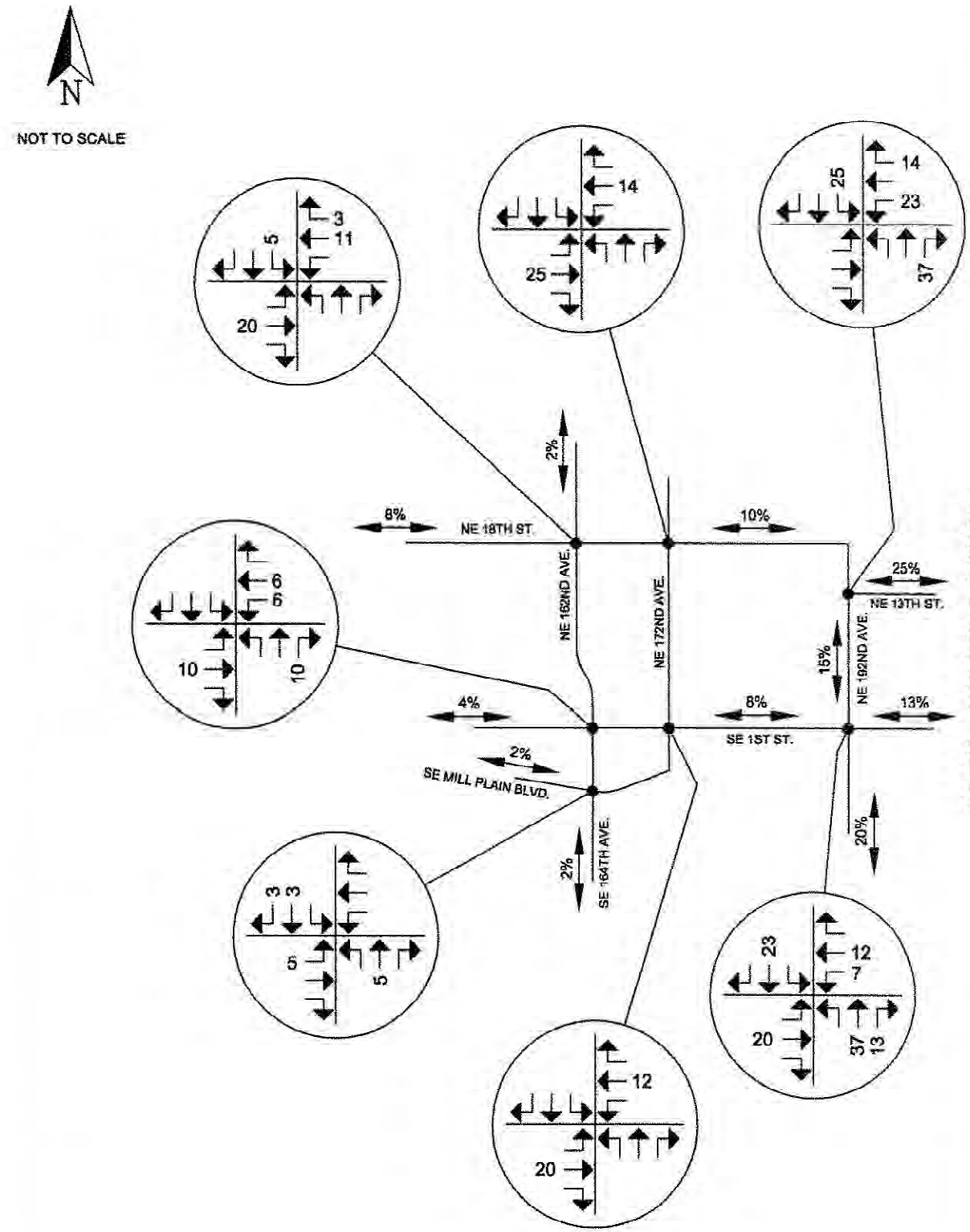
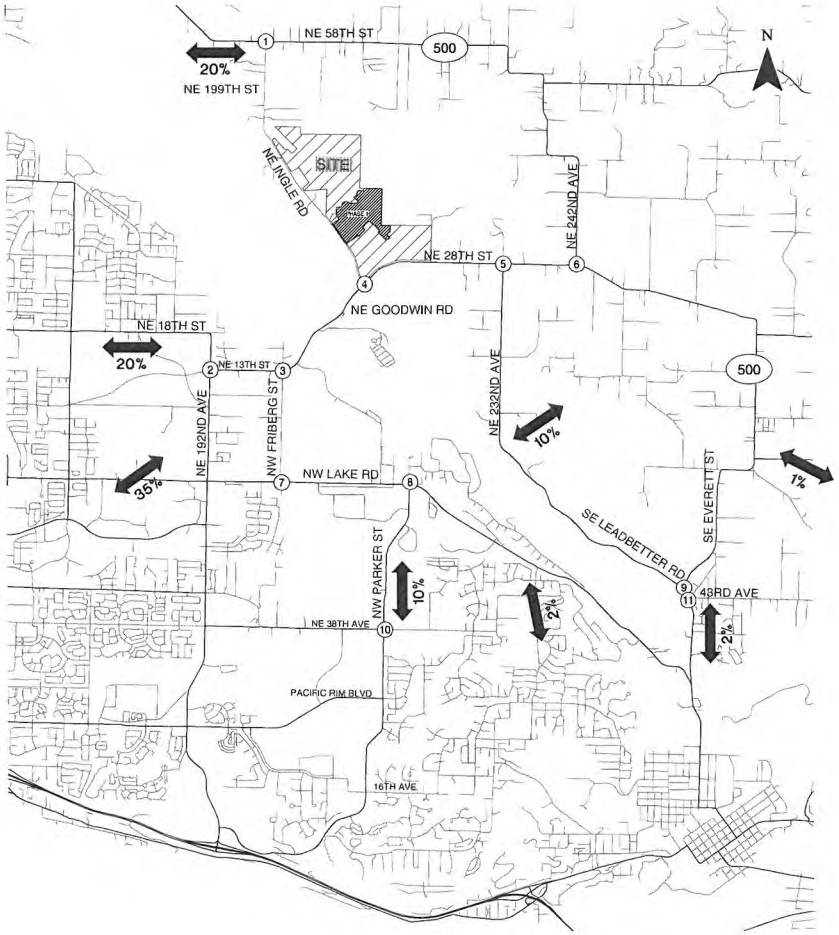


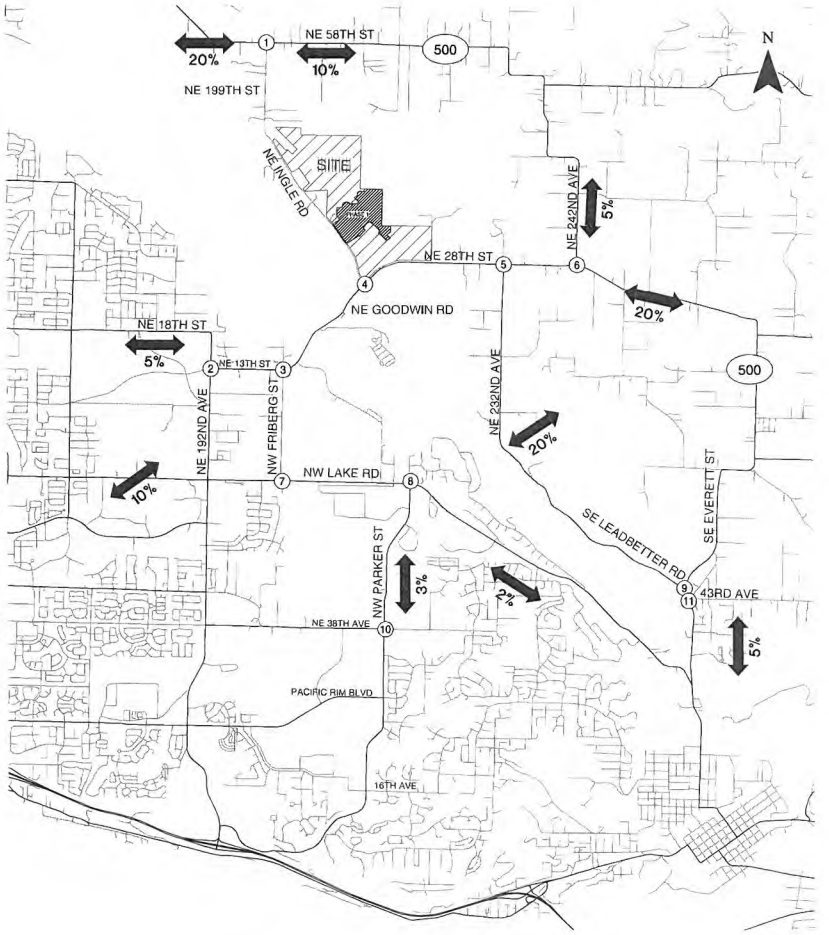
FIGURE 7d
SITE TRAFFIC DISTRIBUTION/
ASSIGNMENT, PM PEAK HOUR

KELLY ENGINEERING
316 E. Fourth Plain, A-2, Vancouver, WA 98663
Phone: 360-433-7530

RESIDENTIAL DISTRIBUTION:



RETAIL DISTRIBUTION:

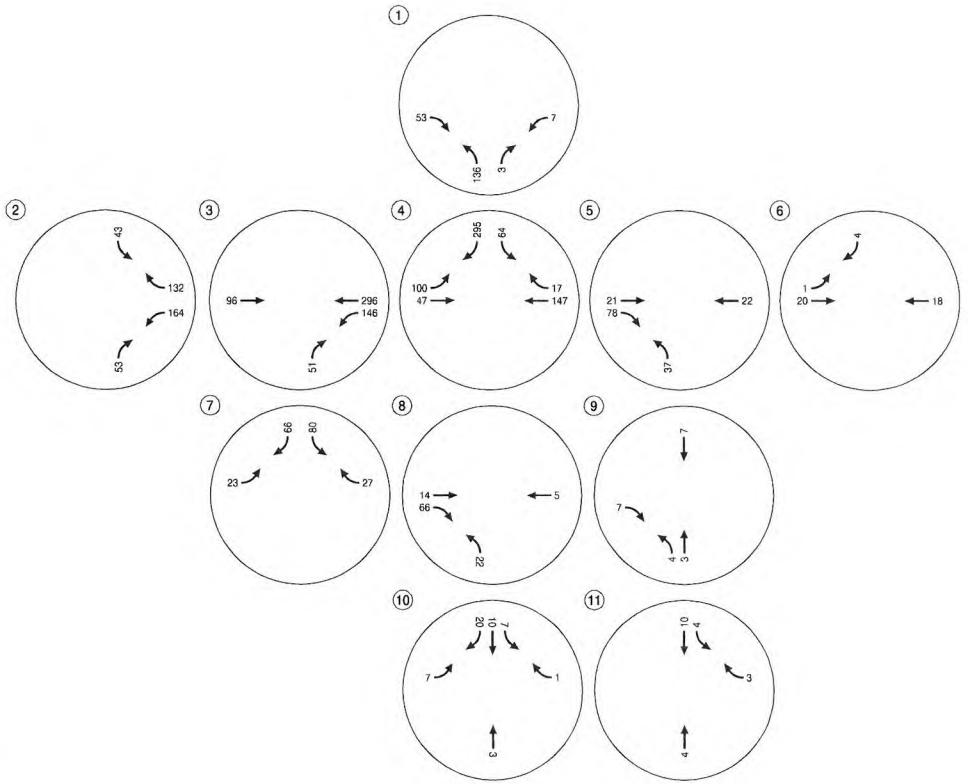


Estimated Trip Distribution Pattern
Camas, Washington

Figure 6

H:\proj\file\13865 - Green Mountain Master Plan\dwg\all\gis\13865_traffic study -Nov update.dwg Nov 20, 2014 - 2:27pm - klaustsen Layout Tab: 6_Dist



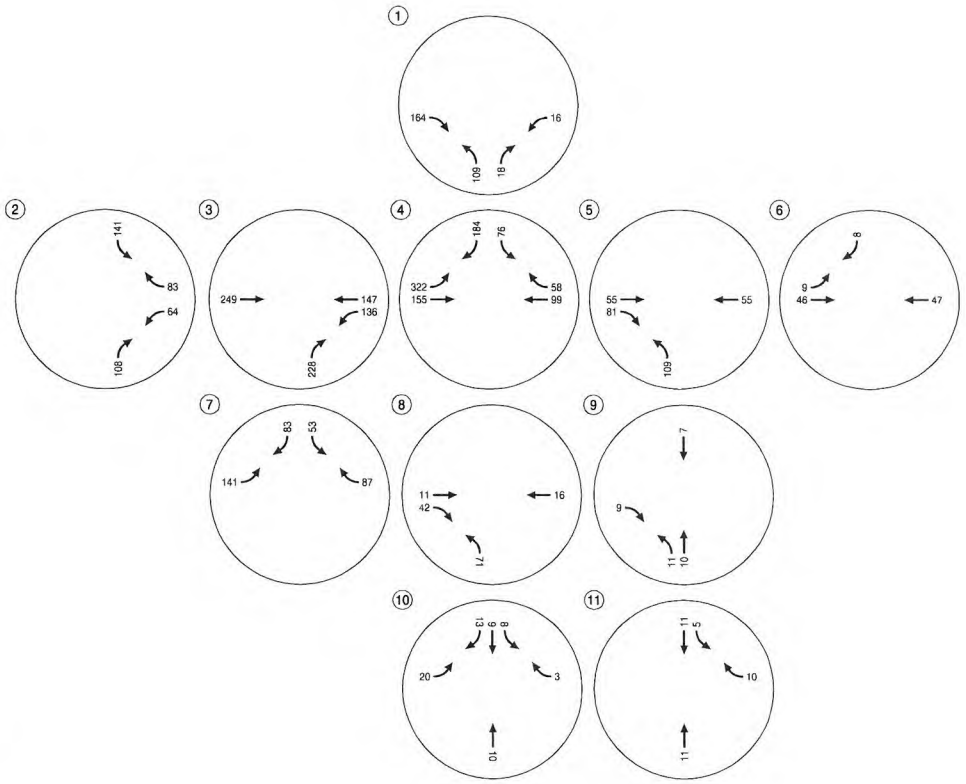


Total Estimated Trip Assignment - Full Build-Out
Weekday AM Peak Hour
Camas, Washington

Figure 9

H:\proj\file\13865 - Green Mountain Master Plan\dwg\all\gpt13865_traffic study -Nov update.dwg Nov 20, 2014 - 2:29pm - kkuettsen Layout Tab: g_45x44

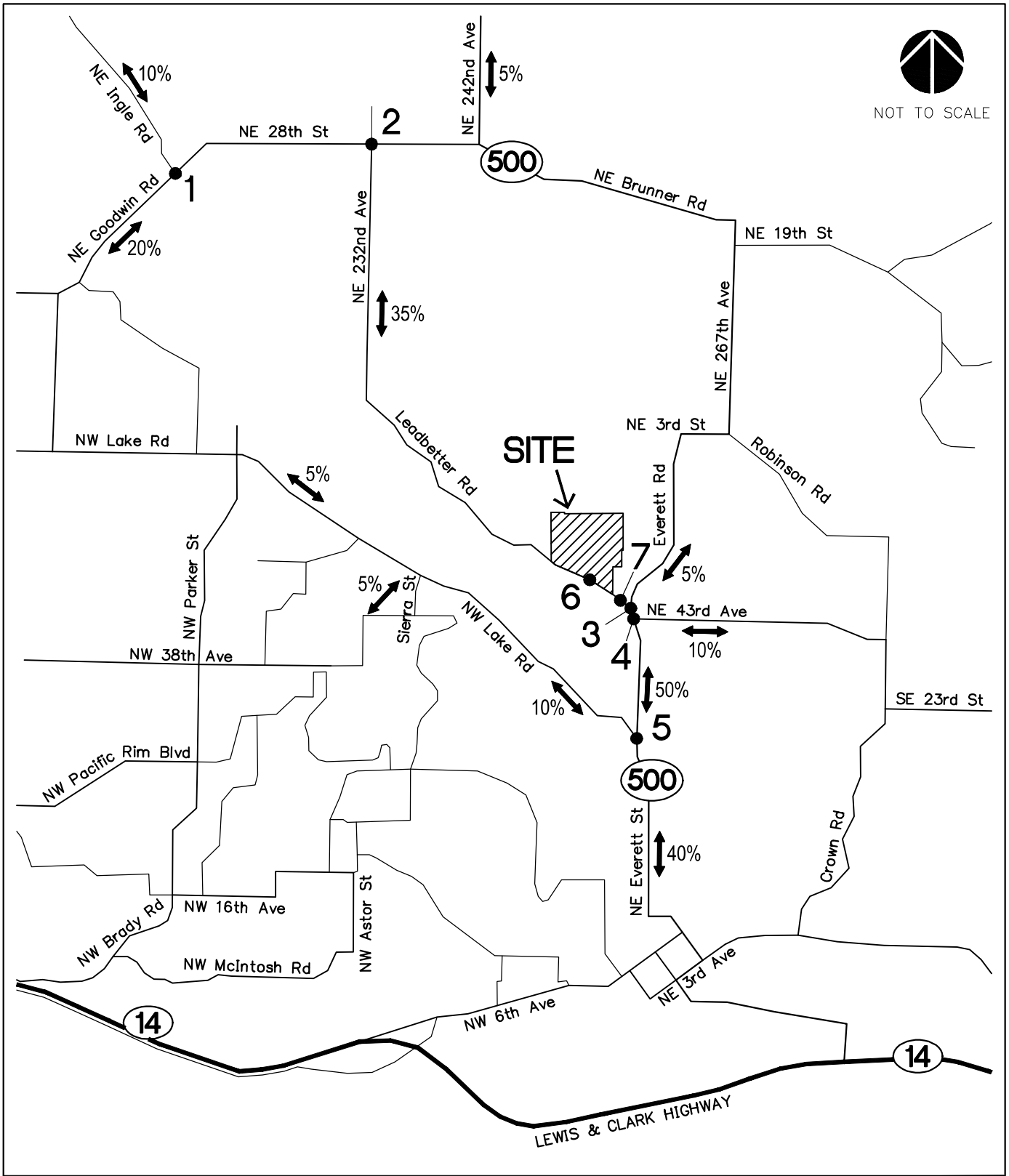




Total Estimated Trip Assignment - Full Build-Out
Weekday PM Peak Hour
Camas, Washington

Figure 10

H:\proj\file13865 - Green Mountain Master Plan\dwg\figs\13865_traffic study -Nov update.dwg Nov 20, 2014 - 2:29pm klaustson Layout Tab: 10_BxPM



Portland 503.224.9560 Vancouver 360.695.7879 Seattle 206.749.9993
www.mcknze.com
Architecture • Interiors
Planning • Engineering
MACKENZIE.

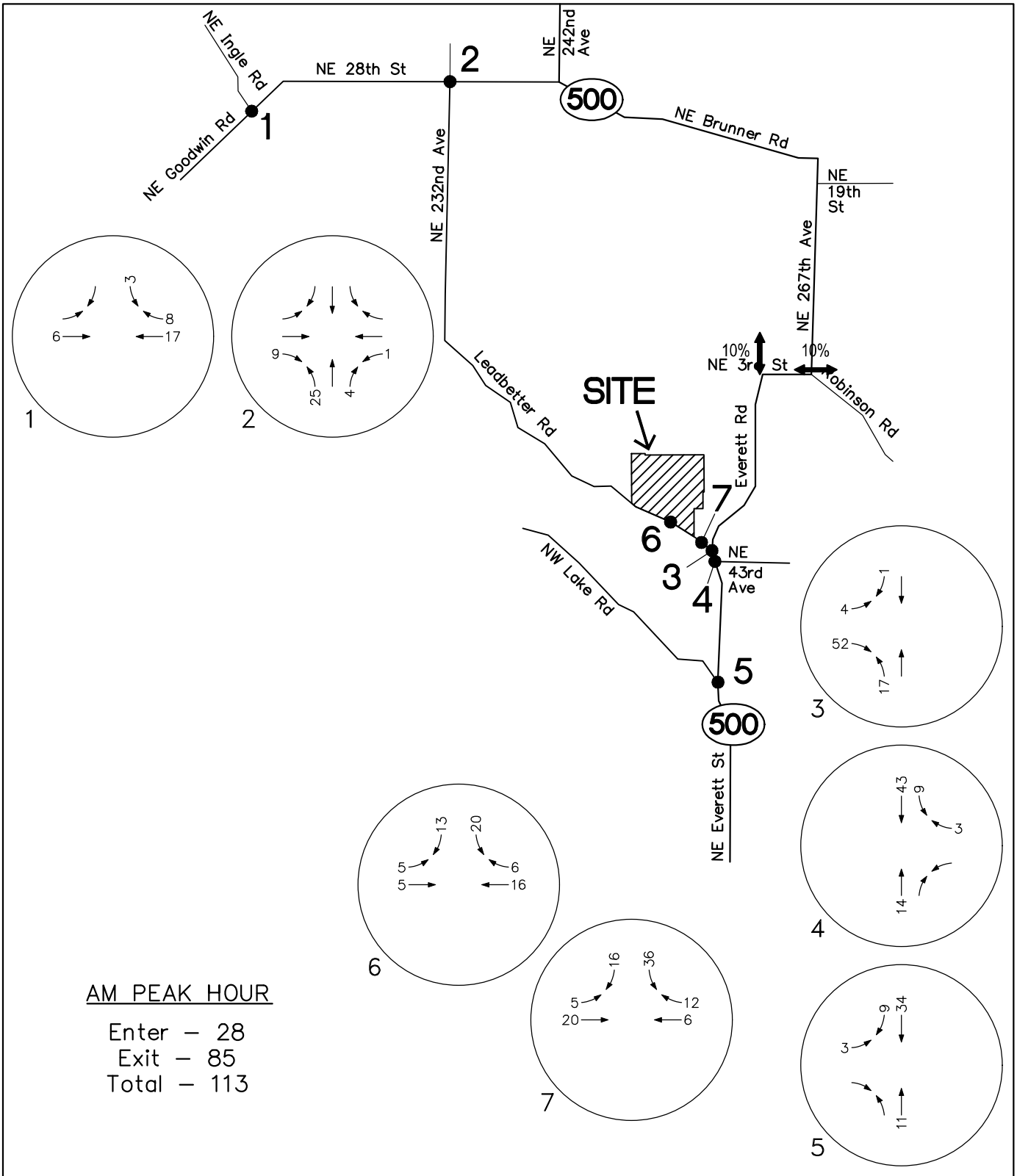
© MACKENZIE 2020 ALL RIGHTS RESERVED
THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION

DATE: 9.16.2020
DRAWN BY: JTJ
CHECKED BY: BTA
JOB NO: 220038900

TRIP DISTRIBUTION

CJ DENS EAST SUBDIVISION
CAMAS, WASHINGTON

FIGURE 1



Portland 503.224.9560 | Vancouver 360.695.7879 | Seattle 206.749.9993
www.mcknze.com
Architecture • Interiors
Planning • Engineering

© MACKENZIE 2020 ALL RIGHTS RESERVED
THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION

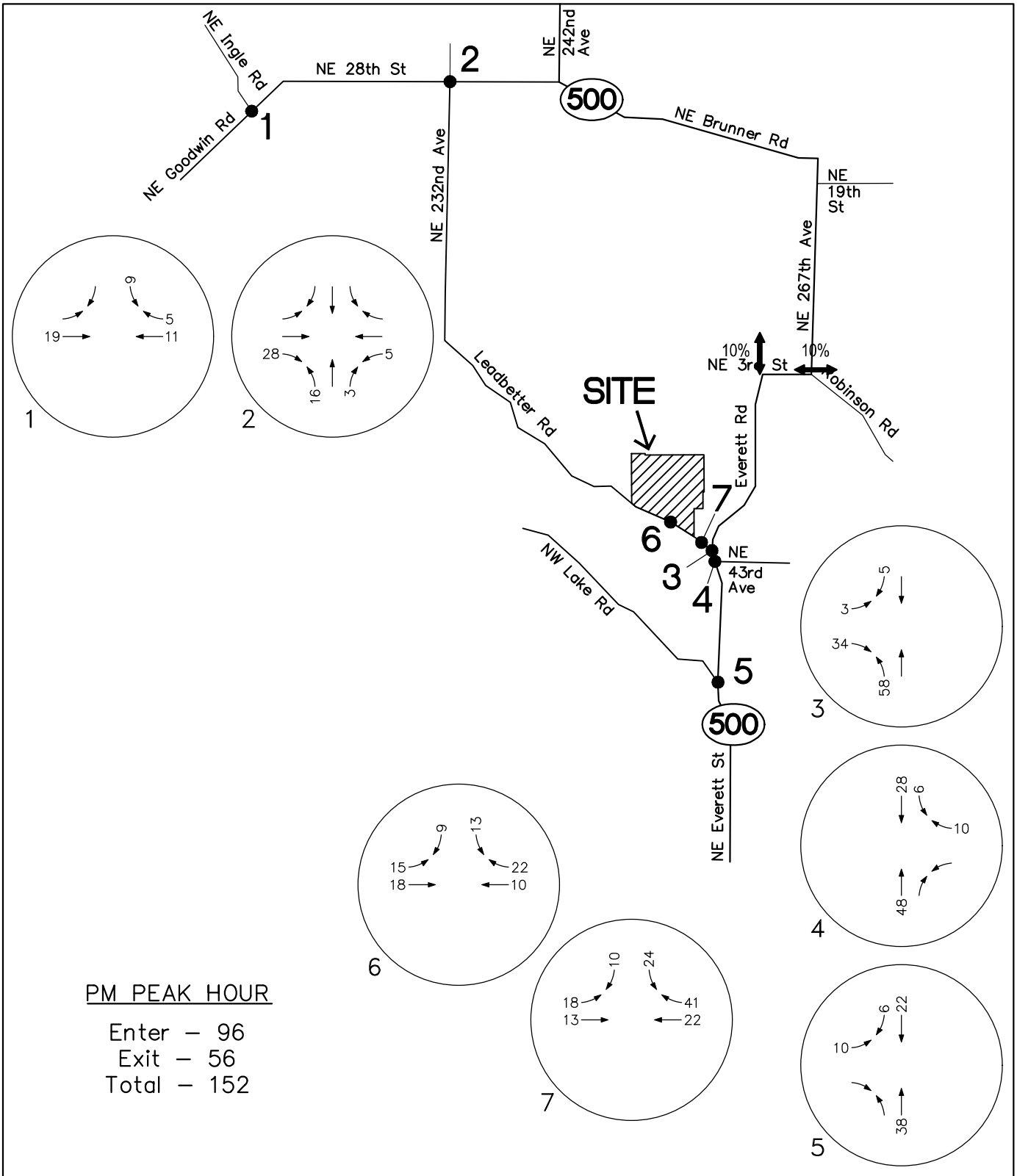
MACKENZIE

DATE: 9.16.2020
DRAWN BY: JTJ
CHECKED BY: BTA
JOB NO: 220038900

PROJECT TRIP ASSIGNMENT
AM PEAK HOUR

CJ DENS EAST SUBDIVISION
CAMAS, WASHINGTON

FIGURE
2A



PM PEAK HOUR

Enter – 96
Exit – 56
Total – 152

Portland 503.224.9560 Vancouver 360.695.7879 Seattle 206.749.9993
www.mcknze.com
Architecture ▪ Interiors
Planning ▪ Engineering

© MACKENZIE 2020 ALL RIGHTS RESERVED
THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION

MACKENZIE

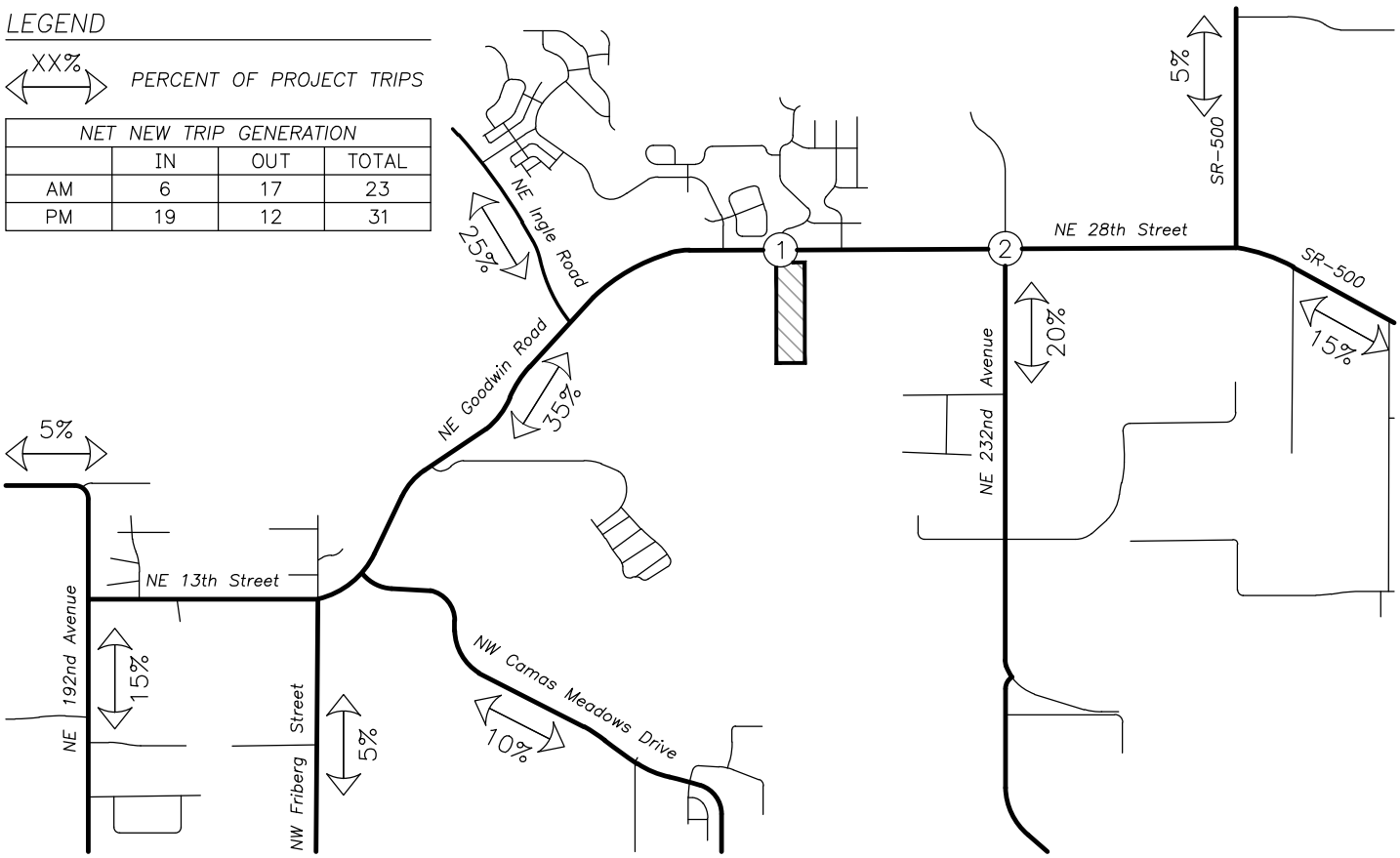
DATE: 9.16.2020
DRAWN BY: JTJ
CHECKED BY: BTA
JOB NO: 220038900

PROJECT TRIP ASSIGNMENT
PM PEAK HOUR

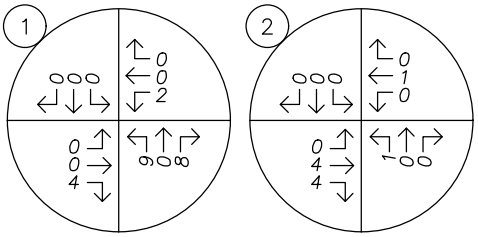
CJ DENS EAST SUBDIVISION
CAMAS, WASHINGTON

FIGURE
2B

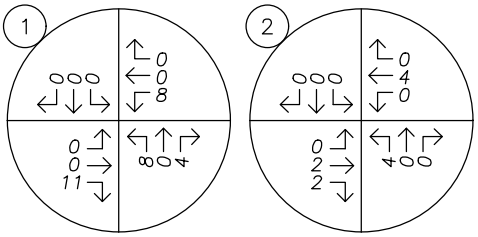
0% Build-Out



AM PEAK HOUR



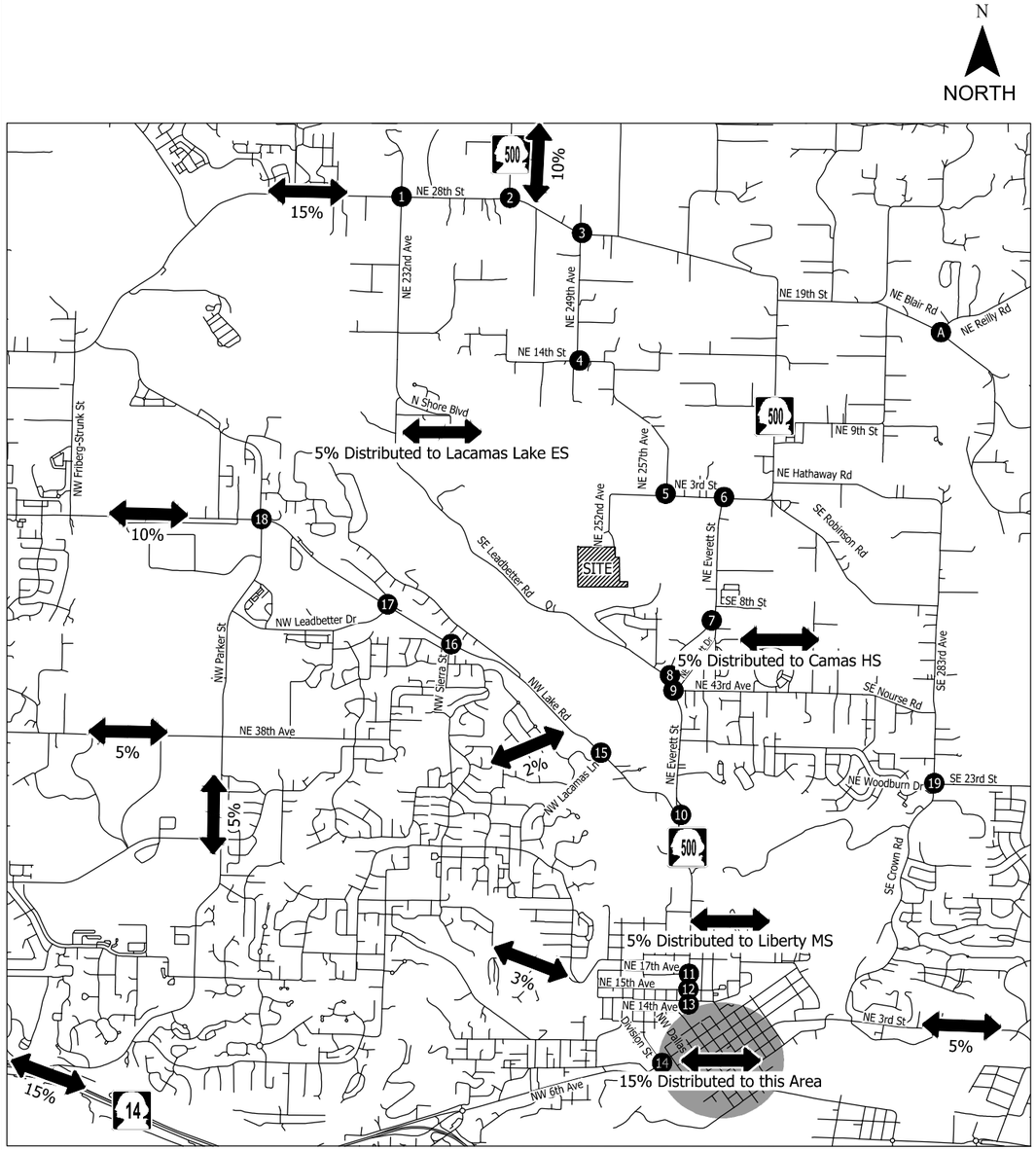
PM PEAK HOUR



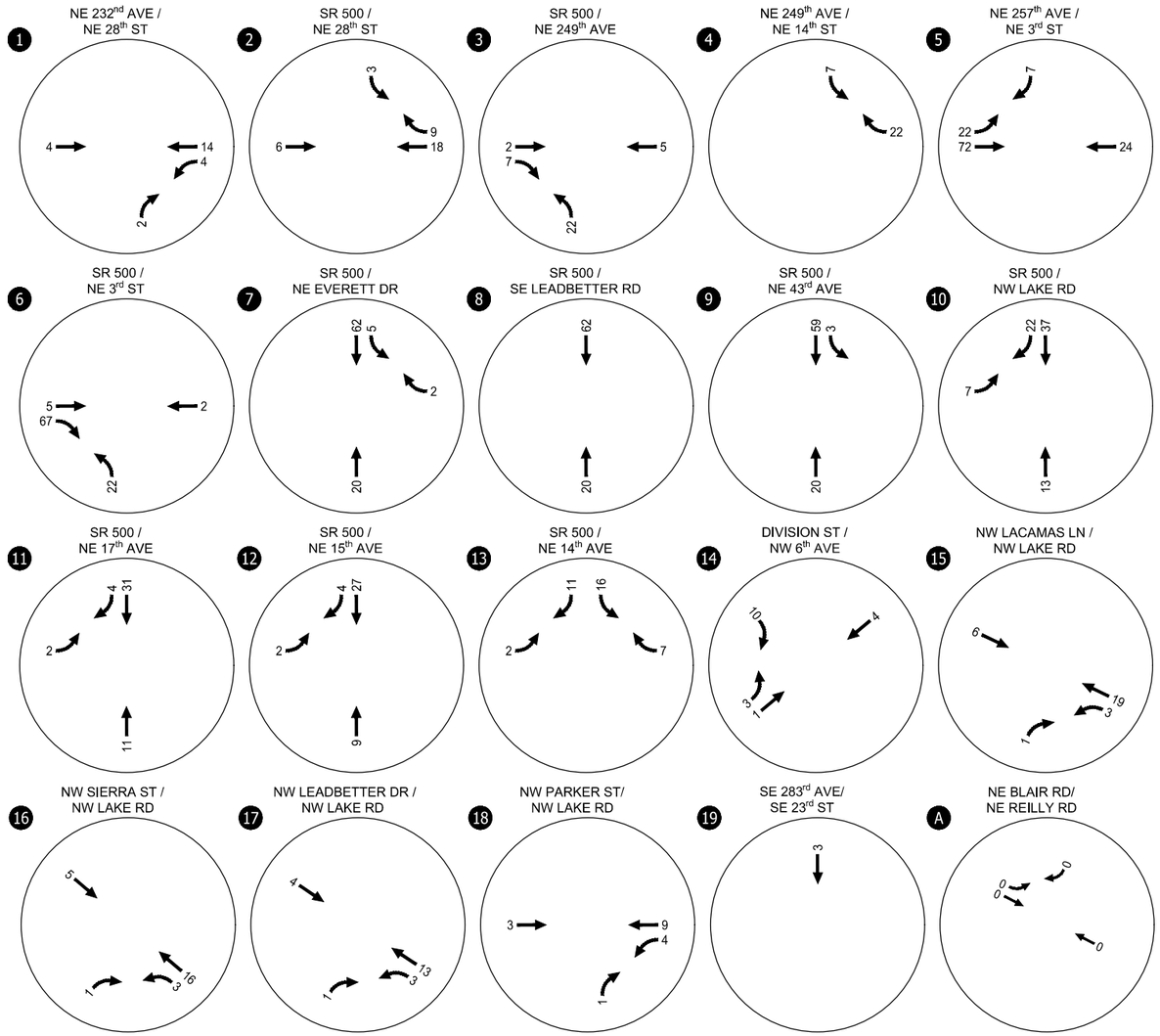
no scale

SITE TRIP DISTRIBUTION & ASSIGNMENT
Proposed Development Plan - Site Trips
AM & PM Peak Hours

Figure 3
Monte Verde Subdivision
7/13/2022



KEY MAP



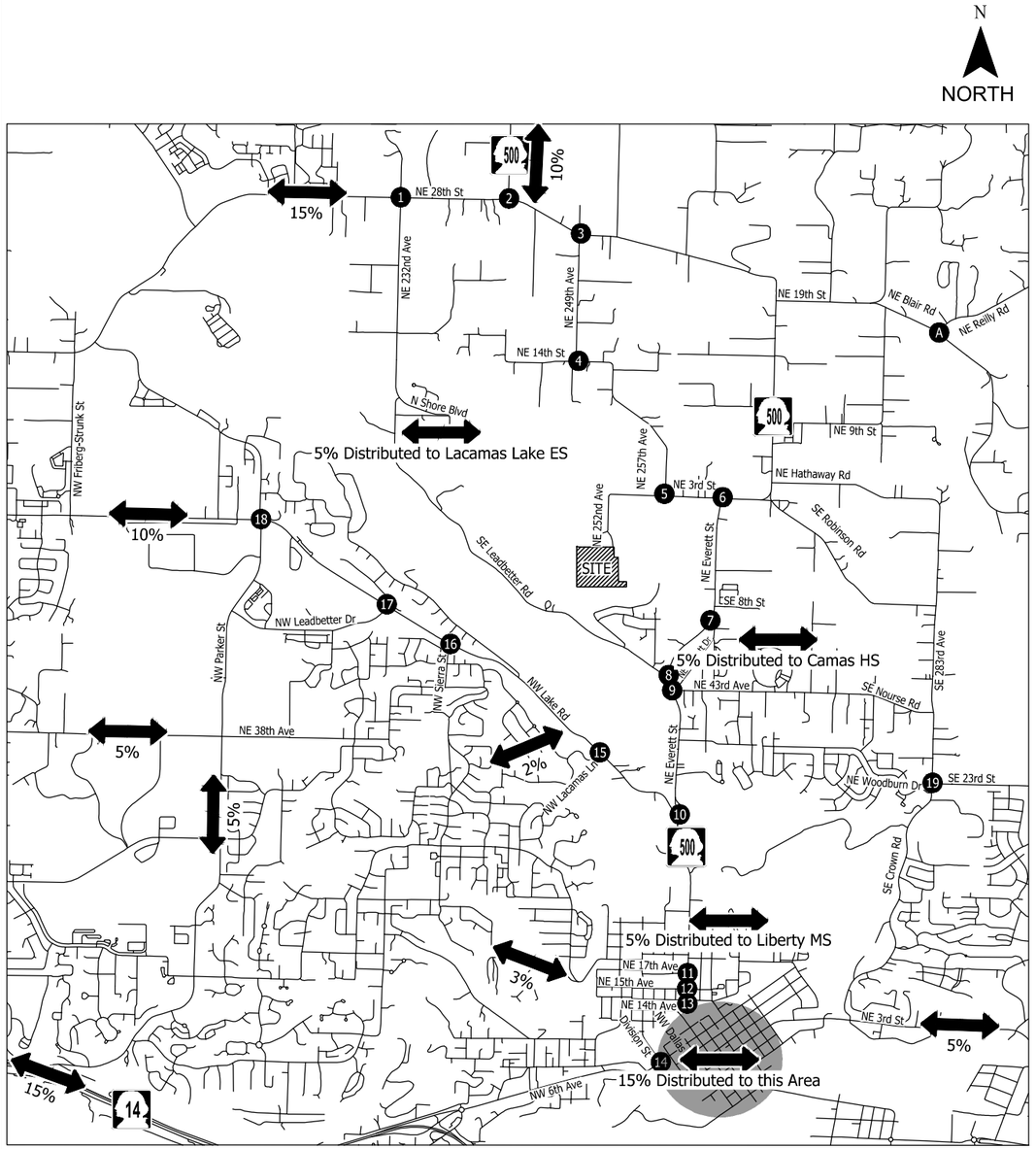
- SITE
- STUDY INTERSECTION
- -TRIP DISTRIBUTION (XX)

Site Generated Trip Assignment
Weekday AM Peak Hour
Camas, Washington

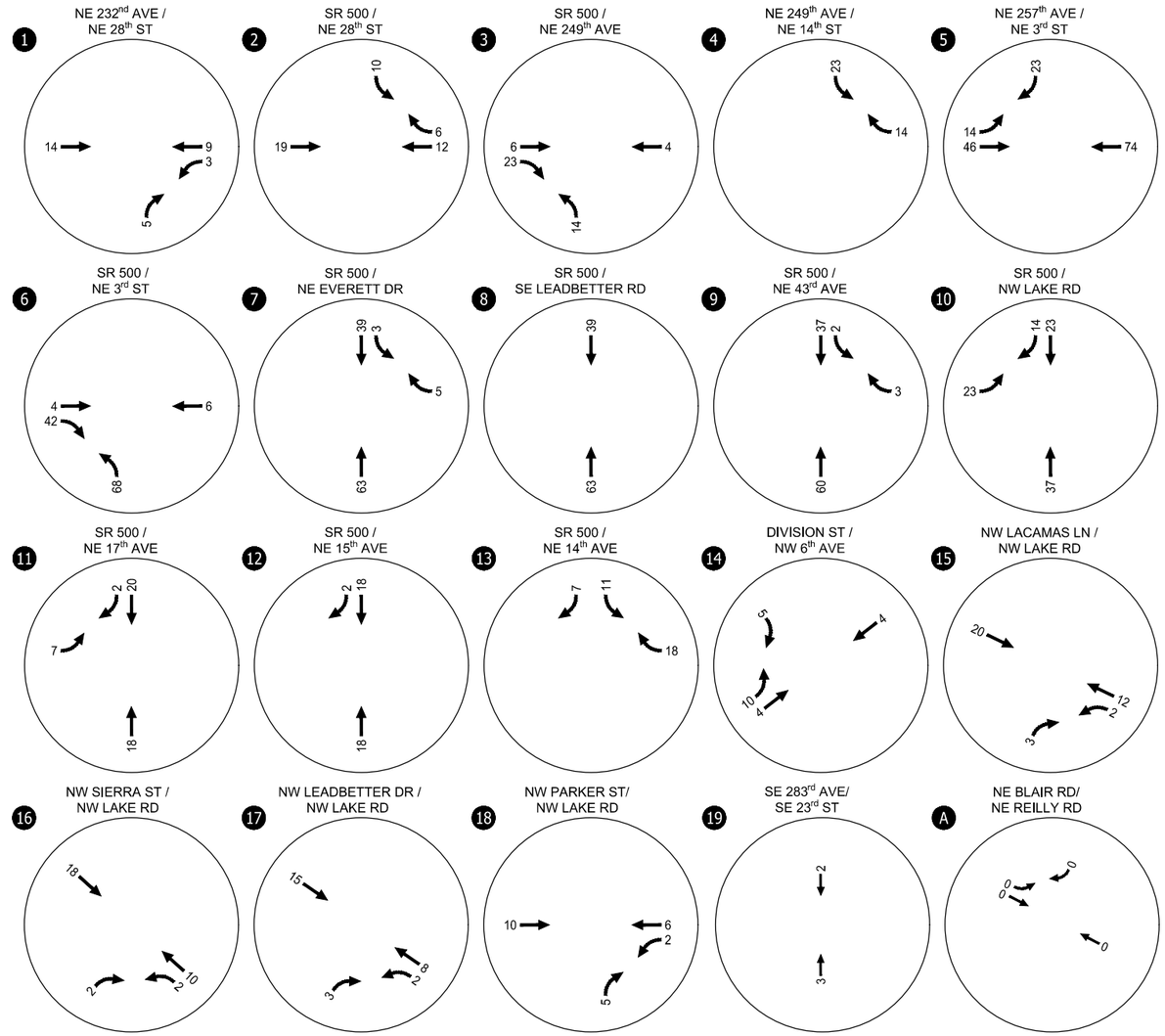
Figure 8

H:\31\31552 - Village at North Shore\report\figs\31552_Figures.dwg Jun 24, 2025 - 4:09pm - sbanerjee Layout Tab: Fig8 Site Trip Ass AM

KITTELSON & ASSOCIATES



KEY MAP



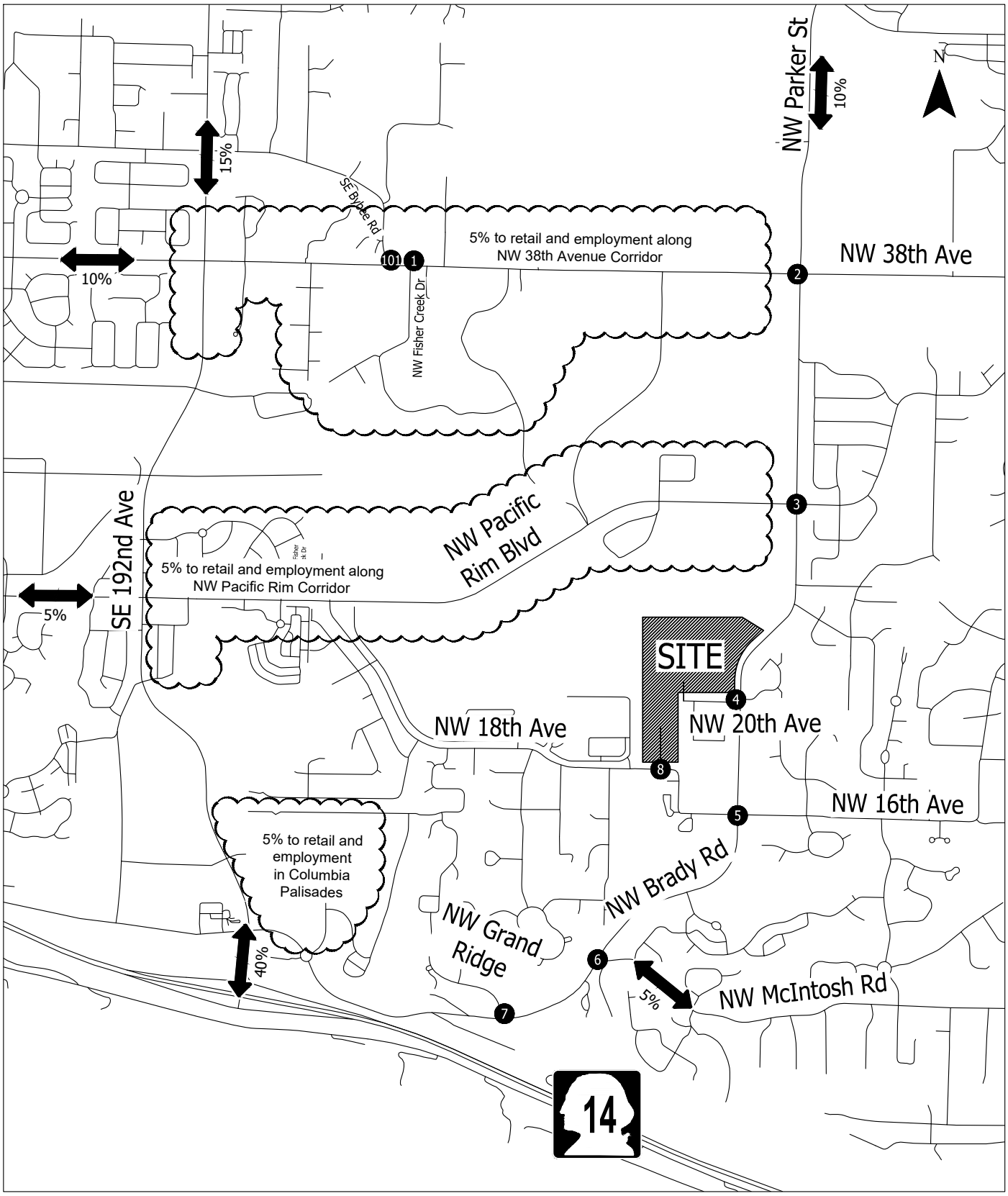
- SITE
- STUDY INTERSECTION
- TRIP DISTRIBUTION (XX%)

Site Generated Trip Assignment
Weekday PM Peak Hour
Camas, Washington

Figure 9

KITTELSON & ASSOCIATES

H:\31\31552 - Village at North Shore\report\figs\31552_Figures.dwg Jun 24, 2025 - 4:09pm - sbanerjee Layout Tab: Fig9 Site Trip Ass PM



Estimated Trip Distribution Pattern
Camas, Washington

Figure
6

(#) Study Intersections

XX% Trip Distribution Percentage

C:\Users\creynolds\appdata\local\temp\AcPublish_38380\31765_figureset.dwg Jul 03, 2025 - 11:51am - creynolds Layout Tab: Fig6 Trip Distribution

WEEKDAY AM PEAK HOUR

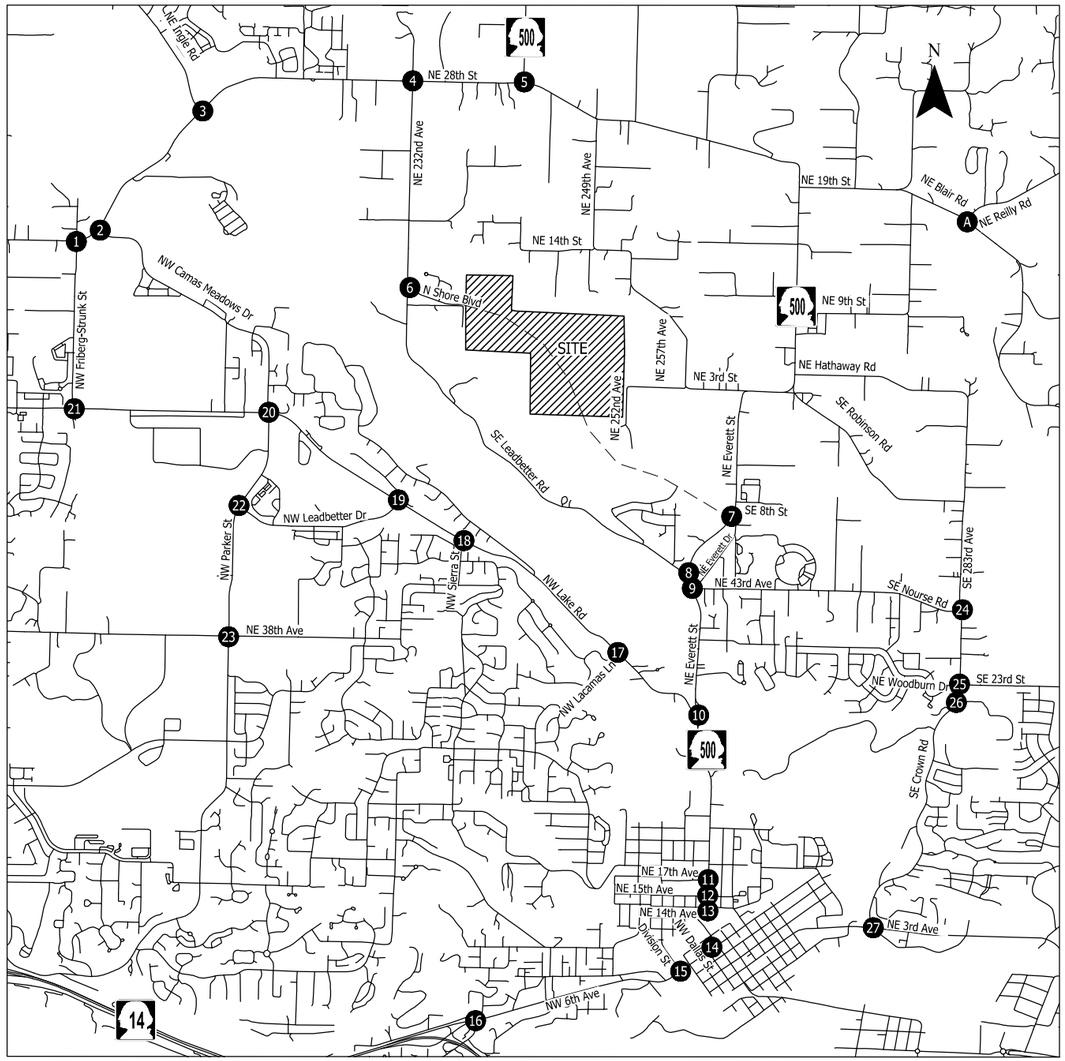
WEEKDAY PM PEAK HOUR

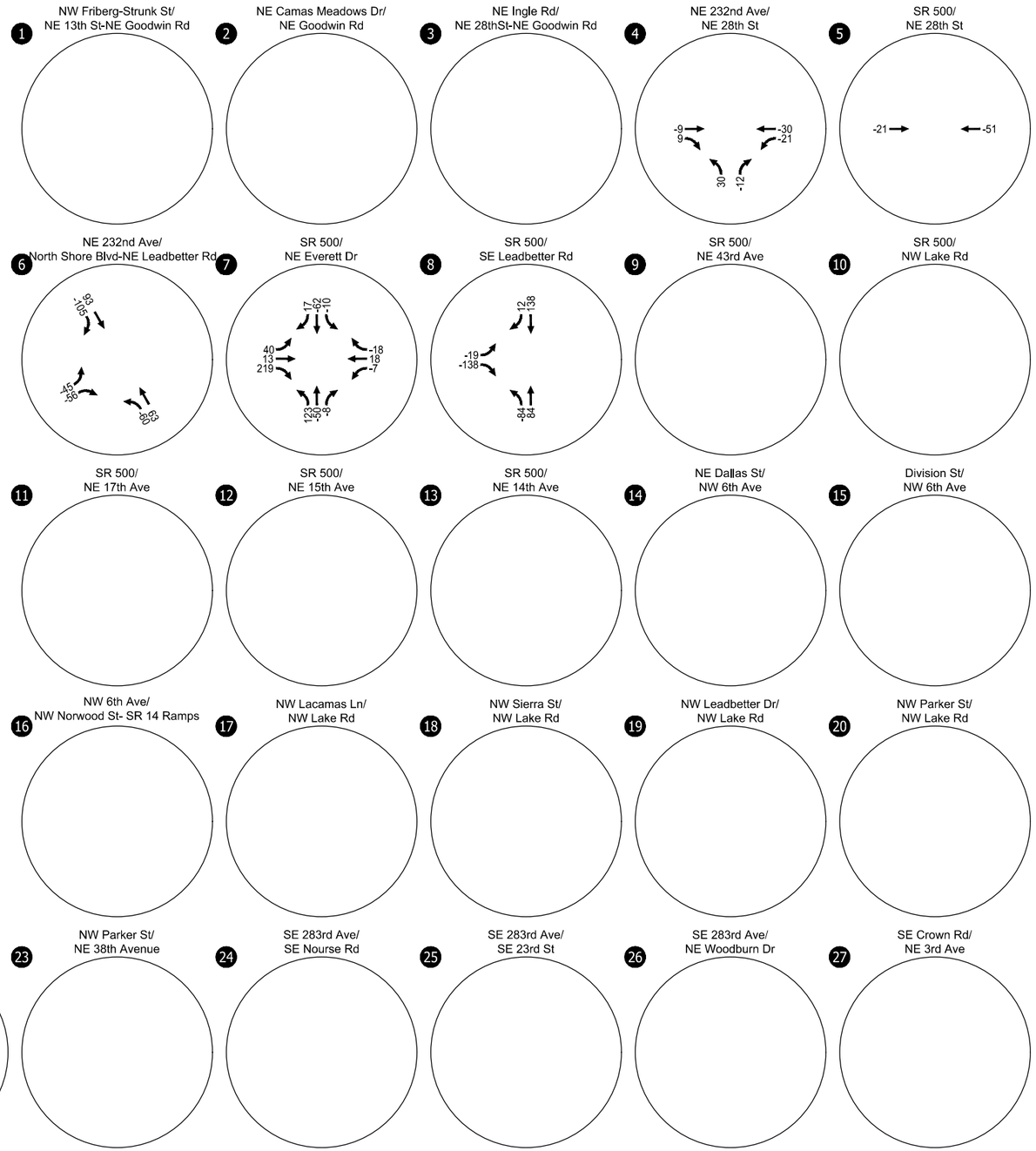
Site-Generated Trip Assignment
Weekday AM & PM Peak Hours
Camas, Washington

Figure
7

C:\Users\creynolds\appdata\local\temp\AcPublish_38380\31765_figureset.dwg Jul 03, 2025 - 11:51am - creynolds Layout Tab: Fig7 Site Trip Assignments

Appendix F : Year 2030 Background Traffic Conditions Analysis Worksheets





- STUDY INTERSECTION

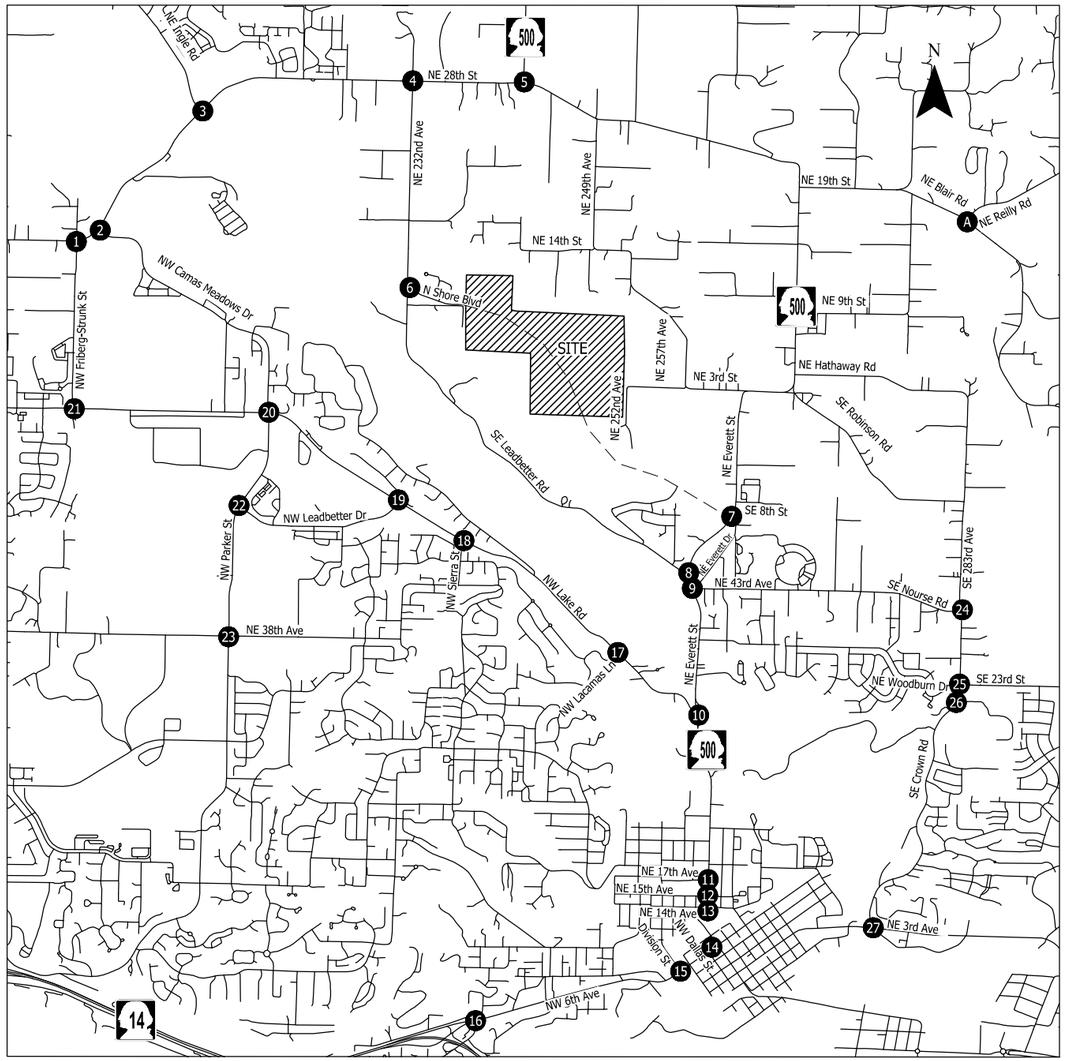
- SITE

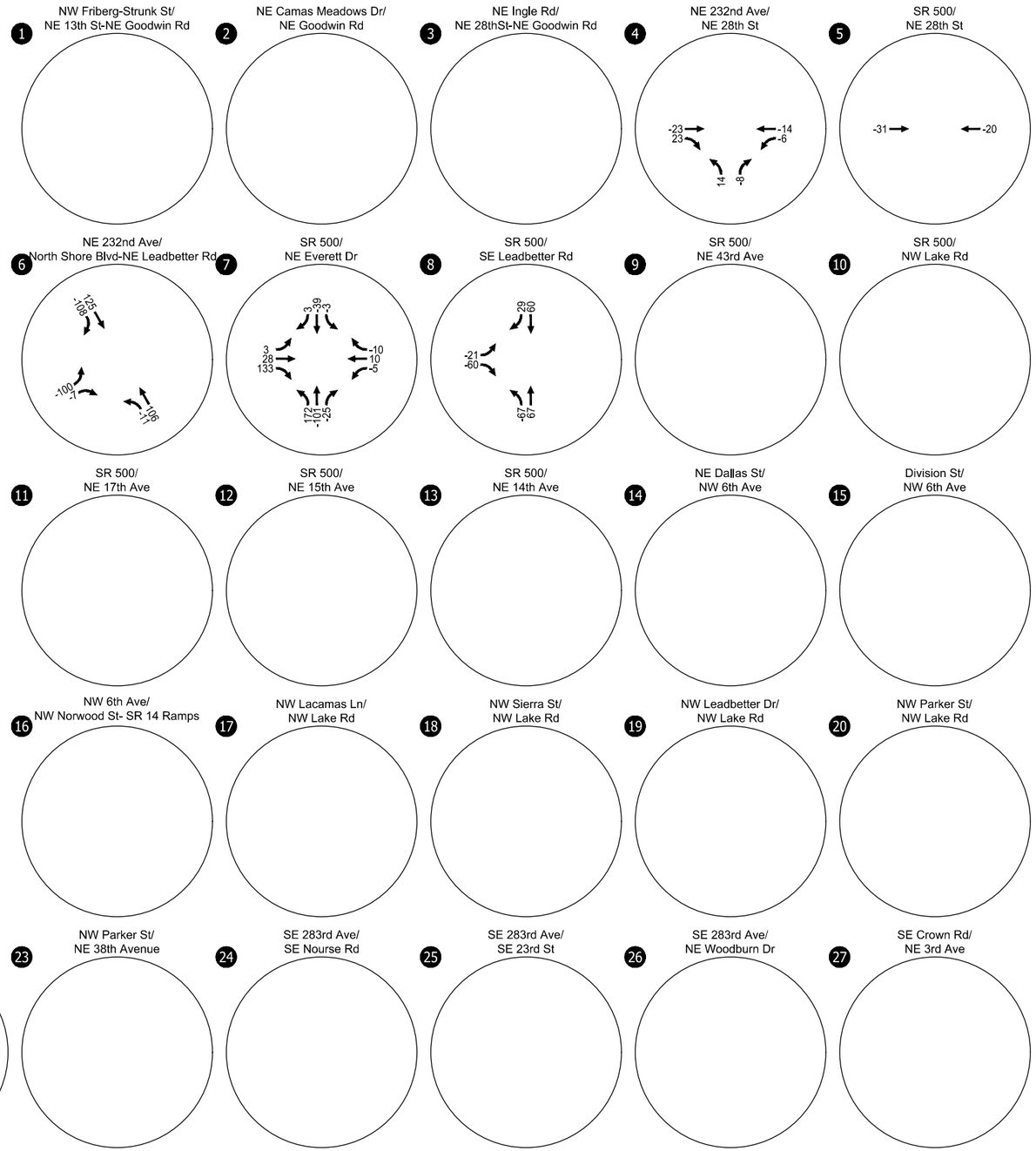
2030 Background Traffic Re-Assignment for North Shore Boulevard
Weekday AM Peak Hour
Camas, Washington

Figure
F-1

KITTELSON & ASSOCIATES

H:\31\31612 - Johnston Dairy\report\figs\31612_TIS Figs.dwg Sep 15, 2025 - 3:00pm - cdougherty Layout Tab: Fig F1 Reassign AM





- STUDY INTERSECTION

- SITE

2030 Background Traffic Re-Assignment for North Shore Boulevard
Weekday PM Peak Hour
Camas, Washington

Figure
F-2

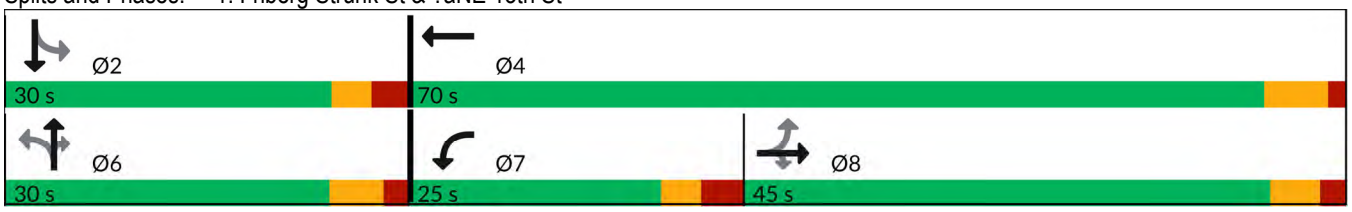
KITTELSON & ASSOCIATES

H:\31\31612 - Johnston Dairy\report\figs\31612_TIS Figs.dwg Sep 15, 2025 - 3:01pm - cdougherty Layout Tab: Fig F2 Reassign PM

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Configurations									
Traffic Volume (vph)	1	209	285	315	430	86	2	112	5
Future Volume (vph)	1	209	285	315	430	86	2	112	5
Turn Type	Perm	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases		8		7	4		6		2
Permitted Phases	8		8			6		6	
Detector Phase	8	8	8	7	4	6	6	6	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.6	23.6	23.6	11.0	24.1	23.8	23.8	23.8	25.6
Total Split (s)	45.0	45.0	45.0	25.0	70.0	30.0	30.0	30.0	30.0
Total Split (%)	45.0%	45.0%	45.0%	25.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.6	3.6	3.6	3.0	4.7	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	3.0	1.4	1.8	1.8	1.8	2.6
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		5.6	5.6	6.0	6.1		5.8	5.8	5.6
Lead/Lag	Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	Min	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)		16.4	16.4	19.5	41.5		10.5	10.5	10.7
Actuated g/C Ratio		0.26	0.26	0.30	0.65		0.16	0.16	0.17
v/c Ratio		0.69	0.55	0.79	0.47		0.57	0.39	0.03
Control Delay (s/veh)		32.2	6.0	38.0	7.9		38.4	8.8	23.2
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		32.2	6.0	38.0	7.9		38.4	8.8	23.2
LOS		C	A	D	A		D	A	C
Approach Delay (s/veh)		17.1			20.6		21.8		23.2
Approach LOS		B			C		C		C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 64.3	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay (s/veh): 19.6	Intersection LOS: B
Intersection Capacity Utilization 59.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Friberg Strunk St & ?áNE 13th St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	209	285	315	430	0	86	2	112	0	5	1
Future Volume (veh/h)	1	209	285	315	430	0	86	2	112	0	5	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	0.96	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	401	1604	1811	1796	1826	1900	1682	1900	1826	1900	1604	1900
Adj Flow Rate, veh/h	1	258	352	389	531	0	106	2	138	0	6	1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	100	20	6	7	5	0	10	0	5	0	20	0
Cap, veh/h	66	455	427	443	1190	0	310	5	205	0	179	30
Arrive On Green	0.28	0.28	0.28	0.26	0.65	0.00	0.13	0.13	0.13	0.00	0.13	0.13
Sat Flow, veh/h	1	1601	1502	1711	1826	0	1360	35	1536	0	1338	223
Grp Volume(v), veh/h	259	0	352	389	531	0	108	0	138	0	0	7
Grp Sat Flow(s),veh/h/ln	1602	0	1502	1711	1826	0	1395	0	1536	0	0	1561
Q Serve(g_s), s	0.0	0.0	12.1	12.1	7.9	0.0	3.9	0.0	4.7	0.0	0.0	0.2
Cycle Q Clear(g_c), s	7.6	0.0	12.1	12.1	7.9	0.0	4.1	0.0	4.7	0.0	0.0	0.2
Prop In Lane	0.00		1.00	1.00		0.00	0.98		1.00	0.00		0.14
Lane Grp Cap(c), veh/h	521	0	427	443	1190	0	315	0	205	0	0	209
V/C Ratio(X)	0.50	0.00	0.82	0.88	0.45	0.00	0.34	0.00	0.67	0.00	0.00	0.03
Avail Cap(c_a), veh/h	1202	0	1068	587	2106	0	748	0	671	0	0	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	16.9	0.0	18.5	19.7	4.7	0.0	22.7	0.0	22.8	0.0	0.0	20.9
Incr Delay (d2), s/veh	0.3	0.0	1.6	9.4	0.1	0.0	0.2	0.0	1.4	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	3.8	5.3	1.7	0.0	1.2	0.0	1.6	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.2	0.0	20.1	29.1	4.8	0.0	22.9	0.0	24.3	0.0	0.0	20.9
LnGrp LOS	B		C	C	A		C		C			C
Approach Vol, veh/h		611			920			246			7	
Approach Delay, s/veh		18.9			15.1			23.7			20.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		13.2		42.2		13.2	20.4	21.8				
Change Period (Y+Rc), s		* 5.8		6.1		5.8	6.0	* 6.1				
Max Green Setting (Gmax), s		* 24		63.9		24.2	19.0	* 39				
Max Q Clear Time (g_c+I1), s		2.2		9.9		6.7	14.1	14.1				
Green Ext Time (p_c), s		0.0		2.2		0.5	0.3	1.6				

Intersection Summary	
HCM 7th Control Delay, s/veh	17.6
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	248	61	173	740	19	59
Future Vol, veh/h	248	61	173	740	19	59
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	55	-	105	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	4	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	14	20	8	5	37	4
Mvmt Flow	273	67	190	813	21	65

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	341	0	1467	274
Stage 1	-	-	-	-	274	-
Stage 2	-	-	-	-	1193	-
Critical Hdwy	-	-	4.18	-	6.77	6.24
Critical Hdwy Stg 1	-	-	-	-	5.77	-
Critical Hdwy Stg 2	-	-	-	-	5.77	-
Follow-up Hdwy	-	-	2.272	-	3.833	3.336
Pot Cap-1 Maneuver	-	-	1186	-	118	760
Stage 1	-	-	-	-	698	-
Stage 2	-	-	-	-	245	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1185	-	99	760
Mov Cap-2 Maneuver	-	-	-	-	99	-
Stage 1	-	-	-	-	698	-
Stage 2	-	-	-	-	206	-

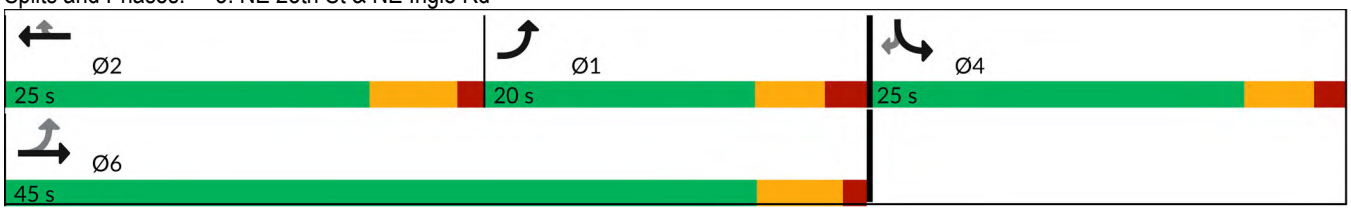
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.63	20.13
HCM LOS			C

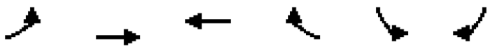
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	99	760	-	-	1185	-
HCM Lane V/C Ratio	0.212	0.085	-	-	0.16	-
HCM Ctrl Dly (s/v)	51	10.2	-	-	8.6	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	0.3	-	-	0.6	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	123	183	426	96	109	480
Future Volume (vph)	123	183	426	96	109	480
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	10.8	15.7	24.9	24.9	10.3	10.3
Total Split (s)	20.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	28.6%	64.3%	35.7%	35.7%	35.7%	35.7%
Yellow Time (s)	3.6	4.5	4.5	4.5	3.6	3.6
All-Red Time (s)	2.2	1.2	1.4	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.7	5.9	5.9	5.3	5.3
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effct Green (s)	28.8	27.4	18.9	18.9	9.1	9.1
Actuated g/C Ratio	0.60	0.57	0.39	0.39	0.19	0.19
v/c Ratio	0.27	0.21	0.68	0.17	0.41	0.75
Control Delay (s/veh)	8.7	6.4	22.0	6.3	22.4	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.7	6.4	22.0	6.3	22.4	9.7
LOS	A	A	C	A	C	A
Approach Delay (s/veh)		7.3	19.1		12.1	
Approach LOS		A	B		B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 48	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay (s/veh): 13.6	Intersection LOS: B
Intersection Capacity Utilization 61.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: NE 28th St & NE Ingle Rd





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	123	183	426	96	109	480
Future Volume (veh/h)	123	183	426	96	109	480
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1707	1737	1811	1796	1752	1841
Adj Flow Rate, veh/h	134	199	463	104	118	522
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	13	11	6	7	10	4
Cap, veh/h	257	813	525	441	568	531
Arrive On Green	0.08	0.47	0.29	0.29	0.34	0.34
Sat Flow, veh/h	1626	1737	1811	1522	1668	1560
Grp Volume(v), veh/h	134	199	463	104	118	522
Grp Sat Flow(s),veh/h/ln	1626	1737	1811	1522	1668	1560
Q Serve(g_s), s	0.0	4.0	14.1	3.0	2.9	19.2
Cycle Q Clear(g_c), s	0.0	4.0	14.1	3.0	2.9	19.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	257	813	525	441	568	531
V/C Ratio(X)	0.52	0.24	0.88	0.24	0.21	0.98
Avail Cap(c_a), veh/h	532	1179	598	502	568	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	9.3	19.6	15.7	13.6	18.9
Incr Delay (d2), s/veh	0.6	0.1	12.3	0.1	0.1	34.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.2	6.8	0.9	1.0	11.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	25.3	9.3	31.9	15.8	13.6	53.5
LnGrp LOS	C	A	C	B	B	D
Approach Vol, veh/h		333	567		640	
Approach Delay, s/veh		15.7	28.9		46.1	
Approach LOS		B	C		D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.2	22.7		25.0		32.9
Change Period (Y+Rc), s	5.8	5.9		5.3		* 5.8
Max Green Setting (Gmax), s	14.2	19.1		19.7		* 39
Max Q Clear Time (g_c+I1), s	2.0	16.1		21.2		6.0
Green Ext Time (p_c), s	0.1	0.6		0.0		0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	33.2
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	153	162	38	248	2	145	2	24	1	3	6
Future Vol, veh/h	2	153	162	38	248	2	145	2	24	1	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	6	8	10	7	0	4	0	21	0	0	20
Mvmt Flow	2	180	191	45	292	2	171	2	28	1	4	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	294	0	0	371	0	0	663	664	275	568	758	293
Stage 1	-	-	-	-	-	-	280	280	-	382	382	-
Stage 2	-	-	-	-	-	-	383	384	-	186	375	-
Critical Hdwy	4.1	-	-	4.2	-	-	7.14	6.5	6.41	7.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.29	-	-	3.536	4	3.489	3.5	4	3.48
Pot Cap-1 Maneuver	1279	-	-	1145	-	-	372	384	720	436	339	706
Stage 1	-	-	-	-	-	-	722	683	-	644	616	-
Stage 2	-	-	-	-	-	-	636	615	-	821	620	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1279	-	-	1145	-	-	347	365	720	396	322	706
Mov Cap-2 Maneuver	-	-	-	-	-	-	347	365	-	396	322	-
Stage 1	-	-	-	-	-	-	721	681	-	614	587	-
Stage 2	-	-	-	-	-	-	596	586	-	784	619	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.05	1.09	25.28	12.5
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	374	10	-	-	237	-	-	492
HCM Lane V/C Ratio	0.538	0.002	-	-	0.039	-	-	0.024
HCM Ctrl Dly (s/v)	25.3	7.8	0	-	8.3	0	-	12.5
HCM Lane LOS	D	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	3.1	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	31	150	0	0	201	120	0	0	0	106	0	87
Future Vol, veh/h	31	150	0	0	201	120	0	0	0	106	0	87
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	13	9	0	0	6	6	0	0	0	4	0	5
Mvmt Flow	36	176	0	0	236	141	0	0	0	125	0	102

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	378	0	0	176	0	0	486	627	176	556	556	307
Stage 1	-	-	-	-	-	-	249	249	-	307	307	-
Stage 2	-	-	-	-	-	-	236	378	-	249	249	-
Critical Hdwy	4.23	-	-	4.1	-	-	7.1	6.5	6.2	7.14	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.317	-	-	2.2	-	-	3.5	4	3.3	3.536	4	3.345
Pot Cap-1 Maneuver	1123	-	-	1412	-	-	495	403	872	438	442	726
Stage 1	-	-	-	-	-	-	759	704	-	699	664	-
Stage 2	-	-	-	-	-	-	771	619	-	750	704	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1123	-	-	1412	-	-	410	388	872	423	426	726
Mov Cap-2 Maneuver	-	-	-	-	-	-	410	388	-	423	426	-
Stage 1	-	-	-	-	-	-	732	679	-	699	664	-
Stage 2	-	-	-	-	-	-	662	619	-	723	679	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.42	0	0	17.16
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	308	-	-	1412	-	-	521
HCM Lane V/C Ratio	-	0.032	-	-	-	-	-	0.436
HCM Ctrl Dly (s/v)	0	8.3	0	-	0	-	-	17.2
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	2.2

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	1	133	176	1
Future Vol, veh/h	1	1	1	133	176	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-4	-4	-
Peak Hour Factor	48	48	48	48	48	48
Heavy Vehicles, %	18	6	5	10	9	8
Mvmt Flow	2	2	2	277	367	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	649	368	369	0	-	0
Stage 1	368	-	-	-	-	-
Stage 2	281	-	-	-	-	-
Critical Hdwy	6.98	6.46	4.15	-	-	-
Critical Hdwy Stg 1	5.98	-	-	-	-	-
Critical Hdwy Stg 2	5.98	-	-	-	-	-
Follow-up Hdwy	3.662	3.354	2.245	-	-	-
Pot Cap-1 Maneuver	382	655	1173	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	708	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	381	655	1173	-	-	-
Mov Cap-2 Maneuver	381	-	-	-	-	-
Stage 1	638	-	-	-	-	-
Stage 2	708	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	12.54	0.06	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	13	-	482	-	-
HCM Lane V/C Ratio	0.002	-	0.009	-	-
HCM Ctrl Dly (s/v)	8.1	0	12.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

MOVEMENT SUMMARY

Site: 7 [Everett St (SR 500) St & NE Everett Dr_BackgroundAM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett St (SR 500)															
3	L2	All MCs	132	0.0	132	0.0	0.498	11.0	LOS B	3.7	93.1	0.49	0.52	0.49	34.1
8	T1	All MCs	230	3.0	230	3.0	0.498	4.8	LOS A	3.7	93.1	0.49	0.52	0.49	34.8
18	R2	All MCs	214	3.0	214	3.0	0.498	4.9	LOS A	3.7	93.1	0.49	0.52	0.49	34.5
Approach			576	2.3	576	2.3	0.498	6.3	LOS A	3.7	93.1	0.49	0.52	0.49	34.5
East: NE Everett Dr															
1	L2	All MCs	189	10.0	189	10.0	0.285	12.3	LOS B	1.6	41.8	0.56	0.66	0.56	32.4
6	T1	All MCs	19	0.0	19	0.0	0.285	5.5	LOS A	1.6	41.8	0.56	0.66	0.56	33.4
16	R2	All MCs	49	3.0	49	3.0	0.285	5.8	LOS A	1.6	41.8	0.56	0.66	0.56	33.0
Approach			258	7.9	258	7.9	0.285	10.6	LOS B	1.6	41.8	0.56	0.66	0.56	32.6
North: NE Everett St (SR 500)															
7	L2	All MCs	138	1.0	138	1.0	0.519	12.4	LOS B	3.7	93.2	0.64	0.63	0.66	33.4
4	T1	All MCs	367	3.0	367	3.0	0.519	6.3	LOS A	3.7	93.2	0.64	0.63	0.66	34.1
14	R2	All MCs	18	0.0	18	0.0	0.519	6.2	LOS A	3.7	93.2	0.64	0.63	0.66	33.8
Approach			523	2.4	523	2.4	0.519	7.9	LOS A	3.7	93.2	0.64	0.63	0.66	33.9
West: NE Everett Dr															
5	L2	All MCs	12	0.0	12	0.0	0.392	14.4	LOS B	2.6	65.2	0.79	0.72	0.79	33.5
2	T1	All MCs	16	0.0	16	0.0	0.392	8.1	LOS A	2.6	65.2	0.79	0.72	0.79	34.2
12	R2	All MCs	270	0.0	270	0.0	0.392	8.3	LOS A	2.6	65.2	0.79	0.72	0.79	33.9
Approach			299	0.0	299	0.0	0.392	8.5	LOS A	2.6	65.2	0.79	0.72	0.79	33.9
All Vehicles			1656	2.8	1656	2.8	0.519	7.9	LOS A	3.7	93.2	0.60	0.61	0.61	33.9

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	17	13	449	671	35
Future Vol, veh/h	12	17	13	449	671	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	110	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	4	-4	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	1	1	3	5	1
Mvmt Flow	14	20	15	516	771	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1337	791	811	0	-	0
Stage 1	791	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Critical Hdwy	6.8	6.41	4.11	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	147	374	819	-	-	-
Stage 1	412	-	-	-	-	-
Stage 2	550	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	144	374	819	-	-	-
Mov Cap-2 Maneuver	144	-	-	-	-	-
Stage 1	405	-	-	-	-	-
Stage 2	550	-	-	-	-	-

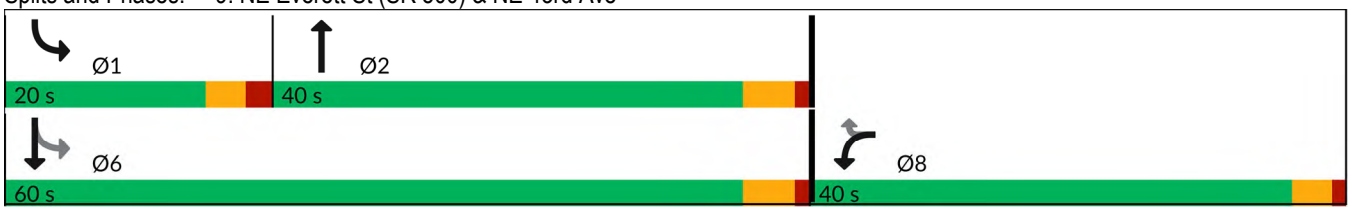
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	23.71	0.27	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	819	-	226	-	-
HCM Lane V/C Ratio	0.018	-	0.148	-	-
HCM Ctrl Dly (s/v)	9.5	-	23.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	333	71	396	485	96	596
Future Volume (vph)	333	71	396	485	96	596
Turn Type	Prot	Perm	NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		Free	6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	23.0	23.0	30.0		10.0	50.0
Total Split (s)	40.0	40.0	40.0		20.0	60.0
Total Split (%)	40.0%	40.0%	40.0%		20.0%	60.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0
All-Red Time (s)	1.0	1.0	1.0		2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	Min		None	Min
Act Effct Green (s)	23.8	23.8	28.6	72.8	38.9	38.9
Actuated g/C Ratio	0.33	0.33	0.39	1.00	0.53	0.53
v/c Ratio	0.75	0.15	0.67	0.38	0.30	0.71
Control Delay (s/veh)	34.0	5.9	26.8	0.7	11.6	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.0	5.9	26.8	0.7	11.6	18.2
LOS	C	A	C	A	B	B
Approach Delay (s/veh)	29.0		12.5			17.3
Approach LOS	C		B			B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 72.8	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay (s/veh): 17.6	Intersection LOS: B
Intersection Capacity Utilization 57.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: NE Everett St (SR 500) & NE 43rd Ave





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	333	71	396	485	96	596
Future Volume (veh/h)	333	71	396	485	96	596
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1799	1874	1746	1776	1802	1997
Adj Flow Rate, veh/h	383	59	455	0	110	685
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	12	7	4	2	17	4
Cap, veh/h	476	441	652		393	1076
Arrive On Green	0.28	0.28	0.37	0.00	0.06	0.54
Sat Flow, veh/h	1713	1588	1746	1505	1716	1997
Grp Volume(v), veh/h	383	59	455	0	110	685
Grp Sat Flow(s),veh/h/ln	1713	1588	1746	1505	1716	1997
Q Serve(g_s), s	10.2	1.4	10.8	0.0	1.8	11.8
Cycle Q Clear(g_c), s	10.2	1.4	10.8	0.0	1.8	11.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	476	441	652		393	1076
V/C Ratio(X)	0.80	0.13	0.70		0.28	0.64
Avail Cap(c_a), veh/h	1258	1166	1247		809	2241
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	16.5	13.3	13.0	0.0	9.1	7.9
Incr Delay (d2), s/veh	3.3	0.1	2.9	0.0	0.4	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.5	4.0	0.0	0.5	3.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	19.7	13.4	15.9	0.0	9.4	8.7
LnGrp LOS	B	B	B		A	A
Approach Vol, veh/h	442		455			795
Approach Delay, s/veh	18.9		15.9			8.8
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.1	23.3			31.4	17.6
Change Period (Y+Rc), s	5.0	5.0			5.0	4.0
Max Green Setting (Gmax), s	15.0	35.0			55.0	36.0
Max Q Clear Time (g_c+I1), s	3.8	12.8			13.8	12.2
Green Ext Time (p_c), s	0.2	5.4			7.0	1.5

Intersection Summary	
HCM 7th Control Delay, s/veh	13.3
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

MOVEMENT SUMMARY

Site 10 NE Everett St & NW Lake Rd_BackgroundAM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett Street															
3	L2	All MCs	231	7.0	231	7.0	0.354	14.1	LOS B	2.3	61.6	0.79	0.75	0.79	31.1
8	T1	All MCs	418	7.0	418	7.0	0.501	7.8	LOS A	4.3	112.7	0.86	0.72	0.93	34.1
Approach			648	7.0	648	7.0	0.501	10.0	LOS A	4.3	112.7	0.84	0.73	0.88	32.9
North: NE Everett Street															
4	T1	All MCs	624	10.0	624	10.0	0.556	5.6	LOS A	4.7	125.9	0.65	0.53	0.65	34.5
14	R2	All MCs	414	2.0	414	2.0	0.334	5.0	LOS A	2.3	58.7	0.51	0.53	0.51	35.1
Approach			1038	6.8	1038	6.8	0.556	5.3	LOS A	4.7	125.9	0.60	0.53	0.60	34.8
West: NW Lake Road															
5	L2	All MCs	563	3.0	563	3.0	0.660	17.8	LOS B	7.5	191.8	0.96	0.90	1.24	29.7
12	R2	All MCs	242	6.0	242	6.0	0.298	7.7	LOS A	2.1	53.9	0.79	0.69	0.79	34.2
Approach			805	3.9	805	3.9	0.660	14.7	LOS B	7.5	191.8	0.91	0.83	1.10	30.9
All Vehicles			2492	5.9	2492	5.9	0.660	9.6	LOS A	7.5	191.8	0.76	0.68	0.83	32.9

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	91	14	24	337	526	83
Future Vol, veh/h	91	14	24	337	526	83
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	7	7	0	6	2	0
Mvmt Flow	100	15	26	370	578	91

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1050	627	672	0	-	0
Stage 1	627	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.1	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.2	-	-	-
Pot Cap-1 Maneuver	246	475	928	-	-	-
Stage 1	523	-	-	-	-	-
Stage 2	650	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	238	474	926	-	-	-
Mov Cap-2 Maneuver	366	-	-	-	-	-
Stage 1	507	-	-	-	-	-
Stage 2	649	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	18.7	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	926	-	377	-	-
HCM Lane V/C Ratio	0.028	-	0.306	-	-
HCM Ctrl Dly (s/v)	9	-	18.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.3	-	-

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	25	19	4	25	78	8	251	6	81	328	130
Future Vol, veh/h	37	25	19	4	25	78	8	251	6	81	328	130
Conflicting Peds, #/hr	13	0	3	3	0	13	0	0	6	6	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	11	0	5	0	0	0	25	6	17	1	4	0
Mvmt Flow	43	29	22	5	29	90	9	289	7	93	377	149

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	972	958	455	897	1029	311	526	0	0	301	0	0
Stage 1	638	638	-	316	316	-	-	-	-	-	-	-
Stage 2	334	320	-	581	713	-	-	-	-	-	-	-
Critical Hdwy	7.21	6.5	6.25	7.1	6.5	6.2	4.35	-	-	4.11	-	-
Critical Hdwy Stg 1	6.21	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.21	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.599	4	3.345	3.5	4	3.3	2.425	-	-	2.209	-	-
Pot Cap-1 Maneuver	223	259	599	263	236	734	933	-	-	1265	-	-
Stage 1	450	474	-	699	658	-	-	-	-	-	-	-
Stage 2	661	656	-	503	439	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	155	237	598	204	215	722	933	-	-	1259	-	-
Mov Cap-2 Maneuver	155	237	-	204	215	-	-	-	-	-	-	-
Stage 1	417	439	-	689	648	-	-	-	-	-	-	-
Stage 2	542	646	-	419	406	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	33.83	16.38	0.27	1.22
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	933	-	-	216	439	1259	-	-
HCM Lane V/C Ratio	0.01	-	-	0.432	0.28	0.074	-	-
HCM Ctrl Dly (s/v)	8.9	-	-	33.8	16.4	8.1	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2	1.1	0.2	-	-

Intersection	
Int Delay, s/veh	11

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	23	1	0	18	209	1	0	0	275	0	74
Future Vol, veh/h	53	23	1	0	18	209	1	0	0	275	0	74
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	8	4	0	0	0	7	0	0	0	4	0	3
Mvmt Flow	62	27	1	0	21	246	1	0	0	324	0	87

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	705	694	44	-	737	2	87	0	0	1	0	0
Stage 1	691	691	-	-	3	-	-	-	-	-	-	-
Stage 2	14	3	-	-	734	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.54	6.2	-	6.5	6.27	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.18	5.54	-	-	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.54	-	-	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.036	3.3	-	4	3.363	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	344	364	1032	0	348	1068	1522	-	-	1609	-	-
Stage 1	425	443	-	0	897	-	-	-	-	-	-	-
Stage 2	991	889	-	0	429	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	195	286	1032	-	273	1066	1522	-	-	1607	-	-
Mov Cap-2 Maneuver	195	286	-	-	273	-	-	-	-	-	-	-
Stage 1	335	348	-	-	896	-	-	-	-	-	-	-
Stage 2	743	888	-	-	337	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	32.84	10.99	7.37	6.15
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1522	-	-	218	866	1182	-	-
HCM Lane V/C Ratio	0.001	-	-	0.416	0.308	0.201	-	-
HCM Ctrl Dly (s/v)	7.4	0	-	32.8	11	7.8	0	-
HCM Lane LOS	A	A	-	D	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.9	1.3	0.8	-	-

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	26	66	8	1	164	4	18	60	3	1	97	91
Future Vol, veh/h	26	66	8	1	164	4	18	60	3	1	97	91
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	4	-	-	-6	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	9	25	0	5	0	22	8	0	0	3	2
Mvmt Flow	30	76	9	1	189	5	21	69	3	1	111	105

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	371	282	164	266	332	73	216	0	0	74	0	0
Stage 1	166	166	-	114	114	-	-	-	-	-	-	-
Stage 2	205	116	-	152	218	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.59	6.45	7.1	6.55	6.2	4.32	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.59	-	6.1	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.59	-	6.1	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.081	3.525	3.5	4.045	3.3	2.398	-	-	2.2	-	-
Pot Cap-1 Maneuver	590	615	824	691	582	995	1244	-	-	1538	-	-
Stage 1	841	748	-	896	795	-	-	-	-	-	-	-
Stage 2	802	786	-	856	717	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	388	603	824	587	571	993	1244	-	-	1535	-	-
Mov Cap-2 Maneuver	388	603	-	587	571	-	-	-	-	-	-	-
Stage 1	840	747	-	878	780	-	-	-	-	-	-	-
Stage 2	595	771	-	759	716	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	13.52	14.38	1.77	0.04
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	396	-	-	537	577	9	-	-
HCM Lane V/C Ratio	0.017	-	-	0.214	0.337	0.001	-	-
HCM Ctrl Dly (s/v)	7.9	0	-	13.5	14.4	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	1.5	0	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	160	413	611	20	11	263
Future Vol, veh/h	160	413	611	20	11	263
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-8	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	7	5	10	0	1
Mvmt Flow	174	449	664	22	12	286

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	686	0	-	0	1247	343
Stage 1	-	-	-	-	675	-
Stage 2	-	-	-	-	572	-
Critical Hdwy	4.2	-	-	-	5.2	6.12
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	2.25	-	-	-	3.5	3.31
Pot Cap-1 Maneuver	884	-	-	-	293	708
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	884	-	-	-	227	708
Mov Cap-2 Maneuver	-	-	-	-	227	-
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	688	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	3.73	0	13.82
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	774	-	-	-	227	708
HCM Lane V/C Ratio	0.197	-	-	-	0.053	0.404
HCM Ctrl Dly (s/v)	10.1	1.3	-	-	21.7	13.5
HCM Lane LOS	B	A	-	-	C	B
HCM 95th %tile Q(veh)	0.7	-	-	-	0.2	2

MOVEMENT SUMMARY

Site: 16 NW Norwood St & NW 6th Ave_BackgroundAM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NW 6th Avenue															
3	L2	All MCs	111	2.0	111	2.0	0.237	13.2	LOS B	1.3	34.7	0.67	0.71	0.67	32.5
8	T1	All MCs	2	0.0	2	0.0	0.237	6.8	LOS A	1.3	34.7	0.67	0.71	0.67	33.2
18	R2	All MCs	75	6.0	75	6.0	0.237	7.4	LOS A	1.3	34.7	0.67	0.71	0.67	32.8
Approach			188	3.6	188	3.6	0.237	10.8	LOS B	1.3	34.7	0.67	0.71	0.67	32.6
East: NW 6th Avenue															
1	L2	All MCs	81	4.0	81	4.0	0.823	12.6	LOS B	12.3	314.9	0.82	0.57	0.85	33.2
6	T1	All MCs	870	3.0	870	3.0	0.823	6.3	LOS A	12.3	314.9	0.82	0.57	0.85	34.0
16	R2	All MCs	11	30.0	11	30.0	0.823	7.8	LOS A	12.3	314.9	0.82	0.57	0.85	33.1
Approach			961	3.4	961	3.4	0.823	6.9	LOS A	12.3	314.9	0.82	0.57	0.85	33.9
North: NW Norwood Street															
7	L2	All MCs	15	7.0	15	7.0	0.176	19.4	LOS B	1.2	30.8	0.93	0.81	0.93	30.8
4	T1	All MCs	5	0.0	5	0.0	0.176	12.2	LOS B	1.2	30.8	0.93	0.81	0.93	31.6
14	R2	All MCs	51	2.0	51	2.0	0.176	12.6	LOS B	1.2	30.8	0.93	0.81	0.93	31.4
Approach			71	2.9	71	2.9	0.176	14.0	LOS B	1.2	30.8	0.93	0.81	0.93	31.3
West: NW 6th Avenue															
5	L2	All MCs	20	26.0	20	26.0	0.564	11.4	LOS B	4.8	129.1	0.46	0.44	0.46	33.7
2	T1	All MCs	526	8.0	526	8.0	0.564	4.6	LOS A	4.8	129.1	0.46	0.44	0.46	35.2
12	R2	All MCs	96	9.0	96	9.0	0.564	4.8	LOS A	4.8	129.1	0.46	0.44	0.46	34.8
Approach			641	8.7	641	8.7	0.564	4.8	LOS A	4.8	129.1	0.46	0.44	0.46	35.1
All Vehicles			1862	5.2	1862	5.2	0.823	6.8	LOS A	12.3	314.9	0.68	0.54	0.70	34.1

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	588	3	68	520	4	174
Future Vol, veh/h	588	3	68	520	4	174
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	105	-	85	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-6	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	0	3	3	0	0
Mvmt Flow	676	3	78	598	5	200

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	679	0	1432	678
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	754	-
Critical Hdwy	-	-	4.13	-	5.2	5.6
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	908	-	241	510
Stage 1	-	-	-	-	637	-
Stage 2	-	-	-	-	602	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	908	-	220	510
Mov Cap-2 Maneuver	-	-	-	-	220	-
Stage 1	-	-	-	-	637	-
Stage 2	-	-	-	-	550	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.08	16.64
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	220	510	-	-	908	-
HCM Lane V/C Ratio	0.021	0.392	-	-	0.086	-
HCM Ctrl Dly (s/v)	21.7	16.5	-	-	9.3	-
HCM Lane LOS	C	C	-	-	A	-
HCM 95th %tile Q(veh)	0.1	1.8	-	-	0.3	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	411	88	76	428	93	166
Future Vol, veh/h	411	88	76	428	93	166
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	7	11	2	3	7
Mvmt Flow	457	98	84	476	103	184

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	554	0	1150	506
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	644	-
Critical Hdwy	-	-	4.21	-	6.43	6.27
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.299	-	3.527	3.363
Pot Cap-1 Maneuver	-	-	972	-	218	557
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	521	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	972	-	199	557
Mov Cap-2 Maneuver	-	-	-	-	199	-
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	476	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.37	24.12
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	199	557	-	-	972	-
HCM Lane V/C Ratio	0.519	0.331	-	-	0.087	-
HCM Ctrl Dly (s/v)	41.1	14.6	-	-	9.1	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	2.6	1.4	-	-	0.3	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	315	12	120	407	6	3	9	176	8	9	8
Future Vol, veh/h	7	315	12	120	407	6	3	9	176	8	9	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	130	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	18	2	2	33	0	22	8	0	0	12
Mvmt Flow	8	342	13	130	442	7	3	10	191	9	10	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	449	0	0	355	0	0	1072	1074	349	1069	1077	446
Stage 1	-	-	-	-	-	-	364	364	-	707	707	-
Stage 2	-	-	-	-	-	-	708	710	-	362	371	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.1	6.72	6.28	7.1	6.5	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.72	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.72	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4.198	3.372	3.5	4	3.408
Pot Cap-1 Maneuver	1122	-	-	1203	-	-	200	203	681	201	221	592
Stage 1	-	-	-	-	-	-	659	590	-	430	441	-
Stage 2	-	-	-	-	-	-	429	408	-	660	623	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1122	-	-	1203	-	-	167	179	681	122	195	592
Mov Cap-2 Maneuver	-	-	-	-	-	-	167	179	-	122	195	-
Stage 1	-	-	-	-	-	-	655	586	-	383	394	-
Stage 2	-	-	-	-	-	-	367	364	-	464	619	-

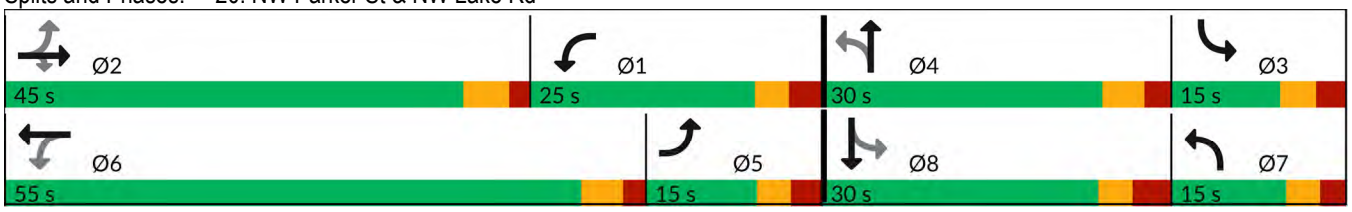
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.17	1.88	14.66	25.87
HCM LOS			B	D

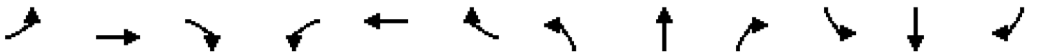
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	576	1122	-	-	1203	-	-	200
HCM Lane V/C Ratio	0.355	0.007	-	-	0.108	-	-	0.136
HCM Ctrl Dly (s/v)	14.7	8.2	-	-	8.4	-	-	25.9
HCM Lane LOS	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.6	0	-	-	0.4	-	-	0.5

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	9	189	173	106	283	151	61	44	123
Future Volume (vph)	9	189	173	106	283	151	61	44	123
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		1	6	7	4	3	8
Permitted Phases	2		2	6		4		8	
Detector Phase	5	2	2	1	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	26.7	26.7	10.7	20.5	10.2	29.2	10.6	33.3
Total Split (s)	15.0	45.0	45.0	25.0	55.0	15.0	30.0	15.0	30.0
Total Split (%)	13.0%	39.1%	39.1%	21.7%	47.8%	13.0%	26.1%	13.0%	26.1%
Yellow Time (s)	3.0	4.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0
All-Red Time (s)	2.5	1.7	1.7	2.7	1.9	2.2	2.3	2.6	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.7	5.7	5.7	5.5	5.2	5.9	5.6	6.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)	18.8	12.7	12.7	21.0	18.9	22.0	17.2	17.1	10.2
Actuated g/C Ratio	0.33	0.22	0.22	0.37	0.33	0.39	0.30	0.30	0.18
v/c Ratio	0.03	0.56	0.40	0.28	0.33	0.33	0.36	0.13	0.50
Control Delay (s/veh)	13.7	27.2	6.4	15.4	16.4	14.8	16.1	13.4	28.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.7	27.2	6.4	15.4	16.4	14.8	16.1	13.4	28.6
LOS	B	C	A	B	B	B	B	B	C
Approach Delay (s/veh)		17.2			16.1		15.5		24.9
Approach LOS		B			B		B		C

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 56.6	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay (s/veh): 17.5	Intersection LOS: B
Intersection Capacity Utilization 50.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 20: NW Parker St & NW Lake Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	189	173	106	283	36	151	61	102	44	123	15
Future Volume (veh/h)	9	189	173	106	283	36	151	61	102	44	123	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1574	1841	1870	1900	1870	1856	1885	1856	1856	1796	1856	1900
Adj Flow Rate, veh/h	11	228	131	128	341	24	182	73	88	53	148	16
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	22	4	2	0	2	3	1	3	3	7	3	0
Cap, veh/h	384	326	281	377	547	38	402	123	148	390	258	28
Arrive On Green	0.12	0.18	0.18	0.10	0.16	0.16	0.09	0.16	0.16	0.10	0.16	0.16
Sat Flow, veh/h	1499	1841	1585	1810	3369	236	1795	762	918	1711	1643	178
Grp Volume(v), veh/h	11	228	131	128	179	186	182	0	161	53	0	164
Grp Sat Flow(s),veh/h/ln	1499	1841	1585	1810	1777	1828	1795	0	1680	1711	0	1820
Q Serve(g_s), s	0.0	5.7	3.7	0.0	4.6	4.7	0.0	0.0	4.4	0.0	0.0	4.1
Cycle Q Clear(g_c), s	0.0	5.7	3.7	0.0	4.6	4.7	0.0	0.0	4.4	0.0	0.0	4.1
Prop In Lane	1.00		1.00	1.00		0.13	1.00		0.55	1.00		0.10
Lane Grp Cap(c), veh/h	384	326	281	377	289	297	402	0	271	390	0	285
V/C Ratio(X)	0.03	0.70	0.47	0.34	0.62	0.63	0.45	0.00	0.59	0.14	0.00	0.57
Avail Cap(c_a), veh/h	492	1465	1261	901	1781	1832	591	0	820	551	0	874
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.5	19.1	18.2	19.5	19.3	19.3	19.4	0.0	19.2	18.1	0.0	19.3
Incr Delay (d2), s/veh	0.0	1.0	0.4	0.2	0.8	0.8	0.8	0.0	0.8	0.2	0.0	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.2	1.2	1.2	1.7	1.8	1.8	0.0	1.6	0.5	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.5	20.1	18.7	19.7	20.1	20.1	20.2	0.0	20.0	18.2	0.0	20.0
LnGrp LOS	B	C	B	B	C	C	C		B	B		B
Approach Vol, veh/h		370			493			343			217	
Approach Delay, s/veh		19.5			20.0			20.1			19.5	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	14.5	10.4	13.9	11.6	13.5	10.2	14.0
Change Period (Y+Rc), s	5.7	5.7	* 5.6	5.9	5.7	* 5.5	5.6	* 6.3
Max Green Setting (Gmax), s	19.3	39.3	* 9.4	24.1	9.5	* 50	9.8	* 24
Max Q Clear Time (g_c+I1), s	2.0	7.7	2.0	6.4	2.0	6.7	2.0	6.1
Green Ext Time (p_c), s	0.1	1.0	0.0	0.5	0.0	1.3	0.3	0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	19.8
HCM 7th LOS	B

Notes

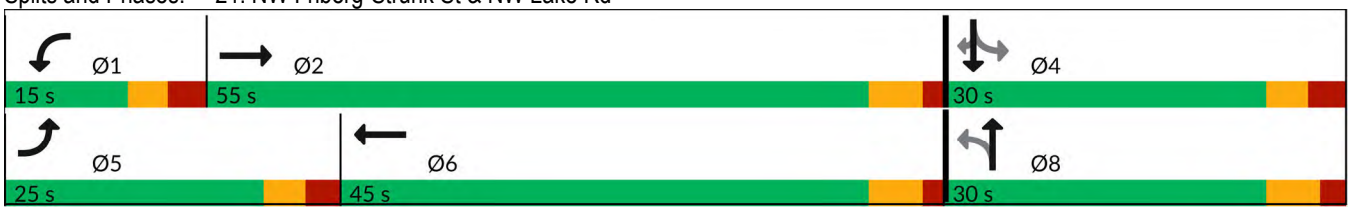
User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	344	281	1	375	0	100	0	339
Future Volume (vph)	344	281	1	375	0	100	0	339
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						4		4
Detector Phase	5	2	1	6	8	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.6	23.5	10.8	26.6	34.0	33.9	33.9	33.9
Total Split (s)	25.0	55.0	15.0	45.0	30.0	30.0	30.0	30.0
Total Split (%)	25.0%	55.0%	15.0%	45.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.6	1.5	2.8	1.6	2.0	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.6	5.5	5.8	5.6	6.0		5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	19.7	39.3	5.1	15.6	10.8		10.9	10.9
Actuated g/C Ratio	0.31	0.62	0.08	0.25	0.17		0.17	0.17
v/c Ratio	0.82	0.18	0.01	0.69	0.00		0.56	0.70
Control Delay (s/veh)	38.6	6.8	32.0	25.4	0.0		34.7	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	38.6	6.8	32.0	25.4	0.0		34.7	9.6
LOS	D	A	C	C	A		C	A
Approach Delay (s/veh)		24.2		25.4			15.3	
Approach LOS		C		C			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 63.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay (s/veh): 22.0	Intersection LOS: C
Intersection Capacity Utilization 59.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 21: NW Friberg-Strunk St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	344	281	3	1	375	85	0	0	1	100	0	339
Future Volume (veh/h)	344	281	3	1	375	85	0	0	1	100	0	339
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1811	1411	1900	1856	1900	1900	1900	1900	1811	1900	1856
Adj Flow Rate, veh/h	447	365	4	1	487	110	0	0	1	130	0	440
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	3	6	33	0	3	0	0	0	0	6	0	3
Cap, veh/h	448	1636	18	2	628	141	0	0	485	527	0	474
Arrive On Green	0.25	0.47	0.47	0.00	0.22	0.22	0.00	0.00	0.30	0.30	0.00	0.30
Sat Flow, veh/h	1767	3487	38	1810	2860	642	0	0	1607	1434	0	1569
Grp Volume(v), veh/h	447	180	189	1	299	298	0	0	1	130	0	440
Grp Sat Flow(s),veh/h/ln	1767	1721	1804	1810	1763	1740	0	0	1607	1434	0	1569
Q Serve(g_s), s	19.3	4.7	4.7	0.0	12.2	12.3	0.0	0.0	0.0	5.3	0.0	20.8
Cycle Q Clear(g_c), s	19.3	4.7	4.7	0.0	12.2	12.3	0.0	0.0	0.0	5.4	0.0	20.8
Prop In Lane	1.00		0.02	1.00		0.37	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	448	807	847	2	387	382	0	0	485	527	0	474
V/C Ratio(X)	1.00	0.22	0.22	0.40	0.77	0.78	0.00	0.00	0.00	0.25	0.00	0.93
Avail Cap(c_a), veh/h	448	1114	1168	218	908	896	0	0	504	546	0	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.5	12.0	12.0	38.2	28.0	28.1	0.0	0.0	18.7	20.5	0.0	25.9
Incr Delay (d2), s/veh	41.7	0.1	0.0	34.6	1.3	1.3	0.0	0.0	0.0	0.1	0.0	23.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	1.6	1.7	0.0	5.1	5.1	0.0	0.0	0.0	1.7	0.0	10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	70.2	12.1	12.1	72.8	29.3	29.4	0.0	0.0	18.7	20.6	0.0	48.9
LnGrp LOS	E	B	B	E	C	C			B	C		D
Approach Vol, veh/h		816			598			1			570	
Approach Delay, s/veh		43.9			29.4			18.7			42.5	
Approach LOS		D			C			B			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	41.5		29.1	25.0	22.4		29.1				
Change Period (Y+Rc), s	5.8	* 5.6		* 6	5.6	5.6		6.0				
Max Green Setting (Gmax), s	9.2	* 50		* 24	19.4	39.4		24.0				
Max Q Clear Time (g_c+I1), s	2.0	6.7		22.8	21.3	14.3		2.0				
Green Ext Time (p_c), s	0.0	1.3		0.2	0.0	2.5		0.0				

Intersection Summary			
HCM 7th Control Delay, s/veh		39.1	
HCM 7th LOS		D	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	149	111	374	147	27	333
Future Vol, veh/h	149	111	374	147	27	333
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	175	0	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	2	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	3	1	3	10	7	3
Mvmt Flow	180	134	451	177	33	401

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1005	539	0	0	628	0
Stage 1	539	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Critical Hdwy	6.03	6.01	-	-	4.17	-
Critical Hdwy Stg 1	5.03	-	-	-	-	-
Critical Hdwy Stg 2	5.03	-	-	-	-	-
Follow-up Hdwy	3.527	3.309	-	-	2.263	-
Pot Cap-1 Maneuver	298	561	-	-	930	-
Stage 1	619	-	-	-	-	-
Stage 2	663	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	287	561	-	-	930	-
Mov Cap-2 Maneuver	287	-	-	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	640	-	-	-	-	-

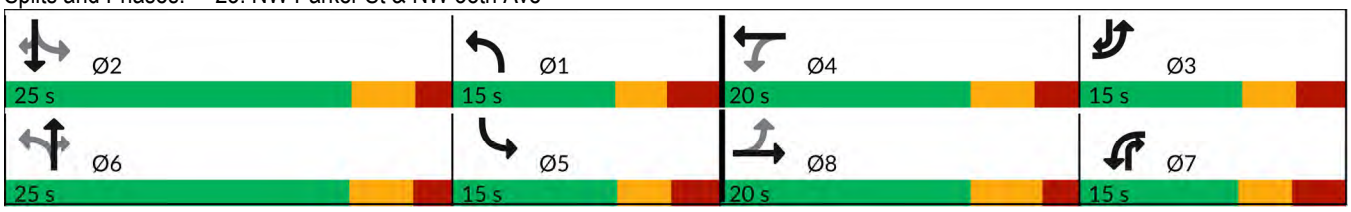
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	26.52	0	0.68
HCM LOS	D		

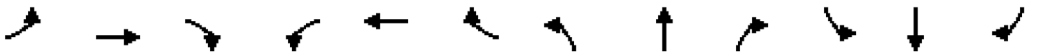
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	287	561	930	-
HCM Lane V/C Ratio	-	-	0.625	0.238	0.035	-
HCM Ctrl Dly (s/v)	-	-	36.3	13.4	9	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	3.9	0.9	0.1	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	104	67	96	111	91	399	76	16	311	135
Future Volume (vph)	104	67	96	111	91	399	76	16	311	135
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	7	4	1	6	7	5	2	3
Permitted Phases	8		4		6		6	2		2
Detector Phase	3	8	7	4	1	6	7	5	2	3
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.8	24.0	11.0	23.0	10.9	20.0	11.0	10.7	20.0	10.8
Total Split (s)	15.0	20.0	15.0	20.0	15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	20.0%	26.7%	20.0%	26.7%	20.0%	33.3%	20.0%	20.0%	33.3%	20.0%
Yellow Time (s)	3.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0	3.6	3.0
All-Red Time (s)	2.8	2.0	3.0	2.4	2.9	2.1	3.0	2.7	2.0	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.0	6.0	6.0	5.9	5.7	6.0	5.7	5.6	5.8
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	None	Max	None
Act Effct Green (s)	12.5	8.1	14.7	9.5	28.8	26.5	33.2	25.8	20.5	26.2
Actuated g/C Ratio	0.21	0.14	0.25	0.16	0.49	0.45	0.57	0.44	0.35	0.45
v/c Ratio	0.36	0.49	0.30	0.56	0.21	0.57	0.09	0.05	0.52	0.20
Control Delay (s/veh)	18.8	25.9	17.7	29.9	12.9	20.5	1.2	11.4	22.4	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.8	25.9	17.7	29.9	12.9	20.5	1.2	11.4	22.4	2.9
LOS	B	C	B	C	B	C	A	B	C	A
Approach Delay (s/veh)		22.4		25.0		16.7			16.3	
Approach LOS		C		C		B			B	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 58.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay (s/veh): 18.8	Intersection LOS: B
Intersection Capacity Utilization 58.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 23: NW Parker St & NW 38th Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	67	43	96	111	34	91	399	76	16	311	135
Future Volume (veh/h)	104	67	43	96	111	34	91	399	76	16	311	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1826	1811	1811	1870	1900	1870	1826	1826	1796	1945	1870
Adj Flow Rate, veh/h	118	76	49	109	126	39	103	453	86	18	353	153
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	5	6	6	2	0	2	5	5	7	2	2
Cap, veh/h	302	115	74	341	177	55	414	580	647	336	621	636
Arrive On Green	0.08	0.11	0.11	0.10	0.13	0.13	0.08	0.32	0.32	0.08	0.32	0.32
Sat Flow, veh/h	1882	1033	666	1725	1367	423	1781	1826	1545	1711	1945	1583
Grp Volume(v), veh/h	118	0	125	109	0	165	103	453	86	18	353	153
Grp Sat Flow(s),veh/h/ln	1882	0	1699	1725	0	1790	1781	1826	1545	1711	1945	1583
Q Serve(g_s), s	0.0	0.0	4.3	0.0	0.0	5.4	0.0	13.7	0.0	0.0	9.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	4.3	0.0	0.0	5.4	0.0	13.7	0.0	0.0	9.2	0.0
Prop In Lane	1.00		0.39	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	302	0	188	341	0	232	414	580	647	336	621	636
V/C Ratio(X)	0.39	0.00	0.66	0.32	0.00	0.71	0.25	0.78	0.13	0.05	0.57	0.24
Avail Cap(c_a), veh/h	432	0	392	423	0	413	534	580	647	457	621	636
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	0.0	25.9	24.0	0.0	25.4	19.4	18.8	10.9	21.1	17.2	12.0
Incr Delay (d2), s/veh	0.3	0.0	1.5	0.2	0.0	1.5	0.1	10.0	0.4	0.0	3.7	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	1.7	1.4	0.0	2.2	1.1	6.7	0.7	0.2	4.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.7	0.0	27.4	24.2	0.0	26.9	19.5	28.8	11.3	21.2	20.9	12.9
LnGrp LOS	C		C	C		C	B	C	B	C	C	B
Approach Vol, veh/h		243			274			642			524	
Approach Delay, s/veh		26.6			25.8			25.0			18.6	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	25.0	11.0	13.9	10.9	25.0	12.1	12.7
Change Period (Y+Rc), s	5.9	5.6	6.0	* 6	5.9	* 5.7	6.0	6.0
Max Green Setting (Gmax), s	9.1	19.4	9.2	* 14	9.3	* 19	9.0	14.0
Max Q Clear Time (g_c+I1), s	2.0	11.2	2.0	7.4	2.0	15.7	2.0	6.3
Green Ext Time (p_c), s	0.1	1.1	0.1	0.3	0.0	0.7	0.1	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	23.4
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	117	250	77	97	22
Future Vol, veh/h	4	117	250	77	97	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	10	5	3	12	20
Mvmt Flow	5	139	298	92	115	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	815	129	142	0	-	0
Stage 1	129	-	-	-	-	-
Stage 2	687	-	-	-	-	-
Critical Hdwy	6.4	6.3	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.39	2.245	-	-	-
Pot Cap-1 Maneuver	350	900	1423	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	272	900	1423	-	-	-
Mov Cap-2 Maneuver	272	-	-	-	-	-
Stage 1	703	-	-	-	-	-
Stage 2	503	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.2	6.27	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1351	-	837	-	-
HCM Lane V/C Ratio	0.209	-	0.172	-	-
HCM Ctrl Dly (s/v)	8.2	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.8	-	0.6	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	96	197	39	49	129
Future Vol, veh/h	44	96	197	39	49	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	14	6	3	18	8	9
Mvmt Flow	49	108	221	44	55	145

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	498	243	0	0	265	0
Stage 1	243	-	-	-	-	-
Stage 2	255	-	-	-	-	-
Critical Hdwy	6.54	6.26	-	-	4.18	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.354	-	-	2.272	-
Pot Cap-1 Maneuver	511	786	-	-	1265	-
Stage 1	770	-	-	-	-	-
Stage 2	760	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	487	786	-	-	1265	-
Mov Cap-2 Maneuver	487	-	-	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	724	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.17	0	2.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	658	496	-
HCM Lane V/C Ratio	-	-	0.239	0.044	-
HCM Ctrl Dly (s/v)	-	-	12.2	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	182	113	209	152	38
Future Vol, veh/h	31	182	113	209	152	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	2	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	3	0	4	8	12	5
Mvmt Flow	41	243	151	279	203	51

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	808	228	253	0	-	0
Stage 1	228	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Critical Hdwy	6.83	6.4	4.14	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.527	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	319	806	1300	-	-	-
Stage 1	787	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	282	806	1300	-	-	-
Mov Cap-2 Maneuver	282	-	-	-	-	-
Stage 1	696	-	-	-	-	-
Stage 2	523	-	-	-	-	-

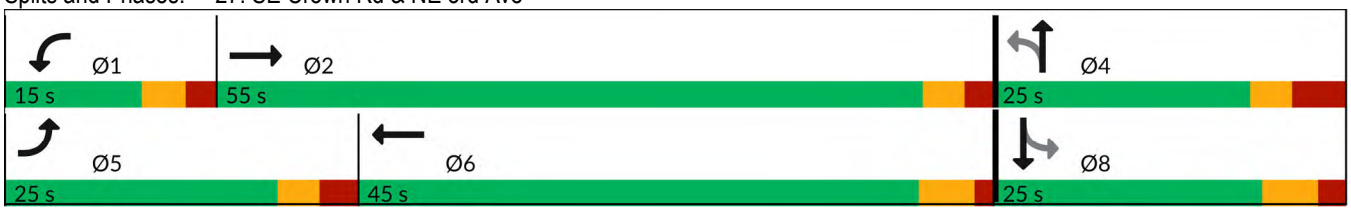
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	12.63	2.85	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1300	-	282	806	-	-
HCM Lane V/C Ratio	0.116	-	0.147	0.301	-	-
HCM Ctrl Dly (s/v)	8.1	-	19.9	11.4	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.5	1.3	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	183	233	9	347	6	4	215	2	247
Future Volume (vph)	183	233	9	347	6	4	215	2	247
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Free
Protected Phases	5	2	1	6		4		8	
Permitted Phases					4		8		Free
Detector Phase	5	2	1	6	4	4	8	8	
Switch Phase									
Minimum Initial (s)	2.0	8.0	5.0	8.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	7.6	23.0	10.2	20.3	32.8	32.8	35.0	35.0	
Total Split (s)	25.0	55.0	15.0	45.0	25.0	25.0	25.0	25.0	
Total Split (%)	26.3%	57.9%	15.8%	47.4%	26.3%	26.3%	26.3%	26.3%	
Yellow Time (s)	3.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.6	2.0	2.2	1.3	3.8	3.8	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	
Total Lost Time (s)	5.6	5.0	5.2	5.3		6.8		6.0	
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	
Act Effct Green (s)	12.0	29.0	5.4	12.7		15.1		15.9	58.1
Actuated g/C Ratio	0.21	0.50	0.09	0.22		0.26		0.27	1.00
v/c Ratio	0.61	0.16	0.06	0.63		0.03		0.63	0.17
Control Delay (s/veh)	31.1	9.4	29.8	23.9		18.8		29.2	0.2
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay (s/veh)	31.1	9.4	29.8	23.9		18.8		29.2	0.2
LOS	C	A	C	C		B		C	A
Approach Delay (s/veh)		18.9		24.0		18.8		13.8	
Approach LOS		B		C		B		B	

Intersection Summary	
Cycle Length: 95	
Actuated Cycle Length: 58.1	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay (s/veh): 18.8	Intersection LOS: B
Intersection Capacity Utilization 55.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: SE Crown Rd & NE 3rd Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	233	2	9	347	83	6	4	0	215	2	247
Future Volume (veh/h)	183	233	2	9	347	83	6	4	0	215	2	247
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1743	1788	1952	1979	1934	1904	1952	1952	1952	1995	2058	2011
Adj Flow Rate, veh/h	201	256	2	10	381	91	7	4	0	236	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	9	6	0	0	3	5	0	0	0	4	0	3
Cap, veh/h	255	1245	10	25	619	146	341	166		485	3	
Arrive On Green	0.15	0.36	0.36	0.01	0.21	0.21	0.20	0.20	0.00	0.20	0.20	0.00
Sat Flow, veh/h	1660	3454	27	1884	2947	696	986	837	1654	1551	13	1704
Grp Volume(v), veh/h	201	126	132	10	236	236	11	0	0	238	0	0
Grp Sat Flow(s),veh/h/ln	1660	1698	1783	1884	1837	1806	1824	0	1654	1564	0	1704
Q Serve(g_s), s	4.7	2.1	2.1	0.2	4.7	4.8	0.0	0.0	0.0	5.6	0.0	0.0
Cycle Q Clear(g_c), s	4.7	2.1	2.1	0.2	4.7	4.8	0.2	0.0	0.0	5.8	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.39	0.64		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	255	612	642	25	386	380	507	0		488	0	
V/C Ratio(X)	0.79	0.21	0.21	0.40	0.61	0.62	0.02	0.00		0.49	0.00	
Avail Cap(c_a), veh/h	797	2102	2206	457	1805	1775	916	0		911	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.5	8.9	8.9	19.8	14.5	14.5	13.1	0.0	0.0	15.3	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.1	0.1	3.9	0.6	0.6	0.0	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.5	0.6	0.1	1.6	1.6	0.1	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.5	9.0	9.0	23.7	15.0	15.1	13.1	0.0	0.0	15.6	0.0	0.0
LnGrp LOS	B	A	A	C	B	B	B			B		
Approach Vol, veh/h		459			482			11			238	
Approach Delay, s/veh		13.2			15.3			13.1			15.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	19.9		14.8	11.8	13.8		14.8				
Change Period (Y+Rc), s	5.2	* 5.3		6.8	5.6	5.3		* 6.8				
Max Green Setting (Gmax), s	9.8	* 50		18.2	19.4	39.7		* 19				
Max Q Clear Time (g_c+I1), s	2.2	4.1		2.2	6.7	6.8		7.8				
Green Ext Time (p_c), s	0.0	0.9		0.0	0.2	1.7		0.6				

Intersection Summary		
HCM 7th Control Delay, s/veh	14.5	
HCM 7th LOS	B	

Notes

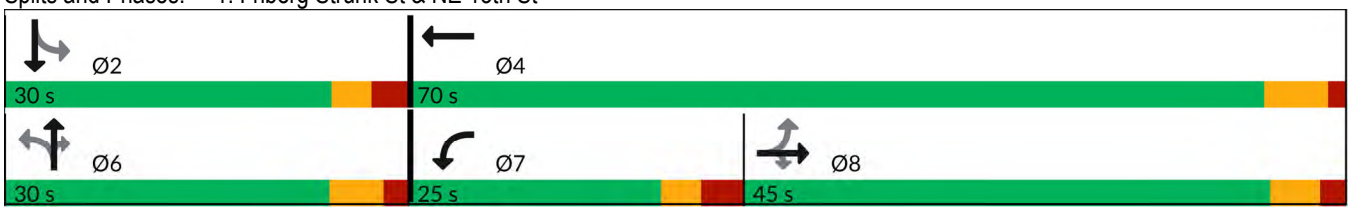
User approved pedestrian interval to be less than phase max green.

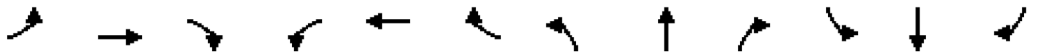
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	1	358	76	212	415	118	8	311	1	5
Future Volume (vph)	1	358	76	212	415	118	8	311	1	5
Turn Type	Perm	NA	Perm	Prot	NA	Perm	NA	Perm	Perm	NA
Protected Phases		8		7	4		6			2
Permitted Phases	8		8			6		6	2	
Detector Phase	8	8	8	7	4	6	6	6	2	2
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.6	23.6	23.6	11.0	24.1	23.8	23.8	23.8	25.6	25.6
Total Split (s)	45.0	45.0	45.0	25.0	70.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	45.0%	45.0%	45.0%	25.0%	70.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.6	3.6	3.6	3.0	4.7	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	3.0	1.4	1.8	1.8	1.8	2.6	2.6
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)		5.6	5.6	6.0	6.1		5.8	5.8		5.6
Lead/Lag	Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	Min	Min	Min	None	Min	None	None	None	None	None
Act Effct Green (s)		19.6	19.6	13.2	38.7		12.1	12.1		12.3
Actuated g/C Ratio		0.31	0.31	0.21	0.61		0.19	0.19		0.19
v/c Ratio		0.72	0.15	0.64	0.42		0.57	0.59		0.03
Control Delay (s/veh)		29.0	4.3	34.8	8.1		36.3	8.3		21.6
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay (s/veh)		29.0	4.3	34.8	8.1		36.3	8.3		21.6
LOS		C	A	C	A		D	A		C
Approach Delay (s/veh)		24.6			17.1		16.4			21.6
Approach LOS		C			B		B			C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 63.6	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay (s/veh): 19.1	Intersection LOS: B
Intersection Capacity Utilization 69.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Friberg Strunk St & NE 13th St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	358	76	212	415	3	118	8	311	1	5	3
Future Volume (veh/h)	1	358	76	212	415	3	118	8	311	1	5	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	0.96	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	401	1885	1856	1885	1841	1900	1781	1900	1900	1900	1900	1411
Adj Flow Rate, veh/h	1	385	82	228	446	3	127	9	334	1	5	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	100	1	3	1	4	0	3	0	0	0	0	33
Cap, veh/h	68	486	405	285	965	6	465	29	402	91	274	145
Arrive On Green	0.26	0.26	0.26	0.16	0.53	0.53	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1	1883	1572	1795	1826	12	1344	115	1610	64	1099	581
Grp Volume(v), veh/h	386	0	82	228	0	449	136	0	334	9	0	0
Grp Sat Flow(s),veh/h/ln	1884	0	1572	1795	0	1839	1460	0	1610	1744	0	0
Q Serve(g_s), s	0.0	0.0	2.2	6.6	0.0	8.2	3.9	0.0	10.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.2	0.0	2.2	6.6	0.0	8.2	4.1	0.0	10.5	0.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.01	0.93		1.00	0.11		0.33
Lane Grp Cap(c), veh/h	553	0	405	285	0	972	494	0	402	510	0	0
V/C Ratio(X)	0.70	0.00	0.20	0.80	0.00	0.46	0.28	0.00	0.83	0.02	0.00	0.00
Avail Cap(c_a), veh/h	1452	0	1157	637	0	2194	788	0	728	851	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.5	0.0	15.6	21.7	0.0	7.9	16.6	0.0	19.0	15.2	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.1	2.0	0.0	0.1	0.1	0.0	1.7	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	0.7	2.6	0.0	2.4	1.2	0.0	3.6	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.1	0.0	15.7	23.7	0.0	8.0	16.7	0.0	20.8	15.2	0.0	0.0
LnGrp LOS	B		B	C		A	B		C	B		
Approach Vol, veh/h		468			677			470			9	
Approach Delay, s/veh		18.5			13.3			19.6			15.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		19.2		34.4		19.2	14.5	19.9				
Change Period (Y+Rc), s		* 5.8		6.1		5.8	6.0	* 6.1				
Max Green Setting (Gmax), s		* 24		63.9		24.2	19.0	* 39				
Max Q Clear Time (g_c+I1), s		2.2		10.2		12.5	8.6	12.2				
Green Ext Time (p_c), s		0.0		1.8		0.8	0.2	1.6				

Intersection Summary	
HCM 7th Control Delay, s/veh	16.6
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	4.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	636	36	79	566	65	150
Future Vol, veh/h	636	36	79	566	65	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	55	-	105	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	4	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	6	1	2	6	4
Mvmt Flow	656	37	81	584	67	155

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	693	0	1402	656
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	746	-
Critical Hdwy	-	-	4.11	-	6.46	6.24
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.209	-	3.554	3.336
Pot Cap-1 Maneuver	-	-	907	-	151	462
Stage 1	-	-	-	-	509	-
Stage 2	-	-	-	-	462	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	907	-	138	462
Mov Cap-2 Maneuver	-	-	-	-	138	-
Stage 1	-	-	-	-	509	-
Stage 2	-	-	-	-	420	-

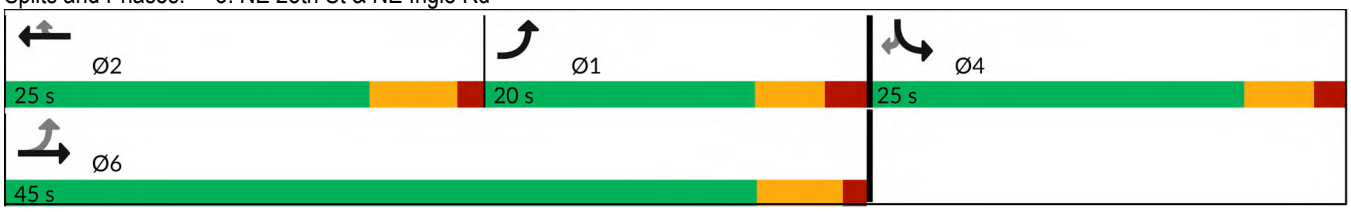
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.15	27.89
HCM LOS			D

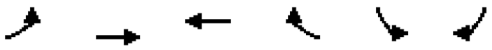
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	138	462	-	-	907	-
HCM Lane V/C Ratio	0.487	0.335	-	-	0.09	-
HCM Ctrl Dly (s/v)	53.8	16.7	-	-	9.4	-
HCM Lane LOS	F	C	-	-	A	-
HCM 95th %tile Q(veh)	2.3	1.5	-	-	0.3	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	294	462	321	97	152	297
Future Volume (vph)	294	462	321	97	152	297
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	10.8	15.7	24.9	24.9	10.3	10.3
Total Split (s)	20.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	28.6%	64.3%	35.7%	35.7%	35.7%	35.7%
Yellow Time (s)	3.6	4.5	4.5	4.5	3.6	3.6
All-Red Time (s)	2.2	1.2	1.4	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.7	5.9	5.9	5.3	5.3
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effct Green (s)	25.2	25.3	13.5	13.5	9.1	9.1
Actuated g/C Ratio	0.55	0.55	0.30	0.30	0.20	0.20
v/c Ratio	0.51	0.48	0.64	0.20	0.49	0.57
Control Delay (s/veh)	11.6	8.6	21.2	4.9	22.6	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	11.6	8.6	21.2	4.9	22.6	7.3
LOS	B	A	C	A	C	A
Approach Delay (s/veh)		9.7	17.4		12.5	
Approach LOS		A	B		B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 45.7	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay (s/veh): 12.5	Intersection LOS: B
Intersection Capacity Utilization 55.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: NE 28th St & NE Ingle Rd





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	294	462	321	97	152	297
Future Volume (veh/h)	294	462	321	97	152	297
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1885	1856	1841	1870	1900
Adj Flow Rate, veh/h	309	486	338	102	160	313
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	3	4	2	0
Cap, veh/h	395	932	446	375	434	392
Arrive On Green	0.11	0.49	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1767	1885	1856	1560	1781	1610
Grp Volume(v), veh/h	309	486	338	102	160	313
Grp Sat Flow(s),veh/h/ln	1767	1885	1856	1560	1781	1610
Q Serve(g_s), s	2.4	7.4	7.2	2.3	3.2	7.7
Cycle Q Clear(g_c), s	2.4	7.4	7.2	2.3	3.2	7.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	395	932	446	375	434	392
V/C Ratio(X)	0.78	0.52	0.76	0.27	0.37	0.80
Avail Cap(c_a), veh/h	785	1749	837	703	829	749
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	7.3	15.0	13.1	13.3	15.0
Incr Delay (d2), s/veh	1.3	0.2	1.0	0.1	0.2	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.8	2.4	0.6	1.0	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	18.2	7.5	16.0	13.2	13.5	16.5
LnGrp LOS	B	A	B	B	B	B
Approach Vol, veh/h		795	440		473	
Approach Delay, s/veh		11.6	15.3		15.5	
Approach LOS		B	B		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.7	16.1		15.6		26.7
Change Period (Y+Rc), s	5.8	5.9		5.3		* 5.8
Max Green Setting (Gmax), s	14.2	19.1		19.7		* 39
Max Q Clear Time (g_c+I1), s	4.4	9.2		9.7		9.4
Green Ext Time (p_c), s	0.3	1.0		0.6		1.8

Intersection Summary	
HCM 7th Control Delay, s/veh	13.6
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	364	155	7	217	0	133	0	6	1	1	3
Future Vol, veh/h	6	364	155	7	217	0	133	0	6	1	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	1	0	0	3	0	3	0	0	100	0	0
Mvmt Flow	6	387	165	7	231	0	141	0	6	1	1	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	231	0	0	552	0	0	729	728	470	646	811	231
Stage 1	-	-	-	-	-	-	482	482	-	246	246	-
Stage 2	-	-	-	-	-	-	246	246	-	400	565	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.13	6.5	6.2	8.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	7.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	7.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.527	4	3.3	4.4	4	3.3
Pot Cap-1 Maneuver	1349	-	-	1028	-	-	337	352	598	277	316	813
Stage 1	-	-	-	-	-	-	563	556	-	583	707	-
Stage 2	-	-	-	-	-	-	755	707	-	470	511	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1349	-	-	1028	-	-	330	347	598	270	311	813
Mov Cap-2 Maneuver	-	-	-	-	-	-	330	347	-	270	311	-
Stage 1	-	-	-	-	-	-	559	552	-	579	701	-
Stage 2	-	-	-	-	-	-	745	701	-	462	508	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.09	0.27	23.85	12.73
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	336	19	-	-	56	-	-	471
HCM Lane V/C Ratio	0.44	0.005	-	-	0.007	-	-	0.011
HCM Ctrl Dly (s/v)	23.9	7.7	0	-	8.5	0	-	12.7
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	2.2	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	10.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	93	273	0	0	165	127	0	0	0	167	0	61
Future Vol, veh/h	93	273	0	0	165	127	0	0	0	167	0	61
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	1	0	0	2	6	0	0	0	3	0	0
Mvmt Flow	103	303	0	0	183	141	0	0	0	186	0	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	324	0	0	303	0	0	693	834	303	764	764	254
Stage 1	-	-	-	-	-	-	510	510	-	254	254	-
Stage 2	-	-	-	-	-	-	183	324	-	510	510	-
Critical Hdwy	4.13	-	-	4.1	-	-	7.1	6.5	6.2	7.13	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.13	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.13	5.5	-
Follow-up Hdwy	2.227	-	-	2.2	-	-	3.5	4	3.3	3.527	4	3.3
Pot Cap-1 Maneuver	1230	-	-	1269	-	-	360	306	741	319	336	790
Stage 1	-	-	-	-	-	-	550	541	-	748	701	-
Stage 2	-	-	-	-	-	-	823	653	-	544	541	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1230	-	-	1269	-	-	296	275	741	287	302	790
Mov Cap-2 Maneuver	-	-	-	-	-	-	296	275	-	287	302	-
Stage 1	-	-	-	-	-	-	494	486	-	748	701	-
Stage 2	-	-	-	-	-	-	752	653	-	489	486	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	2.08	0	0	39.17
HCM LOS			A	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	457	-	-	1269	-	-	346
HCM Lane V/C Ratio	-	0.084	-	-	-	-	-	0.732
HCM Ctrl Dly (s/v)	0	8.2	0	-	0	-	-	39.2
HCM Lane LOS	A	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	-	0.3	-	-	0	-	-	5.5

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	1	113	130	1
Future Vol, veh/h	1	1	1	113	130	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-4	-4	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	5	0	0	0	0	8
Mvmt Flow	1	1	1	140	160	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	303	161	162	0	-	0
Stage 1	161	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.85	6.4	4.1	-	-	-
Critical Hdwy Stg 1	5.85	-	-	-	-	-
Critical Hdwy Stg 2	5.85	-	-	-	-	-
Follow-up Hdwy	3.545	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	660	881	1429	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	864	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	659	881	1429	-	-	-
Mov Cap-2 Maneuver	659	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	864	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	9.79	0.07	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	16	-	754	-	-
HCM Lane V/C Ratio	0.001	-	0.003	-	-
HCM Ctrl Dly (s/v)	7.5	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

MOVEMENT SUMMARY

Site: 7 [Everett St (SR 500) St & NE Everett Dr_BackgroundPM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett St (SR 500)															
3	L2	All MCs	185	0.0	185	0.0	0.472	10.5	LOS B	3.3	83.0	0.33	0.49	0.33	34.3
8	T1	All MCs	255	1.0	255	1.0	0.472	4.2	LOS A	3.3	83.0	0.33	0.49	0.33	35.0
18	R2	All MCs	159	0.0	159	0.0	0.472	4.3	LOS A	3.3	83.0	0.33	0.49	0.33	34.7
Approach			599	0.4	599	0.4	0.472	6.2	LOS A	3.3	83.0	0.33	0.49	0.33	34.7
East: NE Everett Dr															
1	L2	All MCs	161	0.0	161	0.0	0.214	12.0	LOS B	1.2	28.9	0.55	0.67	0.55	32.6
6	T1	All MCs	11	0.0	11	0.0	0.214	5.7	LOS A	1.2	28.9	0.55	0.67	0.55	33.3
16	R2	All MCs	39	0.0	39	0.0	0.214	5.9	LOS A	1.2	28.9	0.55	0.67	0.55	33.0
Approach			211	0.0	211	0.0	0.214	10.5	LOS B	1.2	28.9	0.55	0.67	0.55	32.7
North: NE Everett St (SR 500)															
7	L2	All MCs	55	0.0	55	0.0	0.232	11.5	LOS B	1.2	30.8	0.49	0.56	0.49	34.0
4	T1	All MCs	182	2.0	182	2.0	0.232	5.4	LOS A	1.2	30.8	0.49	0.56	0.49	34.7
14	R2	All MCs	3	0.0	3	0.0	0.232	5.4	LOS A	1.2	30.8	0.49	0.56	0.49	34.4
Approach			240	1.5	240	1.5	0.232	6.8	LOS A	1.2	30.8	0.49	0.56	0.49	34.5
West: NE Everett Dr															
5	L2	All MCs	3	0.0	3	0.0	0.180	11.7	LOS B	0.9	23.4	0.51	0.56	0.51	34.7
2	T1	All MCs	31	0.0	31	0.0	0.180	5.4	LOS A	0.9	23.4	0.51	0.56	0.51	35.4
12	R2	All MCs	149	0.0	149	0.0	0.180	5.6	LOS A	0.9	23.4	0.51	0.56	0.51	35.1
Approach			184	0.0	184	0.0	0.180	5.7	LOS A	0.9	23.4	0.51	0.56	0.51	35.2
All Vehicles			1234	0.5	1234	0.5	0.472	7.0	LOS A	3.3	83.0	0.43	0.55	0.43	34.4

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	73	58	488	381	47
Future Vol, veh/h	9	73	58	488	381	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	110	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	4	-4	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	2	0	1	0
Mvmt Flow	10	79	63	530	414	51

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1096	440	465	0	-	0
Stage 1	440	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Critical Hdwy	6.8	6.44	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.218	-	-	-
Pot Cap-1 Maneuver	211	598	1096	-	-	-
Stage 1	622	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	199	598	1096	-	-	-
Mov Cap-2 Maneuver	199	-	-	-	-	-
Stage 1	587	-	-	-	-	-
Stage 2	483	-	-	-	-	-

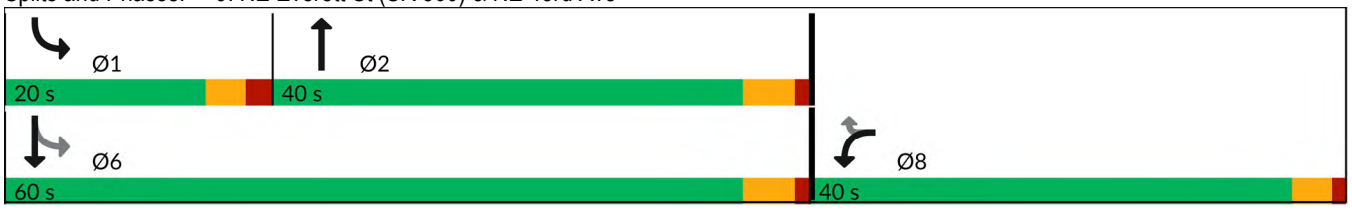
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	13.97	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1096	-	490	-	-
HCM Lane V/C Ratio	0.058	-	0.182	-	-
HCM Ctrl Dly (s/v)	8.5	-	14	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	224	57	486	298	53	405
Future Volume (vph)	224	57	486	298	53	405
Turn Type	Prot	Perm	NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		Free	6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	23.0	23.0	30.0		10.0	50.0
Total Split (s)	40.0	40.0	40.0		20.0	60.0
Total Split (%)	40.0%	40.0%	40.0%		20.0%	60.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0
All-Red Time (s)	1.0	1.0	1.0		2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	Min		None	Min
Act Effct Green (s)	14.6	14.6	29.2	59.4	35.3	35.3
Actuated g/C Ratio	0.25	0.25	0.49	1.00	0.59	0.59
v/c Ratio	0.55	0.14	0.59	0.21	0.12	0.40
Control Delay (s/veh)	27.0	7.5	16.5	0.3	5.9	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.0	7.5	16.5	0.3	5.9	7.9
LOS	C	A	B	A	A	A
Approach Delay (s/veh)	23.0		10.3			7.6
Approach LOS	C		B			A

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 59.4	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay (s/veh): 11.9	Intersection LOS: B
Intersection Capacity Utilization 53.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: NE Everett St (SR 500) & NE 43rd Ave





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	224	57	486	298	53	405
Future Volume (veh/h)	224	57	486	298	53	405
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1979	1979	1791	1806	2057	2012
Adj Flow Rate, veh/h	238	40	517	0	56	431
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	1	0	0	3
Cap, veh/h	339	302	779		464	1211
Arrive On Green	0.18	0.18	0.43	0.00	0.05	0.60
Sat Flow, veh/h	1884	1677	1791	1530	1959	2012
Grp Volume(v), veh/h	238	40	517	0	56	431
Grp Sat Flow(s),veh/h/ln	1884	1677	1791	1530	1959	2012
Q Serve(g_s), s	4.9	0.8	9.5	0.0	0.6	4.5
Cycle Q Clear(g_c), s	4.9	0.8	9.5	0.0	0.6	4.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	339	302	779		464	1211
V/C Ratio(X)	0.70	0.13	0.66		0.12	0.36
Avail Cap(c_a), veh/h	1645	1464	1520		1087	2683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	14.2	9.3	0.0	6.4	4.2
Incr Delay (d2), s/veh	2.6	0.2	2.1	0.0	0.1	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.3	3.1	0.0	0.2	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	18.5	14.4	11.3	0.0	6.5	4.4
LnGrp LOS	B	B	B		A	A
Approach Vol, veh/h	278		517			487
Approach Delay, s/veh	17.9		11.3			4.6
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.9	22.9			29.8	11.4
Change Period (Y+Rc), s	5.0	5.0			5.0	4.0
Max Green Setting (Gmax), s	15.0	35.0			55.0	36.0
Max Q Clear Time (g_c+I1), s	2.6	11.5			6.5	6.9
Green Ext Time (p_c), s	0.1	6.5			3.8	0.9

Intersection Summary	
HCM 7th Control Delay, s/veh	10.2
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

MOVEMENT SUMMARY

Site 10 NE Everett St & NW Lake Rd_BackgroundPM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett Street															
3	L2	All MCs	279	0.0	279	0.0	0.300	12.1	LOS B	1.9	46.7	0.61	0.69	0.61	31.8
8	T1	All MCs	517	1.0	517	1.0	0.450	5.5	LOS A	3.3	84.4	0.66	0.57	0.66	34.8
Approach			796	0.6	796	0.6	0.450	7.8	LOS A	3.3	84.4	0.65	0.61	0.65	33.7
North: NE Everett Street															
4	T1	All MCs	392	2.0	392	2.0	0.318	5.0	LOS A	2.1	53.3	0.52	0.49	0.52	35.1
14	R2	All MCs	303	0.0	303	0.0	0.239	4.9	LOS A	1.5	37.4	0.48	0.53	0.48	35.3
Approach			695	1.1	695	1.1	0.318	4.9	LOS A	2.1	53.3	0.50	0.51	0.50	35.2
West: NW Lake Road															
5	L2	All MCs	390	1.0	390	1.0	0.336	11.7	LOS B	2.2	56.6	0.60	0.67	0.60	31.8
12	R2	All MCs	371	0.0	371	0.0	0.315	5.5	LOS A	2.1	52.1	0.59	0.58	0.59	35.0
Approach			762	0.5	762	0.5	0.336	8.7	LOS A	2.2	56.6	0.60	0.62	0.60	33.2
All Vehicles			2252	0.8	2252	0.8	0.450	7.2	LOS A	3.3	84.4	0.58	0.58	0.58	34.0

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	123	18	56	463	485	72
Future Vol, veh/h	123	18	56	463	485	72
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	4	0	0	2
Mvmt Flow	129	19	59	487	511	76

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1160	554	592	0	-	0
Stage 1	554	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.14	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	218	536	974	-	-	-
Stage 1	579	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	203	533	969	-	-	-
Mov Cap-2 Maneuver	341	-	-	-	-	-
Stage 1	541	-	-	-	-	-
Stage 2	546	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	22.07	0.97	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	969	-	357	-	-
HCM Lane V/C Ratio	0.061	-	0.416	-	-
HCM Ctrl Dly (s/v)	9	-	22.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	10	33	7	8	28	12	438	3	40	365	98
Future Vol, veh/h	53	10	33	7	8	28	12	438	3	40	365	98
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	10	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	56	11	35	7	9	30	13	466	3	43	388	104

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1023	1020	440	972	1071	470	493	0	0	469	0	0
Stage 1	526	526	-	493	493	-	-	-	-	-	-	-
Stage 2	498	495	-	479	578	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.6	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.6	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.6	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.09	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	216	229	621	234	223	598	1081	-	-	1103	-	-
Stage 1	539	516	-	561	550	-	-	-	-	-	-	-
Stage 2	558	533	-	572	505	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	187	218	621	200	212	597	1081	-	-	1103	-	-
Mov Cap-2 Maneuver	187	218	-	200	212	-	-	-	-	-	-	-
Stage 1	518	496	-	555	544	-	-	-	-	-	-	-
Stage 2	515	527	-	507	485	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	28.85	16.48	0.22	0.67
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1081	-	-	251	359	1103	-	-
HCM Lane V/C Ratio	0.012	-	-	0.407	0.127	0.039	-	-
HCM Ctrl Dly (s/v)	8.4	-	-	28.8	16.5	8.4	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.9	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	17.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	31	0	0	24	352	0	1	0	355	0	54
Future Vol, veh/h	73	31	0	0	24	352	0	1	0	355	0	54
Conflicting Peds, #/hr	3	0	2	2	0	3	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	3	0	0	0	2	0	0	0	1	0	0
Mvmt Flow	79	34	0	0	26	383	0	1	0	386	0	59

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	818	803	31	-	833	5	59	0	0	2	0	0
Stage 1	801	801	-	-	2	-	-	-	-	-	-	-
Stage 2	17	2	-	-	830	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.53	6.2	-	6.5	6.22	4.1	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.53	-	-	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.53	-	-	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.027	3.3	-	4	3.318	2.2	-	-	2.209	-	-
Pot Cap-1 Maneuver	297	316	1048	0	307	1078	1558	-	-	1627	-	-
Stage 1	381	395	-	0	898	-	-	-	-	-	-	-
Stage 2	1007	892	-	0	388	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	131	237	1046	-	231	1074	1558	-	-	1625	-	-
Mov Cap-2 Maneuver	131	237	-	-	231	-	-	-	-	-	-	-
Stage 1	287	298	-	-	897	-	-	-	-	-	-	-
Stage 2	628	891	-	-	292	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	78.05	12.74	0	6.86
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1558	-	-	151	871	1302	-	-
HCM Lane V/C Ratio	-	-	-	0.748	0.469	0.237	-	-
HCM Ctrl Dly (s/v)	0	-	-	78.1	12.7	7.9	0	-
HCM Lane LOS	A	-	-	F	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	4.6	2.5	0.9	-	-

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	49	131	9	4	115	6	30	136	6	2	125	56
Future Vol, veh/h	49	131	9	4	115	6	30	136	6	2	125	56
Conflicting Peds, #/hr	1	0	3	3	0	1	0	0	9	9	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	4	-	-	-6	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	2	0	0	2	0	0	1	0	0	0	0
Mvmt Flow	56	149	10	5	131	7	34	155	7	2	142	64

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	467	417	177	459	445	168	206	0	0	170	0	0
Stage 1	178	178	-	235	235	-	-	-	-	-	-	-
Stage 2	289	239	-	224	210	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.1	6.52	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.5	4.018	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	509	527	871	516	508	881	1378	-	-	1419	-	-
Stage 1	828	752	-	772	710	-	-	-	-	-	-	-
Stage 2	723	708	-	783	728	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	362	507	869	348	489	873	1378	-	-	1407	-	-
Mov Cap-2 Maneuver	362	507	-	348	489	-	-	-	-	-	-	-
Stage 1	827	750	-	745	685	-	-	-	-	-	-	-
Stage 2	564	683	-	617	727	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	19.07	15.24	1.34	0.08
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	311	-	-	468	493	19	-	-
HCM Lane V/C Ratio	0.025	-	-	0.459	0.288	0.002	-	-
HCM Ctrl Dly (s/v)	7.7	0	-	19.1	15.2	7.6	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2.4	1.2	0	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	228	700	579	28	8	149
Future Vol, veh/h	228	700	579	28	8	149
Conflicting Peds, #/hr	3	0	0	3	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-8	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	2	0	0	1
Mvmt Flow	240	737	609	29	8	157

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	642	0	-	0	1476	322
Stage 1	-	-	-	-	627	-
Stage 2	-	-	-	-	848	-
Critical Hdwy	4.12	-	-	-	5.2	6.12
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	2.21	-	-	-	3.5	3.31
Pot Cap-1 Maneuver	945	-	-	-	230	726
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	561	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	943	-	-	-	155	724
Mov Cap-2 Maneuver	-	-	-	-	155	-
Stage 1	-	-	-	-	448	-
Stage 2	-	-	-	-	560	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	3.97	0	12.26
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	750	-	-	-	155	724
HCM Lane V/C Ratio	0.255	-	-	-	0.054	0.217
HCM Ctrl Dly (s/v)	10.1	2	-	-	29.5	11.3
HCM Lane LOS	B	A	-	-	D	B
HCM 95th %tile Q(veh)	1	-	-	-	0.2	0.8

MOVEMENT SUMMARY

Site: 16 [NW Norwood St & NW 6th Ave_BackgroundPM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NW 6th Avenue															
3	L2	All MCs	61	5.0	61	5.0	0.290	17.6	LOS B	2.0	50.9	0.91	0.81	0.91	31.0
8	T1	All MCs	6	17.0	6	17.0	0.290	12.8	LOS B	2.0	50.9	0.91	0.81	0.91	31.5
18	R2	All MCs	70	1.0	70	1.0	0.290	10.9	LOS B	2.0	50.9	0.91	0.81	0.91	31.5
Approach			138	3.5	138	3.5	0.290	14.0	LOS B	2.0	50.9	0.91	0.81	0.91	31.3
East: NW 6th Avenue															
1	L2	All MCs	73	1.0	73	1.0	0.617	10.9	LOS B	5.6	144.0	0.50	0.46	0.50	34.2
6	T1	All MCs	650	3.0	650	3.0	0.617	4.7	LOS A	5.6	144.0	0.50	0.46	0.50	35.0
16	R2	All MCs	16	7.0	16	7.0	0.617	4.9	LOS A	5.6	144.0	0.50	0.46	0.50	34.5
Approach			739	2.9	739	2.9	0.617	5.3	LOS A	5.6	144.0	0.50	0.46	0.50	34.9
North: NW Norwood Street															
7	L2	All MCs	15	7.0	15	7.0	0.090	14.9	LOS B	0.5	13.1	0.73	0.72	0.73	32.7
4	T1	All MCs	8	0.0	8	0.0	0.090	8.0	LOS A	0.5	13.1	0.73	0.72	0.73	33.6
14	R2	All MCs	35	3.0	35	3.0	0.090	8.4	LOS A	0.5	13.1	0.73	0.72	0.73	33.2
Approach			58	3.6	58	3.6	0.090	10.0	LOS A	0.5	13.1	0.73	0.72	0.73	33.1
West: NW 6th Avenue															
5	L2	All MCs	46	0.0	46	0.0	0.831	11.4	LOS B	12.5	314.3	0.73	0.48	0.73	33.7
2	T1	All MCs	912	1.0	912	1.0	0.831	5.1	LOS A	12.5	314.3	0.73	0.48	0.73	34.4
12	R2	All MCs	80	1.0	80	1.0	0.831	5.3	LOS A	12.5	314.3	0.73	0.48	0.73	34.1
Approach			1038	1.0	1038	1.0	0.831	5.4	LOS A	12.5	314.3	0.73	0.48	0.73	34.4
All Vehicles			1972	1.9	1972	1.9	0.831	6.1	LOS A	12.5	314.3	0.66	0.50	0.66	34.3

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	657	4	82	472	10	67
Future Vol, veh/h	657	4	82	472	10	67
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	105	-	85	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-6	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	699	4	87	502	11	71

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	703	0	1378	702
Stage 1	-	-	-	-	701	-
Stage 2	-	-	-	-	677	-
Critical Hdwy	-	-	4.1	-	5.2	5.6
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	904	-	255	496
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	637	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	904	-	231	496
Mov Cap-2 Maneuver	-	-	-	-	231	-
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	576	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.39	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	231	496	-	-	904	-
HCM Lane V/C Ratio	0.046	0.144	-	-	0.097	-
HCM Ctrl Dly (s/v)	21.4	13.5	-	-	9.4	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.5	-	-	0.3	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	564	146	98	373	72	104
Future Vol, veh/h	564	146	98	373	72	104
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	3	1
Mvmt Flow	594	154	103	393	76	109

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	747	0	1269	671
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	599	-
Critical Hdwy	-	-	4.11	-	6.43	6.21
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.209	-	3.527	3.309
Pot Cap-1 Maneuver	-	-	866	-	185	458
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	547	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	866	-	163	458
Mov Cap-2 Maneuver	-	-	-	-	163	-
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	482	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.02	27.48
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	163	458	-	-	866	-
HCM Lane V/C Ratio	0.466	0.239	-	-	0.119	-
HCM Ctrl Dly (s/v)	45.1	15.3	-	-	9.7	-
HCM Lane LOS	E	C	-	-	A	-
HCM 95th %tile Q(veh)	2.2	0.9	-	-	0.4	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	575	7	83	357	6	3	5	121	10	7	13
Future Vol, veh/h	7	575	7	83	357	6	3	5	121	10	7	13
Conflicting Peds, #/hr	0	0	3	3	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	130	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	1	0	0	0	0	0	0	8
Mvmt Flow	8	625	8	90	388	7	3	5	132	11	8	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	395	0	0	636	0	0	1220	1222	632	1215	1223	392
Stage 1	-	-	-	-	-	-	647	647	-	572	572	-
Stage 2	-	-	-	-	-	-	573	575	-	643	651	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.372
Pot Cap-1 Maneuver	1175	-	-	957	-	-	158	181	484	160	181	644
Stage 1	-	-	-	-	-	-	463	470	-	509	508	-
Stage 2	-	-	-	-	-	-	508	506	-	465	468	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1175	-	-	955	-	-	133	162	483	101	162	643
Mov Cap-2 Maneuver	-	-	-	-	-	-	133	162	-	101	162	-
Stage 1	-	-	-	-	-	-	459	465	-	461	460	-
Stage 2	-	-	-	-	-	-	442	458	-	332	463	-

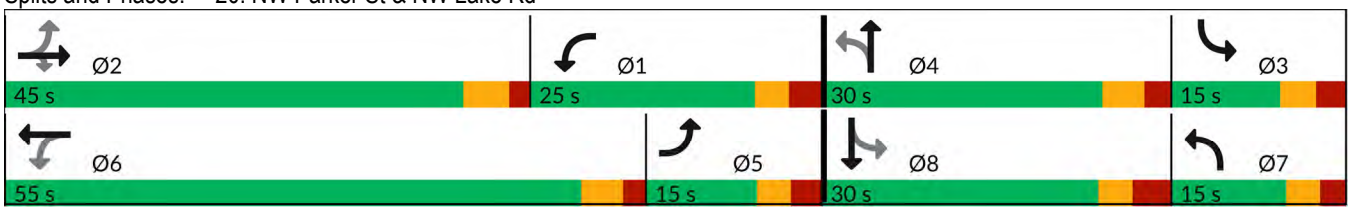
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.1	1.71	17.61	28.55
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	424	1175	-	-	955	-	-	185
HCM Lane V/C Ratio	0.33	0.006	-	-	0.094	-	-	0.176
HCM Ctrl Dly (s/v)	17.6	8.1	-	-	9.2	-	-	28.5
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.4	0	-	-	0.3	-	-	0.6

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	19	446	162	45	313	192	128	43	95
Future Volume (vph)	19	446	162	45	313	192	128	43	95
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		1	6	7	4	3	8
Permitted Phases	2		2	6		4		8	
Detector Phase	5	2	2	1	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	26.7	26.7	10.7	20.5	10.2	29.2	10.6	33.3
Total Split (s)	15.0	45.0	45.0	25.0	55.0	15.0	30.0	15.0	30.0
Total Split (%)	13.0%	39.1%	39.1%	21.7%	47.8%	13.0%	26.1%	13.0%	26.1%
Yellow Time (s)	3.0	4.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0
All-Red Time (s)	2.5	1.7	1.7	2.7	1.9	2.2	2.3	2.6	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.7	5.7	5.7	5.5	5.2	5.9	5.6	6.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)	28.9	24.9	24.9	30.3	26.2	23.9	17.6	15.1	10.1
Actuated g/C Ratio	0.43	0.37	0.37	0.45	0.39	0.36	0.26	0.23	0.15
v/c Ratio	0.04	0.69	0.25	0.14	0.27	0.39	0.56	0.16	0.44
Control Delay (s/veh)	14.7	26.5	3.7	14.9	18.6	21.6	28.0	20.1	36.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.7	26.5	3.7	14.9	18.6	21.6	28.0	20.1	36.1
LOS	B	C	A	B	B	C	C	C	D
Approach Delay (s/veh)		20.3			18.1		25.2		31.7
Approach LOS		C			B		C		C

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 67	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay (s/veh): 22.2	Intersection LOS: C
Intersection Capacity Utilization 65.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 20: NW Parker St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	446	162	45	313	25	192	128	117	43	95	17
Future Volume (veh/h)	19	446	162	45	313	25	192	128	117	43	95	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1885	1900	1885	1885	1900	1900	1885	1900
Adj Flow Rate, veh/h	21	490	108	49	344	9	211	141	97	47	104	17
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	1	0	1	0	1	1	0	0	1	0
Cap, veh/h	592	587	492	271	532	14	376	188	129	202	176	29
Arrive On Green	0.25	0.31	0.31	0.08	0.15	0.15	0.11	0.18	0.18	0.05	0.11	0.11
Sat Flow, veh/h	1810	1900	1592	1810	3565	93	1795	1039	715	1810	1578	258
Grp Volume(v), veh/h	21	490	108	49	172	181	211	0	238	47	0	121
Grp Sat Flow(s),veh/h/ln	1810	1900	1592	1810	1791	1868	1795	0	1754	1810	0	1836
Q Serve(g_s), s	0.0	14.4	3.0	0.0	5.4	5.5	0.2	0.0	7.7	0.0	0.0	3.8
Cycle Q Clear(g_c), s	0.0	14.4	3.0	0.0	5.4	5.5	0.2	0.0	7.7	0.0	0.0	3.8
Prop In Lane	1.00		1.00	1.00		0.05	1.00		0.41	1.00		0.14
Lane Grp Cap(c), veh/h	592	587	492	271	267	279	376	0	317	202	0	205
V/C Ratio(X)	0.04	0.83	0.22	0.18	0.65	0.65	0.56	0.00	0.75	0.23	0.00	0.59
Avail Cap(c_a), veh/h	592	1244	1042	702	1477	1540	475	0	704	403	0	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.3	19.3	15.4	25.2	24.0	24.1	23.4	0.0	23.3	27.4	0.0	25.4
Incr Delay (d2), s/veh	0.0	1.2	0.1	0.1	1.0	0.9	1.3	0.0	1.3	0.6	0.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.8	1.0	0.6	2.2	2.3	2.6	0.0	3.0	0.6	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.3	20.5	15.5	25.3	25.0	25.0	24.8	0.0	24.6	27.9	0.0	26.4
LnGrp LOS	B	C	B	C	C	C	C		C	C		C
Approach Vol, veh/h		619			402			449			168	
Approach Delay, s/veh		19.5			25.1			24.7			26.8	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	24.3	8.3	16.8	20.5	14.5	12.1	13.0
Change Period (Y+Rc), s	5.7	5.7	* 5.6	5.9	5.7	* 5.5	5.6	* 6.3
Max Green Setting (Gmax), s	19.3	39.3	* 9.4	24.1	9.5	* 50	9.8	* 24
Max Q Clear Time (g_c+I1), s	2.0	16.4	2.0	9.7	2.0	7.5	2.2	5.8
Green Ext Time (p_c), s	0.0	2.1	0.0	0.7	0.0	1.3	0.3	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	23.0
HCM 7th LOS	C

Notes

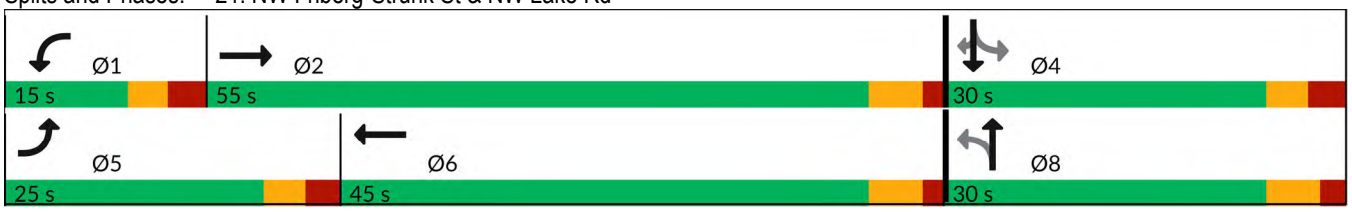
User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	336	554	1	444	4	1	97	0	219
Future Volume (vph)	336	554	1	444	4	1	97	0	219
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2	1	6		8		4	
Permitted Phases					8		4		4
Detector Phase	5	2	1	6	8	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.6	23.5	10.8	26.6	34.0	34.0	33.9	33.9	33.9
Total Split (s)	25.0	55.0	15.0	45.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	25.0%	55.0%	15.0%	45.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.6	1.5	2.8	1.6	2.0	2.0	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.6	5.5	5.8	5.6		6.0		5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	None	None	None	None	None
Act Effct Green (s)	19.7	39.2	5.1	15.6		9.1		9.2	9.2
Actuated g/C Ratio	0.32	0.63	0.08	0.25		0.15		0.15	0.15
v/c Ratio	0.64	0.26	0.01	0.69		0.02		0.51	0.54
Control Delay (s/veh)	27.1	6.4	30.0	24.0		24.0		34.3	9.2
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay (s/veh)	27.1	6.4	30.0	24.0		24.0		34.3	9.2
LOS	C	A	C	C		C		C	A
Approach Delay (s/veh)		14.2		24.0		24.0		16.9	
Approach LOS		B		C		C		B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 61.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay (s/veh): 17.8	Intersection LOS: B
Intersection Capacity Utilization 56.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 21: NW Friberg-Strunk St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	336	554	2	1	444	129	4	1	0	97	0	219
Future Volume (veh/h)	336	554	2	1	444	129	4	1	0	97	0	219
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1900	1900	1900	1885	1900	1900	1900	1900	1856	1900	1885
Adj Flow Rate, veh/h	365	602	2	1	483	140	4	1	0	105	0	238
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	0	0	0	1	0	0	0	0	3	0	1
Cap, veh/h	425	1792	6	3	696	200	265	54	0	431	0	312
Arrive On Green	0.24	0.49	0.49	0.00	0.25	0.25	0.20	0.20	0.00	0.20	0.00	0.20
Sat Flow, veh/h	1795	3690	12	1810	2738	788	750	276	0	1529	0	1593
Grp Volume(v), veh/h	365	294	310	1	315	308	5	0	0	105	0	238
Grp Sat Flow(s),veh/h/ln	1795	1805	1898	1810	1791	1736	1026	0	0	1529	0	1593
Q Serve(g_s), s	10.7	5.5	5.5	0.0	8.7	8.8	0.0	0.0	0.0	0.0	0.0	7.7
Cycle Q Clear(g_c), s	10.7	5.5	5.5	0.0	8.7	8.8	2.7	0.0	0.0	2.7	0.0	7.7
Prop In Lane	1.00		0.01	1.00		0.45	0.80		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	425	876	921	3	455	441	319	0	0	431	0	312
V/C Ratio(X)	0.86	0.34	0.34	0.30	0.69	0.70	0.02	0.00	0.00	0.24	0.00	0.76
Avail Cap(c_a), veh/h	635	1629	1713	303	1286	1247	623	0	0	780	0	700
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.1	8.7	8.7	27.4	18.5	18.6	17.8	0.0	0.0	18.8	0.0	20.8
Incr Delay (d2), s/veh	5.2	0.1	0.1	18.0	0.7	0.8	0.0	0.0	0.0	0.1	0.0	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	1.6	1.7	0.0	3.3	3.3	0.0	0.0	0.0	1.0	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.3	8.8	8.8	45.4	19.2	19.3	17.8	0.0	0.0	18.9	0.0	22.3
LnGrp LOS	C	A	A	D	B	B	B			B		C
Approach Vol, veh/h		969			624			5			343	
Approach Delay, s/veh		15.0			19.3			17.8			21.3	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	32.2		16.7	18.6	19.5		16.7				
Change Period (Y+Rc), s	5.8	* 5.6		* 6	5.6	5.6		6.0				
Max Green Setting (Gmax), s	9.2	* 50		* 24	19.4	39.4		24.0				
Max Q Clear Time (g_c+I1), s	2.0	7.5		9.7	12.7	10.8		4.7				
Green Ext Time (p_c), s	0.0	2.2		0.6	0.3	2.6		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh		17.5
HCM 7th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	80	27	323	126	28	315
Future Vol, veh/h	80	27	323	126	28	315
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	175	0	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	2	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	7	2	0	0	1
Mvmt Flow	88	30	355	138	31	346

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	834	426	0	0	495	0
Stage 1	426	-	-	-	-	-
Stage 2	408	-	-	-	-	-
Critical Hdwy	6.01	6.07	-	-	4.1	-
Critical Hdwy Stg 1	5.01	-	-	-	-	-
Critical Hdwy Stg 2	5.01	-	-	-	-	-
Follow-up Hdwy	3.509	3.363	-	-	2.2	-
Pot Cap-1 Maneuver	373	633	-	-	1079	-
Stage 1	693	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	361	631	-	-	1077	-
Mov Cap-2 Maneuver	361	-	-	-	-	-
Stage 1	692	-	-	-	-	-
Stage 2	685	-	-	-	-	-

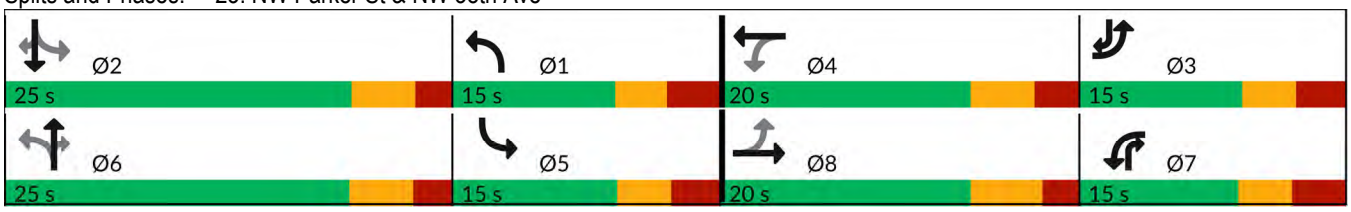
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	16.34	0	0.69
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	361	631	1077	-
HCM Lane V/C Ratio	-	-	0.243	0.047	0.029	-
HCM Ctrl Dly (s/v)	-	-	18.1	11	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0.1	0.1	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	74	131	161	238	51	277	60	102	290	127
Future Volume (vph)	74	131	161	238	51	277	60	102	290	127
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	7	4	1	6	7	5	2	3
Permitted Phases	8		4		6		6	2		2
Detector Phase	3	8	7	4	1	6	7	5	2	3
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.8	24.0	11.0	23.0	10.9	20.0	11.0	10.7	20.0	10.8
Total Split (s)	15.0	20.0	15.0	20.0	15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	20.0%	26.7%	20.0%	26.7%	20.0%	33.3%	20.0%	20.0%	33.3%	20.0%
Yellow Time (s)	3.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0	3.6	3.0
All-Red Time (s)	2.8	2.0	3.0	2.4	2.9	2.1	3.0	2.7	2.0	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.0	6.0	6.0	5.9	5.7	6.0	5.7	5.6	5.8
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	None	Max	None
Act Effct Green (s)	18.5	12.6	21.0	14.4	24.8	19.8	31.2	26.1	22.0	30.3
Actuated g/C Ratio	0.29	0.20	0.33	0.23	0.39	0.31	0.50	0.41	0.35	0.48
v/c Ratio	0.26	0.54	0.37	0.87	0.12	0.49	0.07	0.24	0.44	0.15
Control Delay (s/veh)	18.4	27.9	18.4	48.5	12.5	23.4	0.4	13.9	21.0	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.4	27.9	18.4	48.5	12.5	23.4	0.4	13.9	21.0	2.9
LOS	B	C	B	D	B	C	A	B	C	A
Approach Delay (s/veh)		25.2		39.1		18.4			15.1	
Approach LOS		C		D		B			B	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 62.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay (s/veh): 24.8	Intersection LOS: C
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 23: NW Parker St & NW 38th Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	131	62	161	238	114	51	277	60	102	290	127
Future Volume (veh/h)	74	131	62	161	238	114	51	277	60	102	290	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1900	1811	1885	1900	1900	1900	1900	1900	1885	1976	1900
Adj Flow Rate, veh/h	76	135	64	166	245	118	53	286	62	105	299	131
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	6	1	0	0	0	0	0	1	0	0
Cap, veh/h	248	174	83	396	253	122	400	548	691	411	573	587
Arrive On Green	0.07	0.14	0.14	0.14	0.21	0.21	0.07	0.29	0.29	0.07	0.29	0.29
Sat Flow, veh/h	1882	1215	576	1795	1209	582	1810	1900	1610	1795	1976	1610
Grp Volume(v), veh/h	76	0	199	166	0	363	53	286	62	105	299	131
Grp Sat Flow(s),veh/h/ln	1882	0	1792	1795	0	1792	1810	1900	1610	1795	1976	1610
Q Serve(g_s), s	0.0	0.0	7.2	0.0	0.0	13.4	0.0	8.4	0.0	0.0	8.5	0.0
Cycle Q Clear(g_c), s	0.0	0.0	7.2	0.0	0.0	13.4	0.0	8.4	0.0	0.0	8.5	0.0
Prop In Lane	1.00		0.32	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	0	257	396	0	375	400	548	691	411	573	587
V/C Ratio(X)	0.31	0.00	0.77	0.42	0.00	0.97	0.13	0.52	0.09	0.26	0.52	0.22
Avail Cap(c_a), veh/h	366	0	375	396	0	375	511	548	691	526	573	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	0.0	27.6	24.5	0.0	26.2	20.6	19.9	11.3	21.6	19.9	14.7
Incr Delay (d2), s/veh	0.3	0.0	3.2	0.3	0.0	37.8	0.1	3.5	0.3	0.1	3.4	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	3.0	2.2	0.0	9.3	0.6	3.9	0.5	1.3	4.1	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.9	0.0	30.8	24.7	0.0	64.0	20.7	23.5	11.6	21.8	23.2	15.6
LnGrp LOS	C		C	C		E	C	C	B	C	C	B
Approach Vol, veh/h		275			529			401			535	
Approach Delay, s/veh		30.3			51.7			21.3			21.1	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	25.0	11.0	20.0	10.9	25.0	15.4	15.6
Change Period (Y+Rc), s	5.9	5.6	6.0	* 6	5.9	* 5.7	6.0	6.0
Max Green Setting (Gmax), s	9.1	19.4	9.2	* 14	9.3	* 19	9.0	14.0
Max Q Clear Time (g_c+I1), s	2.0	10.5	2.0	15.4	2.0	10.4	2.0	9.2
Green Ext Time (p_c), s	0.0	0.9	0.0	0.0	0.1	0.8	0.1	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	31.9
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	123	69	129	84	10
Future Vol, veh/h	15	123	69	129	84	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	1	5	6	1	0
Mvmt Flow	19	154	86	161	105	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	445	111	118	0	-	0
Stage 1	111	-	-	-	-	-
Stage 2	334	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.245	-	-	-
Pot Cap-1 Maneuver	574	945	1452	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	730	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	537	945	1452	-	-	-
Mov Cap-2 Maneuver	537	-	-	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	730	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.14	2.66	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	627	-	873	-	-
HCM Lane V/C Ratio	0.059	-	0.198	-	-
HCM Ctrl Dly (s/v)	7.6	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	46	50	145	36	37	143
Future Vol, veh/h	46	50	145	36	37	143
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	4	6	4	14	5	4
Mvmt Flow	52	57	165	41	42	163

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	432	185	0	0	206	0
Stage 1	185	-	-	-	-	-
Stage 2	247	-	-	-	-	-
Critical Hdwy	6.44	6.26	-	-	4.15	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.354	-	-	2.245	-
Pot Cap-1 Maneuver	577	847	-	-	1348	-
Stage 1	842	-	-	-	-	-
Stage 2	790	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	557	847	-	-	1348	-
Mov Cap-2 Maneuver	557	-	-	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	763	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.33	0	1.59
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	678	370	-
HCM Lane V/C Ratio	-	-	0.161	0.031	-
HCM Ctrl Dly (s/v)	-	-	11.3	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	98	126	155	138	32
Future Vol, veh/h	15	98	126	155	138	32
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	1	0	1	1	3
Mvmt Flow	17	109	140	172	153	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	624	172	190	0	-	0
Stage 1	172	-	-	-	-	-
Stage 2	452	-	-	-	-	-
Critical Hdwy	6.8	6.41	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.2	-	-	-
Pot Cap-1 Maneuver	422	866	1396	-	-	-
Stage 1	847	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	379	865	1395	-	-	-
Mov Cap-2 Maneuver	379	-	-	-	-	-
Stage 1	761	-	-	-	-	-
Stage 2	613	-	-	-	-	-

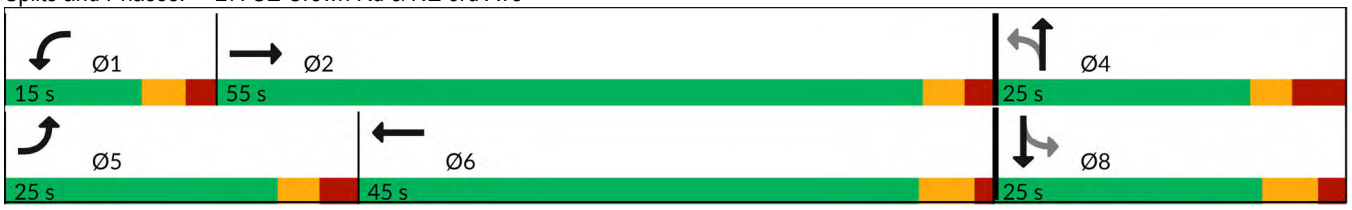
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.45	3.53	0
HCM LOS	B		

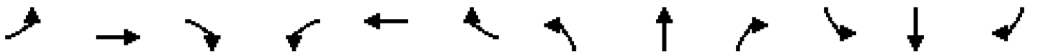
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1395	-	379	865	-	-
HCM Lane V/C Ratio	0.1	-	0.044	0.126	-	-
HCM Ctrl Dly (s/v)	7.9	-	14.9	9.8	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	0.4	-	-

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR	Ø1
Lane Configurations									
Traffic Volume (vph)	269	489	413	11	4	93	1	216	
Future Volume (vph)	269	489	413	11	4	93	1	216	
Turn Type	Prot	NA	NA	Perm	NA	Perm	NA	Free	
Protected Phases	5	2	6		4		8		1
Permitted Phases				4		8		Free	
Detector Phase	5	2	6	4	4	8	8		
Switch Phase									
Minimum Initial (s)	2.0	8.0	8.0	2.0	2.0	2.0	2.0		5.0
Minimum Split (s)	7.6	23.0	20.3	32.8	32.8	35.0	35.0		10.2
Total Split (s)	25.0	55.0	45.0	25.0	25.0	25.0	25.0		15.0
Total Split (%)	26.3%	57.9%	47.4%	26.3%	26.3%	26.3%	26.3%		16%
Yellow Time (s)	3.0	3.0	4.0	3.0	3.0	4.0	4.0		3.0
All-Red Time (s)	2.6	2.0	1.3	3.8	3.8	2.0	2.0		2.2
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0		
Total Lost Time (s)	5.6	5.0	5.3		6.8		6.0		
Lead/Lag	Lead	Lag	Lag						Lead
Lead-Lag Optimize?	Yes	Yes	Yes						Yes
Recall Mode	None	None	None	None	None	None	None		None
Act Effct Green (s)	13.6	35.5	13.4		7.9		8.6	50.3	
Actuated g/C Ratio	0.27	0.71	0.27		0.16		0.17	1.00	
v/c Ratio	0.59	0.21	0.58		0.06		0.41	0.13	
Control Delay (s/veh)	23.9	4.3	19.1		22.9		27.9	0.2	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)	23.9	4.3	19.1		22.9		27.9	0.2	
LOS	C	A	B		C		C	A	
Approach Delay (s/veh)		11.2	19.1		22.9		8.6		
Approach LOS		B	B		C		A		

Intersection Summary	
Cycle Length: 95	
Actuated Cycle Length: 50.3	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay (s/veh): 13.4	Intersection LOS: B
Intersection Capacity Utilization 55.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 27: SE Crown Rd & NE 3rd Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	269	489	12	0	413	121	11	4	0	93	1	216
Future Volume (veh/h)	269	489	12	0	413	121	11	4	0	93	1	216
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1876	1862	1952	1979	1964	1934	1952	1952	1952	2011	2058	2027
Adj Flow Rate, veh/h	274	499	12	0	421	123	11	4	0	95	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	0	0	1	3	0	0	0	3	0	2
Cap, veh/h	350	2080	50	5	688	199	259	56		322	1	
Arrive On Green	0.20	0.59	0.59	0.00	0.24	0.24	0.08	0.08	0.00	0.08	0.08	0.00
Sat Flow, veh/h	1787	3528	85	1884	2854	826	1109	702	1654	1577	17	1717
Grp Volume(v), veh/h	274	250	261	0	274	270	15	0	0	96	0	0
Grp Sat Flow(s),veh/h/ln	1787	1769	1844	1884	1865	1815	1811	0	1654	1594	0	1717
Q Serve(g_s), s	5.3	2.5	2.5	0.0	4.8	4.9	0.0	0.0	0.0	1.9	0.0	0.0
Cycle Q Clear(g_c), s	5.3	2.5	2.5	0.0	4.8	4.9	0.3	0.0	0.0	2.1	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.46	0.73		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	350	1042	1087	5	449	437	316	0		324	0	
V/C Ratio(X)	0.78	0.24	0.24	0.00	0.61	0.62	0.05	0.00		0.30	0.00	
Avail Cap(c_a), veh/h	946	2413	2517	504	2021	1967	974	0		1006	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.0	3.6	3.6	0.0	12.4	12.4	15.6	0.0	0.0	16.5	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.3	0.3	0.0	1.5	1.5	0.1	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.5	3.6	3.6	0.0	12.9	12.9	15.6	0.0	0.0	16.6	0.0	0.0
LnGrp LOS	B	A	A		B	B	B			B		
Approach Vol, veh/h		785			544			15			96	
Approach Delay, s/veh		7.8			12.9			15.6			16.6	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	26.9		9.7	12.8	14.1		9.7				
Change Period (Y+Rc), s	5.2	* 5.3		6.8	5.6	5.3		* 6.8				
Max Green Setting (Gmax), s	9.8	* 50		18.2	19.4	39.7		* 19				
Max Q Clear Time (g_c+I1), s	0.0	4.5		2.3	7.3	6.9		4.1				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.3	2.0		0.2				

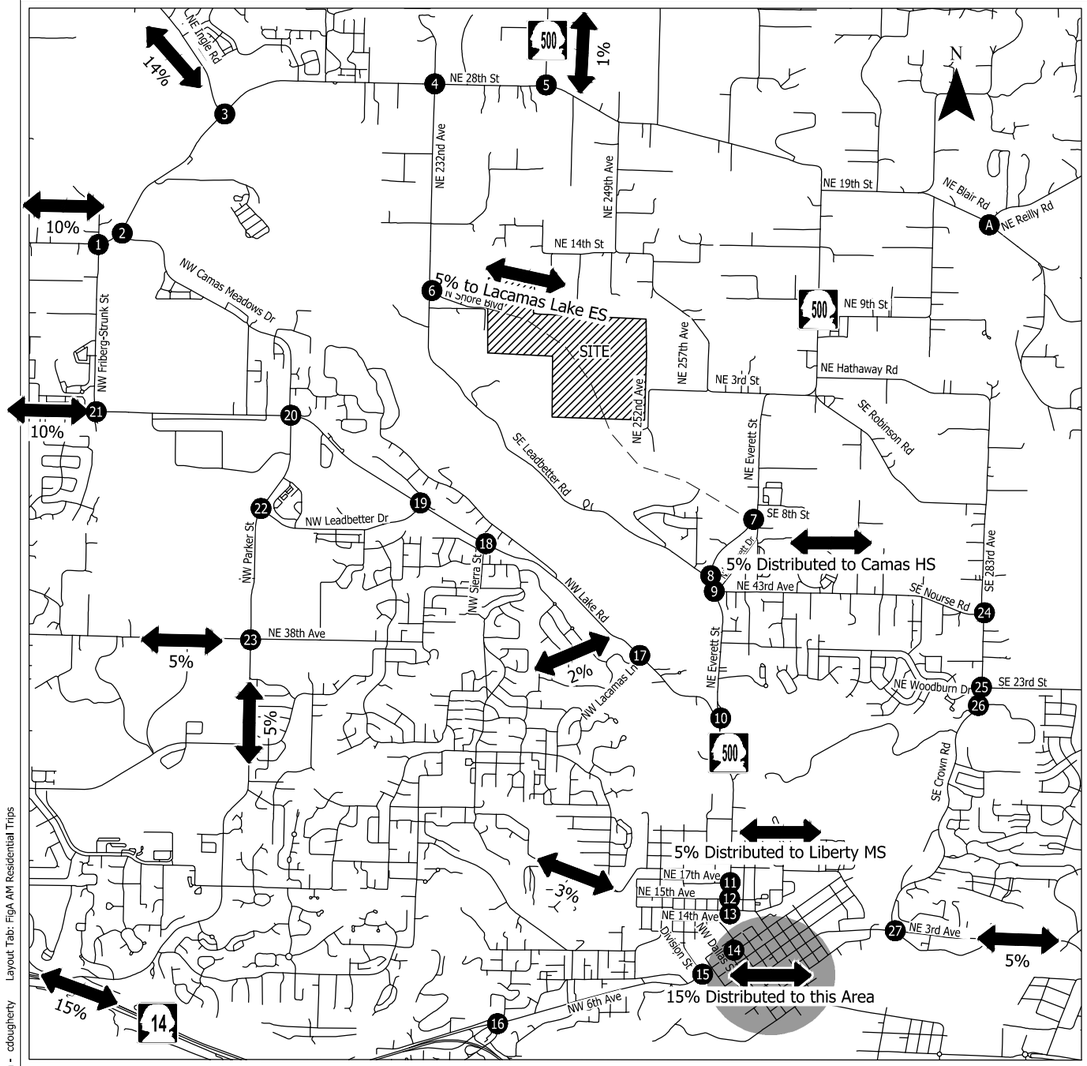
Intersection Summary		
HCM 7th Control Delay, s/veh		10.4
HCM 7th LOS		B

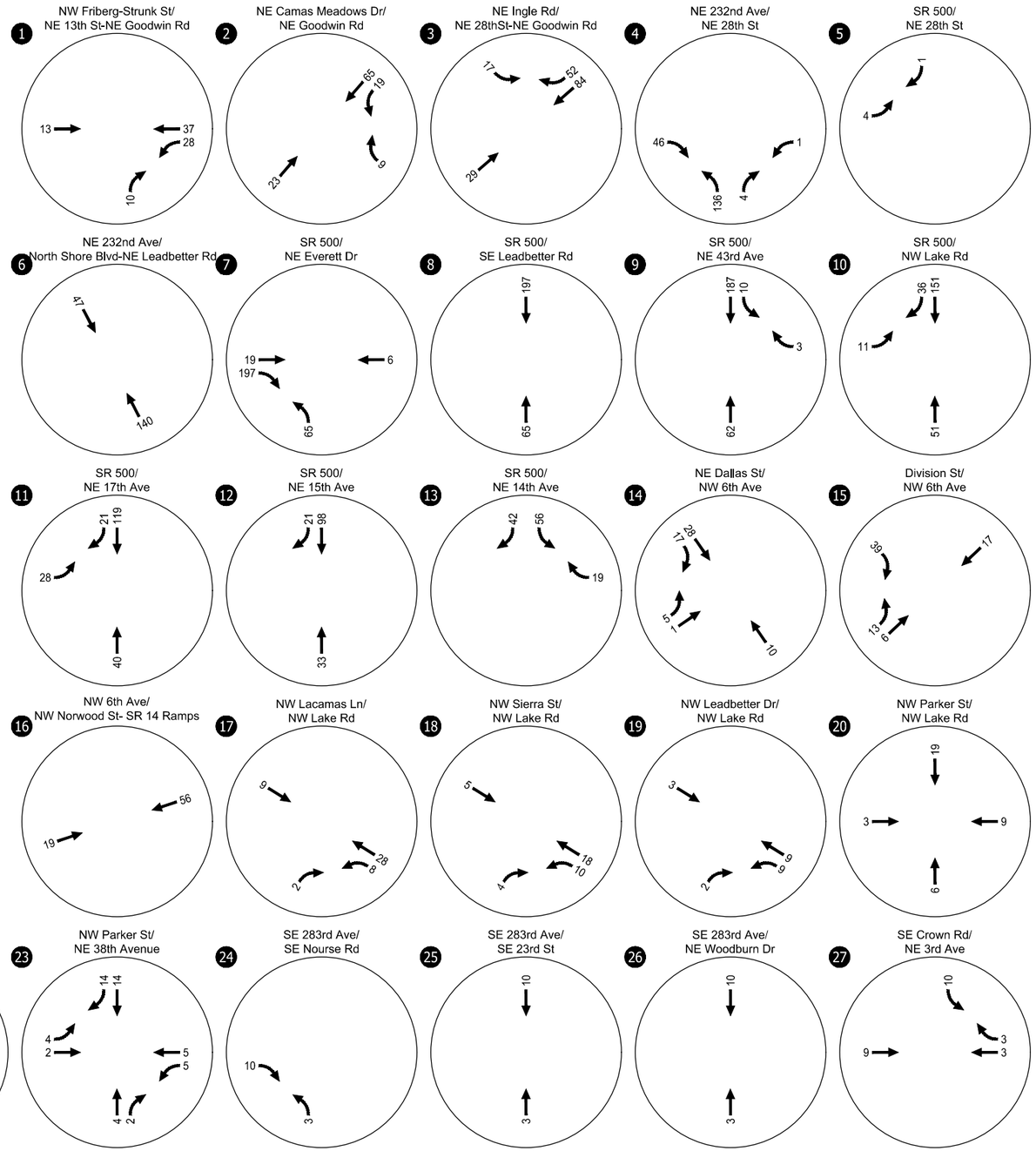
Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix G : Site-Generated Trip Assignment by Land Use



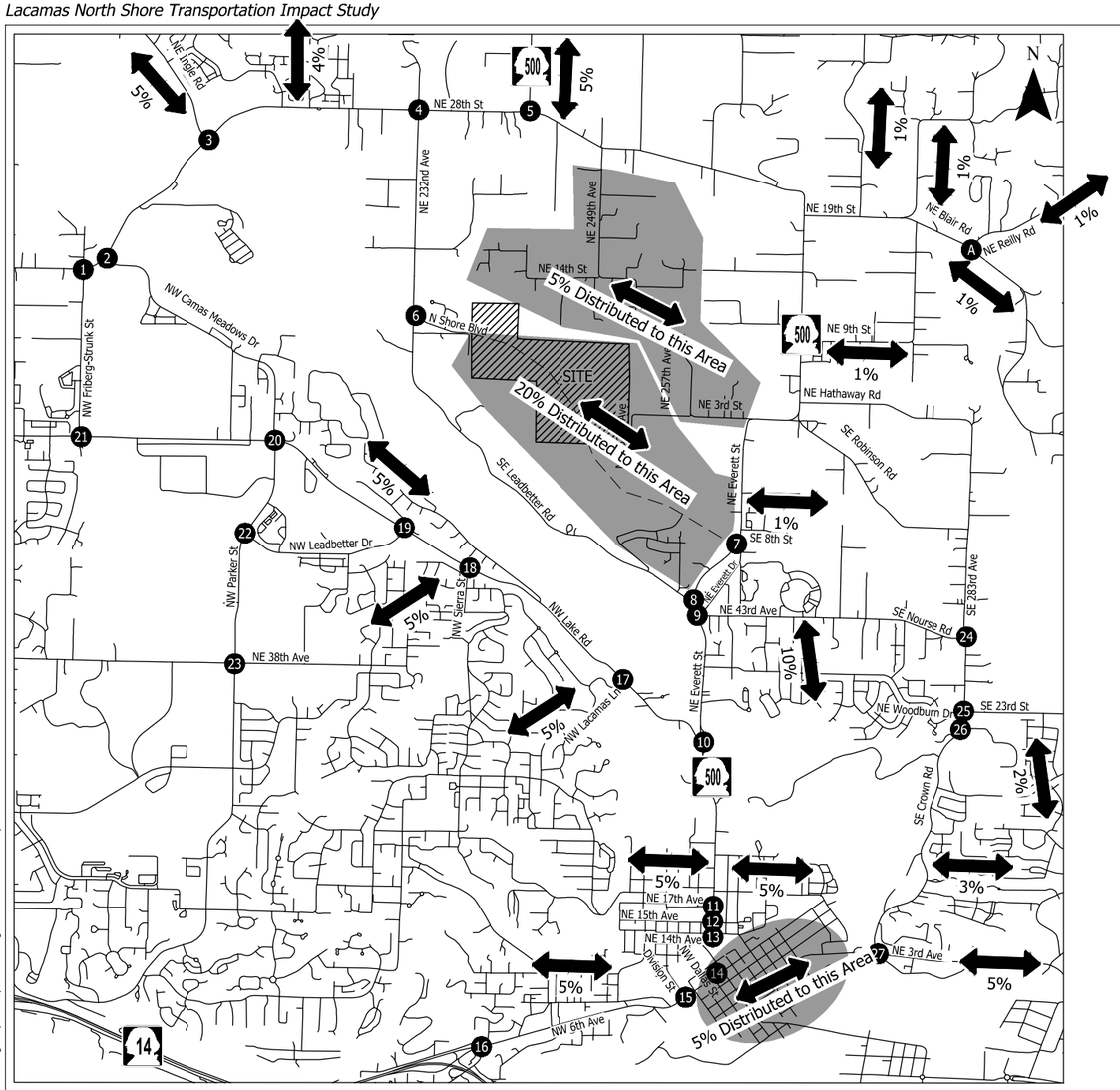


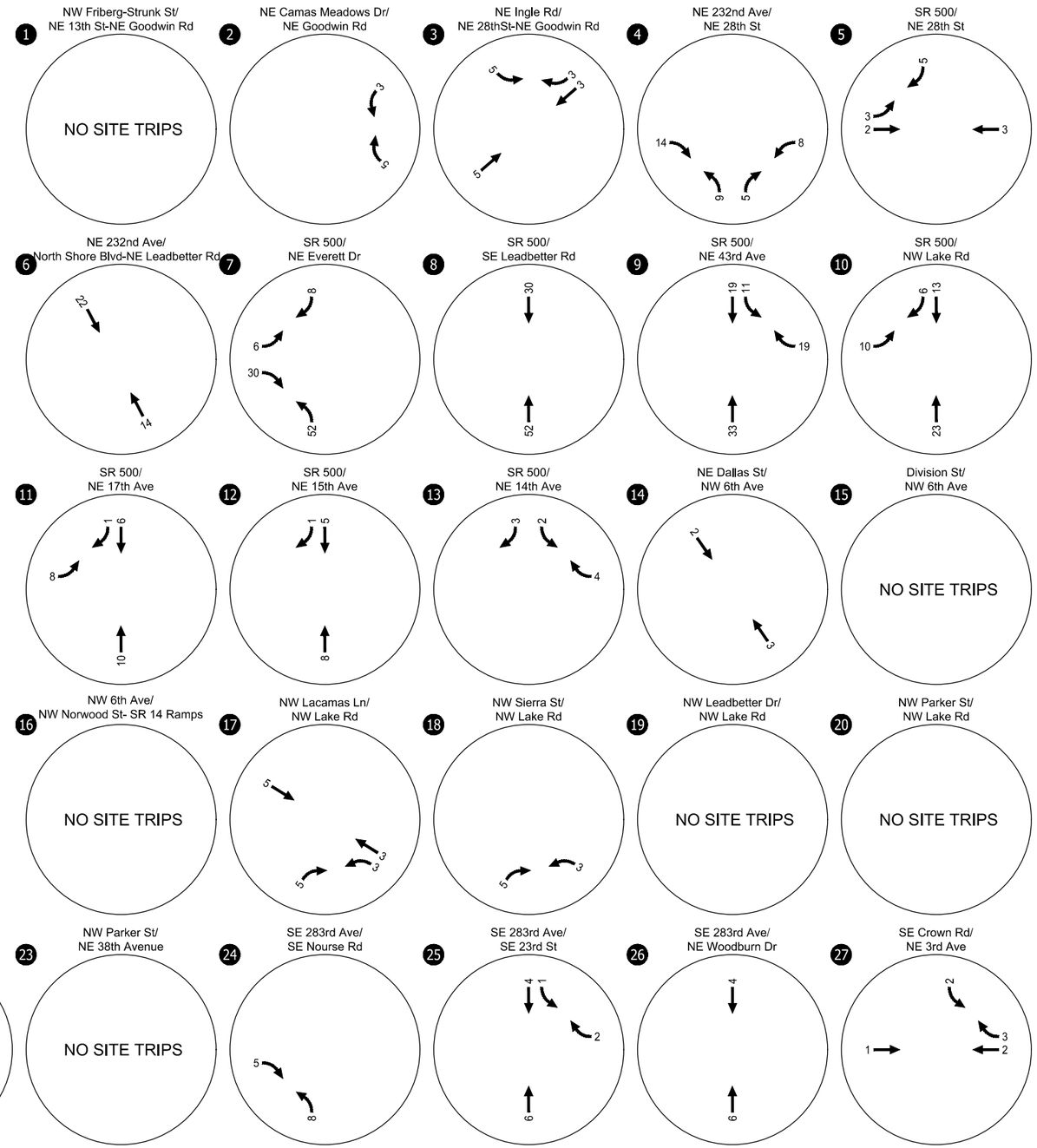
Study Intersections

Weekday AM Peak Hour Residential Trip Assignment Camas, Washington

Figure G-1

H:\31\31612 - Johnston Dairy\report\figs\31612_TIS Figs.dwg Sep 15, 2025 - 3:03pm - cdougherty Layout Tab: FigA AM Residential Trips



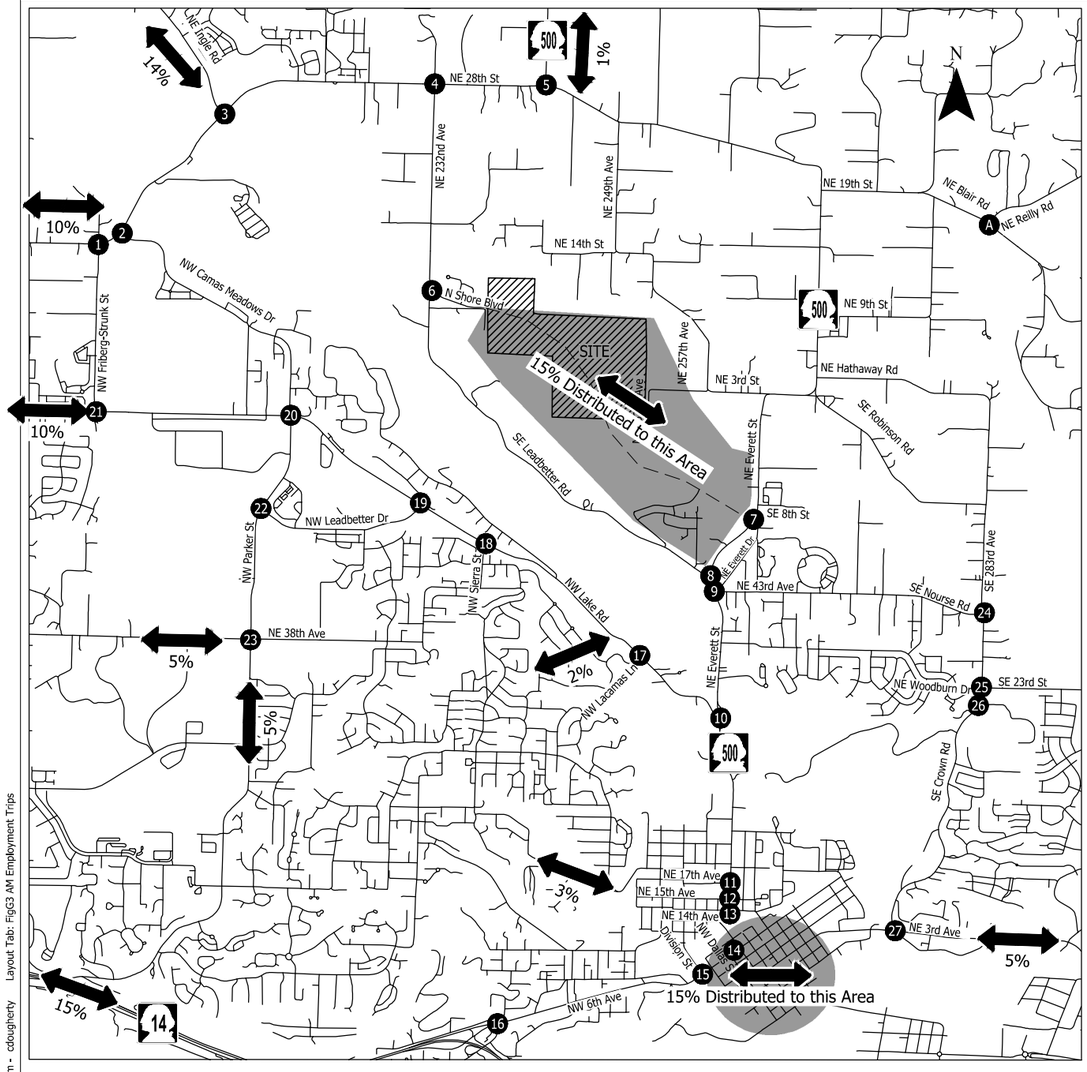


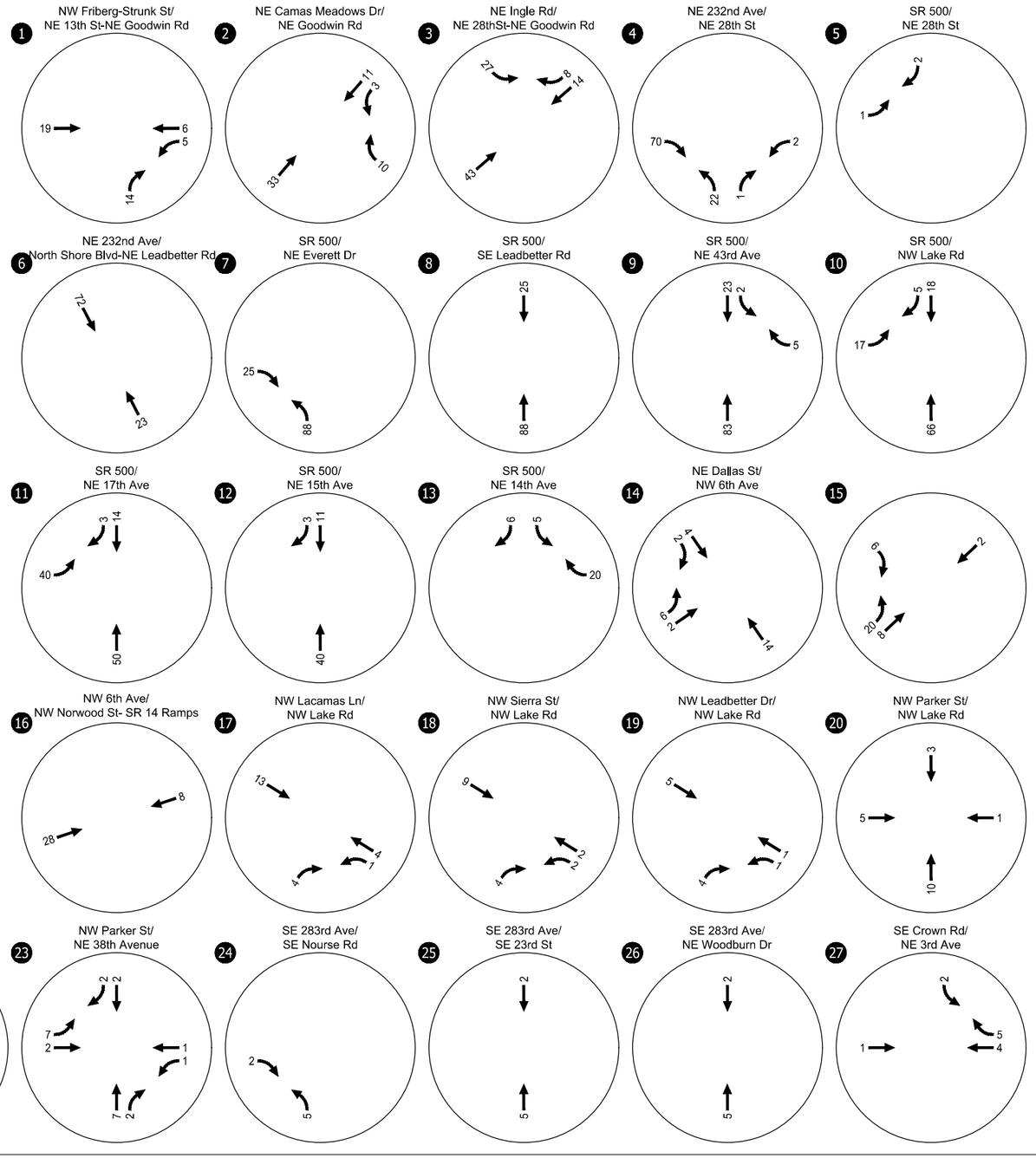
(#) Study Intersections

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

Figure
G-2

H:\31\31612 - Johnston Dairy\report\figs\31612_TIS Figs.dwg Sep 15, 2025 - 3:06pm - cdougherty Layout Tab: Fig G2 AM Commercial Trips



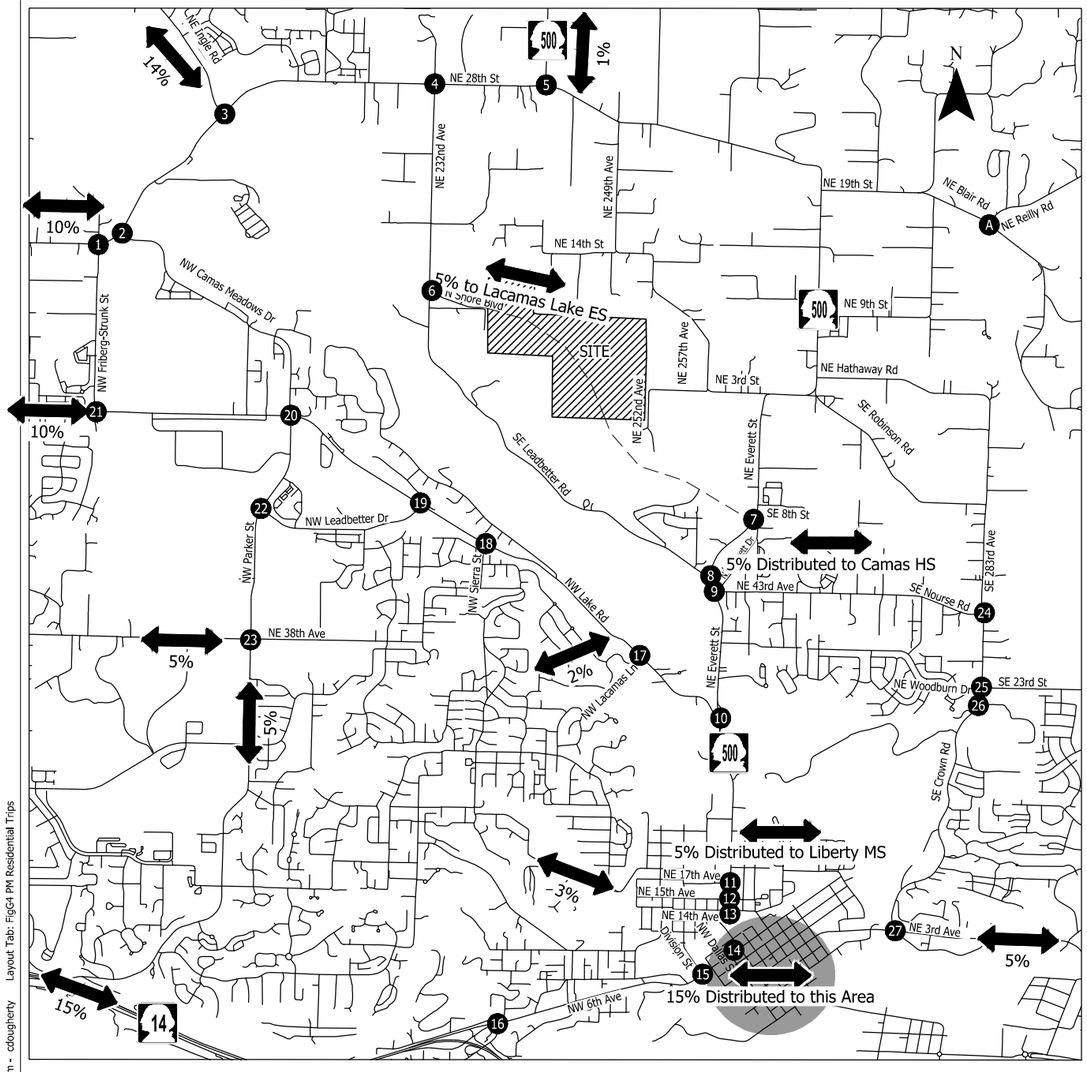


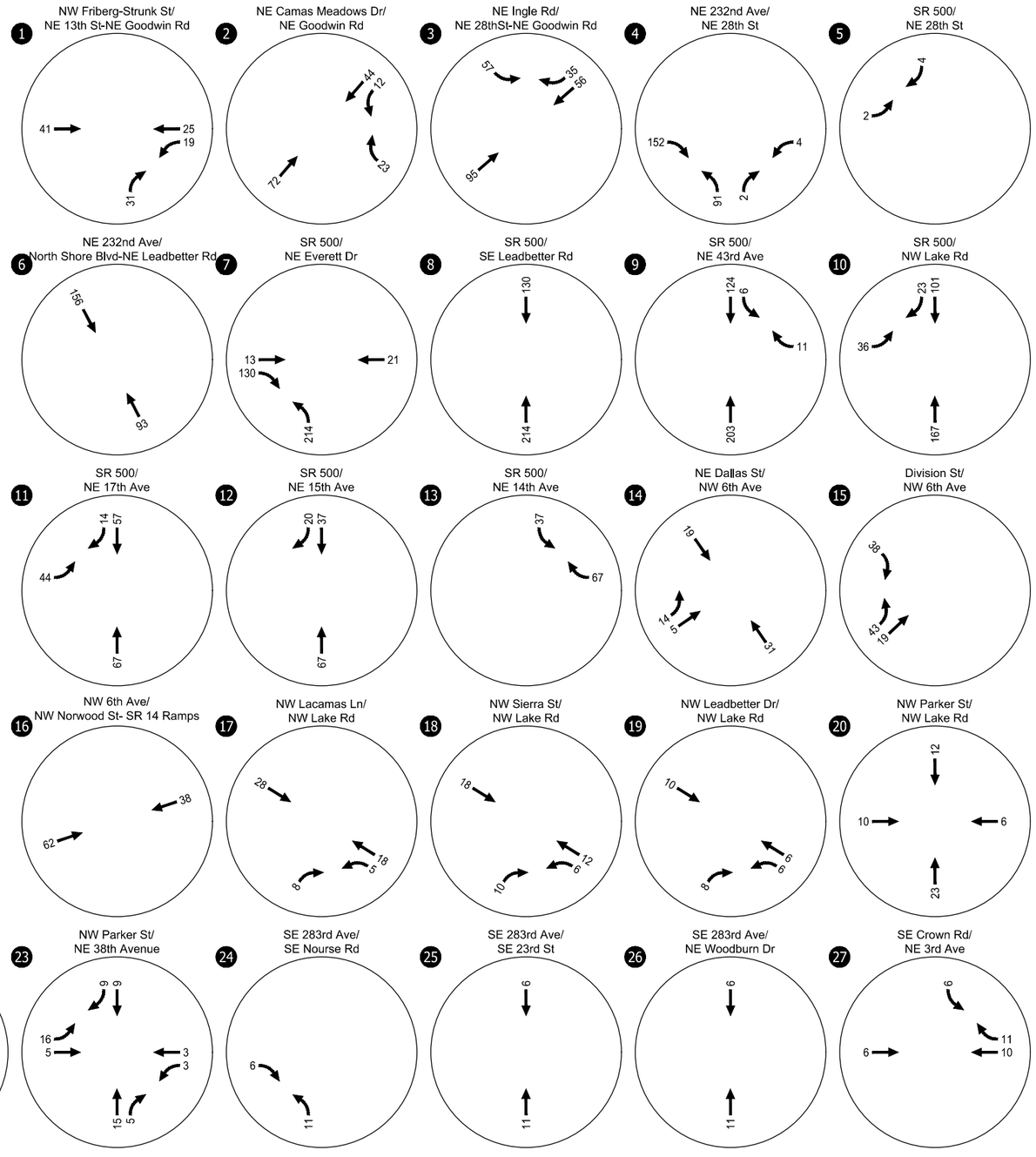
Study Intersections

Weekday AM Peak Hour Employment Trip Assignment Camas, Washington

Figure G-3

H:\31\31612 - Johnston Dairy\report\figs\31612_TIS Figs.dwg Sep 15, 2025 - 3:07pm - cdougherty Layout Tab: Fig03 AM Employment Trips



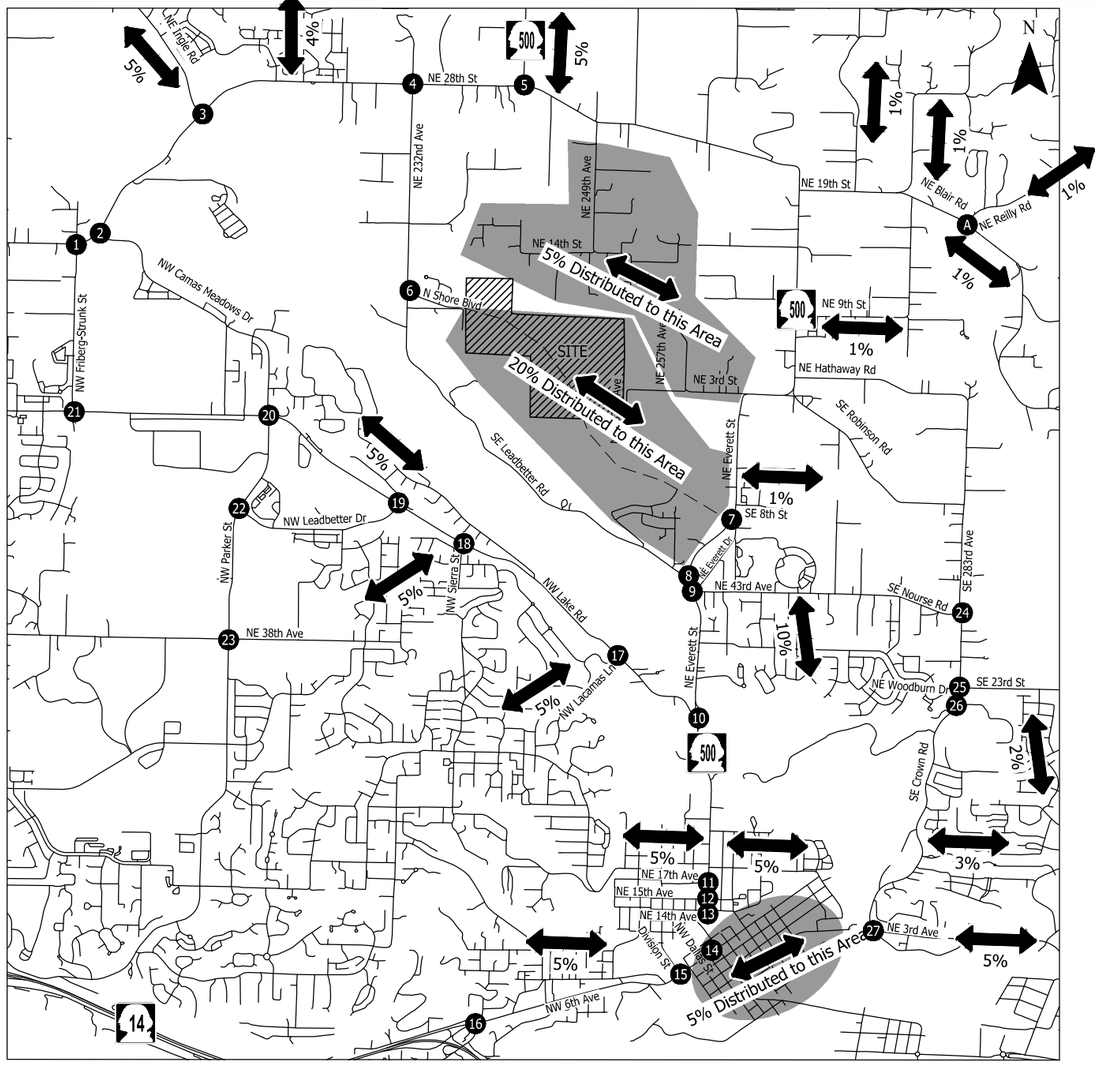


(#) Study Intersections

Weekday PM Peak Hour Residential Trip Assignment Camas, Washington

Figure G-4

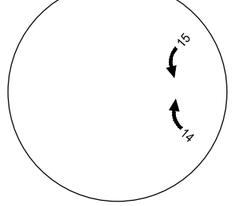
H:\31\31612 - Johnston Dairy\report\figs\31612_TIS Figs.dwg Sep 15, 2025 - 3:08pm - cdougherty Layout Tab: Fig04 PM Residential Trips



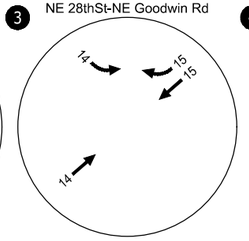
1 NW Friberg-Strunk St/ NE 13th St-NE Goodwin Rd

NO SITE TRIPS

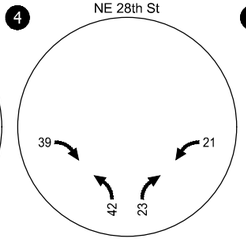
2 NE Camas Meadows Dr/ NE Goodwin Rd



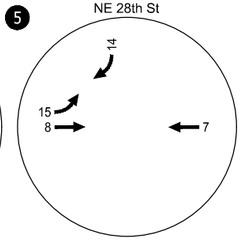
3 NE Ingle Rd/ NE 28thSt-NE Goodwin Rd



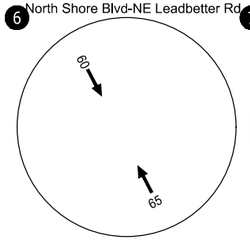
4 NE 232nd Ave/ NE 28th St



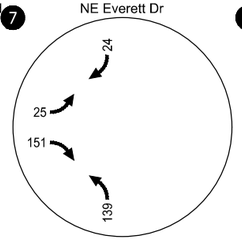
5 SR 500/ NE 28th St



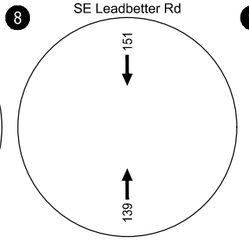
6 NE 232nd Ave/ North Shore Blvd-NE Leadbetter Rd



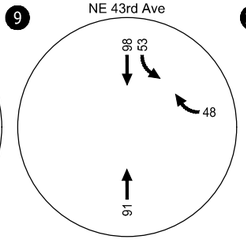
7 SR 500/ NE Everett Dr



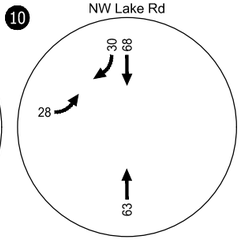
8 SR 500/ SE Leadbetter Rd



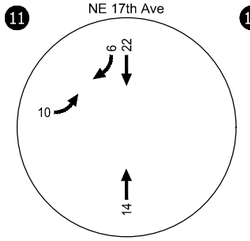
9 SR 500/ NE 43rd Ave



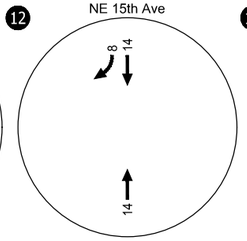
10 SR 500/ NW Lake Rd



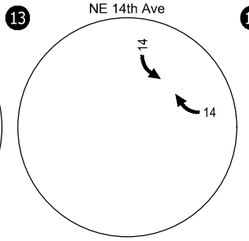
11 SR 500/ NE 17th Ave



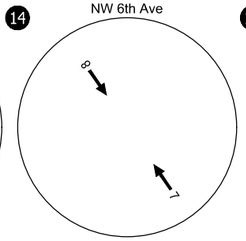
12 SR 500/ NE 15th Ave



13 SR 500/ NE 14th Ave



14 NE Dallas St/ NW 6th Ave



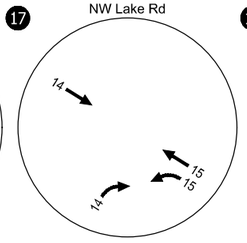
15 Division St/ NW 6th Ave

NO SITE TRIPS

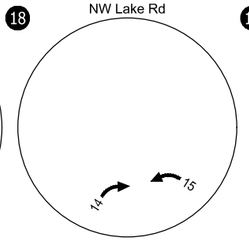
16 NW 6th Ave/ NW Norwood St- SR 14 Ramps

NO SITE TRIPS

17 NW Lacamas Ln/ NW Lake Rd



18 NW Sierra St/ NW Lake Rd



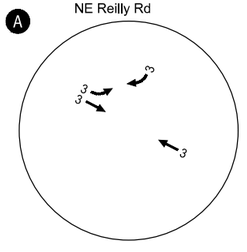
19 NW Leadbetter Dr/ NW Lake Rd

NO SITE TRIPS

20 NW Parker St/ NW Lake Rd

NO SITE TRIPS

A NE Blair Rd/ NE Reilly Rd



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

NO SITE TRIPS

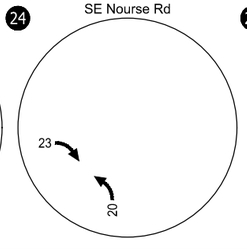
22 NW Parker St/ NW Leadbetter Dr

NO SITE TRIPS

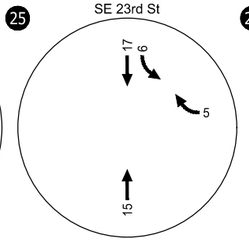
23 NW Parker St/ NW 38th Avenue

NO SITE TRIPS

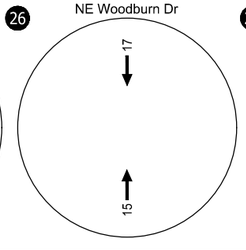
24 SE 283rd Ave/ SE Nourse Rd



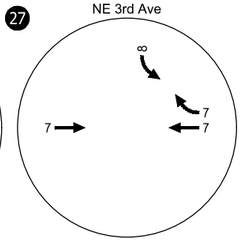
25 SE 283rd Ave/ SE 23rd St



26 SE 283rd Ave/ NE Woodburn Dr



27 SE Crown Rd/ NE 3rd Ave

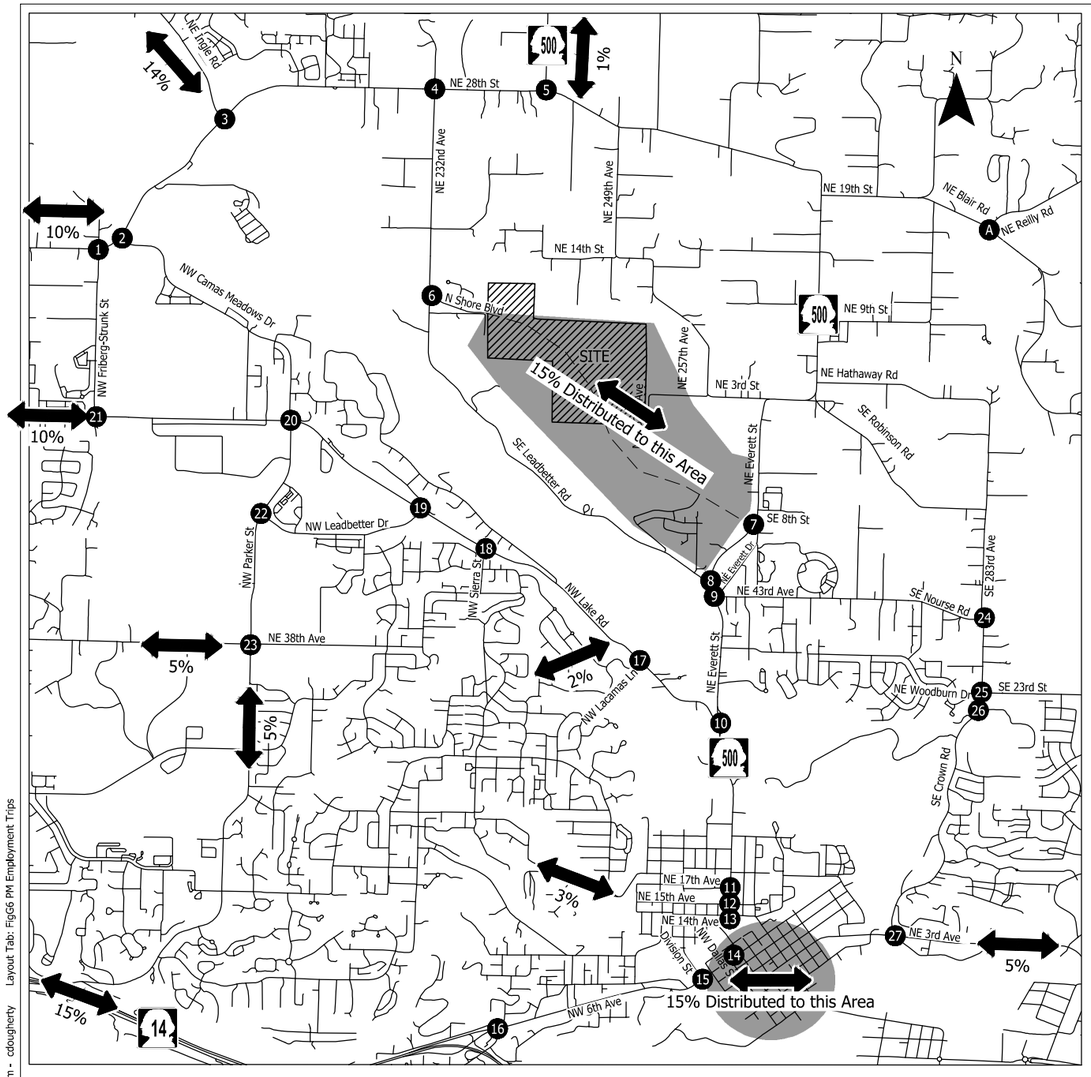


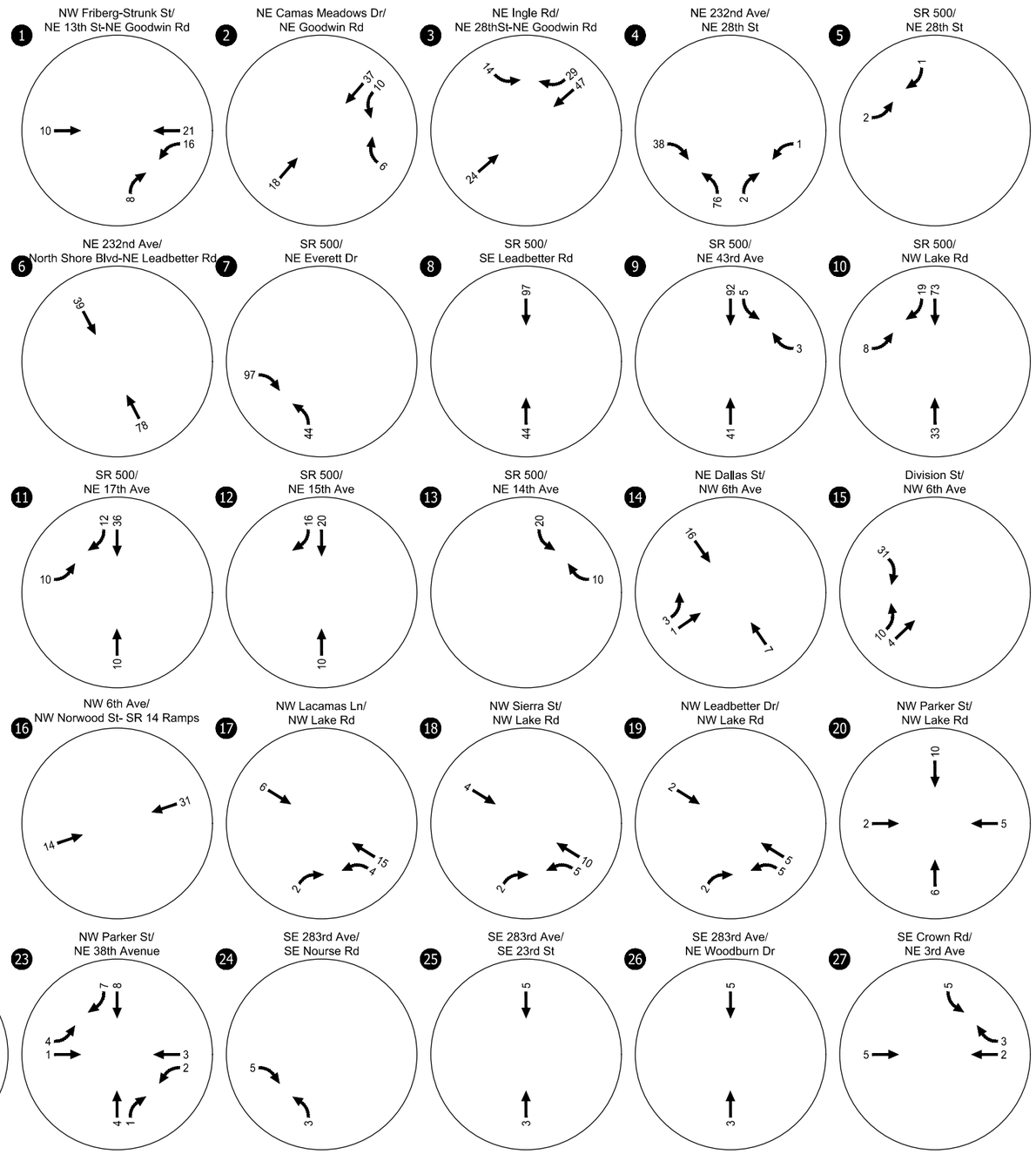
(#) Study Intersections

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

Figure
G-5

H:\31\31612 - Johnston Dairy\report\figs\31612_TIS Figs.dwg Sep 15, 2025 - 3:09pm - cdougherty Layout Tab: FigG5 PM Commercial Trips





Study Intersections

Weekday PM Peak Hour Employment Trip Assignment Camas, Washington

Figure G-6

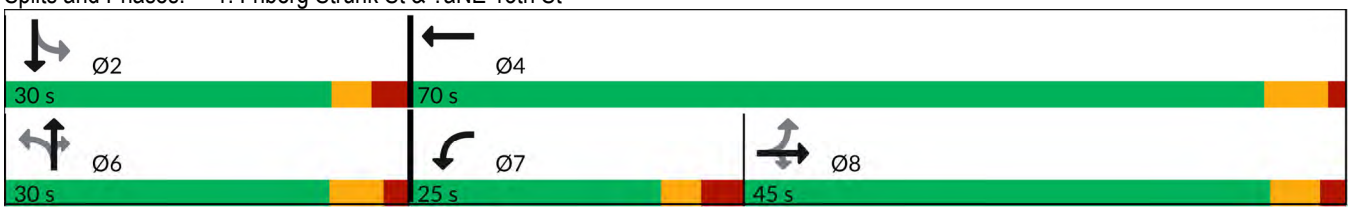
H:\31\31612 - Johnston Dairy\report\figs\31612_TIS Figs.dwg Sep 15, 2025 - 3:09pm - cdougherty Layout Tab: Fig06 PM Employment Trips

Appendix H : Year 2030 Total Traffic Conditions Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Configurations									
Traffic Volume (vph)	1	241	285	348	473	86	2	136	5
Future Volume (vph)	1	241	285	348	473	86	2	136	5
Turn Type	Perm	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases		8		7	4		6		2
Permitted Phases	8		8			6		6	
Detector Phase	8	8	8	7	4	6	6	6	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.6	23.6	23.6	11.0	24.1	23.8	23.8	23.8	25.6
Total Split (s)	45.0	45.0	45.0	25.0	70.0	30.0	30.0	30.0	30.0
Total Split (%)	45.0%	45.0%	45.0%	25.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.6	3.6	3.6	3.0	4.7	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	3.0	1.4	1.8	1.8	1.8	2.6
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		5.6	5.6	6.0	6.1		5.8	5.8	5.6
Lead/Lag	Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	Min	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)		18.7	18.7	19.6	44.0		10.9	10.9	11.1
Actuated g/C Ratio		0.28	0.28	0.29	0.66		0.16	0.16	0.17
v/c Ratio		0.73	0.53	0.91	0.51		0.57	0.44	0.03
Control Delay (s/veh)		33.1	5.5	52.4	8.4		40.2	9.0	24.5
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)		33.1	5.5	52.4	8.4		40.2	9.0	24.5
LOS		C	A	D	A		D	A	C
Approach Delay (s/veh)		18.2			27.0		21.2		24.5
Approach LOS		B			C		C		C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 67.1	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay (s/veh): 23.2	Intersection LOS: C
Intersection Capacity Utilization 63.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Friberg Strunk St & ?áNE 13th St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	241	285	348	473	0	86	2	136	0	5	1
Future Volume (veh/h)	1	241	285	348	473	0	86	2	136	0	5	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	0.96	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	401	1604	1811	1796	1826	1900	1682	1900	1826	1900	1604	1900
Adj Flow Rate, veh/h	1	298	352	430	584	0	106	2	168	0	6	1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	100	20	6	7	5	0	10	0	5	0	20	0
Cap, veh/h	59	451	423	476	1200	0	320	5	229	0	200	33
Arrive On Green	0.28	0.28	0.28	0.28	0.66	0.00	0.15	0.15	0.15	0.00	0.15	0.15
Sat Flow, veh/h	1	1602	1502	1711	1826	0	1366	34	1537	0	1339	223
Grp Volume(v), veh/h	299	0	352	430	584	0	108	0	168	0	0	7
Grp Sat Flow(s),veh/h/ln	1603	0	1502	1711	1826	0	1399	0	1537	0	0	1562
Q Serve(g_s), s	0.0	0.0	13.5	14.9	9.9	0.0	4.2	0.0	6.4	0.0	0.0	0.2
Cycle Q Clear(g_c), s	10.1	0.0	13.5	14.9	9.9	0.0	4.5	0.0	6.4	0.0	0.0	0.2
Prop In Lane	0.00		1.00	1.00		0.00	0.98		1.00	0.00		0.14
Lane Grp Cap(c), veh/h	510	0	423	476	1200	0	325	0	229	0	0	233
V/C Ratio(X)	0.59	0.00	0.83	0.90	0.49	0.00	0.33	0.00	0.73	0.00	0.00	0.03
Avail Cap(c_a), veh/h	1085	0	964	530	1901	0	675	0	606	0	0	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	19.5	0.0	20.7	21.4	5.3	0.0	24.2	0.0	24.9	0.0	0.0	22.3
Incr Delay (d2), s/veh	0.4	0.0	1.7	16.8	0.1	0.0	0.2	0.0	1.7	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	4.4	7.5	2.4	0.0	1.3	0.0	2.3	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.9	0.0	22.4	38.2	5.4	0.0	24.4	0.0	26.7	0.0	0.0	22.3
LnGrp LOS	B		C	D	A		C		C			C
Approach Vol, veh/h		651			1014			276			7	
Approach Delay, s/veh		21.2			19.3			25.8			22.3	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	2	4	6	7	8
Phs Duration (G+Y+Rc), s	15.0	46.4	15.0	23.1	23.4
Change Period (Y+Rc), s	* 5.8	6.1	5.8	6.0	* 6.1
Max Green Setting (Gmax), s	* 24	63.9	24.2	19.0	* 39
Max Q Clear Time (g_c+I1), s	2.2	11.9	8.4	16.9	15.5
Green Ext Time (p_c), s	0.0	2.5	0.5	0.2	1.8

Intersection Summary	
HCM 7th Control Delay, s/veh	20.9
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	304	61	198	816	19	80
Future Vol, veh/h	304	61	198	816	19	80
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	55	-	105	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	4	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	14	20	8	5	37	4
Mvmt Flow	334	67	218	897	21	88

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	402	0	1667	335
Stage 1	-	-	-	-	335	-
Stage 2	-	-	-	-	1332	-
Critical Hdwy	-	-	4.18	-	6.77	6.24
Critical Hdwy Stg 1	-	-	-	-	5.77	-
Critical Hdwy Stg 2	-	-	-	-	5.77	-
Follow-up Hdwy	-	-	2.272	-	3.833	3.336
Pot Cap-1 Maneuver	-	-	1125	-	87	702
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	208	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1124	-	70	702
Mov Cap-2 Maneuver	-	-	-	-	70	-
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	168	-

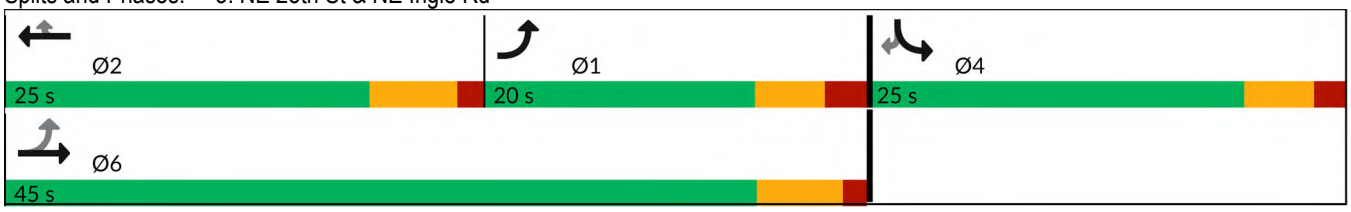
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.75	23.45
HCM LOS			C

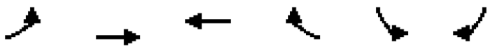
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	70	702	-	-	1124	-
HCM Lane V/C Ratio	0.297	0.125	-	-	0.194	-
HCM Ctrl Dly (s/v)	76.5	10.9	-	-	9	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	1.1	0.4	-	-	0.7	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	123	260	527	159	158	480
Future Volume (vph)	123	260	527	159	158	480
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	10.8	15.7	24.9	24.9	10.3	10.3
Total Split (s)	20.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	28.6%	64.3%	35.7%	35.7%	35.7%	35.7%
Yellow Time (s)	3.6	4.5	4.5	4.5	3.6	3.6
All-Red Time (s)	2.2	1.2	1.4	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.7	5.9	5.9	5.3	5.3
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effct Green (s)	30.5	29.2	19.9	19.9	10.7	10.7
Actuated g/C Ratio	0.59	0.57	0.39	0.39	0.21	0.21
v/c Ratio	0.33	0.30	0.86	0.28	0.54	0.75
Control Delay (s/veh)	11.9	7.6	34.6	8.4	25.6	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	11.9	7.6	34.6	8.4	25.6	10.1
LOS	B	A	C	A	C	B
Approach Delay (s/veh)		9.0	28.5		13.9	
Approach LOS		A	C		B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 51.3	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay (s/veh): 18.7	Intersection LOS: B
Intersection Capacity Utilization 66.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: NE 28th St & NE Ingle Rd





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	123	260	527	159	158	480
Future Volume (veh/h)	123	260	527	159	158	480
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1707	1737	1811	1796	1752	1841
Adj Flow Rate, veh/h	134	283	573	173	172	522
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	13	11	6	7	10	4
Cap, veh/h	240	849	574	482	545	510
Arrive On Green	0.07	0.49	0.32	0.32	0.33	0.33
Sat Flow, veh/h	1626	1737	1811	1522	1668	1560
Grp Volume(v), veh/h	134	283	573	173	172	522
Grp Sat Flow(s),veh/h/ln	1626	1737	1811	1522	1668	1560
Q Serve(g_s), s	0.2	6.0	19.1	5.3	4.7	19.7
Cycle Q Clear(g_c), s	0.2	6.0	19.1	5.3	4.7	19.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	240	849	574	482	545	510
V/C Ratio(X)	0.56	0.33	1.00	0.36	0.32	1.02
Avail Cap(c_a), veh/h	503	1133	574	482	545	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	9.4	20.6	15.9	15.2	20.3
Incr Delay (d2), s/veh	0.8	0.1	37.1	0.2	0.1	46.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.8	12.7	1.6	1.6	12.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	26.6	9.5	57.7	16.0	15.3	66.3
LnGrp LOS	C	A	E	B	B	F
Approach Vol, veh/h		417	746		694	
Approach Delay, s/veh		15.0	48.0		53.7	
Approach LOS		B	D		D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.3	25.0		25.0		35.3
Change Period (Y+Rc), s	5.8	5.9		5.3		* 5.8
Max Green Setting (Gmax), s	14.2	19.1		19.7		* 39
Max Q Clear Time (g_c+I1), s	2.2	21.1		21.7		8.0
Green Ext Time (p_c), s	0.1	0.0		0.0		1.0

Intersection Summary	
HCM 7th Control Delay, s/veh	42.7
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	64.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	153	292	49	248	2	312	2	34	1	3	6
Future Vol, veh/h	2	153	292	49	248	2	312	2	34	1	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	6	4	10	7	0	2	0	18	0	0	20
Mvmt Flow	2	180	344	58	292	2	367	2	40	1	4	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	294	0	0	524	0	0	765	766	352	594	936	293
Stage 1	-	-	-	-	-	-	356	356	-	408	408	-
Stage 2	-	-	-	-	-	-	409	409	-	186	528	-
Critical Hdwy	4.1	-	-	4.2	-	-	7.12	6.5	6.38	7.1	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.29	-	-	3.518	4	3.462	3.5	4	3.48
Pot Cap-1 Maneuver	1279	-	-	1003	-	-	~ 320	335	657	420	267	706
Stage 1	-	-	-	-	-	-	661	632	-	624	600	-
Stage 2	-	-	-	-	-	-	619	599	-	821	531	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1279	-	-	1003	-	-	~ 290	311	657	363	248	706
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 290	311	-	363	248	-
Stage 1	-	-	-	-	-	-	659	631	-	581	559	-
Stage 2	-	-	-	-	-	-	568	558	-	766	529	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.03	1.44	204.16	13.65
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	307	7	-	-	295	-	-	428
HCM Lane V/C Ratio	1.333	0.002	-	-	0.057	-	-	0.027
HCM Ctrl Dly (s/v)	204.2	7.8	0	-	8.8	0	-	13.6
HCM Lane LOS	F	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	20.3	0	-	-	0.2	-	-	0.1

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	39	152	0	0	204	120	0	0	0	106	0	95
Future Vol, veh/h	39	152	0	0	204	120	0	0	0	106	0	95
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	13	9	0	0	6	6	0	0	0	4	0	5
Mvmt Flow	46	179	0	0	240	141	0	0	0	125	0	112

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	381	0	0	179	0	0	511	652	179	581	581	311
Stage 1	-	-	-	-	-	-	271	271	-	311	311	-
Stage 2	-	-	-	-	-	-	240	381	-	271	271	-
Critical Hdwy	4.23	-	-	4.1	-	-	7.1	6.5	6.2	7.14	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.317	-	-	2.2	-	-	3.5	4	3.3	3.536	4	3.345
Pot Cap-1 Maneuver	1120	-	-	1409	-	-	477	390	869	422	428	723
Stage 1	-	-	-	-	-	-	740	689	-	695	662	-
Stage 2	-	-	-	-	-	-	768	617	-	731	689	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1120	-	-	1409	-	-	385	372	869	403	408	723
Mov Cap-2 Maneuver	-	-	-	-	-	-	385	372	-	403	408	-
Stage 1	-	-	-	-	-	-	706	658	-	695	662	-
Stage 2	-	-	-	-	-	-	649	617	-	698	658	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.71	0	0	18.05
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	368	-	-	1409	-	-	509
HCM Lane V/C Ratio	-	0.041	-	-	-	-	-	0.464
HCM Ctrl Dly (s/v)	0	8.4	0	-	0	-	-	18
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	2.4

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	1	310	317	1
Future Vol, veh/h	1	1	1	310	317	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-4	-4	-
Peak Hour Factor	48	48	48	48	48	48
Heavy Vehicles, %	18	6	5	10	9	8
Mvmt Flow	2	2	2	646	660	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1311	661	663	0	-	0
Stage 1	661	-	-	-	-	-
Stage 2	650	-	-	-	-	-
Critical Hdwy	6.98	6.46	4.15	-	-	-
Critical Hdwy Stg 1	5.98	-	-	-	-	-
Critical Hdwy Stg 2	5.98	-	-	-	-	-
Follow-up Hdwy	3.662	3.354	2.245	-	-	-
Pot Cap-1 Maneuver	140	439	912	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	140	439	912	-	-	-
Mov Cap-2 Maneuver	140	-	-	-	-	-
Stage 1	449	-	-	-	-	-
Stage 2	456	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	22.34	0.03	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	6	-	212	-	-
HCM Lane V/C Ratio	0.002	-	0.02	-	-
HCM Ctrl Dly (s/v)	9	0	22.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

MOVEMENT SUMMARY

Site: 7 [Everett St (SR 500) St & NE Everett Dr_Total AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett St (SR 500)															
3	L2	All MCs	353	0.0	353	0.0	0.703	12.1	LOS B	7.4	187.9	0.70	0.61	0.72	33.1
8	T1	All MCs	230	3.0	230	3.0	0.703	6.0	LOS A	7.4	187.9	0.70	0.61	0.72	33.8
18	R2	All MCs	214	3.0	214	3.0	0.703	6.1	LOS A	7.4	187.9	0.70	0.61	0.72	33.4
Approach			797	1.7	797	1.7	0.703	8.7	LOS A	7.4	187.9	0.70	0.61	0.72	33.4
East: NE Everett Dr															
1	L2	All MCs	189	10.0	189	10.0	0.371	14.2	LOS B	2.3	61.6	0.76	0.74	0.76	31.7
6	T1	All MCs	26	0.0	26	0.0	0.371	7.1	LOS A	2.3	61.6	0.76	0.74	0.76	32.6
16	R2	All MCs	49	3.0	49	3.0	0.371	7.5	LOS A	2.3	61.6	0.76	0.74	0.76	32.3
Approach			265	7.7	265	7.7	0.371	12.3	LOS B	2.3	61.6	0.76	0.74	0.76	31.9
North: NE Everett St (SR 500)															
7	L2	All MCs	138	1.0	138	1.0	0.637	16.6	LOS B	6.1	155.5	0.85	0.84	1.08	32.0
4	T1	All MCs	367	3.0	367	3.0	0.637	10.5	LOS B	6.1	155.5	0.85	0.84	1.08	32.6
14	R2	All MCs	27	0.0	27	0.0	0.637	10.3	LOS B	6.1	155.5	0.85	0.84	1.08	32.4
Approach			531	2.3	531	2.3	0.637	12.0	LOS B	6.1	155.5	0.85	0.84	1.08	32.4
West: NE Everett Dr															
5	L2	All MCs	20	0.0	20	0.0	0.875	29.0	LOS D	15.0	375.1	1.00	1.25	1.90	27.5
2	T1	All MCs	40	0.0	40	0.0	0.875	22.7	LOS D	15.0	375.1	1.00	1.25	1.90	28.0
12	R2	All MCs	581	0.0	581	0.0	0.875	22.8	LOS D	15.0	375.1	1.00	1.25	1.90	27.8
Approach			641	0.0	641	0.0	0.875	23.0	LOS C	15.0	375.1	1.00	1.25	1.90	27.8
All Vehicles			2233	2.1	2233	2.1	0.875	14.0	LOS B	15.0	375.1	0.83	0.86	1.15	31.2

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	17	13	654	923	35
Future Vol, veh/h	12	17	13	654	923	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	110	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	4	-4	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	1	1	3	5	1
Mvmt Flow	14	20	15	752	1061	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1863	1081	1101	0	-	0
Stage 1	1081	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Critical Hdwy	6.8	6.41	4.11	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	66	250	638	-	-	-
Stage 1	291	-	-	-	-	-
Stage 2	417	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	64	250	638	-	-	-
Mov Cap-2 Maneuver	64	-	-	-	-	-
Stage 1	284	-	-	-	-	-
Stage 2	417	-	-	-	-	-

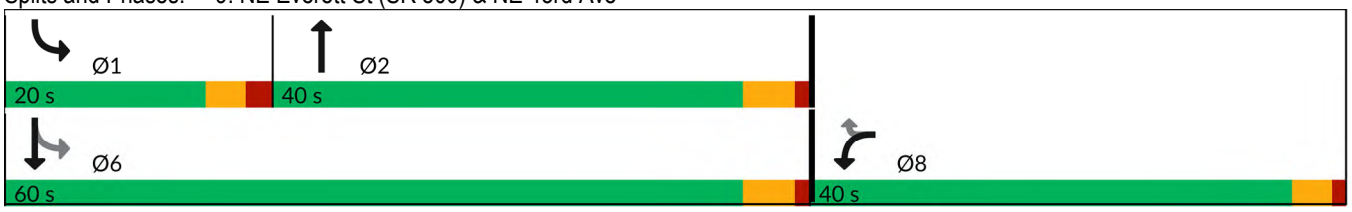
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	49.04	0.21	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	638	-	114	-	-
HCM Lane V/C Ratio	0.023	-	0.292	-	-
HCM Ctrl Dly (s/v)	10.8	-	49	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	333	98	574	485	119	825
Future Volume (vph)	333	98	574	485	119	825
Turn Type	Prot	Perm	NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		Free	6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	23.0	23.0	30.0		10.0	50.0
Total Split (s)	40.0	40.0	40.0		20.0	60.0
Total Split (%)	40.0%	40.0%	40.0%		20.0%	60.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0
All-Red Time (s)	1.0	1.0	1.0		2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	Min		None	Min
Act Effct Green (s)	26.2	26.2	38.2	88.2	52.9	52.9
Actuated g/C Ratio	0.30	0.30	0.43	1.00	0.60	0.60
v/c Ratio	0.82	0.21	0.88	0.38	0.50	0.88
Control Delay (s/veh)	44.2	5.5	40.9	0.7	15.8	28.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.2	5.5	40.9	0.7	15.8	28.0
LOS	D	A	D	A	B	C
Approach Delay (s/veh)	35.4		22.5			26.5
Approach LOS	D		C			C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 88.2	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay (s/veh): 26.3	Intersection LOS: C
Intersection Capacity Utilization 69.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 9: NE Everett St (SR 500) & NE 43rd Ave





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	333	98	574	485	119	825
Future Volume (veh/h)	333	98	574	485	119	825
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1799	1874	1746	1776	1802	1997
Adj Flow Rate, veh/h	383	90	660	0	137	948
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	12	7	4	2	17	4
Cap, veh/h	455	422	787		314	1189
Arrive On Green	0.27	0.27	0.45	0.00	0.07	0.60
Sat Flow, veh/h	1713	1588	1746	1505	1716	1997
Grp Volume(v), veh/h	383	90	660	0	137	948
Grp Sat Flow(s),veh/h/ln	1713	1588	1746	1505	1716	1997
Q Serve(g_s), s	13.7	2.9	21.6	0.0	2.5	23.7
Cycle Q Clear(g_c), s	13.7	2.9	21.6	0.0	2.5	23.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	455	422	787		314	1189
V/C Ratio(X)	0.84	0.21	0.84		0.44	0.80
Avail Cap(c_a), veh/h	952	882	943		596	1695
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	18.5	15.7	0.0	12.4	10.1
Incr Delay (d2), s/veh	4.3	0.2	7.3	0.0	1.0	2.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	1.0	9.0	0.0	0.9	8.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	26.8	18.8	23.0	0.0	13.4	12.1
LnGrp LOS	C	B	C		B	B
Approach Vol, veh/h	473		660			1085
Approach Delay, s/veh	25.2		23.0			12.3
Approach LOS	C		C			B

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	9.4	34.2				43.6	21.2
Change Period (Y+Rc), s	5.0	5.0				5.0	4.0
Max Green Setting (Gmax), s	15.0	35.0				55.0	36.0
Max Q Clear Time (g_c+I1), s	4.5	23.6				25.7	15.7
Green Ext Time (p_c), s	0.2	5.6				10.9	1.5

Intersection Summary	
HCM 7th Control Delay, s/veh	18.2
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

MOVEMENT SUMMARY

Site 10 NE Everett St & NW Lake Rd_TotalAM (Site Folder: General)

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett Street															
3	L2	All MCs	238	7.0	238	7.0	0.414	15.3	LOS B	2.9	76.0	0.84	0.80	0.88	30.6
8	T1	All MCs	584	7.0	584	7.0	0.746	13.2	LOS B	9.7	255.5	1.00	0.96	1.38	32.0
Approach			822	7.0	822	7.0	0.746	13.8	LOS B	9.7	255.5	0.95	0.92	1.24	31.6
North: NE Everett Street															
4	T1	All MCs	796	10.0	796	10.0	0.718	7.3	LOS A	8.7	235.6	0.81	0.64	0.89	34.0
14	R2	All MCs	451	2.0	451	2.0	0.367	5.0	LOS A	2.6	67.1	0.54	0.53	0.54	35.1
Approach			1246	7.1	1246	7.1	0.718	6.5	LOS A	8.7	235.6	0.71	0.60	0.76	34.4
West: NW Lake Road															
5	L2	All MCs	603	3.0	603	3.0	0.936	42.6	LOS D	20.3	519.1	1.00	1.50	2.35	22.6
12	R2	All MCs	242	6.0	242	6.0	0.396	9.8	LOS A	3.1	81.4	0.95	0.77	0.96	33.1
Approach			845	3.9	845	3.9	0.936	33.2	LOS C	20.3	519.1	0.99	1.30	1.96	24.8
All Vehicles			2913	6.1	2913	6.1	0.936	16.3	LOS B	20.3	519.1	0.86	0.89	1.24	30.2

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	167	14	24	380	665	108
Future Vol, veh/h	167	14	24	380	665	108
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	7	7	0	6	2	0
Mvmt Flow	184	15	26	418	731	119

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1263	793	852	0	-	0
Stage 1	793	-	-	-	-	-
Stage 2	470	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.1	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.2	-	-	-
Pot Cap-1 Maneuver	~ 183	381	795	-	-	-
Stage 1	437	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 176	380	793	-	-	-
Mov Cap-2 Maneuver	304	-	-	-	-	-
Stage 1	421	-	-	-	-	-
Stage 2	617	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	35.44	0.58	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	793	-	309	-	-
HCM Lane V/C Ratio	0.033	-	0.643	-	-
HCM Ctrl Dly (s/v)	9.7	-	35.4	-	-
HCM Lane LOS	A	-	E	-	-
HCM 95th %tile Q(veh)	0.1	-	4.2	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	25	19	4	25	78	8	294	6	81	442	155
Future Vol, veh/h	37	25	19	4	25	78	8	294	6	81	442	155
Conflicting Peds, #/hr	13	0	3	3	0	13	0	0	6	6	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	11	0	5	0	0	0	25	6	17	1	4	0
Mvmt Flow	43	29	22	5	29	90	9	338	7	93	508	178

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1167	1153	600	1077	1238	360	686	0	0	351	0	0
Stage 1	783	783	-	366	366	-	-	-	-	-	-	-
Stage 2	384	369	-	712	872	-	-	-	-	-	-	-
Critical Hdwy	7.21	6.5	6.25	7.1	6.5	6.2	4.35	-	-	4.11	-	-
Critical Hdwy Stg 1	6.21	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.21	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.599	4	3.345	3.5	4	3.3	2.425	-	-	2.209	-	-
Pot Cap-1 Maneuver	164	199	495	198	177	689	809	-	-	1214	-	-
Stage 1	373	407	-	658	626	-	-	-	-	-	-	-
Stage 2	621	624	-	427	371	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	107	181	494	146	161	677	809	-	-	1207	-	-
Mov Cap-2 Maneuver	107	181	-	146	161	-	-	-	-	-	-	-
Stage 1	345	376	-	647	616	-	-	-	-	-	-	-
Stage 2	502	614	-	347	342	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	58.24	20.16	0.25	0.98
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	809	-	-	155	359	1207	-	-
HCM Lane V/C Ratio	0.011	-	-	0.601	0.343	0.077	-	-
HCM Ctrl Dly (s/v)	9.5	-	-	58.2	20.2	8.2	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	3.2	1.5	0.3	-	-

Intersection	
Int Delay, s/veh	13.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	23	1	0	18	252	1	0	0	338	0	125
Future Vol, veh/h	53	23	1	0	18	252	1	0	0	338	0	125
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	8	4	0	0	0	7	0	0	0	4	0	3
Mvmt Flow	62	27	1	0	21	296	1	0	0	398	0	147

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	883	872	74	-	946	2	147	0	0	1	0	0
Stage 1	869	869	-	-	3	-	-	-	-	-	-	-
Stage 2	14	3	-	-	942	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.54	6.2	-	6.5	6.27	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.18	5.54	-	-	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.54	-	-	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.036	3.3	-	4	3.363	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	260	287	994	0	264	1068	1447	-	-	1609	-	-
Stage 1	338	367	-	0	897	-	-	-	-	-	-	-
Stage 2	991	889	-	0	344	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	125	208	994	-	191	1066	1447	-	-	1607	-	-
Mov Cap-2 Maneuver	125	208	-	-	191	-	-	-	-	-	-	-
Stage 1	246	266	-	-	895	-	-	-	-	-	-	-
Stage 2	697	887	-	-	250	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	65.51	12.19	7.49	5.82
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1447	-	-	143	816	1095	-	-
HCM Lane V/C Ratio	0.001	-	-	0.631	0.389	0.247	-	-
HCM Ctrl Dly (s/v)	7.5	0	-	65.5	12.2	8	0	-
HCM Lane LOS	A	A	-	F	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	3.4	1.9	1	-	-

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	37	69	8	1	164	4	18	87	3	1	131	110
Future Vol, veh/h	37	69	8	1	164	4	18	87	3	1	131	110
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	4	-	-	-6	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	9	25	0	5	0	22	8	0	0	3	2
Mvmt Flow	43	79	9	1	189	5	21	100	3	1	151	126

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	452	363	214	338	424	104	277	0	0	105	0	0
Stage 1	216	216	-	145	145	-	-	-	-	-	-	-
Stage 2	236	147	-	193	279	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.59	6.45	7.1	6.55	6.2	4.32	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.59	-	6.1	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.59	-	6.1	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.081	3.525	3.5	4.045	3.3	2.398	-	-	2.2	-	-
Pot Cap-1 Maneuver	521	554	772	620	517	957	1179	-	-	1498	-	-
Stage 1	791	711	-	862	771	-	-	-	-	-	-	-
Stage 2	772	762	-	814	674	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	322	542	772	513	506	955	1179	-	-	1496	-	-
Mov Cap-2 Maneuver	322	542	-	513	506	-	-	-	-	-	-	-
Stage 1	790	710	-	845	755	-	-	-	-	-	-	-
Stage 2	566	747	-	714	674	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	16.22	16.28	1.35	0.03
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	298	-	-	451	512	7	-	-
HCM Lane V/C Ratio	0.018	-	-	0.291	0.38	0.001	-	-
HCM Ctrl Dly (s/v)	8.1	0	-	16.2	16.3	7.4	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	1.8	0	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	193	427	630	20	11	308
Future Vol, veh/h	193	427	630	20	11	308
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-8	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	7	5	10	0	1
Mvmt Flow	210	464	685	22	12	335

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	707	0	-	0	1347	353
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	652	-
Critical Hdwy	4.2	-	-	-	5.2	6.12
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	2.25	-	-	-	3.5	3.31
Pot Cap-1 Maneuver	868	-	-	-	264	699
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	649	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	868	-	-	-	190	699
Mov Cap-2 Maneuver	-	-	-	-	190	-
Stage 1	-	-	-	-	454	-
Stage 2	-	-	-	-	649	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	4.31	0	15.16
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	756	-	-	-	190	699
HCM Lane V/C Ratio	0.242	-	-	-	0.063	0.479
HCM Ctrl Dly (s/v)	10.5	1.5	-	-	25.2	14.8
HCM Lane LOS	B	A	-	-	D	B
HCM 95th %tile Q(veh)	0.9	-	-	-	0.2	2.6

MOVEMENT SUMMARY

Site: 16 [NW Norwood St & NW 6th Ave_TotalAM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NW 6th Avenue															
3	L2	All MCs	110	2.0	110	2.0	0.251	13.7	LOS B	1.5	38.1	0.72	0.73	0.72	32.2
8	T1	All MCs	2	0.0	2	0.0	0.251	7.2	LOS A	1.5	38.1	0.72	0.73	0.72	33.0
18	R2	All MCs	74	6.0	74	6.0	0.251	7.9	LOS A	1.5	38.1	0.72	0.73	0.72	32.6
Approach			186	3.6	186	3.6	0.251	11.3	LOS B	1.5	38.1	0.72	0.73	0.72	32.4
East: NW 6th Avenue															
1	L2	All MCs	81	4.0	81	4.0	0.882	14.2	LOS D	17.3	443.1	0.97	0.63	1.05	32.7
6	T1	All MCs	939	3.0	939	3.0	0.882	7.8	LOS D	17.3	443.1	0.97	0.63	1.05	33.5
16	R2	All MCs	11	30.0	11	30.0	0.882	9.6	LOS D	17.3	443.1	0.97	0.63	1.05	32.6
Approach			1030	3.4	1030	3.4	0.882	8.4	LOS A	17.3	443.1	0.97	0.63	1.05	33.4
North: NW Norwood Street															
7	L2	All MCs	15	7.0	15	7.0	0.218	21.2	LOS C	1.6	40.1	0.99	0.84	0.99	30.2
4	T1	All MCs	5	0.0	5	0.0	0.218	13.8	LOS B	1.6	40.1	0.99	0.84	0.99	30.9
14	R2	All MCs	51	2.0	51	2.0	0.218	14.3	LOS B	1.6	40.1	0.99	0.84	0.99	30.6
Approach			71	2.9	71	2.9	0.218	15.7	LOS B	1.6	40.1	0.99	0.84	0.99	30.6
West: NW 6th Avenue															
5	L2	All MCs	20	26.0	20	26.0	0.616	11.5	LOS B	5.9	158.2	0.51	0.44	0.51	33.6
2	T1	All MCs	582	8.0	582	8.0	0.616	4.7	LOS A	5.9	158.2	0.51	0.44	0.51	35.0
12	R2	All MCs	97	9.0	97	9.0	0.616	4.9	LOS A	5.9	158.2	0.51	0.44	0.51	34.6
Approach			699	8.7	699	8.7	0.616	4.9	LOS A	5.9	158.2	0.51	0.44	0.51	34.9
All Vehicles			1986	5.2	1986	5.2	0.882	7.7	LOS A	17.3	443.1	0.79	0.58	0.83	33.7

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	615	3	80	555	4	185
Future Vol, veh/h	615	3	80	555	4	185
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	105	-	85	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-6	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	0	3	3	0	0
Mvmt Flow	707	3	92	638	5	213

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	710	0	1530	709
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	822	-
Critical Hdwy	-	-	4.13	-	5.2	5.6
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	884	-	217	493
Stage 1	-	-	-	-	623	-
Stage 2	-	-	-	-	573	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	884	-	194	493
Mov Cap-2 Maneuver	-	-	-	-	194	-
Stage 1	-	-	-	-	623	-
Stage 2	-	-	-	-	513	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.2	17.88
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	194	493	-	-	884	-
HCM Lane V/C Ratio	0.024	0.432	-	-	0.104	-
HCM Ctrl Dly (s/v)	24	17.7	-	-	9.5	-
HCM Lane LOS	C	C	-	-	A	-
HCM 95th %tile Q(veh)	0.1	2.1	-	-	0.3	-

Intersection	
Int Delay, s/veh	6.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	425	88	91	448	93	179
Future Vol, veh/h	425	88	91	448	93	179
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	7	11	2	3	7
Mvmt Flow	472	98	101	498	103	199

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	570	0	1221	521
Stage 1	-	-	-	-	521	-
Stage 2	-	-	-	-	700	-
Critical Hdwy	-	-	4.21	-	6.43	6.27
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.299	-	3.527	3.363
Pot Cap-1 Maneuver	-	-	959	-	198	546
Stage 1	-	-	-	-	594	-
Stage 2	-	-	-	-	491	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	959	-	177	546
Mov Cap-2 Maneuver	-	-	-	-	177	-
Stage 1	-	-	-	-	594	-
Stage 2	-	-	-	-	439	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.55	27.39
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	177	546	-	-	959	-
HCM Lane V/C Ratio	0.584	0.365	-	-	0.105	-
HCM Ctrl Dly (s/v)	50.6	15.3	-	-	9.2	-
HCM Lane LOS	F	C	-	-	A	-
HCM 95th %tile Q(veh)	3.1	1.7	-	-	0.4	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	323	12	130	417	6	3	9	182	8	9	8
Future Vol, veh/h	7	323	12	130	417	6	3	9	182	8	9	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	130	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	18	2	2	33	0	22	8	0	0	12
Mvmt Flow	8	351	13	141	453	7	3	10	198	9	10	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	460	0	0	364	0	0	1114	1115	358	1110	1118	457
Stage 1	-	-	-	-	-	-	373	373	-	739	739	-
Stage 2	-	-	-	-	-	-	741	742	-	371	379	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.1	6.72	6.28	7.1	6.5	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.72	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.72	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.5	4.198	3.372	3.5	4	3.408
Pot Cap-1 Maneuver	1112	-	-	1194	-	-	187	191	673	188	209	584
Stage 1	-	-	-	-	-	-	652	585	-	412	427	-
Stage 2	-	-	-	-	-	-	411	394	-	653	618	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1112	-	-	1194	-	-	154	167	673	110	183	584
Mov Cap-2 Maneuver	-	-	-	-	-	-	154	167	-	110	183	-
Stage 1	-	-	-	-	-	-	647	581	-	363	376	-
Stage 2	-	-	-	-	-	-	348	347	-	450	614	-

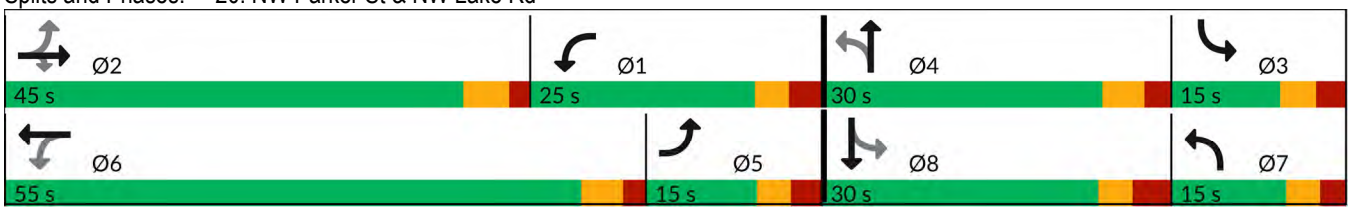
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.17	1.98	15.13	27.84
HCM LOS			C	D

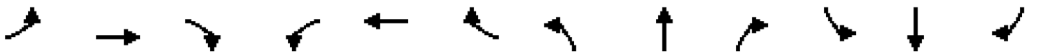
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	565	1112	-	-	1194	-	-	185
HCM Lane V/C Ratio	0.373	0.007	-	-	0.118	-	-	0.147
HCM Ctrl Dly (s/v)	15.1	8.3	-	-	8.4	-	-	27.8
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.7	0	-	-	0.4	-	-	0.5

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	9	197	173	106	293	151	77	44	145
Future Volume (vph)	9	197	173	106	293	151	77	44	145
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		1	6	7	4	3	8
Permitted Phases	2		2	6		4		8	
Detector Phase	5	2	2	1	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	26.7	26.7	10.7	20.5	10.2	29.2	10.6	33.3
Total Split (s)	15.0	45.0	45.0	25.0	55.0	15.0	30.0	15.0	30.0
Total Split (%)	13.0%	39.1%	39.1%	21.7%	47.8%	13.0%	26.1%	13.0%	26.1%
Yellow Time (s)	3.0	4.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0
All-Red Time (s)	2.5	1.7	1.7	2.7	1.9	2.2	2.3	2.6	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.7	5.7	5.7	5.5	5.2	5.9	5.6	6.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)	19.3	13.1	13.1	21.4	19.3	23.0	18.1	18.1	11.2
Actuated g/C Ratio	0.33	0.23	0.23	0.37	0.33	0.40	0.31	0.31	0.19
v/c Ratio	0.03	0.57	0.40	0.28	0.34	0.33	0.39	0.13	0.54
Control Delay (s/veh)	13.9	27.8	6.4	15.8	16.8	15.1	18.1	13.5	29.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.9	27.8	6.4	15.8	16.8	15.1	18.1	13.5	29.1
LOS	B	C	A	B	B	B	B	B	C
Approach Delay (s/veh)		17.7			16.5		16.7		25.7
Approach LOS		B			B		B		C

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 57.9	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay (s/veh): 18.3	Intersection LOS: B
Intersection Capacity Utilization 52.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 20: NW Parker St & NW Lake Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	197	173	106	293	36	151	77	102	44	145	15
Future Volume (veh/h)	9	197	173	106	293	36	151	77	102	44	145	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1574	1841	1870	1900	1870	1856	1885	1856	1856	1796	1856	1900
Adj Flow Rate, veh/h	11	237	131	128	353	24	182	93	88	53	175	16
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	22	4	2	0	2	3	1	3	3	7	3	0
Cap, veh/h	377	333	287	365	556	38	392	149	141	392	284	26
Arrive On Green	0.12	0.18	0.18	0.10	0.16	0.16	0.09	0.17	0.17	0.10	0.17	0.17
Sat Flow, veh/h	1499	1841	1585	1810	3377	229	1795	873	826	1711	1672	153
Grp Volume(v), veh/h	11	237	131	128	185	192	182	0	181	53	0	191
Grp Sat Flow(s),veh/h/ln	1499	1841	1585	1810	1777	1829	1795	0	1698	1711	0	1825
Q Serve(g_s), s	0.0	6.1	3.7	0.0	4.9	5.0	0.0	0.0	5.0	0.0	0.0	4.9
Cycle Q Clear(g_c), s	0.0	6.1	3.7	0.0	4.9	5.0	0.0	0.0	5.0	0.0	0.0	4.9
Prop In Lane	1.00		1.00	1.00		0.12	1.00		0.49	1.00		0.08
Lane Grp Cap(c), veh/h	377	333	287	365	293	301	392	0	290	392	0	310
V/C Ratio(X)	0.03	0.71	0.46	0.35	0.63	0.64	0.46	0.00	0.63	0.14	0.00	0.62
Avail Cap(c_a), veh/h	479	1426	1228	876	1734	1785	576	0	807	541	0	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.0	19.5	18.5	20.2	19.7	19.8	20.1	0.0	19.5	18.3	0.0	19.5
Incr Delay (d2), s/veh	0.0	1.1	0.4	0.2	0.8	0.8	0.9	0.0	0.8	0.2	0.0	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.4	1.3	1.3	1.9	1.9	1.9	0.0	1.8	0.5	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.0	20.6	19.0	20.4	20.6	20.6	20.9	0.0	20.4	18.5	0.0	20.3
LnGrp LOS	B	C	B	C	C	C	C		C	B		C
Approach Vol, veh/h		379			505			363			244	
Approach Delay, s/veh		19.9			20.6			20.6			19.9	
Approach LOS		B			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	14.9	10.6	14.5	11.7	13.9	10.2	14.9
Change Period (Y+Rc), s	5.7	5.7	* 5.6	5.9	5.7	* 5.5	5.6	* 6.3
Max Green Setting (Gmax), s	19.3	39.3	* 9.4	24.1	9.5	* 50	9.8	* 24
Max Q Clear Time (g_c+I1), s	2.0	8.1	2.0	7.0	2.0	7.0	2.0	6.9
Green Ext Time (p_c), s	0.1	1.0	0.0	0.6	0.0	1.4	0.3	0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	20.3
HCM 7th LOS	C

Notes

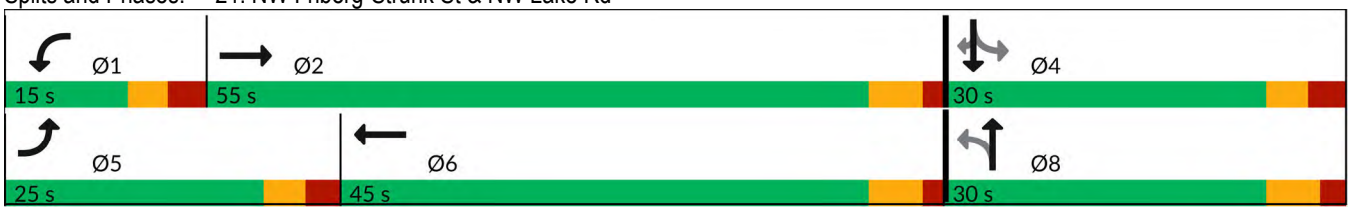
User approved pedestrian interval to be less than phase max green.

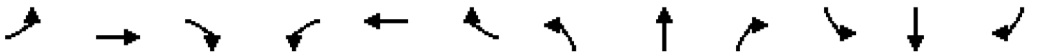
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	368	289	1	385	0	100	0	372
Future Volume (vph)	368	289	1	385	0	100	0	372
Turn Type	Prot	NA	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	1	6	8		4	
Permitted Phases						4		4
Detector Phase	5	2	1	6	8	4	4	4
Switch Phase								
Minimum Initial (s)	5.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.6	23.5	10.8	26.6	34.0	33.9	33.9	33.9
Total Split (s)	25.0	55.0	15.0	45.0	30.0	30.0	30.0	30.0
Total Split (%)	25.0%	55.0%	15.0%	45.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.6	1.5	2.8	1.6	2.0	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.6	5.5	5.8	5.6	6.0		5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	19.8	40.2	5.1	16.3	11.4		11.5	11.5
Actuated g/C Ratio	0.30	0.62	0.08	0.25	0.18		0.18	0.18
v/c Ratio	0.90	0.18	0.01	0.69	0.00		0.54	0.77
Control Delay (s/veh)	47.5	7.2	34.0	25.8	0.0		34.0	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	47.5	7.2	34.0	25.8	0.0		34.0	13.4
LOS	D	A	C	C	A		C	B
Approach Delay (s/veh)		29.7		25.9			17.8	
Approach LOS		C		C			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 65.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay (s/veh): 25.0	Intersection LOS: C
Intersection Capacity Utilization 60.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 21: NW Friberg-Strunk St & NW Lake Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	368	289	3	1	385	85	0	0	1	100	0	372
Future Volume (veh/h)	368	289	3	1	385	85	0	0	1	100	0	372
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1811	1411	1900	1856	1900	1900	1900	1900	1811	1900	1856
Adj Flow Rate, veh/h	478	375	4	1	500	110	0	0	1	130	0	483
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	3	6	33	0	3	0	0	0	0	6	0	3
Cap, veh/h	439	1629	17	2	640	140	0	0	496	535	0	484
Arrive On Green	0.25	0.47	0.47	0.00	0.22	0.22	0.00	0.00	0.31	0.31	0.00	0.31
Sat Flow, veh/h	1767	3488	37	1810	2876	629	0	0	1607	1434	0	1569
Grp Volume(v), veh/h	478	185	194	1	305	305	0	0	1	130	0	483
Grp Sat Flow(s),veh/h/ln	1767	1721	1804	1810	1763	1742	0	0	1607	1434	0	1569
Q Serve(g_s), s	19.4	5.0	5.0	0.0	12.7	12.9	0.0	0.0	0.0	5.4	0.0	24.0
Cycle Q Clear(g_c), s	19.4	5.0	5.0	0.0	12.7	12.9	0.0	0.0	0.0	5.4	0.0	24.0
Prop In Lane	1.00		0.02	1.00		0.36	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	439	804	843	2	392	388	0	0	496	535	0	484
V/C Ratio(X)	1.09	0.23	0.23	0.40	0.78	0.79	0.00	0.00	0.00	0.24	0.00	1.00
Avail Cap(c_a), veh/h	439	1091	1144	213	890	879	0	0	496	535	0	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.3	12.4	12.4	38.9	28.5	28.6	0.0	0.0	18.7	20.5	0.0	26.9
Incr Delay (d2), s/veh	69.0	0.1	0.1	34.6	1.3	1.3	0.0	0.0	0.0	0.1	0.0	40.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.0	1.7	1.8	0.0	5.3	5.3	0.0	0.0	0.0	1.7	0.0	14.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	98.3	12.5	12.5	73.6	29.8	29.9	0.0	0.0	18.7	20.6	0.0	67.0
LnGrp LOS	F	B	B	E	C	C			B	C		E
Approach Vol, veh/h		857			611			1			613	
Approach Delay, s/veh		60.3			30.0			18.7			57.2	
Approach LOS		E			C			B			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	42.1		30.1	25.0	23.0		30.1				
Change Period (Y+Rc), s	5.8	* 5.6		* 6	5.6	5.6		6.0				
Max Green Setting (Gmax), s	9.2	* 50		* 24	19.4	39.4		24.0				
Max Q Clear Time (g_c+I1), s	2.0	7.0		26.0	21.4	14.9		2.0				
Green Ext Time (p_c), s	0.0	1.3		0.0	0.0	2.5		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh	50.5	
HCM 7th LOS	D	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	159	111	390	153	27	355
Future Vol, veh/h	159	111	390	153	27	355
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	175	0	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	2	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	3	1	3	10	7	3
Mvmt Flow	192	134	470	184	33	428

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1055	562	0	0	654	0
Stage 1	562	-	-	-	-	-
Stage 2	493	-	-	-	-	-
Critical Hdwy	6.03	6.01	-	-	4.17	-
Critical Hdwy Stg 1	5.03	-	-	-	-	-
Critical Hdwy Stg 2	5.03	-	-	-	-	-
Follow-up Hdwy	3.527	3.309	-	-	2.263	-
Pot Cap-1 Maneuver	280	545	-	-	909	-
Stage 1	605	-	-	-	-	-
Stage 2	646	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	270	545	-	-	909	-
Mov Cap-2 Maneuver	270	-	-	-	-	-
Stage 1	605	-	-	-	-	-
Stage 2	623	-	-	-	-	-

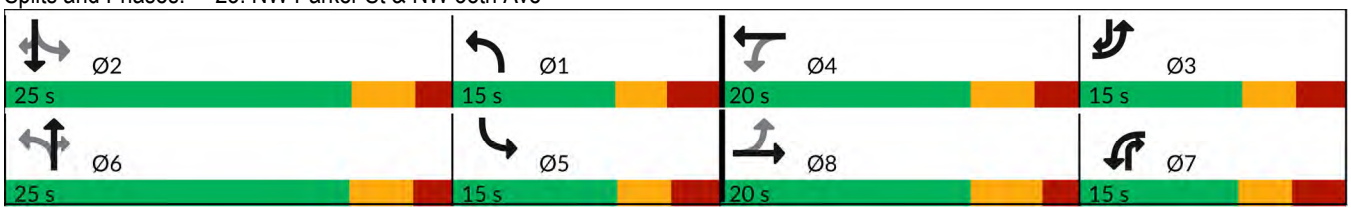
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	32.39	0	0.64
HCM LOS	D		

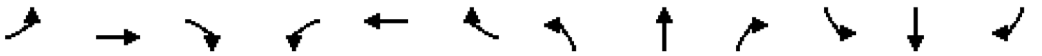
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	270	545	909	-
HCM Lane V/C Ratio	-	-	0.71	0.245	0.036	-
HCM Ctrl Dly (s/v)	-	-	45.4	13.7	9.1	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	4.9	1	0.1	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	115	71	102	117	91	410	80	16	327	151
Future Volume (vph)	115	71	102	117	91	410	80	16	327	151
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	7	4	1	6	7	5	2	3
Permitted Phases	8		4		6		6	2		2
Detector Phase	3	8	7	4	1	6	7	5	2	3
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.8	24.0	11.0	23.0	10.9	20.0	11.0	10.7	20.0	10.8
Total Split (s)	15.0	20.0	15.0	20.0	15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	20.0%	26.7%	20.0%	26.7%	20.0%	33.3%	20.0%	20.0%	33.3%	20.0%
Yellow Time (s)	3.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0	3.6	3.0
All-Red Time (s)	2.8	2.0	3.0	2.4	2.9	2.1	3.0	2.7	2.0	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.0	6.0	6.0	5.9	5.7	6.0	5.7	5.6	5.8
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	None	Max	None
Act Effct Green (s)	12.9	8.3	18.1	9.7	28.2	26.0	35.6	25.0	19.8	25.3
Actuated g/C Ratio	0.21	0.14	0.29	0.16	0.46	0.42	0.58	0.41	0.32	0.41
v/c Ratio	0.41	0.52	0.27	0.60	0.24	0.63	0.10	0.06	0.60	0.23
Control Delay (s/veh)	19.9	27.5	17.3	31.6	13.7	22.5	1.3	11.8	24.8	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.9	27.5	17.3	31.6	13.7	22.5	1.3	11.8	24.8	3.0
LOS	B	C	B	C	B	C	A	B	C	A
Approach Delay (s/veh)		23.7		25.9		18.2			17.7	
Approach LOS		C		C		B			B	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 61.4	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay (s/veh): 20.1	Intersection LOS: C
Intersection Capacity Utilization 59.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 23: NW Parker St & NW 38th Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	71	43	102	117	34	91	410	80	16	327	151
Future Volume (veh/h)	115	71	43	102	117	34	91	410	80	16	327	151
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1826	1811	1811	1870	1900	1870	1826	1826	1796	1945	1870
Adj Flow Rate, veh/h	131	81	49	116	133	39	103	466	91	18	372	172
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	5	6	6	2	0	2	5	5	7	2	2
Cap, veh/h	299	120	73	342	184	54	398	578	646	326	619	633
Arrive On Green	0.08	0.11	0.11	0.10	0.13	0.13	0.08	0.32	0.32	0.08	0.32	0.32
Sat Flow, veh/h	1882	1061	642	1725	1387	407	1781	1826	1545	1711	1945	1583
Grp Volume(v), veh/h	131	0	130	116	0	172	103	466	91	18	372	172
Grp Sat Flow(s),veh/h/ln	1882	0	1704	1725	0	1794	1781	1826	1545	1711	1945	1583
Q Serve(g_s), s	0.0	0.0	4.5	0.0	0.0	5.6	0.0	14.3	0.0	0.0	9.8	0.0
Cycle Q Clear(g_c), s	0.0	0.0	4.5	0.0	0.0	5.6	0.0	14.3	0.0	0.0	9.8	0.0
Prop In Lane	1.00		0.38	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	299	0	193	342	0	238	398	578	646	326	619	633
V/C Ratio(X)	0.44	0.00	0.67	0.34	0.00	0.72	0.26	0.81	0.14	0.06	0.60	0.27
Avail Cap(c_a), veh/h	429	0	391	421	0	412	518	578	646	446	619	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	0.0	26.0	24.1	0.0	25.4	20.2	19.1	11.0	21.8	17.5	12.3
Incr Delay (d2), s/veh	0.4	0.0	1.5	0.2	0.0	1.6	0.1	11.5	0.5	0.0	4.3	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	1.7	1.5	0.0	2.3	1.2	7.1	0.7	0.2	4.6	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.9	0.0	27.5	24.3	0.0	26.9	20.3	30.6	11.4	21.8	21.8	13.4
LnGrp LOS	C		C	C		C	C	C	B	C	C	B
Approach Vol, veh/h		261			288			660			562	
Approach Delay, s/veh		26.7			25.9			26.4			19.2	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	25.0	11.0	14.1	10.9	25.0	12.2	12.9
Change Period (Y+Rc), s	5.9	5.6	6.0	* 6	5.9	* 5.7	6.0	6.0
Max Green Setting (Gmax), s	9.1	19.4	9.2	* 14	9.3	* 19	9.0	14.0
Max Q Clear Time (g_c+I1), s	2.0	11.8	2.0	7.6	2.0	16.3	2.0	6.5
Green Ext Time (p_c), s	0.1	1.1	0.1	0.3	0.0	0.7	0.1	0.2

Intersection Summary	
HCM 7th Control Delay, s/veh	24.1
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	134	266	77	97	22
Future Vol, veh/h	4	134	266	77	97	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	10	5	3	12	20
Mvmt Flow	5	160	317	92	115	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	854	129	142	0	-	0
Stage 1	129	-	-	-	-	-
Stage 2	725	-	-	-	-	-
Critical Hdwy	6.4	6.3	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.39	2.245	-	-	-
Pot Cap-1 Maneuver	332	900	1423	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	254	900	1423	-	-	-
Mov Cap-2 Maneuver	254	-	-	-	-	-
Stage 1	691	-	-	-	-	-
Stage 2	483	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.34	6.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1351	-	839	-	-
HCM Lane V/C Ratio	0.223	-	0.196	-	-
HCM Ctrl Dly (s/v)	8.3	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.9	-	0.7	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	98	211	39	50	145
Future Vol, veh/h	44	98	211	39	50	145
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	14	6	3	18	8	9
Mvmt Flow	49	110	237	44	56	163

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	534	259	0	0	281	0
Stage 1	259	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Critical Hdwy	6.54	6.26	-	-	4.18	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.354	-	-	2.272	-
Pot Cap-1 Maneuver	486	770	-	-	1248	-
Stage 1	757	-	-	-	-	-
Stage 2	744	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	462	770	-	-	1248	-
Mov Cap-2 Maneuver	462	-	-	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	707	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.51	0	2.06
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	638	462	-
HCM Lane V/C Ratio	-	-	0.25	0.045	-
HCM Ctrl Dly (s/v)	-	-	12.5	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1	0.1	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	182	113	223	168	38
Future Vol, veh/h	31	182	113	223	168	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	2	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	3	0	4	8	12	5
Mvmt Flow	41	243	151	297	224	51

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	848	249	275	0	-	0
Stage 1	249	-	-	-	-	-
Stage 2	599	-	-	-	-	-
Critical Hdwy	6.83	6.4	4.14	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.527	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	301	783	1277	-	-	-
Stage 1	768	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	265	783	1277	-	-	-
Mov Cap-2 Maneuver	265	-	-	-	-	-
Stage 1	678	-	-	-	-	-
Stage 2	512	-	-	-	-	-

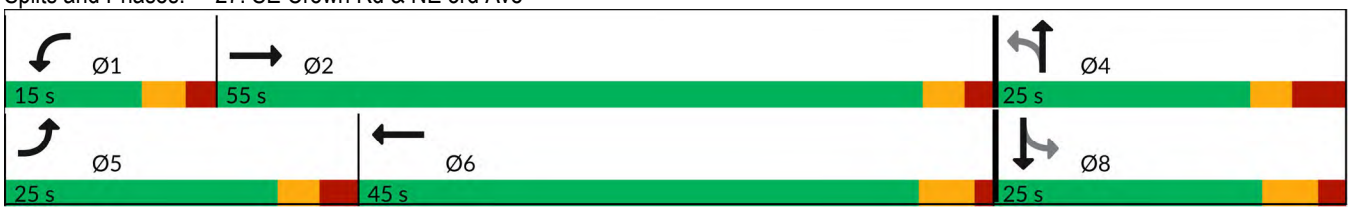
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	13.01	2.76	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1277	-	265	783	-	-
HCM Lane V/C Ratio	0.118	-	0.156	0.31	-	-
HCM Ctrl Dly (s/v)	8.2	-	21.1	11.6	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.5	1.3	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	183	244	9	356	6	4	229	2	247
Future Volume (vph)	183	244	9	356	6	4	229	2	247
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Free
Protected Phases	5	2	1	6		4		8	
Permitted Phases					4		8		Free
Detector Phase	5	2	1	6	4	4	8	8	
Switch Phase									
Minimum Initial (s)	2.0	8.0	5.0	8.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	7.6	23.0	10.2	20.3	32.8	32.8	35.0	35.0	
Total Split (s)	25.0	55.0	15.0	45.0	25.0	25.0	25.0	25.0	
Total Split (%)	26.3%	57.9%	15.8%	47.4%	26.3%	26.3%	26.3%	26.3%	
Yellow Time (s)	3.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.6	2.0	2.2	1.3	3.8	3.8	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	
Total Lost Time (s)	5.6	5.0	5.2	5.3		6.8		6.0	
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	None	None	
Act Effct Green (s)	12.1	29.5	5.3	13.2		16.6		17.4	60.0
Actuated g/C Ratio	0.20	0.49	0.09	0.22		0.28		0.29	1.00
v/c Ratio	0.63	0.17	0.06	0.65		0.02		0.64	0.17
Control Delay (s/veh)	32.5	9.6	30.4	24.7		19.1		29.6	0.2
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay (s/veh)	32.5	9.6	30.4	24.7		19.1		29.6	0.2
LOS	C	A	C	C		B		C	A
Approach Delay (s/veh)		19.4		24.8		19.1		14.5	
Approach LOS		B		C		B		B	

Intersection Summary	
Cycle Length: 95	
Actuated Cycle Length: 60	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay (s/veh): 19.5	Intersection LOS: B
Intersection Capacity Utilization 56.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 27: SE Crown Rd & NE 3rd Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	244	2	9	356	94	6	4	0	229	2	247
Future Volume (veh/h)	183	244	2	9	356	94	6	4	0	229	2	247
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1743	1788	1952	1979	1934	1904	1952	1952	1952	1995	2058	2011
Adj Flow Rate, veh/h	201	268	2	10	391	103	7	4	0	252	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	9	6	0	0	3	5	0	0	0	4	0	3
Cap, veh/h	254	1261	9	25	621	162	350	172		495	3	
Arrive On Green	0.15	0.36	0.36	0.01	0.22	0.22	0.21	0.21	0.00	0.21	0.21	0.00
Sat Flow, veh/h	1660	3455	26	1884	2882	751	1001	824	1654	1551	12	1704
Grp Volume(v), veh/h	201	132	138	10	248	246	11	0	0	254	0	0
Grp Sat Flow(s),veh/h/ln	1660	1698	1783	1884	1837	1796	1826	0	1654	1563	0	1704
Q Serve(g_s), s	4.9	2.2	2.2	0.2	5.1	5.2	0.0	0.0	0.0	6.2	0.0	0.0
Cycle Q Clear(g_c), s	4.9	2.2	2.2	0.2	5.1	5.2	0.2	0.0	0.0	6.4	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.42	0.64		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	254	620	651	25	396	387	522	0		498	0	
V/C Ratio(X)	0.79	0.21	0.21	0.40	0.63	0.64	0.02	0.00		0.51	0.00	
Avail Cap(c_a), veh/h	769	2027	2128	441	1741	1703	887	0		878	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.1	9.2	9.2	20.5	14.9	14.9	13.2	0.0	0.0	15.6	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.1	0.1	3.9	0.6	0.7	0.0	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.6	0.6	0.1	1.7	1.7	0.1	0.0	0.0	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.2	9.2	9.2	24.4	15.5	15.6	13.2	0.0	0.0	15.9	0.0	0.0
LnGrp LOS	B	A	A	C	B	B	B			B		
Approach Vol, veh/h		471			504			11			254	
Approach Delay, s/veh		13.5			15.7			13.2			15.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	20.6		15.6	12.0	14.3		15.6				
Change Period (Y+Rc), s	5.2	* 5.3		6.8	5.6	5.3		* 6.8				
Max Green Setting (Gmax), s	9.8	* 50		18.2	19.4	39.7		* 19				
Max Q Clear Time (g_c+I1), s	2.2	4.2		2.2	6.9	7.2		8.4				
Green Ext Time (p_c), s	0.0	0.9		0.0	0.2	1.8		0.6				

Intersection Summary		
HCM 7th Control Delay, s/veh	14.9	
HCM 7th LOS	B	

Notes

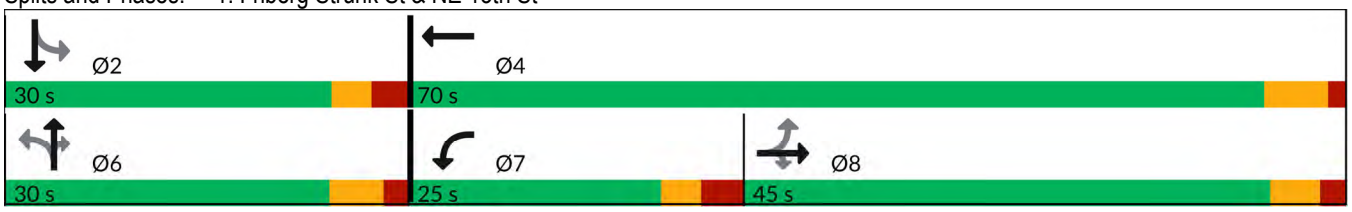
User approved pedestrian interval to be less than phase max green.

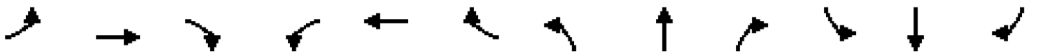
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	1	409	76	247	461	118	8	350	1	5
Future Volume (vph)	1	409	76	247	461	118	8	350	1	5
Turn Type	Perm	NA	Perm	Prot	NA	Perm	NA	Perm	Perm	NA
Protected Phases		8		7	4		6			2
Permitted Phases	8		8			6		6	2	
Detector Phase	8	8	8	7	4	6	6	6	2	2
Switch Phase										
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.6	23.6	23.6	11.0	24.1	23.8	23.8	23.8	25.6	25.6
Total Split (s)	45.0	45.0	45.0	25.0	70.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	45.0%	45.0%	45.0%	25.0%	70.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.6	3.6	3.6	3.0	4.7	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	3.0	1.4	1.8	1.8	1.8	2.6	2.6
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)		5.6	5.6	6.0	6.1		5.8	5.8		5.6
Lead/Lag	Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	Min	Min	Min	None	Min	None	None	None	None	None
Act Effct Green (s)		22.9	22.9	15.5	44.3		12.8	12.8		13.0
Actuated g/C Ratio		0.33	0.33	0.22	0.63		0.18	0.18		0.19
v/c Ratio		0.77	0.14	0.69	0.45		0.59	0.64		0.03
Control Delay (s/veh)		31.8	4.0	39.6	8.3		40.2	8.9		23.6
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay (s/veh)		31.8	4.0	39.6	8.3		40.2	8.9		23.6
LOS		C	A	D	A		D	A		C
Approach Delay (s/veh)		27.5			19.2		17.2			23.6
Approach LOS		C			B		B			C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 69.9	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay (s/veh): 21.1	Intersection LOS: C
Intersection Capacity Utilization 74.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Friberg Strunk St & NE 13th St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	409	76	247	461	3	118	8	350	1	5	3
Future Volume (veh/h)	1	409	76	247	461	3	118	8	350	1	5	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	0.96	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	401	1885	1856	1885	1841	1900	1781	1900	1900	1900	1900	1411
Adj Flow Rate, veh/h	1	440	82	266	496	3	127	9	376	1	5	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	100	1	3	1	4	0	3	0	0	0	0	33
Cap, veh/h	56	526	439	317	1003	6	467	30	429	82	288	154
Arrive On Green	0.28	0.28	0.28	0.18	0.55	0.55	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1	1884	1572	1795	1828	11	1348	111	1610	74	1080	577
Grp Volume(v), veh/h	441	0	82	266	0	499	136	0	376	9	0	0
Grp Sat Flow(s),veh/h/ln	1884	0	1572	1795	0	1839	1459	0	1610	1731	0	0
Q Serve(g_s), s	0.0	0.0	2.6	9.2	0.0	10.8	4.6	0.0	14.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.2	0.0	2.6	9.2	0.0	10.8	4.8	0.0	14.4	0.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.01	0.93		1.00	0.11		0.33
Lane Grp Cap(c), veh/h	582	0	439	317	0	1009	497	0	429	524	0	0
V/C Ratio(X)	0.76	0.00	0.19	0.84	0.00	0.49	0.27	0.00	0.88	0.02	0.00	0.00
Avail Cap(c_a), veh/h	1207	0	962	530	0	1824	656	0	605	708	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.9	0.0	17.7	25.6	0.0	9.0	19.1	0.0	22.6	17.4	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.1	2.4	0.0	0.1	0.1	0.0	7.9	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	0.9	3.8	0.0	3.4	1.5	0.0	5.8	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.6	0.0	17.7	28.1	0.0	9.1	19.2	0.0	30.5	17.4	0.0	0.0
LnGrp LOS	C		B	C		A	B		C	B		
Approach Vol, veh/h		523			765			512			9	
Approach Delay, s/veh		21.9			15.7			27.5			17.4	
Approach LOS		C			B			C			B	

Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0		41.4		23.0	17.4	24.1				
Change Period (Y+Rc), s		* 5.8		6.1		5.8	6.0	* 6.1				
Max Green Setting (Gmax), s		* 24		63.9		24.2	19.0	* 39				
Max Q Clear Time (g_c+I1), s		2.2		12.8		16.4	11.2	16.2				
Green Ext Time (p_c), s		0.0		2.1		0.8	0.2	1.8				

Intersection Summary	
HCM 7th Control Delay, s/veh	20.8
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	726	36	116	647	65	193
Future Vol, veh/h	726	36	116	647	65	193
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	55	-	105	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-4	-	-	4	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	6	1	2	6	3
Mvmt Flow	748	37	120	667	67	199

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	786	0	1655	748
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	906	-
Critical Hdwy	-	-	4.11	-	6.46	6.23
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.209	-	3.554	3.327
Pot Cap-1 Maneuver	-	-	838	-	106	410
Stage 1	-	-	-	-	460	-
Stage 2	-	-	-	-	388	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	838	-	91	410
Mov Cap-2 Maneuver	-	-	-	-	91	-
Stage 1	-	-	-	-	460	-
Stage 2	-	-	-	-	332	-

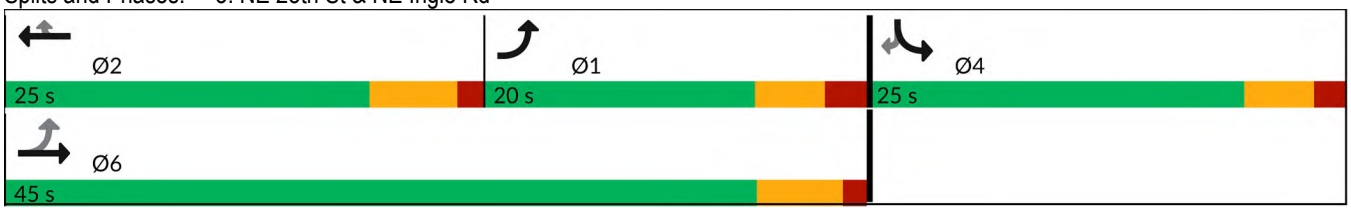
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.52	45.36
HCM LOS			E

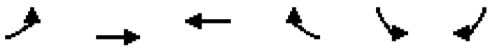
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	91	410	-	-	838	-
HCM Lane V/C Ratio	0.74	0.485	-	-	0.143	-
HCM Ctrl Dly (s/v)	115.5	21.7	-	-	10	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	3.8	2.6	-	-	0.5	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	294	595	439	176	237	297
Future Volume (vph)	294	595	439	176	237	297
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Detector Phase	1	6	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	10.8	15.7	24.9	24.9	10.3	10.3
Total Split (s)	20.0	45.0	25.0	25.0	25.0	25.0
Total Split (%)	28.6%	64.3%	35.7%	35.7%	35.7%	35.7%
Yellow Time (s)	3.6	4.5	4.5	4.5	3.6	3.6
All-Red Time (s)	2.2	1.2	1.4	1.4	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.7	5.9	5.9	5.3	5.3
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effct Green (s)	32.6	32.7	18.5	18.5	12.8	12.8
Actuated g/C Ratio	0.57	0.58	0.33	0.33	0.23	0.23
v/c Ratio	0.61	0.60	0.80	0.33	0.67	0.54
Control Delay (s/veh)	17.8	11.5	32.7	7.9	30.2	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	17.8	11.5	32.7	7.9	30.2	6.6
LOS	B	B	C	A	C	A
Approach Delay (s/veh)		13.6	25.6		17.1	
Approach LOS		B	C		B	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 56.8	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay (s/veh): 18.1	Intersection LOS: B
Intersection Capacity Utilization 66.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: NE 28th St & NE Ingle Rd





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	294	595	439	176	237	297
Future Volume (veh/h)	294	595	439	176	237	297
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1885	1856	1841	1870	1900
Adj Flow Rate, veh/h	309	626	462	185	249	313
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	3	4	2	0
Cap, veh/h	375	1010	551	463	425	384
Arrive On Green	0.12	0.54	0.30	0.30	0.24	0.24
Sat Flow, veh/h	1767	1885	1856	1560	1781	1610
Grp Volume(v), veh/h	309	626	462	185	249	313
Grp Sat Flow(s),veh/h/ln	1767	1885	1856	1560	1781	1610
Q Serve(g_s), s	3.6	11.4	11.5	4.7	6.1	9.0
Cycle Q Clear(g_c), s	3.6	11.4	11.5	4.7	6.1	9.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	375	1010	551	463	425	384
V/C Ratio(X)	0.82	0.62	0.84	0.40	0.59	0.81
Avail Cap(c_a), veh/h	674	1505	720	605	713	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.7	7.9	16.2	13.8	16.6	17.7
Incr Delay (d2), s/veh	1.8	0.2	5.4	0.2	0.5	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	2.9	4.7	1.3	2.2	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	21.5	8.2	21.6	14.0	17.1	19.3
LnGrp LOS	C	A	C	B	B	B
Approach Vol, veh/h		935	647		562	
Approach Delay, s/veh		12.6	19.4		18.3	
Approach LOS		B	B		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.7	20.5		17.0		32.2
Change Period (Y+Rc), s	5.8	5.9		5.3		* 5.8
Max Green Setting (Gmax), s	14.2	19.1		19.7		* 39
Max Q Clear Time (g_c+I1), s	5.6	13.5		11.0		13.4
Green Ext Time (p_c), s	0.3	1.1		0.7		2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	16.1
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	86.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	364	384	33	217	0	342	0	33	1	1	3
Future Vol, veh/h	6	364	384	33	217	0	342	0	33	1	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-3	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	1	0	0	3	0	3	0	0	100	0	0
Mvmt Flow	6	387	409	35	231	0	364	0	35	1	1	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	231	0	0	796	0	0	906	905	591	701	1110	231
Stage 1	-	-	-	-	-	-	604	604	-	301	301	-
Stage 2	-	-	-	-	-	-	302	301	-	400	809	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.13	6.5	6.2	8.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	7.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	7.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.527	4	3.3	4.4	4	3.3
Pot Cap-1 Maneuver	1349	-	-	835	-	-	~ 256	278	510	252	211	813
Stage 1	-	-	-	-	-	-	483	491	-	540	668	-
Stage 2	-	-	-	-	-	-	705	668	-	470	397	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1349	-	-	835	-	-	~ 239	262	510	221	199	813
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 239	262	-	221	199	-
Stage 1	-	-	-	-	-	-	479	486	-	514	636	-
Stage 2	-	-	-	-	-	-	668	636	-	434	393	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.06	1.25	$ 318.82	14.67
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	251	13	-	-	238	-	-	378
HCM Lane V/C Ratio	1.589	0.005	-	-	0.042	-	-	0.014
HCM Ctrl Dly (s/v)	$ 318.8	7.7	0	-	9.5	0	-	14.7
HCM Lane LOS	F	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	24.6	0	-	-	0.1	-	-	0

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	15.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	112	281	0	0	172	127	0	0	0	167	0	80
Future Vol, veh/h	112	281	0	0	172	127	0	0	0	167	0	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	1	0	0	2	6	0	0	0	3	0	0
Mvmt Flow	124	312	0	0	191	141	0	0	0	186	0	89

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	332	0	0	312	0	0	752	893	312	823	823	262
Stage 1	-	-	-	-	-	-	561	561	-	262	262	-
Stage 2	-	-	-	-	-	-	191	332	-	561	561	-
Critical Hdwy	4.13	-	-	4.1	-	-	7.1	6.5	6.2	7.13	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.13	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.13	5.5	-
Follow-up Hdwy	2.227	-	-	2.2	-	-	3.5	4	3.3	3.527	4	3.3
Pot Cap-1 Maneuver	1222	-	-	1260	-	-	329	283	733	291	311	782
Stage 1	-	-	-	-	-	-	516	513	-	741	695	-
Stage 2	-	-	-	-	-	-	815	648	-	510	513	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1222	-	-	1260	-	-	256	248	733	256	273	782
Mov Cap-2 Maneuver	-	-	-	-	-	-	256	248	-	256	273	-
Stage 1	-	-	-	-	-	-	452	450	-	741	695	-
Stage 2	-	-	-	-	-	-	723	648	-	447	450	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	2.36	0	0	53.9
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	513	-	-	1260	-	-	327
HCM Lane V/C Ratio	-	0.102	-	-	-	-	-	0.84
HCM Ctrl Dly (s/v)	0	8.3	0	-	0	-	-	53.9
HCM Lane LOS	A	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0.3	-	-	0	-	-	7.4

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	1	349	385	1
Future Vol, veh/h	1	1	1	349	385	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-4	-4	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	5	0	0	0	0	8
Mvmt Flow	1	1	1	431	475	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	909	476	477	0	-	0
Stage 1	476	-	-	-	-	-
Stage 2	433	-	-	-	-	-
Critical Hdwy	6.85	6.4	4.1	-	-	-
Critical Hdwy Stg 1	5.85	-	-	-	-	-
Critical Hdwy Stg 2	5.85	-	-	-	-	-
Follow-up Hdwy	3.545	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	272	578	1096	-	-	-
Stage 1	587	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	272	578	1096	-	-	-
Mov Cap-2 Maneuver	272	-	-	-	-	-
Stage 1	586	-	-	-	-	-
Stage 2	617	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	14.8	0.02	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	5	-	370	-	-
HCM Lane V/C Ratio	0.001	-	0.007	-	-
HCM Ctrl Dly (s/v)	8.3	0	14.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

MOVEMENT SUMMARY

Site: 7 [Everett St (SR 500) St & NE Everett Dr_Total PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett St (SR 500)															
3	L2	All MCs	612	0.0	612	0.0	0.840	12.3	LOS B	12.9	323.5	0.82	0.59	0.84	32.5
8	T1	All MCs	255	1.0	255	1.0	0.840	6.1	LOS A	12.9	323.5	0.82	0.59	0.84	33.1
18	R2	All MCs	159	0.0	159	0.0	0.840	6.2	LOS A	12.9	323.5	0.82	0.59	0.84	32.9
Approach			1026	0.2	1026	0.2	0.840	9.8	LOS A	12.9	323.5	0.82	0.59	0.84	32.7
East: NE Everett Dr															
1	L2	All MCs	161	0.0	161	0.0	0.424	17.0	LOS B	3.3	82.5	0.94	0.83	1.01	30.7
6	T1	All MCs	33	0.0	33	0.0	0.424	10.8	LOS B	3.3	82.5	0.94	0.83	1.01	31.3
16	R2	All MCs	39	0.0	39	0.0	0.424	10.9	LOS B	3.3	82.5	0.94	0.83	1.01	31.1
Approach			233	0.0	233	0.0	0.424	15.1	LOS B	3.3	82.5	0.94	0.83	1.01	30.9
North: NE Everett St (SR 500)															
7	L2	All MCs	55	0.0	55	0.0	0.412	15.6	LOS B	3.0	74.7	0.86	0.78	0.91	32.5
4	T1	All MCs	182	2.0	182	2.0	0.412	9.6	LOS A	3.0	74.7	0.86	0.78	0.91	33.2
14	R2	All MCs	29	0.0	29	0.0	0.412	9.5	LOS A	3.0	74.7	0.86	0.78	0.91	32.9
Approach			266	1.4	266	1.4	0.412	10.8	LOS B	3.0	74.7	0.86	0.78	0.91	33.0
West: NE Everett Dr															
5	L2	All MCs	31	0.0	31	0.0	0.656	14.3	LOS B	6.5	162.6	0.78	0.73	0.91	33.5
2	T1	All MCs	46	0.0	46	0.0	0.656	8.0	LOS A	6.5	162.6	0.78	0.73	0.91	34.2
12	R2	All MCs	574	0.0	574	0.0	0.656	8.2	LOS A	6.5	162.6	0.78	0.73	0.91	33.9
Approach			652	0.0	652	0.0	0.656	8.5	LOS A	6.5	162.6	0.78	0.73	0.91	33.9
All Vehicles			2176	0.3	2176	0.3	0.840	10.1	LOS B	12.9	323.5	0.83	0.68	0.89	32.9

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	73	58	885	759	47
Future Vol, veh/h	9	73	58	885	759	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	110	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	4	-4	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	2	0	1	0
Mvmt Flow	10	79	63	962	825	51

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1939	851	876	0	-	0
Stage 1	851	-	-	-	-	-
Stage 2	1088	-	-	-	-	-
Critical Hdwy	6.8	6.44	4.12	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.218	-	-	-
Pot Cap-1 Maneuver	59	341	771	-	-	-
Stage 1	384	-	-	-	-	-
Stage 2	289	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	54	341	771	-	-	-
Mov Cap-2 Maneuver	54	-	-	-	-	-
Stage 1	353	-	-	-	-	-
Stage 2	289	-	-	-	-	-

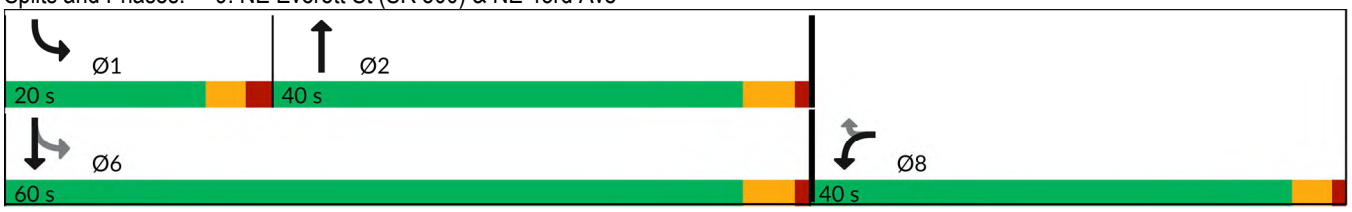
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	33.1	0.62	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	771	-	215	-	-
HCM Lane V/C Ratio	0.082	-	0.414	-	-
HCM Ctrl Dly (s/v)	10.1	-	33.1	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.3	-	1.9	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	224	119	821	298	117	719
Future Volume (vph)	224	119	821	298	117	719
Turn Type	Prot	Perm	NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		Free	6	
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	23.0	23.0	30.0		10.0	50.0
Total Split (s)	40.0	40.0	40.0		20.0	60.0
Total Split (%)	40.0%	40.0%	40.0%		20.0%	60.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0
All-Red Time (s)	1.0	1.0	1.0		2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	Min		None	Min
Act Effct Green (s)	15.2	15.2	36.4	70.7	46.4	46.4
Actuated g/C Ratio	0.21	0.21	0.51	1.00	0.66	0.66
v/c Ratio	0.63	0.28	0.95	0.21	0.43	0.64
Control Delay (s/veh)	33.7	6.7	41.8	0.3	11.6	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.7	6.7	41.8	0.3	11.6	11.1
LOS	C	A	D	A	B	B
Approach Delay (s/veh)	24.3		30.7			11.2
Approach LOS	C		C			B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 70.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay (s/veh): 22.7	Intersection LOS: C
Intersection Capacity Utilization 73.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9: NE Everett St (SR 500) & NE 43rd Ave





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	224	119	821	298	117	719
Future Volume (veh/h)	224	119	821	298	117	719
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1979	1979	1791	1806	2057	2012
Adj Flow Rate, veh/h	238	106	873	0	124	765
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	1	0	0	3
Cap, veh/h	320	285	973		306	1373
Arrive On Green	0.17	0.17	0.54	0.00	0.06	0.68
Sat Flow, veh/h	1884	1677	1791	1530	1959	2012
Grp Volume(v), veh/h	238	106	873	0	124	765
Grp Sat Flow(s),veh/h/ln	1884	1677	1791	1530	1959	2012
Q Serve(g_s), s	7.3	3.4	26.5	0.0	1.5	11.9
Cycle Q Clear(g_c), s	7.3	3.4	26.5	0.0	1.5	11.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	320	285	973		306	1373
V/C Ratio(X)	0.74	0.37	0.90		0.40	0.56
Avail Cap(c_a), veh/h	1112	989	1027		675	1814
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	24.1	22.4	12.4	0.0	12.5	5.0
Incr Delay (d2), s/veh	3.4	0.8	11.0	0.0	0.9	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	1.4	11.2	0.0	0.8	3.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	27.5	23.2	23.4	0.0	13.3	5.4
LnGrp LOS	C	C	C		B	A
Approach Vol, veh/h	344		873			889
Approach Delay, s/veh	26.2		23.4			6.5
Approach LOS	C		C			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.5	38.1			46.6	14.4
Change Period (Y+Rc), s	5.0	5.0			5.0	4.0
Max Green Setting (Gmax), s	15.0	35.0			55.0	36.0
Max Q Clear Time (g_c+I1), s	3.5	28.5			13.9	9.3
Green Ext Time (p_c), s	0.2	4.6			8.4	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	16.7
HCM 7th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

MOVEMENT SUMMARY

Site 10 NE Everett St & NW Lake Rd_TotalPM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NE Everett Street															
3	L2	All MCs	279	0.0	279	0.0	0.374	13.2	LOS B	2.5	61.6	0.73	0.73	0.73	31.5
8	T1	All MCs	794	1.0	794	1.0	0.765	10.3	LOS B	10.9	273.8	0.97	0.87	1.25	33.4
Approach			1073	0.7	1073	0.7	0.765	11.0	LOS B	10.9	273.8	0.90	0.83	1.11	32.9
North: NE Everett Street															
4	T1	All MCs	646	2.0	646	2.0	0.532	5.3	LOS A	4.4	111.5	0.64	0.54	0.64	34.7
14	R2	All MCs	379	0.0	379	0.0	0.303	5.0	LOS A	2.0	51.0	0.52	0.53	0.52	35.2
Approach			1025	1.3	1025	1.3	0.532	5.2	LOS A	4.4	111.5	0.60	0.54	0.60	34.9
West: NW Lake Road															
5	L2	All MCs	467	1.0	467	1.0	0.513	14.5	LOS B	4.6	114.7	0.87	0.78	0.95	31.0
12	R2	All MCs	371	0.0	371	0.0	0.401	7.3	LOS A	3.1	76.6	0.81	0.69	0.81	34.5
Approach			838	0.6	838	0.6	0.513	11.3	LOS B	4.6	114.7	0.84	0.74	0.89	32.4
All Vehicles			2936	0.9	2936	0.9	0.765	9.1	LOS A	10.9	273.8	0.78	0.70	0.87	33.4

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	187	18	56	554	600	104
Future Vol, veh/h	187	18	56	554	600	104
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	4	0	0	2
Mvmt Flow	197	19	59	583	632	109

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1393	692	747	0	-	0
Stage 1	692	-	-	-	-	-
Stage 2	701	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.14	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.236	-	-	-
Pot Cap-1 Maneuver	~ 158	447	852	-	-	-
Stage 1	500	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 145	445	848	-	-	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	493	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	44.93	0.88	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	848	-	293	-	-
HCM Lane V/C Ratio	0.07	-	0.735	-	-
HCM Ctrl Dly (s/v)	9.6	-	44.9	-	-
HCM Lane LOS	A	-	E	-	-
HCM 95th %tile Q(veh)	0.2	-	5.4	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	10	33	7	8	28	12	529	3	40	436	142
Future Vol, veh/h	53	10	33	7	8	28	12	529	3	40	436	142
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	10	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	56	11	35	7	8	29	13	557	3	42	459	149

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1206	1203	534	1132	1276	560	608	0	0	560	0	0
Stage 1	618	618	-	584	584	-	-	-	-	-	-	-
Stage 2	588	585	-	548	693	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.6	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.6	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.6	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.09	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	162	178	550	182	168	531	980	-	-	1021	-	-
Stage 1	480	468	-	501	501	-	-	-	-	-	-	-
Stage 2	498	485	-	524	448	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	137	168	550	152	159	530	980	-	-	1021	-	-
Mov Cap-2 Maneuver	137	168	-	152	159	-	-	-	-	-	-	-
Stage 1	460	449	-	495	495	-	-	-	-	-	-	-
Stage 2	456	479	-	460	429	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	43.71	19.81	0.19	0.56
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	980	-	-	190	288	1021	-	-
HCM Lane V/C Ratio	0.013	-	-	0.532	0.157	0.041	-	-
HCM Ctrl Dly (s/v)	8.7	-	-	43.7	19.8	8.7	-	-
HCM Lane LOS	A	-	-	E	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2.7	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	27

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	31	0	0	24	443	0	1	0	426	0	54
Future Vol, veh/h	73	31	0	0	24	443	0	1	0	426	0	54
Conflicting Peds, #/hr	3	0	2	2	0	3	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	3	0	0	0	2	0	0	0	1	0	0
Mvmt Flow	77	33	0	0	25	466	0	1	0	448	0	57

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	942	927	30	-	956	5	57	0	0	2	0	0
Stage 1	925	925	-	-	2	-	-	-	-	-	-	-
Stage 2	17	2	-	-	954	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.53	6.2	-	6.5	6.22	4.1	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.53	-	-	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.53	-	-	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.027	3.3	-	4	3.318	2.2	-	-	2.209	-	-
Pot Cap-1 Maneuver	245	267	1050	0	260	1078	1561	-	-	1627	-	-
Stage 1	325	346	-	0	898	-	-	-	-	-	-	-
Stage 2	1008	892	-	0	340	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	89	190	1048	-	185	1074	1561	-	-	1625	-	-
Mov Cap-2 Maneuver	89	190	-	-	185	-	-	-	-	-	-	-
Stage 1	232	247	-	-	897	-	-	-	-	-	-	-
Stage 2	553	891	-	-	242	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	174.42	14.58	0	7.15
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1561	-	-	105	862	1331	-	-
HCM Lane V/C Ratio	-	-	-	1.038	0.57	0.276	-	-
HCM Ctrl Dly (s/v)	0	-	-	174.4	14.6	8.1	0	-
HCM Lane LOS	A	-	-	F	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	6.7	3.7	1.1	-	-

Intersection	
Int Delay, s/veh	10.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	66	137	9	4	115	6	30	181	6	2	168	56
Future Vol, veh/h	66	137	9	4	115	6	30	181	6	2	168	56
Conflicting Peds, #/hr	1	0	3	3	0	1	0	0	9	9	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	4	-	-	-6	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	2	0	0	2	0	0	1	0	0	0	0
Mvmt Flow	75	156	10	5	131	7	34	206	7	2	191	64

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	567	517	226	563	545	219	255	0	0	222	0	0
Stage 1	227	227	-	286	286	-	-	-	-	-	-	-
Stage 2	340	290	-	276	259	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.1	6.52	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.5	4.018	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	437	462	819	440	445	826	1322	-	-	1360	-	-
Stage 1	780	716	-	725	675	-	-	-	-	-	-	-
Stage 2	679	673	-	734	693	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	294	444	816	273	428	818	1322	-	-	1348	-	-
Mov Cap-2 Maneuver	294	444	-	273	428	-	-	-	-	-	-	-
Stage 1	778	715	-	698	649	-	-	-	-	-	-	-
Stage 2	521	647	-	564	692	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	28.07	17.45	1.08	0.07
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	247	-	-	390	430	15	-	-
HCM Lane V/C Ratio	0.026	-	-	0.618	0.33	0.002	-	-
HCM Ctrl Dly (s/v)	7.8	0	-	28.1	17.4	7.7	0	-
HCM Lane LOS	A	A	-	D	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	4	1.4	0	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	281	723	579	28	8	218
Future Vol, veh/h	281	723	579	28	8	218
Conflicting Peds, #/hr	3	0	0	3	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	-8	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	2	0	0	1
Mvmt Flow	296	761	609	29	8	229

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	642	0	-	0	1599	322
Stage 1	-	-	-	-	627	-
Stage 2	-	-	-	-	972	-
Critical Hdwy	4.12	-	-	-	5.2	6.12
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	2.21	-	-	-	3.5	3.31
Pot Cap-1 Maneuver	945	-	-	-	201	726
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	512	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	943	-	-	-	120	724
Mov Cap-2 Maneuver	-	-	-	-	120	-
Stage 1	-	-	-	-	397	-
Stage 2	-	-	-	-	510	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	4.66	0	13.14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	743	-	-	-	120	724
HCM Lane V/C Ratio	0.314	-	-	-	0.07	0.317
HCM Ctrl Dly (s/v)	10.6	2.4	-	-	37.1	12.3
HCM Lane LOS	B	A	-	-	E	B
HCM 95th %tile Q(veh)	1.3	-	-	-	0.2	1.4

MOVEMENT SUMMARY

Site: 16 NW Norwood St & NW 6th Ave_TotalPM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: NW 6th Avenue															
3	L2	All MCs	61	5.0	61	5.0	0.368	19.6	LOS B	2.7	70.0	0.99	0.85	1.02	30.2
8	T1	All MCs	6	17.0	6	17.0	0.368	15.0	LOS B	2.7	70.0	0.99	0.85	1.02	30.7
18	R2	All MCs	70	1.0	70	1.0	0.368	12.9	LOS B	2.7	70.0	0.99	0.85	1.02	30.6
Approach			138	3.5	138	3.5	0.368	16.0	LOS B	2.7	70.0	0.99	0.85	1.02	30.4
East: NW 6th Avenue															
1	L2	All MCs	73	1.0	73	1.0	0.678	11.0	LOS B	7.0	179.0	0.57	0.47	0.57	34.1
6	T1	All MCs	722	3.0	722	3.0	0.678	4.8	LOS A	7.0	179.0	0.57	0.47	0.57	34.8
16	R2	All MCs	16	7.0	16	7.0	0.678	5.1	LOS A	7.0	179.0	0.57	0.47	0.57	34.4
Approach			810	2.9	810	2.9	0.678	5.4	LOS A	7.0	179.0	0.57	0.47	0.57	34.7
North: NW Norwood Street															
7	L2	All MCs	15	7.0	15	7.0	0.100	15.8	LOS B	0.6	15.2	0.78	0.86	0.78	29.6
4	T1	All MCs	8	0.0	8	0.0	0.100	8.8	LOS A	0.6	15.2	0.78	0.86	0.78	30.4
14	R2	All MCs	35	3.0	35	3.0	0.100	18.8	LOS B	0.6	15.2	0.78	0.86	0.78	7.1
Approach			58	3.6	58	3.6	0.100	16.6	LOS B	0.6	15.2	0.78	0.86	0.78	10.1
West: NW 6th Avenue															
5	L2	All MCs	46	0.0	46	0.0	0.894	11.8	LOS D	17.2	433.8	0.93	0.52	0.93	33.1
2	T1	All MCs	990	1.0	990	1.0	0.894	5.6	LOS D	17.2	433.8	0.93	0.52	0.93	33.8
12	R2	All MCs	80	1.0	80	1.0	0.894	5.8	LOS D	17.2	433.8	0.93	0.52	0.93	33.5
Approach			1115	1.0	1115	1.0	0.894	5.9	LOS A	17.2	433.8	0.93	0.52	0.93	33.7
All Vehicles			2122	1.9	2122	1.9	0.894	6.6	LOS A	17.2	433.8	0.79	0.53	0.79	31.8

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	705	4	106	520	10	91
Future Vol, veh/h	705	4	106	520	10	91
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	105	-	85	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-6	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	750	4	113	553	11	97

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	754	0	1531	753
Stage 1	-	-	-	-	752	-
Stage 2	-	-	-	-	779	-
Critical Hdwy	-	-	4.1	-	5.2	5.6
Critical Hdwy Stg 1	-	-	-	-	4.2	-
Critical Hdwy Stg 2	-	-	-	-	4.2	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	865	-	217	468
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	591	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	865	-	188	468
Mov Cap-2 Maneuver	-	-	-	-	188	-
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	514	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.66	15.74
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	188	468	-	-	865	-
HCM Lane V/C Ratio	0.056	0.207	-	-	0.13	-
HCM Ctrl Dly (s/v)	25.2	14.7	-	-	9.8	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.8	-	-	0.4	-

Intersection	
Int Delay, s/veh	5.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	586	146	124	395	72	130
Future Vol, veh/h	586	146	124	395	72	130
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	110	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	1	0	3	1
Mvmt Flow	617	154	131	416	76	137

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	771	0	1371	694
Stage 1	-	-	-	-	694	-
Stage 2	-	-	-	-	677	-
Critical Hdwy	-	-	4.11	-	6.43	6.21
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.209	-	3.527	3.309
Pot Cap-1 Maneuver	-	-	849	-	160	445
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	503	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	849	-	136	445
Mov Cap-2 Maneuver	-	-	-	-	136	-
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	426	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.39	32.37
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	136	445	-	-	849	-
HCM Lane V/C Ratio	0.558	0.308	-	-	0.154	-
HCM Ctrl Dly (s/v)	60.8	16.7	-	-	10	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	2.8	1.3	-	-	0.5	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	587	7	94	368	6	3	5	131	10	7	13
Future Vol, veh/h	7	587	7	94	368	6	3	5	131	10	7	13
Conflicting Peds, #/hr	0	0	3	3	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	90	-	-	130	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	1	0	0	0	0	0	0	8
Mvmt Flow	8	638	8	102	400	7	3	5	142	11	8	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	407	0	0	649	0	0	1269	1271	645	1264	1271	404
Stage 1	-	-	-	-	-	-	660	660	-	608	608	-
Stage 2	-	-	-	-	-	-	609	611	-	656	664	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.372
Pot Cap-1 Maneuver	1163	-	-	947	-	-	147	169	476	148	169	634
Stage 1	-	-	-	-	-	-	455	463	-	486	489	-
Stage 2	-	-	-	-	-	-	486	488	-	458	461	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1163	-	-	944	-	-	121	150	475	89	149	633
Mov Cap-2 Maneuver	-	-	-	-	-	-	121	150	-	89	149	-
Stage 1	-	-	-	-	-	-	451	459	-	434	436	-
Stage 2	-	-	-	-	-	-	416	435	-	315	457	-

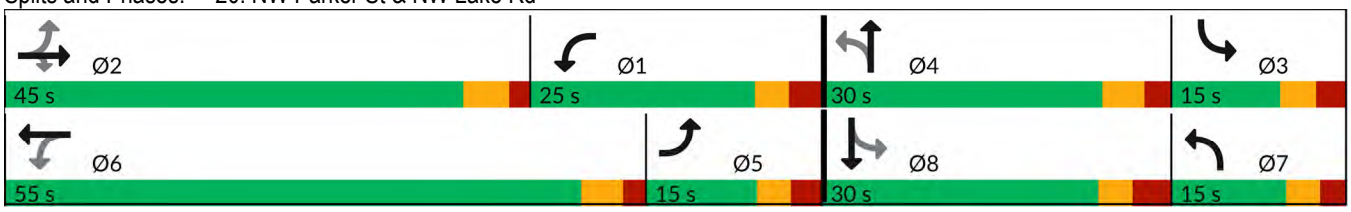
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.09	1.86	18.52	31.8
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	416	1163	-	-	944	-	-	167
HCM Lane V/C Ratio	0.363	0.007	-	-	0.108	-	-	0.196
HCM Ctrl Dly (s/v)	18.5	8.1	-	-	9.3	-	-	31.8
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.6	0	-	-	0.4	-	-	0.7

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	19	458	162	45	324	192	157	43	117
Future Volume (vph)	19	458	162	45	324	192	157	43	117
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		1	6	7	4	3	8
Permitted Phases	2		2	6		4		8	
Detector Phase	5	2	2	1	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	26.7	26.7	10.7	20.5	10.2	29.2	10.6	33.3
Total Split (s)	15.0	45.0	45.0	25.0	55.0	15.0	30.0	15.0	30.0
Total Split (%)	13.0%	39.1%	39.1%	21.7%	47.8%	13.0%	26.1%	13.0%	26.1%
Yellow Time (s)	3.0	4.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0
All-Red Time (s)	2.5	1.7	1.7	2.7	1.9	2.2	2.3	2.6	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.7	5.7	5.7	5.5	5.2	5.9	5.6	6.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	None	None	None	None
Act Effct Green (s)	29.7	26.0	26.0	30.8	27.0	28.4	22.0	18.2	11.1
Actuated g/C Ratio	0.41	0.36	0.36	0.43	0.38	0.39	0.31	0.25	0.15
v/c Ratio	0.04	0.73	0.25	0.17	0.29	0.37	0.55	0.17	0.51
Control Delay (s/veh)	15.3	28.9	3.7	16.3	19.7	21.8	28.6	21.6	38.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.3	28.9	3.7	16.3	19.7	21.8	28.6	21.6	38.6
LOS	B	C	A	B	B	C	C	C	D
Approach Delay (s/veh)		22.1			19.3		25.8		34.5
Approach LOS		C			B		C		C

Intersection Summary	
Cycle Length: 115	
Actuated Cycle Length: 72	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay (s/veh): 23.8	Intersection LOS: C
Intersection Capacity Utilization 67.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 20: NW Parker St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	458	162	45	324	25	192	157	117	43	117	17
Future Volume (veh/h)	19	458	162	45	324	25	192	157	117	43	117	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1885	1900	1885	1885	1900	1900	1885	1900
Adj Flow Rate, veh/h	21	503	108	49	356	9	211	173	97	47	129	17
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	1	0	1	0	1	1	0	0	1	0
Cap, veh/h	585	596	499	260	538	14	369	222	124	196	201	26
Arrive On Green	0.25	0.31	0.31	0.08	0.15	0.15	0.11	0.20	0.20	0.04	0.12	0.12
Sat Flow, veh/h	1810	1900	1593	1810	3569	90	1795	1133	635	1810	1630	215
Grp Volume(v), veh/h	21	503	108	49	178	187	211	0	270	47	0	146
Grp Sat Flow(s),veh/h/ln	1810	1900	1593	1810	1791	1868	1795	0	1769	1810	0	1844
Q Serve(g_s), s	0.0	15.5	3.1	0.0	5.9	5.9	0.7	0.0	9.1	0.0	0.0	4.7
Cycle Q Clear(g_c), s	0.0	15.5	3.1	0.0	5.9	5.9	0.7	0.0	9.1	0.0	0.0	4.7
Prop In Lane	1.00		1.00	1.00		0.05	1.00		0.36	1.00		0.12
Lane Grp Cap(c), veh/h	585	596	499	260	270	281	369	0	346	196	0	227
V/C Ratio(X)	0.04	0.84	0.22	0.19	0.66	0.66	0.57	0.00	0.78	0.24	0.00	0.64
Avail Cap(c_a), veh/h	585	1193	1000	673	1417	1478	451	0	681	387	0	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.0	20.0	15.8	26.5	25.1	25.1	24.4	0.0	23.9	28.6	0.0	26.1
Incr Delay (d2), s/veh	0.0	1.3	0.1	0.1	1.0	1.0	1.4	0.0	1.5	0.6	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	6.2	1.1	0.6	2.4	2.5	2.8	0.0	3.6	0.7	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.0	21.3	15.9	26.6	26.1	26.1	25.8	0.0	25.3	29.2	0.0	27.2
LnGrp LOS	B	C	B	C	C	C	C		C	C		C
Approach Vol, veh/h		632			414			481			193	
Approach Delay, s/veh		20.3			26.1			25.5			27.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	25.3	8.4	18.2	21.1	14.9	12.5	14.0
Change Period (Y+Rc), s	5.7	5.7	* 5.6	5.9	5.7	* 5.5	5.6	* 6.3
Max Green Setting (Gmax), s	19.3	39.3	* 9.4	24.1	9.5	* 50	9.8	* 24
Max Q Clear Time (g_c+I1), s	2.0	17.5	2.0	11.1	2.0	7.9	2.7	6.7
Green Ext Time (p_c), s	0.0	2.1	0.0	0.8	0.0	1.3	0.3	0.4

Intersection Summary	
HCM 7th Control Delay, s/veh	24.0
HCM 7th LOS	C

Notes

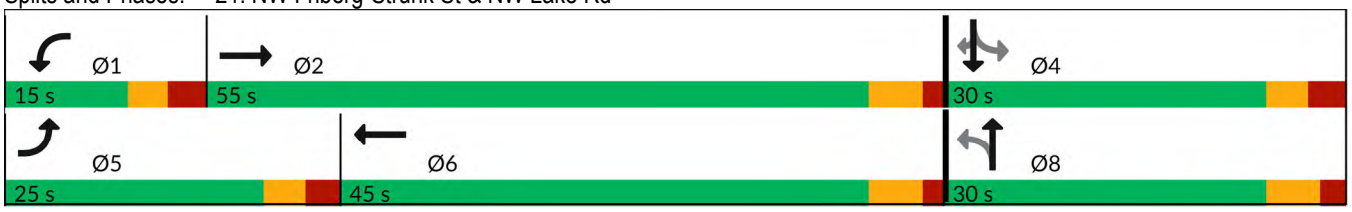
User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	375	566	1	455	4	1	97	0	254
Future Volume (vph)	375	566	1	455	4	1	97	0	254
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2	1	6		8		4	
Permitted Phases					8		4		4
Detector Phase	5	2	1	6	8	8	4	4	4
Switch Phase									
Minimum Initial (s)	5.0	8.0	5.0	8.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.6	23.5	10.8	26.6	34.0	34.0	33.9	33.9	33.9
Total Split (s)	25.0	55.0	15.0	45.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	25.0%	55.0%	15.0%	45.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.6	1.5	2.8	1.6	2.0	2.0	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.6	5.5	5.8	5.6		6.0		5.9	5.9
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	None	None	None	None	None
Act Effct Green (s)	19.7	39.5	5.1	15.8		9.2		9.3	9.3
Actuated g/C Ratio	0.32	0.64	0.08	0.25		0.15		0.15	0.15
v/c Ratio	0.72	0.27	0.01	0.70		0.02		0.51	0.59
Control Delay (s/veh)	30.6	6.5	31.0	24.1		24.0		34.4	9.5
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0	0.0
Total Delay (s/veh)	30.6	6.5	31.0	24.1		24.0		34.4	9.5
LOS	C	A	C	C		C		C	A
Approach Delay (s/veh)		16.1		24.1		24.0		16.4	
Approach LOS		B		C		C		B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 62.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay (s/veh): 18.6	Intersection LOS: B
Intersection Capacity Utilization 59.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 21: NW Friberg-Strunk St & NW Lake Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	375	566	2	1	455	129	4	1	0	97	0	254
Future Volume (veh/h)	375	566	2	1	455	129	4	1	0	97	0	254
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1900	1900	1900	1885	1900	1900	1900	1900	1856	1900	1885
Adj Flow Rate, veh/h	408	615	2	1	495	140	4	1	0	105	0	276
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	0	0	0	1	0	0	0	0	3	0	1
Cap, veh/h	459	1846	6	3	686	193	267	56	0	443	0	341
Arrive On Green	0.26	0.50	0.50	0.00	0.25	0.25	0.21	0.21	0.00	0.21	0.00	0.21
Sat Flow, veh/h	1795	3691	12	1810	2755	774	754	261	0	1519	0	1593
Grp Volume(v), veh/h	408	301	316	1	321	314	5	0	0	105	0	276
Grp Sat Flow(s),veh/h/ln	1795	1805	1898	1810	1791	1738	1015	0	0	1519	0	1593
Q Serve(g_s), s	13.4	6.1	6.1	0.0	10.0	10.1	0.0	0.0	0.0	0.0	0.0	10.1
Cycle Q Clear(g_c), s	13.4	6.1	6.1	0.0	10.0	10.1	3.0	0.0	0.0	3.0	0.0	10.1
Prop In Lane	1.00		0.01	1.00		0.45	0.80		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	459	903	949	3	446	433	323	0	0	443	0	341
V/C Ratio(X)	0.89	0.33	0.33	0.34	0.72	0.73	0.02	0.00	0.00	0.24	0.00	0.81
Avail Cap(c_a), veh/h	569	1459	1534	272	1153	1119	540	0	0	701	0	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	9.2	9.2	30.5	21.0	21.1	19.0	0.0	0.0	20.1	0.0	22.9
Incr Delay (d2), s/veh	12.0	0.1	0.1	23.2	0.8	0.9	0.0	0.0	0.0	0.1	0.0	1.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	1.9	2.0	0.0	4.0	3.9	0.1	0.0	0.0	1.1	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.0	9.3	9.2	53.7	21.9	21.9	19.0	0.0	0.0	20.2	0.0	24.6
LnGrp LOS	C	A	A	D	C	C	B			C		C
Approach Vol, veh/h		1025			636			5			381	
Approach Delay, s/veh		19.1			21.9			19.0			23.4	
Approach LOS		B			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	36.2		19.1	21.3	20.8		19.1				
Change Period (Y+Rc), s	5.8	* 5.6		* 6	5.6	5.6		6.0				
Max Green Setting (Gmax), s	9.2	* 50		* 24	19.4	39.4		24.0				
Max Q Clear Time (g_c+I1), s	2.0	8.1		12.1	15.4	12.1		5.0				
Green Ext Time (p_c), s	0.0	2.2		0.7	0.3	2.7		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh	20.8	
HCM 7th LOS	C	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	91	27	352	136	28	337
Future Vol, veh/h	91	27	352	136	28	337
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	175	0	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	2	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	7	2	0	0	1
Mvmt Flow	100	30	387	149	31	370

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	895	464	0	0	538	0
Stage 1	464	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Critical Hdwy	6.01	6.07	-	-	4.1	-
Critical Hdwy Stg 1	5.01	-	-	-	-	-
Critical Hdwy Stg 2	5.01	-	-	-	-	-
Follow-up Hdwy	3.509	3.363	-	-	2.2	-
Pot Cap-1 Maneuver	345	604	-	-	1040	-
Stage 1	669	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	334	602	-	-	1038	-
Mov Cap-2 Maneuver	334	-	-	-	-	-
Stage 1	668	-	-	-	-	-
Stage 2	669	-	-	-	-	-

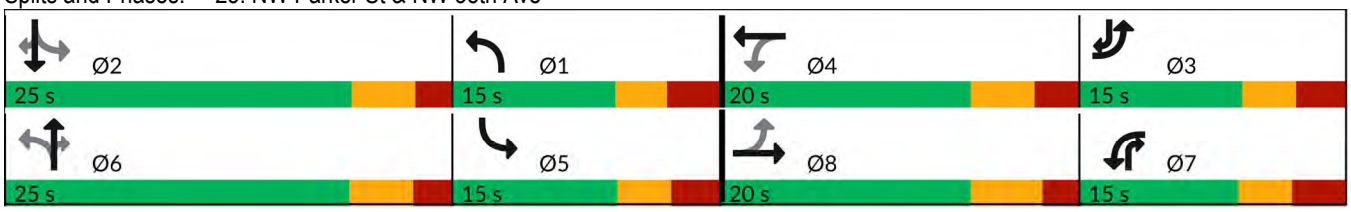
Approach	WB	NB	SB
HCM Ctrl Dly, s/v	18.25	0	0.66
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	334	602	1038	-
HCM Lane V/C Ratio	-	-	0.299	0.049	0.03	-
HCM Ctrl Dly (s/v)	-	-	20.3	11.3	8.6	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0.2	0.1	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	94	137	166	244	51	296	66	102	307	143
Future Volume (vph)	94	137	166	244	51	296	66	102	307	143
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	7	4	1	6	7	5	2	3
Permitted Phases	8		4		6		6	2		2
Detector Phase	3	8	7	4	1	6	7	5	2	3
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.8	24.0	11.0	23.0	10.9	20.0	11.0	10.7	20.0	10.8
Total Split (s)	15.0	20.0	15.0	20.0	15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	20.0%	26.7%	20.0%	26.7%	20.0%	33.3%	20.0%	20.0%	33.3%	20.0%
Yellow Time (s)	3.0	4.0	3.0	3.6	3.0	3.6	3.0	3.0	3.6	3.0
All-Red Time (s)	2.8	2.0	3.0	2.4	2.9	2.1	3.0	2.7	2.0	2.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	6.0	6.0	6.0	5.9	5.7	6.0	5.7	5.6	5.8
Lead/Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	None	Max	None
Act Effct Green (s)	19.6	15.0	20.7	14.1	24.2	19.4	30.8	25.7	21.6	32.8
Actuated g/C Ratio	0.30	0.23	0.32	0.22	0.37	0.30	0.47	0.39	0.33	0.50
v/c Ratio	0.36	0.49	0.40	0.93	0.14	0.56	0.08	0.26	0.49	0.17
Control Delay (s/veh)	22.0	26.3	19.2	58.8	12.9	25.0	0.6	14.6	22.0	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.0	26.3	19.2	58.8	12.9	25.0	0.6	14.6	22.0	2.7
LOS	C	C	B	E	B	C	A	B	C	A
Approach Delay (s/veh)		24.9		46.3		19.6			15.6	
Approach LOS		C		D		B			B	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 65.1	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 27.1	Intersection LOS: C
Intersection Capacity Utilization 65.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 23: NW Parker St & NW 38th Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	137	62	166	244	114	51	296	66	102	307	143
Future Volume (veh/h)	94	137	62	166	244	114	51	296	66	102	307	143
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1900	1811	1885	1900	1900	1900	1900	1900	1885	1976	1900
Adj Flow Rate, veh/h	97	141	64	171	252	118	53	305	68	105	316	147
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	6	1	0	0	0	0	0	1	0	0
Cap, veh/h	248	181	82	394	256	120	388	548	686	397	573	587
Arrive On Green	0.07	0.15	0.15	0.14	0.21	0.21	0.07	0.29	0.29	0.07	0.29	0.29
Sat Flow, veh/h	1882	1234	560	1795	1222	572	1810	1900	1610	1795	1976	1610
Grp Volume(v), veh/h	97	0	205	171	0	370	53	305	68	105	316	147
Grp Sat Flow(s),veh/h/ln	1882	0	1795	1795	0	1794	1810	1900	1610	1795	1976	1610
Q Serve(g_s), s	0.0	0.0	7.4	0.0	0.0	13.7	0.0	9.1	0.0	0.0	9.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	7.4	0.0	0.0	13.7	0.0	9.1	0.0	0.0	9.0	0.0
Prop In Lane	1.00		0.31	1.00		0.32	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	0	263	394	0	375	388	548	686	397	573	587
V/C Ratio(X)	0.39	0.00	0.78	0.43	0.00	0.99	0.14	0.56	0.10	0.26	0.55	0.25
Avail Cap(c_a), veh/h	366	0	376	394	0	375	499	548	686	512	573	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	0.0	27.5	24.6	0.0	26.3	21.1	20.2	11.5	22.3	20.1	14.9
Incr Delay (d2), s/veh	0.4	0.0	3.9	0.3	0.0	42.4	0.1	4.0	0.3	0.1	3.8	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	3.2	2.3	0.0	9.9	0.6	4.3	0.6	1.3	4.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.0	0.0	31.4	24.9	0.0	68.7	21.2	24.2	11.8	22.4	23.9	15.9
LnGrp LOS	C		C	C		E	C	C	B	C	C	B
Approach Vol, veh/h		302			541			426			568	
Approach Delay, s/veh		30.6			54.9			21.8			21.5	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	25.0	11.0	20.0	10.9	25.0	15.2	15.8
Change Period (Y+Rc), s	5.9	5.6	6.0	* 6	5.9	* 5.7	6.0	6.0
Max Green Setting (Gmax), s	9.1	19.4	9.2	* 14	9.3	* 19	9.0	14.0
Max Q Clear Time (g_c+I1), s	2.0	11.0	2.0	15.7	2.0	11.1	2.0	9.4
Green Ext Time (p_c), s	0.0	1.0	0.1	0.0	0.1	0.8	0.1	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	32.9
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	157	103	129	84	10
Future Vol, veh/h	15	157	103	129	84	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	1	5	6	1	0
Mvmt Flow	19	196	129	161	105	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	530	111	118	0	-	0
Stage 1	111	-	-	-	-	-
Stage 2	419	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.245	-	-	-
Pot Cap-1 Maneuver	513	945	1452	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	668	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	463	945	1452	-	-	-
Mov Cap-2 Maneuver	463	-	-	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	668	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.52	3.43	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	799	-	866	-	-
HCM Lane V/C Ratio	0.089	-	0.248	-	-
HCM Ctrl Dly (s/v)	7.7	0	10.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.3	-	1	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	46	55	174	36	43	171
Future Vol, veh/h	46	55	174	36	43	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	4	6	4	14	5	4
Mvmt Flow	52	63	198	41	49	194

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	510	218	0	0	239	0
Stage 1	218	-	-	-	-	-
Stage 2	292	-	-	-	-	-
Critical Hdwy	6.44	6.26	-	-	4.15	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.354	-	-	2.245	-
Pot Cap-1 Maneuver	520	812	-	-	1311	-
Stage 1	813	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	498	812	-	-	1311	-
Mov Cap-2 Maneuver	498	-	-	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	722	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	11.97	0	1.58
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	631	362	-
HCM Lane V/C Ratio	-	-	0.182	0.037	-
HCM Ctrl Dly (s/v)	-	-	12	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	98	126	184	166	32
Future Vol, veh/h	15	98	126	184	166	32
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	130	0	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	-2	2	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	1	0	1	1	3
Mvmt Flow	17	109	140	204	184	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	688	203	221	0	-	0
Stage 1	203	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Critical Hdwy	6.8	6.41	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.2	-	-	-
Pot Cap-1 Maneuver	385	831	1360	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	591	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	345	830	1359	-	-	-
Mov Cap-2 Maneuver	345	-	-	-	-	-
Stage 1	732	-	-	-	-	-
Stage 2	590	-	-	-	-	-

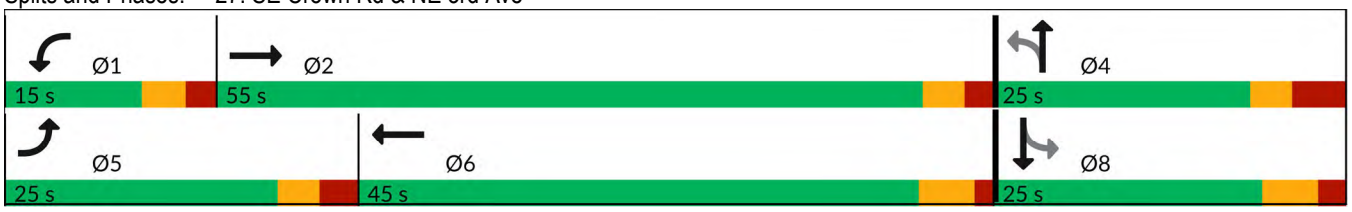
Approach	EB	NB	SB
HCM Ctrl Dly, s/v	10.79	3.23	0
HCM LOS	B		

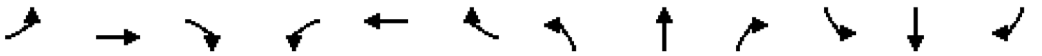
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1359	-	345	830	-	-
HCM Lane V/C Ratio	0.103	-	0.048	0.131	-	-
HCM Ctrl Dly (s/v)	8	-	16	10	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.2	0.5	-	-

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR	Ø1
Lane Configurations									
Traffic Volume (vph)	269	507	432	11	4	112	1	216	
Future Volume (vph)	269	507	432	11	4	112	1	216	
Turn Type	Prot	NA	NA	Perm	NA	Perm	NA	Free	
Protected Phases	5	2	6		4		8		1
Permitted Phases				4		8		Free	
Detector Phase	5	2	6	4	4	8	8		
Switch Phase									
Minimum Initial (s)	2.0	8.0	8.0	2.0	2.0	2.0	2.0		5.0
Minimum Split (s)	7.6	23.0	20.3	32.8	32.8	35.0	35.0		10.2
Total Split (s)	25.0	55.0	45.0	25.0	25.0	25.0	25.0		15.0
Total Split (%)	26.3%	57.9%	47.4%	26.3%	26.3%	26.3%	26.3%		16%
Yellow Time (s)	3.0	3.0	4.0	3.0	3.0	4.0	4.0		3.0
All-Red Time (s)	2.6	2.0	1.3	3.8	3.8	2.0	2.0		2.2
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0		
Total Lost Time (s)	5.6	5.0	5.3		6.8		6.0		
Lead/Lag	Lead	Lag	Lag						Lead
Lead-Lag Optimize?	Yes	Yes	Yes						Yes
Recall Mode	None	None	None	None	None	None	None		None
Act Effct Green (s)	14.0	37.0	14.4		8.7		9.5	52.5	
Actuated g/C Ratio	0.27	0.70	0.27		0.17		0.18	1.00	
v/c Ratio	0.60	0.22	0.61		0.06		0.46	0.13	
Control Delay (s/veh)	25.6	4.7	19.7		23.3		29.4	0.2	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)	25.6	4.7	19.7		23.3		29.4	0.2	
LOS	C	A	B		C		C	A	
Approach Delay (s/veh)		11.8	19.7		23.3		10.2		
Approach LOS		B	B		C		B		

Intersection Summary	
Cycle Length: 95	
Actuated Cycle Length: 52.5	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay (s/veh): 14.3	Intersection LOS: B
Intersection Capacity Utilization 57.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 27: SE Crown Rd & NE 3rd Ave





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	269	507	12	0	432	142	11	4	0	112	1	216
Future Volume (veh/h)	269	507	12	0	432	142	11	4	0	112	1	216
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.04	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1876	1862	1952	1979	1964	1934	1952	1952	1952	2011	2058	2027
Adj Flow Rate, veh/h	274	517	12	0	441	145	11	4	0	114	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	0	0	1	3	0	0	0	3	0	2
Cap, veh/h	348	2085	48	5	695	226	265	71		337	1	
Arrive On Green	0.19	0.59	0.59	0.00	0.25	0.25	0.10	0.10	0.00	0.10	0.10	0.00
Sat Flow, veh/h	1787	3531	82	1884	2766	901	1074	738	1654	1573	14	1717
Grp Volume(v), veh/h	274	259	270	0	296	290	15	0	0	115	0	0
Grp Sat Flow(s),veh/h/ln	1787	1769	1845	1884	1865	1801	1811	0	1654	1586	0	1717
Q Serve(g_s), s	5.6	2.7	2.7	0.0	5.5	5.6	0.0	0.0	0.0	2.4	0.0	0.0
Cycle Q Clear(g_c), s	5.6	2.7	2.7	0.0	5.5	5.6	0.3	0.0	0.0	2.7	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.50	0.73		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	348	1044	1089	5	469	453	337	0		339	0	
V/C Ratio(X)	0.79	0.25	0.25	0.00	0.63	0.64	0.04	0.00		0.34	0.00	
Avail Cap(c_a), veh/h	896	2286	2385	477	1915	1849	927	0		953	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.8	3.8	3.8	0.0	12.9	12.9	15.9	0.0	0.0	17.0	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.0	0.5	0.6	0.0	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.3	0.3	0.0	1.7	1.7	0.1	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.3	3.8	3.8	0.0	13.4	13.5	15.9	0.0	0.0	17.2	0.0	0.0
LnGrp LOS	B	A	A		B	B	B			B		
Approach Vol, veh/h		803			586			15			115	
Approach Delay, s/veh		8.1			13.5			15.9			17.2	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	28.1		10.5	13.1	15.0		10.5				
Change Period (Y+Rc), s	5.2	* 5.3		6.8	5.6	5.3		* 6.8				
Max Green Setting (Gmax), s	9.8	* 50		18.2	19.4	39.7		* 19				
Max Q Clear Time (g_c+I1), s	0.0	4.7		2.3	7.6	7.6		4.7				
Green Ext Time (p_c), s	0.0	1.9		0.0	0.3	2.2		0.3				

Intersection Summary			
HCM 7th Control Delay, s/veh		10.9	
HCM 7th LOS		B	

Notes

User approved pedestrian interval to be less than phase max green.

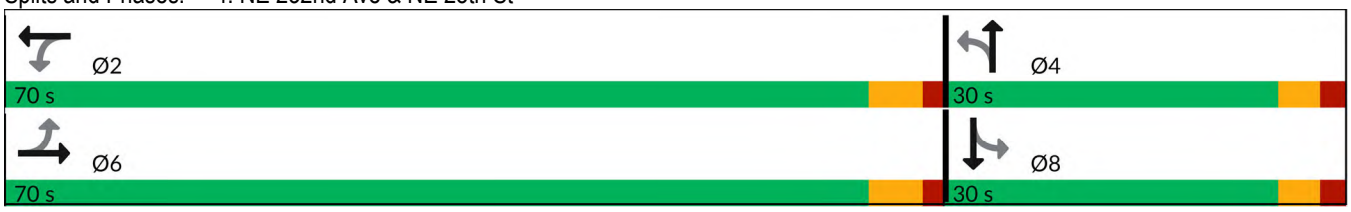
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix I: Year 2030 Mitigated Total Traffic Conditions Analysis Worksheets

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	2	153	49	248	312	2	1	3
Future Volume (vph)	2	153	49	248	312	2	1	3
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		6		2		4		8
Permitted Phases	6		2		4		8	
Detector Phase	6	6	2	2	4	4	8	8
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.0	23.0	23.0	23.0
Total Split (s)	70.0	70.0	70.0	70.0	30.0	30.0	30.0	30.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	None	None	None	None
Act Effct Green (s)		15.0		15.0		25.1		25.1
Actuated g/C Ratio		0.30		0.30		0.50		0.50
v/c Ratio		0.79		0.77		0.57		0.01
Control Delay (s/veh)		19.8		29.4		14.6		6.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay (s/veh)		19.8		29.4		14.6		6.8
LOS		B		C		B		A
Approach Delay (s/veh)		19.8		29.4		14.6		6.8
Approach LOS		B		C		B		A

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 50.7	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay (s/veh): 20.7	Intersection LOS: C
Intersection Capacity Utilization 81.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: NE 232nd Ave & NE 28th St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	153	292	49	248	2	312	2	34	1	3	6
Future Volume (veh/h)	2	153	292	49	248	2	312	2	34	1	3	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1832	1847	2018	1973	2018	1856	1900	1900	418	1900	1900
Adj Flow Rate, veh/h	2	163	311	52	264	2	332	2	36	1	3	6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	1	0	0	3	0	3	0	0	100	0	0
Cap, veh/h	107	213	402	188	635	4	612	2	45	131	201	323
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	2	566	1070	171	1693	12	1302	8	141	46	635	1022
Grp Volume(v), veh/h	476	0	0	318	0	0	370	0	0	10	0	0
Grp Sat Flow(s),veh/h/ln	1638	0	0	1876	0	0	1451	0	0	1703	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	7.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.7	0.0	0.0	4.1	0.0	0.0	8.0	0.0	0.0	0.1	0.0	0.0
Prop In Lane	0.00		0.65	0.16		0.01	0.90		0.10	0.10		0.60
Lane Grp Cap(c), veh/h	721	0	0	827	0	0	659	0	0	654	0	0
V/C Ratio(X)	0.66	0.00	0.00	0.38	0.00	0.00	0.56	0.00	0.00	0.02	0.00	0.00
Avail Cap(c_a), veh/h	3209	0	0	3393	0	0	1266	0	0	1351	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.3	0.0	0.0	7.9	0.0	0.0	10.7	0.0	0.0	8.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.0	1.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.7	0.0	0.0	8.0	0.0	0.0	10.9	0.0	0.0	8.0	0.0	0.0
LnGrp LOS	A			A			B			A		
Approach Vol, veh/h		476			318			370			10	
Approach Delay, s/veh		9.7			8.0			10.9			8.0	
Approach LOS		A			A			B			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.3		15.7		18.3		15.7				
Change Period (Y+Rc), s		5.5		5.0		5.5		5.0				
Max Green Setting (Gmax), s		64.5		25.0		64.5		25.0				
Max Q Clear Time (g_c+I1), s		6.1		10.0		10.7		2.1				
Green Ext Time (p_c), s		1.3		1.1		2.1		0.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			9.6									
HCM 7th LOS			A									

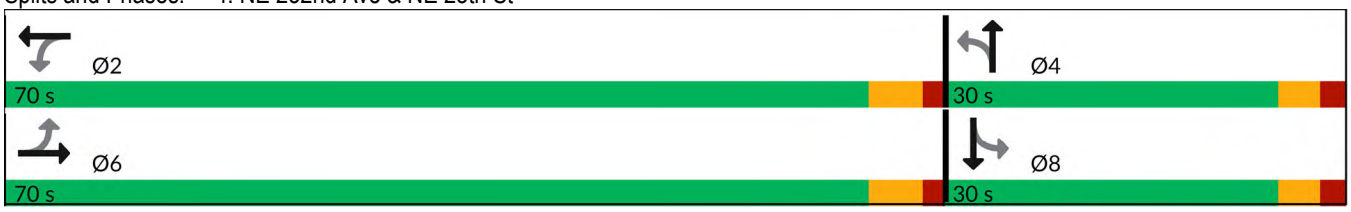
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	476	318	370	10
v/c Ratio	0.79	0.77	0.57	0.01
Control Delay (s/veh)	19.8	29.4	14.6	6.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.8	29.4	14.6	6.8
Queue Length 50th (ft)	72	84	67	1
Queue Length 95th (ft)	163	156	182	8
Internal Link Dist (ft)	1011	2542	687	496
Turn Bay Length (ft)				
Base Capacity (vph)	1584	1393	652	747
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	0.23	0.57	0.01

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	6	364	33	217	342	0	1	1
Future Volume (vph)	6	364	33	217	342	0	1	1
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		6		2		4		8
Permitted Phases	6		2		4		8	
Detector Phase	6	6	2	2	4	4	8	8
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.0	23.0	23.0	23.0
Total Split (s)	70.0	70.0	70.0	70.0	30.0	30.0	30.0	30.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	None	None	None	None
Act Effct Green (s)		39.8		39.8		25.9		25.9
Actuated g/C Ratio		0.52		0.52		0.34		0.34
v/c Ratio		0.90		0.34		0.87		0.01
Control Delay (s/veh)		27.7		10.9		47.4		19.6
Queue Delay		0.0		0.0		0.0		0.0
Total Delay (s/veh)		27.7		10.9		47.4		19.6
LOS		C		B		D		B
Approach Delay (s/veh)		27.7		10.9		47.4		19.6
Approach LOS		C		B		D		B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 76.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay (s/veh): 30.0	Intersection LOS: C
Intersection Capacity Utilization 80.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: NE 232nd Ave & NE 28th St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	364	384	33	217	0	342	0	33	1	1	3
Future Volume (veh/h)	6	364	384	33	217	0	342	0	33	1	1	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1832	1847	2018	1973	2018	1856	1900	1900	418	1900	1900
Adj Flow Rate, veh/h	6	387	409	35	231	0	364	0	35	1	1	3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	1	0	0	3	0	3	0	0	100	0	0
Cap, veh/h	59	432	452	129	798	0	514	0	39	138	147	326
Arrive On Green	0.53	0.53	0.53	0.53	0.53	0.00	0.31	0.00	0.31	0.31	0.31	0.31
Sat Flow, veh/h	3	818	855	122	1511	0	1324	0	127	230	480	1064
Grp Volume(v), veh/h	802	0	0	266	0	0	399	0	0	5	0	0
Grp Sat Flow(s),veh/h/ln	1676	0	0	1633	0	0	1451	0	0	1774	0	0
Q Serve(g_s), s	2.2	0.0	0.0	0.0	0.0	0.0	16.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	27.4	0.0	0.0	4.7	0.0	0.0	16.7	0.0	0.0	0.1	0.0	0.0
Prop In Lane	0.01		0.51	0.13		0.00	0.91		0.09	0.20		0.60
Lane Grp Cap(c), veh/h	943	0	0	927	0	0	553	0	0	611	0	0
V/C Ratio(X)	0.85	0.00	0.00	0.29	0.00	0.00	0.72	0.00	0.00	0.01	0.00	0.00
Avail Cap(c_a), veh/h	1757	0	0	1709	0	0	679	0	0	752	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.5	0.0	0.0	8.2	0.0	0.0	21.1	0.0	0.0	15.3	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.1	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	0.0	1.5	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.4	0.0	0.0	8.2	0.0	0.0	23.1	0.0	0.0	15.3	0.0	0.0
LnGrp LOS	B			A			C			B		
Approach Vol, veh/h		802			266			399			5	
Approach Delay, s/veh		14.4			8.2			23.1			15.3	
Approach LOS		B			A			C			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	39.1	24.5	39.1	24.5
Change Period (Y+Rc), s	5.5	5.0	5.5	5.0
Max Green Setting (Gmax), s	64.5	25.0	64.5	25.0
Max Q Clear Time (g_c+I1), s	6.7	18.7	29.4	2.1
Green Ext Time (p_c), s	1.1	0.8	4.1	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	15.6
HCM 7th LOS	B

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	802	266	399	5
v/c Ratio	0.90	0.34	0.87	0.01
Control Delay (s/veh)	27.7	10.9	47.4	19.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.7	10.9	47.4	19.6
Queue Length 50th (ft)	275	66	160	1
Queue Length 95th (ft)	438	106	#474	10
Internal Link Dist (ft)	1011	2542	687	496
Turn Bay Length (ft)				
Base Capacity (vph)	1387	1282	460	455
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.58	0.21	0.87	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	112	281	0	0	172	127	0	0	0	167	0	80
Future Vol, veh/h	112	281	0	0	172	127	0	0	0	167	0	80
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	1	0	0	2	6	0	0	0	3	0	0
Mvmt Flow	124	312	0	0	191	141	0	0	0	186	0	89
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	17.7	12.9	0	13.5
HCM LOS	C	B	-	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	28%	0%	68%
Vol Thru, %	100%	72%	58%	0%
Vol Right, %	0%	0%	42%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	393	299	247
LT Vol	0	112	0	167
Through Vol	0	281	172	0
RT Vol	0	0	127	80
Lane Flow Rate	0	437	332	274
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0.647	0.477	0.444
Departure Headway (Hd)	6.531	5.333	5.169	5.83
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	677	694	618
Service Time	4.609	3.373	3.213	3.876
HCM Lane V/C Ratio	0	0.645	0.478	0.443
HCM Control Delay, s/veh	9.6	17.7	12.9	13.5
HCM Lane LOS	N	C	B	B
HCM 95th-tile Q	0	4.7	2.6	2.3

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

KITTELSON & ASSOCIATES

Project #:	31612
Project Name:	Lacamas North Shore
Analyst:	Kittelson & Associates, Inc.
Analysis Date:	9/4/2025
File:	H:\31\31612 - Johnston Dairy\analysis\TIA\Signal Warrants\[28th & 232nd Signal-Warrant-Analysis_Total Traffic 2030.xlsm]Warrant
Intersection:	28th & 232nd
Scenario:	2030 Total Traffic Conditions
Data Date:	4/8/2025

Warrant Summary

Warrant	Name	Analyzed?	Met?
#1	Eight-Hour Vehicular Volume	Yes	Yes
#2	Four-Hour Vehicular volume	Yes	Yes
#3	Peak Hour	No	-
#4	Pedestrian Volume	No	-
#5	School Crossing	No	-
#6	Coordinated Signal System	No	-
#7	Crash Experience	No	-
#8	Roadway Network	No	-
#9	Intersection Near a Grade Crossing	No	-

Analysis Traffic Volumes

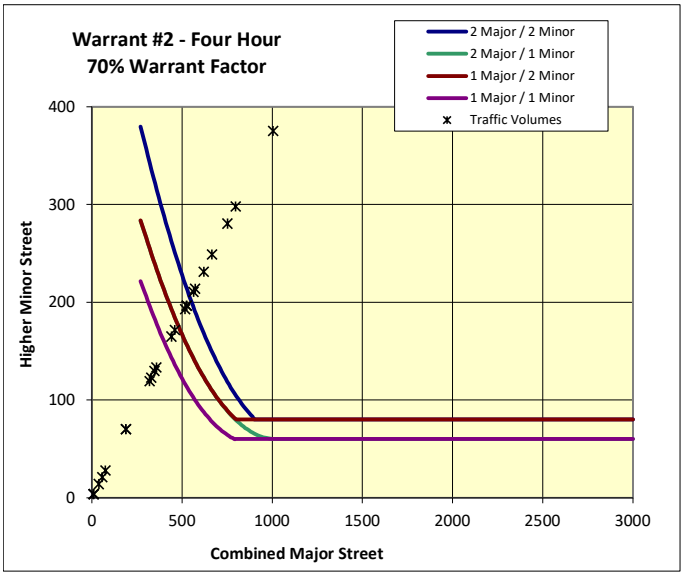
Hour		Major Street		Minor Street	
Begin	End	EB	WB	NB	SB
5:00 PM	6:00 PM	754	250	375	5
2nd Highest Hour		599	199	298	4
3rd Highest Hour		564	187	280	4
4th Highest Hour		500	166	249	3
5th Highest Hour		465	154	231	3
6th Highest Hour		430	143	214	3
7th Highest Hour		423	140	210	3
8th Highest Hour		395	131	196	3
9th Highest Hour		395	131	196	3
10th Highest Hour		388	129	193	3
11th Highest Hour		345	114	172	2
12th Highest Hour		331	110	165	2
13th Highest Hour		268	89	133	2
14th Highest Hour		261	86	130	2
15th Highest Hour		247	82	123	2
16th Highest Hour		240	79	119	2
17th Highest Hour		141	47	70	1
18th Highest Hour		141	47	70	1
19th Highest Hour		56	19	28	0
20th Highest Hour		42	14	21	0
21st Highest Hour		28	9	14	0
22nd Highest Hour		7	2	4	0
23rd Highest Hour		7	2	4	0
24th Highest Hour		7	2	4	0

Input Parameters

Volume Adjustment Factor =	1.0
North-South Approach =	Minor
East-West Approach =	Major
Major Street Thru Lanes =	1
Minor Street Thru Lanes =	1
Speed > 40 mph?	Yes
Population < 10,000?	No
Warrant Factor	70%
Peak Hour or Daily Count?	Peak Hour
Major Street: 4th-Highest Hour / Peak Hour	66%
Major Street: 8th-Highest Hour / Peak Hour	52%
Minor Street: 4th-Highest Hour / Peak Hour	66%
Minor Street: 8th-Highest Hour / Peak Hour	52%

Warrant #1 - Eight Hour

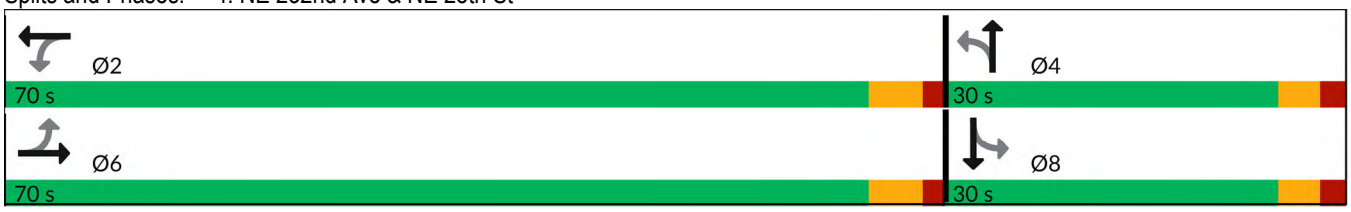
Warrant Factor	Condition	Major Street Requirement	Minor Street Requirement	Hours That Condition Is Met	Condition for Warrant Factor Met?	Signal Warrant Met?
100%	A	500	150	10	Yes	**Yes**
	B	750	75	3	No	
80%	A	400	120	12	Yes	**Yes**
	B	600	60	5	No	
70%	A	350	105	13	Yes	**Yes**
	B	525	53	9	Yes	
56%	A	280	84	16	Yes	**Yes**
	B	420	42	12	Yes	



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	2	153	49	248	312	2	1	3
Future Volume (vph)	2	153	49	248	312	2	1	3
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		6		2		4		8
Permitted Phases	6		2		4		8	
Detector Phase	6	6	2	2	4	4	8	8
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.0	23.0	23.0	23.0
Total Split (s)	70.0	70.0	70.0	70.0	30.0	30.0	30.0	30.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	None	None	None	None
Act Effct Green (s)		15.0		15.0		25.1		25.1
Actuated g/C Ratio		0.30		0.30		0.50		0.50
v/c Ratio		0.79		0.77		0.57		0.01
Control Delay (s/veh)		19.8		29.4		14.6		6.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay (s/veh)		19.8		29.4		14.6		6.8
LOS		B		C		B		A
Approach Delay (s/veh)		19.8		29.4		14.6		6.8
Approach LOS		B		C		B		A

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 50.7	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay (s/veh): 20.7	Intersection LOS: C
Intersection Capacity Utilization 81.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: NE 232nd Ave & NE 28th St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	153	292	49	248	2	312	2	34	1	3	6
Future Volume (veh/h)	2	153	292	49	248	2	312	2	34	1	3	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1832	1847	2018	1973	2018	1856	1900	1900	418	1900	1900
Adj Flow Rate, veh/h	2	163	311	52	264	2	332	2	36	1	3	6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	1	0	0	3	0	3	0	0	100	0	0
Cap, veh/h	107	213	402	188	635	4	612	2	45	131	201	323
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	2	566	1070	171	1693	12	1302	8	141	46	635	1022
Grp Volume(v), veh/h	476	0	0	318	0	0	370	0	0	10	0	0
Grp Sat Flow(s),veh/h/ln	1638	0	0	1876	0	0	1451	0	0	1703	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	7.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.7	0.0	0.0	4.1	0.0	0.0	8.0	0.0	0.0	0.1	0.0	0.0
Prop In Lane	0.00		0.65	0.16		0.01	0.90		0.10	0.10		0.60
Lane Grp Cap(c), veh/h	721	0	0	827	0	0	659	0	0	654	0	0
V/C Ratio(X)	0.66	0.00	0.00	0.38	0.00	0.00	0.56	0.00	0.00	0.02	0.00	0.00
Avail Cap(c_a), veh/h	3209	0	0	3393	0	0	1266	0	0	1351	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.3	0.0	0.0	7.9	0.0	0.0	10.7	0.0	0.0	8.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.0	1.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.7	0.0	0.0	8.0	0.0	0.0	10.9	0.0	0.0	8.0	0.0	0.0
LnGrp LOS	A			A			B			A		
Approach Vol, veh/h		476			318			370			10	
Approach Delay, s/veh		9.7			8.0			10.9			8.0	
Approach LOS		A			A			B			A	

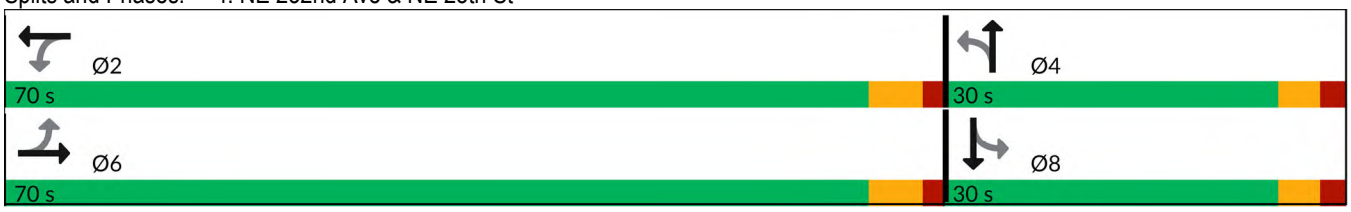
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.3		15.7		18.3		15.7				
Change Period (Y+Rc), s		5.5		5.0		5.5		5.0				
Max Green Setting (Gmax), s		64.5		25.0		64.5		25.0				
Max Q Clear Time (g_c+I1), s		6.1		10.0		10.7		2.1				
Green Ext Time (p_c), s		1.3		1.1		2.1		0.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			9.6									
HCM 7th LOS			A									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	6	364	33	217	342	0	1	1
Future Volume (vph)	6	364	33	217	342	0	1	1
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		6		2		4		8
Permitted Phases	6		2		4		8	
Detector Phase	6	6	2	2	4	4	8	8
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.0	23.0	23.0	23.0
Total Split (s)	70.0	70.0	70.0	70.0	30.0	30.0	30.0	30.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.5		5.5		5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	None	None	None	None
Act Effct Green (s)		39.8		39.8		25.9		25.9
Actuated g/C Ratio		0.52		0.52		0.34		0.34
v/c Ratio		0.90		0.34		0.87		0.01
Control Delay (s/veh)		27.7		10.9		47.4		19.6
Queue Delay		0.0		0.0		0.0		0.0
Total Delay (s/veh)		27.7		10.9		47.4		19.6
LOS		C		B		D		B
Approach Delay (s/veh)		27.7		10.9		47.4		19.6
Approach LOS		C		B		D		B

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 76.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay (s/veh): 30.0	Intersection LOS: C
Intersection Capacity Utilization 80.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: NE 232nd Ave & NE 28th St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	364	384	33	217	0	342	0	33	1	1	3
Future Volume (veh/h)	6	364	384	33	217	0	342	0	33	1	1	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1847	1832	1847	2018	1973	2018	1856	1900	1900	418	1900	1900
Adj Flow Rate, veh/h	6	387	409	35	231	0	364	0	35	1	1	3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	1	0	0	3	0	3	0	0	100	0	0
Cap, veh/h	59	432	452	129	798	0	514	0	39	138	147	326
Arrive On Green	0.53	0.53	0.53	0.53	0.53	0.00	0.31	0.00	0.31	0.31	0.31	0.31
Sat Flow, veh/h	3	818	855	122	1511	0	1324	0	127	230	480	1064
Grp Volume(v), veh/h	802	0	0	266	0	0	399	0	0	5	0	0
Grp Sat Flow(s),veh/h/ln	1676	0	0	1633	0	0	1451	0	0	1774	0	0
Q Serve(g_s), s	2.2	0.0	0.0	0.0	0.0	0.0	16.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	27.4	0.0	0.0	4.7	0.0	0.0	16.7	0.0	0.0	0.1	0.0	0.0
Prop In Lane	0.01		0.51	0.13		0.00	0.91		0.09	0.20		0.60
Lane Grp Cap(c), veh/h	943	0	0	927	0	0	553	0	0	611	0	0
V/C Ratio(X)	0.85	0.00	0.00	0.29	0.00	0.00	0.72	0.00	0.00	0.01	0.00	0.00
Avail Cap(c_a), veh/h	1757	0	0	1709	0	0	679	0	0	752	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.5	0.0	0.0	8.2	0.0	0.0	21.1	0.0	0.0	15.3	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.1	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	0.0	1.5	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.4	0.0	0.0	8.2	0.0	0.0	23.1	0.0	0.0	15.3	0.0	0.0
LnGrp LOS	B			A			C			B		
Approach Vol, veh/h		802			266			399			5	
Approach Delay, s/veh		14.4			8.2			23.1			15.3	
Approach LOS		B			A			C			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	39.1	24.5	39.1	24.5
Change Period (Y+Rc), s	5.5	5.0	5.5	5.0
Max Green Setting (Gmax), s	64.5	25.0	64.5	25.0
Max Q Clear Time (g_c+I1), s	6.7	18.7	29.4	2.1
Green Ext Time (p_c), s	1.1	0.8	4.1	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	15.6
HCM 7th LOS	B

Exhibit D

Stormwater Memo and Concept Plan

MacKay Sposito

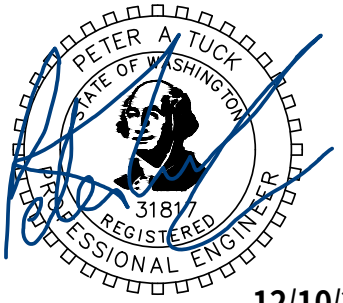
Vancouver Office

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

MEMORANDUM

TO: **City of Camas**

FROM: **Peter Tuck P.E.**
MacKay Sposito



12/10/2025

RE: Existing and Proposed Stormwater on City of Camas Parcel – Parcel Id # 175721-000.

DATE: December 10, 2025

This memo is to address the following concerns raised by the city in relation to the proposed storm line to be constructed across the City of Camas Parcel with the Lacamas North Shore Development. City staff are concerned that the proposed design will dry up the natural drainage across the parcel and request that a design be completed that preserves the natural drainage.

Currently runoff from the basin area that discharges to the head of the city's drainage, first flows to the central wetland on the Lacamas North Shore Project (LNSP), before being collected and piped to the drainage on the city's parcel. Since the hydrology for the wetland is primarily from groundwater, the current subsurface collection system in the wetland ensures constant flow to the drainage throughout the year.

The existing contributing basin area to the city's drainage is made up of approximately 34 Ac of land not being disturbed by the LNSP and another 55 Ac of development area within the LNSP. The undisturbed area consists of forested area with large basaltic extrusions, some swampy area and the remainder made up of the pastured wetland central to LNSP.

Runoff from the 55 Ac of development area is being collected and routed to the stormwater facility adjacent to the central wetland where it is treated using media cartridges followed by underground detention. Discharge from the detention is currently planned to be piped to the west slope on the City of Camas Parcel where it will be discharged to the existing drainage.

Runoff from the remaining 34 Ac will continue to flow to the central wetland where it will be collected and routed to the head of the drainage on the city's parcel. The current subsurface collection system will be impacted by the development, but a new shallow French drain system will be installed in or adjacent to the wetland in accordance with the wetland mitigation plan, to ensure the base historic flows from groundwater are maintained throughout the year. This

system will also collect surface runoff and route it to the drainage. To increase the amount of water routed to the wetland and therefore the city's drainage, all roof area directly adjacent to the wetland will be routed to it. This flow will be mitigated by oversizing the detention system to ensure the full discharge from the site is in accordance with Washington State Department of Ecology (WSDOE) requirements.

Based on WSDOE requirements, all stormwater facilities are to be sized using the Western Washinton Hydrological Model (WWHM). This model calculates the historic runoff rates from a site and aids in sizing facilities that meet the developed runoff rate that is equal to or lower than the runoff from the site in a fully forested state.

For this project, a model was created that includes both the 55 Ac onsite development area and the undisturbed 34 Ac area. For the model:

- The undisturbed area is unchanged in both the predeveloped and developed conditions
- In the developed state, the undisturbed area was not routed to the detention facility
- Approximately 1.5 Ac of roof area was added to the undisturbed catchment that bypasses detention. (this equates to the roofs runoff being routed directly to the central wetland)
- Resultant discharge flows for the model are for the location of the pipe discharge at the west side of the city parcel not at the head of the drainage.
- Table 1 below shows Peak Historic Flows from the site for the full 89 Ac.
- Table 2 shows Peak Developed Flows from the site for the full 89 Ac.

Since the peak flows shown in the above model are at the pipe discharge rather than at the top of the drainage, a second model was created identical to the first but revised to remove the basin that bypasses the detention. The resultant flows are still at the pipe discharge but do not include the flow across the drainage and are shown below in Table 3.

The flow across the drainage can be calculated as the difference between the two sets of flows or the values shown in Table 3 subtracted from the values in Table 2. These totals are shown in Table 4 below.

Storm Event	Peak Flow (CFS)
2 Year	22.3
10 Year	41.9
25 Year	48.9
100 Year	56.5

Table 1: Historic Runoff from the Entire 89 Ac

Storm Event	Peak Flow (CFS)
2 Year	15.8
10 Year	31.6
25 Year	40.8
100 Year	55.7

Table 2: Developed Discharge from Detention Facility and 34 Ac Undeveloped Area.

Storm Event	Peak Flow (CFS)
2 Year	9.7
10 Year	19.6
25 Year	26.0
100 Year	37.4

Table 3: Developed Discharge from Detention Facility (34 Ac + additional roof areas removed from model)

Storm Event	Peak Flow (CFS)
2 Year	6.1
10 Year	12.0
25 Year	14.8
100 Year	18.3

Table 4: Flow to Head of Drainage after Development (Flows from Table 3 subtracted from Table 2)

As can be seen from the values in Table 4, when the development is completed, post developed flows are still more than adequate to preserve the natural drainage and will ensure that it will not dry up. In addition, since a shallow french drain will be installed in or adjacent to the wetland, the existing low flows from the groundwater will continue to provide moisture in the drainage throughout the year.

Attached:
Southern Storm Basin Exhibit
WWHM Model for 89 Ac Development and Adjacent Area – Results
Original WWHM Model with 34 Ac + additional roof areas removed - Results

PROPOSED STORM PIPE OVER CITY PARCEL
SIZE TO BE DETERMINED DURING FINAL DESIGN

ENERGY DISSIPATION DEVICE AT STORM OUTFALL
DETAILS TO BE DETERMINED DURING FINAL DESIGN

UNDERGROUND DETENTION SYSTEM
FOR SINGLE FAMILY DEVELOPMENT
AREA

EXISTING SUBSURFACE SYSTEM
FOR COLLECTION OF RUNOFF
FROM WETLAND AREA

EXISTING DRAINAGE ACROSS CITY PARCEL

EXISTING PIPE DISCHARGE FROM
CENTRAL WETLAND AREA

CENTRAL WETLAND AREA

PROPOSED FRENCH DRAIN SYSTEM FOR
COLLECTION OF RUNOFF FROM WETLAND AREA
AND ROUTE TO EXISTING DISCHARGE LINE

CONTRIBUTING BASIN TO CENTRAL WETLAND AREA - APPROXIMATLEY 34.2AC

0 100 200
SCALE: 1" = 100'

FILE: W:\8973 Lacamas NS\400 Design\500 Drawings\01 Conceptual\02 Exhibits\2025 11 25 Southern Storm Exhibit\Southern Storm Exhibit 1.dwg PLOTSTYLE: Storm.stb

MacKay Sposito
ENERGY PUBLIC WORKS LAND DEVELOPMENT
www.mackaysposito.com

TAYLOR ANDREW WITTLE
STATE OF WASHINGTON
24027
REGISTERED
PROFESSIONAL ENGINEER

12/8/2025

LACAMAS NORTH SHORE
CITY OF CAMAS

SOUTHERN STORM EXHIBIT

REVISIONS:

JOB NO.:	8973
DATE:	12/8/2025
DESIGNED BY:	KEH
DRAWN BY:	KEH
CHECKED BY:	TAW

CONCEPTUAL

EX3.1

WWHM2012

PROJECT REPORT

General Model Information

WWHM2012 Project Name: South Basin Revised w roof to wetland

Site Name:	Lacamas NS
Site Address:	
City:	
Report Date:	12/9/2025
Gage:	Lacamas
Data Start:	1948/10/01
Data End:	2008/09/30
Timestep:	15 Minute
Precip Scale:	1.300
Version Date:	2025/05/13
Version:	4.3.2

POC Thresholds

Low Flow Threshold for POC1:	50 Percent of the 2 Year
High Flow Threshold for POC1:	50 Year

Landuse Basin Data

Predeveloped Land Use

Basin 1

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
SG4, Forest, Flat	54.83
Pervious Total	54.83
Impervious Land Use	acre
Impervious Total	0
Basin Total	54.83

Element Flow Componants:

Surface	Interflow	Groundwater

Componant Flows To:

POC 1	POC 1

Basin 2

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
SG4, Forest, Flat	34.23
Pervious Total	34.23
Impervious Land Use	acre
Impervious Total	0
Basin Total	34.23

Element Flow Componants:

Surface	Interflow	Groundwater

Componant Flows To:

POC 1	POC 1

Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
SG4, Lawn, Flat	21.03
Pervious Total	21.03

Impervious Land Use	acre
ROADS FLAT	6.05
ROOF TOPS FLAT	4.13
SIDEWALKS FLAT	2.23
Impervious Total	12.41
Basin Total	33.44

Element Flow Componants:

Surface	Interflow	Groundwater
Componant Flows To:		
Trapezoidal Pond 1	Trapezoidal Pond 1	

Basin 2

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
SG4, Lawn, Flat	11.26
Pervious Total	11.26

Impervious Land Use	acre
ROADS FLAT	3.73
ROOF TOPS FLAT	3.42
SIDEWALKS FLAT	1.43
Impervious Total	8.58
Basin Total	19.84

Element Flow Componants:

Surface	Interflow	Groundwater
Componant Flows To:		
Trapezoidal Pond 1	Trapezoidal Pond 1	

Basin 3

Bypass:	Yes
GroundWater:	No

Pervious Land Use	acre
SG4, Forest, Flat	34.23
Pervious Total	34.23

Impervious Land Use	acre
ROOF TOPS FLAT	1.54
Impervious Total	1.54
Basin Total	35.77

Element Flow Componants:

Surface	Interflow	Groundwater

Componant Flows To:

POC 1	POC 1	

Routing Elements
Predeveloped Routing

Mitigated Routing

Trapezoidal Pond 1

Bottom Length: 170.00 ft.
Bottom Width: 170.00 ft.
Depth: 5 ft.
Volume at riser head: 2.6907 acre-feet.
Side slope 1: 0 To 1
Side slope 2: 0 To 1
Side slope 3: 0 To 1
Side slope 4: 0 To 1
Discharge Structure
Riser Height: 4 ft.
Riser Diameter: 54 in.
Notch Type: Rectangular
Notch Width: 1.750 ft.
Notch Height: 1.250 ft.
Orifice 1 Diameter: 11.000 in Elevation:0 ft.
Element Outlets:
Outlet 1 Outlet 2
Outlet Flows To:

Pond Hydraulic Table

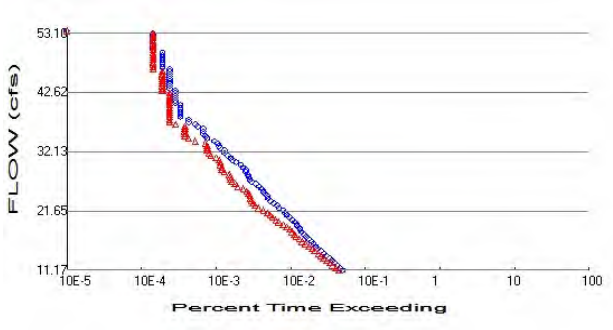
Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.663	0.000	0.000	0.000
0.0556	0.663	0.036	0.773	0.000
0.1111	0.663	0.073	1.094	0.000
0.1667	0.663	0.110	1.340	0.000
0.2222	0.663	0.147	1.547	0.000
0.2778	0.663	0.184	1.730	0.000
0.3333	0.663	0.221	1.895	0.000
0.3889	0.663	0.258	2.047	0.000
0.4444	0.663	0.294	2.189	0.000
0.5000	0.663	0.331	2.321	0.000
0.5556	0.663	0.368	2.447	0.000
0.6111	0.663	0.405	2.566	0.000
0.6667	0.663	0.442	2.681	0.000
0.7222	0.663	0.479	2.790	0.000
0.7778	0.663	0.516	2.895	0.000
0.8333	0.663	0.552	2.997	0.000
0.8889	0.663	0.589	3.095	0.000
0.9444	0.663	0.626	3.191	0.000
1.0000	0.663	0.663	3.283	0.000
1.0556	0.663	0.700	3.373	0.000
1.1111	0.663	0.737	3.461	0.000
1.1667	0.663	0.774	3.546	0.000
1.2222	0.663	0.810	3.630	0.000
1.2778	0.663	0.847	3.711	0.000
1.3333	0.663	0.884	3.791	0.000
1.3889	0.663	0.921	3.869	0.000
1.4444	0.663	0.958	3.946	0.000
1.5000	0.663	0.995	4.021	0.000
1.5556	0.663	1.032	4.095	0.000
1.6111	0.663	1.068	4.167	0.000
1.6667	0.663	1.105	4.239	0.000

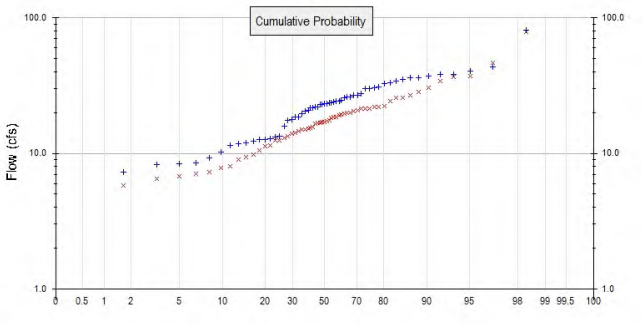
1.7222	0.663	1.142	4.309	0.000
1.7778	0.663	1.179	4.378	0.000
1.8333	0.663	1.216	4.446	0.000
1.8889	0.663	1.253	4.512	0.000
1.9444	0.663	1.290	4.578	0.000
2.0000	0.663	1.326	4.643	0.000
2.0556	0.663	1.363	4.707	0.000
2.1111	0.663	1.400	4.770	0.000
2.1667	0.663	1.437	4.833	0.000
2.2222	0.663	1.474	4.894	0.000
2.2778	0.663	1.511	4.955	0.000
2.3333	0.663	1.548	5.015	0.000
2.3889	0.663	1.584	5.075	0.000
2.4444	0.663	1.621	5.133	0.000
2.5000	0.663	1.658	5.191	0.000
2.5556	0.663	1.695	5.249	0.000
2.6111	0.663	1.732	5.305	0.000
2.6667	0.663	1.769	5.362	0.000
2.7222	0.663	1.806	5.417	0.000
2.7778	0.663	1.842	5.499	0.000
2.8333	0.663	1.879	5.667	0.000
2.8889	0.663	1.916	5.882	0.000
2.9444	0.663	1.953	6.134	0.000
3.0000	0.663	1.990	6.415	0.000
3.0556	0.663	2.027	6.724	0.000
3.1111	0.663	2.064	7.056	0.000
3.1667	0.663	2.100	7.410	0.000
3.2222	0.663	2.137	7.785	0.000
3.2778	0.663	2.174	8.179	0.000
3.3333	0.663	2.211	8.591	0.000
3.3889	0.663	2.248	9.020	0.000
3.4444	0.663	2.285	9.466	0.000
3.5000	0.663	2.322	9.928	0.000
3.5556	0.663	2.358	10.40	0.000
3.6111	0.663	2.395	10.89	0.000
3.6667	0.663	2.432	11.40	0.000
3.7222	0.663	2.469	11.92	0.000
3.7778	0.663	2.506	12.45	0.000
3.8333	0.663	2.543	13.00	0.000
3.8889	0.663	2.580	13.55	0.000
3.9444	0.663	2.617	14.12	0.000
4.0000	0.663	2.653	14.71	0.000
4.0556	0.663	2.690	15.38	0.000
4.1111	0.663	2.727	16.57	0.000
4.1667	0.663	2.764	18.09	0.000
4.2222	0.663	2.801	19.88	0.000
4.2778	0.663	2.838	21.91	0.000
4.3333	0.663	2.875	24.14	0.000
4.3889	0.663	2.911	26.55	0.000
4.4444	0.663	2.948	29.13	0.000
4.5000	0.663	2.985	31.85	0.000
4.5556	0.663	3.022	34.71	0.000
4.6111	0.663	3.059	37.68	0.000
4.6667	0.663	3.096	40.75	0.000
4.7222	0.663	3.133	43.91	0.000
4.7778	0.663	3.169	47.13	0.000
4.8333	0.663	3.206	50.41	0.000
4.8889	0.663	3.243	53.73	0.000

4.9444	0.663	3.280	57.07	0.000
5.0000	0.663	3.317	60.42	0.000
5.0556	0.663	3.354	63.75	0.000

Analysis Results

POC 1





+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1
Total Pervious Area: 89.06
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 66.52
Total Impervious Area: 22.53

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	22.344109
5 year	34.979818
10 year	41.874478
25 year	48.90844
50 year	53.096113
100 year	56.543096

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	16.283888
5 year	25.41149
10 year	32.066895
25 year	41.095244
50 year	48.237759
100 year	55.717006

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1949	17.448	16.894
1950	22.877	16.886
1951	30.220	16.467
1952	17.715	18.511
1953	23.899	15.456
1954	33.306	19.313
1955	18.543	12.421
1956	36.364	36.931
1957	27.656	18.249
1958	20.516	25.831

1959	11.927	8.040
1960	11.780	9.004
1961	32.747	20.826
1962	21.974	14.986
1963	24.417	15.587
1964	23.303	15.006
1965	20.892	19.054
1966	26.700	16.995
1967	23.265	14.263
1968	30.419	19.631
1969	24.787	19.928
1970	81.020	79.014
1971	12.814	10.450
1972	21.788	14.574
1973	21.699	21.334
1974	34.171	36.730
1975	18.621	13.086
1976	26.765	21.411
1977	0.729	4.123
1978	38.152	30.393
1979	25.823	21.342
1980	15.792	11.385
1981	36.269	26.764
1982	24.410	22.271
1983	40.608	25.666
1984	13.249	9.840
1985	10.213	11.322
1986	12.615	9.338
1987	22.014	17.432
1988	8.500	6.473
1989	9.236	7.058
1990	8.378	7.229
1991	23.763	13.875
1992	26.142	15.210
1993	30.729	28.242
1994	23.493	21.973
1995	19.493	22.131
1996	37.280	46.361
1997	43.174	34.015
1998	34.903	18.558
1999	26.084	20.591
2000	12.631	7.771
2001	7.279	5.752
2002	38.095	20.010
2003	29.949	24.358
2004	8.219	6.810
2005	12.286	12.527
2006	22.984	17.288
2007	11.378	16.991
2008	13.352	13.475

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	81.0204	79.0136
2	43.1735	46.3608
3	40.6079	36.9313
4	38.1521	36.7296

5	38.0949	34.0149
6	37.2802	30.3928
7	36.3635	28.2415
8	36.2693	26.7642
9	34.9032	25.8306
10	34.1706	25.6655
11	33.3057	24.3581
12	32.7471	22.2709
13	30.7287	22.1307
14	30.4193	21.9734
15	30.2198	21.4107
16	29.9486	21.3424
17	27.6561	21.3335
18	26.7653	20.8259
19	26.7001	20.5905
20	26.1422	20.0098
21	26.0842	19.9277
22	25.8228	19.6306
23	24.7866	19.3128
24	24.4166	19.0537
25	24.4099	18.5578
26	23.8989	18.5107
27	23.7633	18.2493
28	23.4933	17.4320
29	23.3027	17.2878
30	23.2653	16.9948
31	22.9836	16.9909
32	22.8768	16.8938
33	22.0144	16.8862
34	21.9736	16.4672
35	21.7883	15.5873
36	21.6993	15.4562
37	20.8921	15.2095
38	20.5158	15.0057
39	19.4933	14.9857
40	18.6209	14.5740
41	18.5433	14.2627
42	17.7147	13.8754
43	17.4476	13.4753
44	15.7916	13.0862
45	13.3524	12.5274
46	13.2489	12.4205
47	12.8138	11.3851
48	12.6306	11.3216
49	12.6152	10.4495
50	12.2862	9.8402
51	11.9265	9.3383
52	11.7803	9.0037
53	11.3782	8.0405
54	10.2127	7.7707
55	9.2359	7.2294
56	8.5003	7.0581
57	8.3785	6.8098
58	8.2195	6.4732
59	7.2790	5.7524
60	0.7288	4.1234

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
11.1721	1041	937	90	Pass
11.5955	960	839	87	Pass
12.0190	894	761	85	Pass
12.4425	811	702	86	Pass
12.8660	746	634	84	Pass
13.2894	694	582	83	Pass
13.7129	631	535	84	Pass
14.1364	583	495	84	Pass
14.5599	536	440	82	Pass
14.9833	484	406	83	Pass
15.4068	456	367	80	Pass
15.8303	425	332	78	Pass
16.2538	402	301	74	Pass
16.6772	367	274	74	Pass
17.1007	336	246	73	Pass
17.5242	314	236	75	Pass
17.9477	298	220	73	Pass
18.3711	280	204	72	Pass
18.7946	265	186	70	Pass
19.2181	253	168	66	Pass
19.6416	238	145	60	Pass
20.0650	221	132	59	Pass
20.4885	201	120	59	Pass
20.9120	186	112	60	Pass
21.3355	175	102	58	Pass
21.7589	168	91	54	Pass
22.1824	145	77	53	Pass
22.6059	139	70	50	Pass
23.0294	126	66	52	Pass
23.4528	113	62	54	Pass
23.8763	104	60	57	Pass
24.2998	101	60	59	Pass
24.7233	95	57	60	Pass
25.1467	90	54	60	Pass
25.5702	85	49	57	Pass
25.9937	80	41	51	Pass
26.4172	71	38	53	Pass
26.8406	62	34	54	Pass
27.2641	59	33	55	Pass
27.6876	57	33	57	Pass
28.1111	56	32	57	Pass
28.5345	53	27	50	Pass
28.9580	52	25	48	Pass
29.3815	48	25	52	Pass
29.8050	45	24	53	Pass
30.2284	39	24	61	Pass
30.6519	35	23	65	Pass
31.0754	33	21	63	Pass
31.4989	30	18	60	Pass
31.9223	27	17	62	Pass
32.3458	27	16	59	Pass
32.7693	24	16	66	Pass
33.1928	23	16	69	Pass

33.6162	22	15	68	Pass
34.0397	20	11	55	Pass
34.4632	16	9	56	Pass
34.8867	15	8	53	Pass
35.3101	14	8	57	Pass
35.7336	14	8	57	Pass
36.1571	14	8	57	Pass
36.5806	12	8	66	Pass
37.0041	11	6	54	Pass
37.4275	9	5	55	Pass
37.8510	9	5	55	Pass
38.2745	7	5	71	Pass
38.6980	7	5	71	Pass
39.1214	7	5	71	Pass
39.5449	7	5	71	Pass
39.9684	7	5	71	Pass
40.3919	7	5	71	Pass
40.8153	6	5	83	Pass
41.2388	6	5	83	Pass
41.6623	6	5	83	Pass
42.0858	6	5	83	Pass
42.5092	6	5	83	Pass
42.9327	6	4	66	Pass
43.3562	5	4	80	Pass
43.7797	5	4	80	Pass
44.2031	5	4	80	Pass
44.6266	5	4	80	Pass
45.0501	5	4	80	Pass
45.4736	5	4	80	Pass
45.8970	5	4	80	Pass
46.3205	5	4	80	Pass
46.7440	5	3	60	Pass
47.1675	4	3	75	Pass
47.5909	4	3	75	Pass
48.0144	4	3	75	Pass
48.4379	4	3	75	Pass
48.8614	4	3	75	Pass
49.2848	4	3	75	Pass
49.7083	4	3	75	Pass
50.1318	3	3	100	Pass
50.5553	3	3	100	Pass
50.9787	3	3	100	Pass
51.4022	3	3	100	Pass
51.8257	3	3	100	Pass
52.2492	3	3	100	Pass
52.6726	3	3	100	Pass
53.0961	3	3	100	Pass

Water Quality

Water Quality BMP Flow and Volume for POC #1

On-line facility volume:	2.3746 acre-feet
On-line facility target flow:	3.2304 cfs.
Adjusted for 15 min:	3.2304 cfs.
Off-line facility target flow:	1.7176 cfs.
Adjusted for 15 min:	1.7176 cfs.

POC 2

POC #2 was not reported because POC must exist in both scenarios and both scenarios must have been run.

Model Default Modifications

Total of 0 changes have been made.

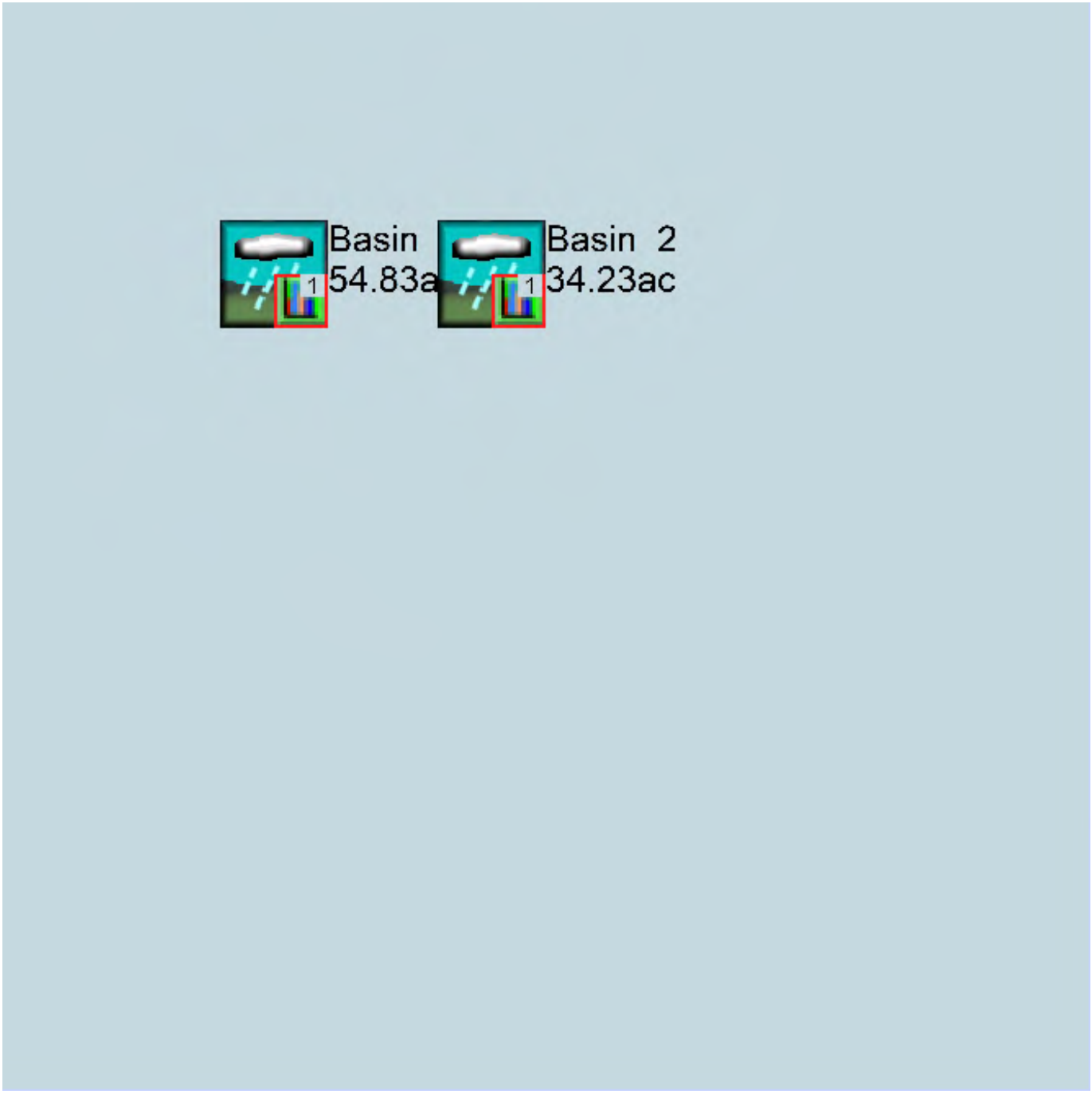
PERLND Changes

No PERLND changes have been made.

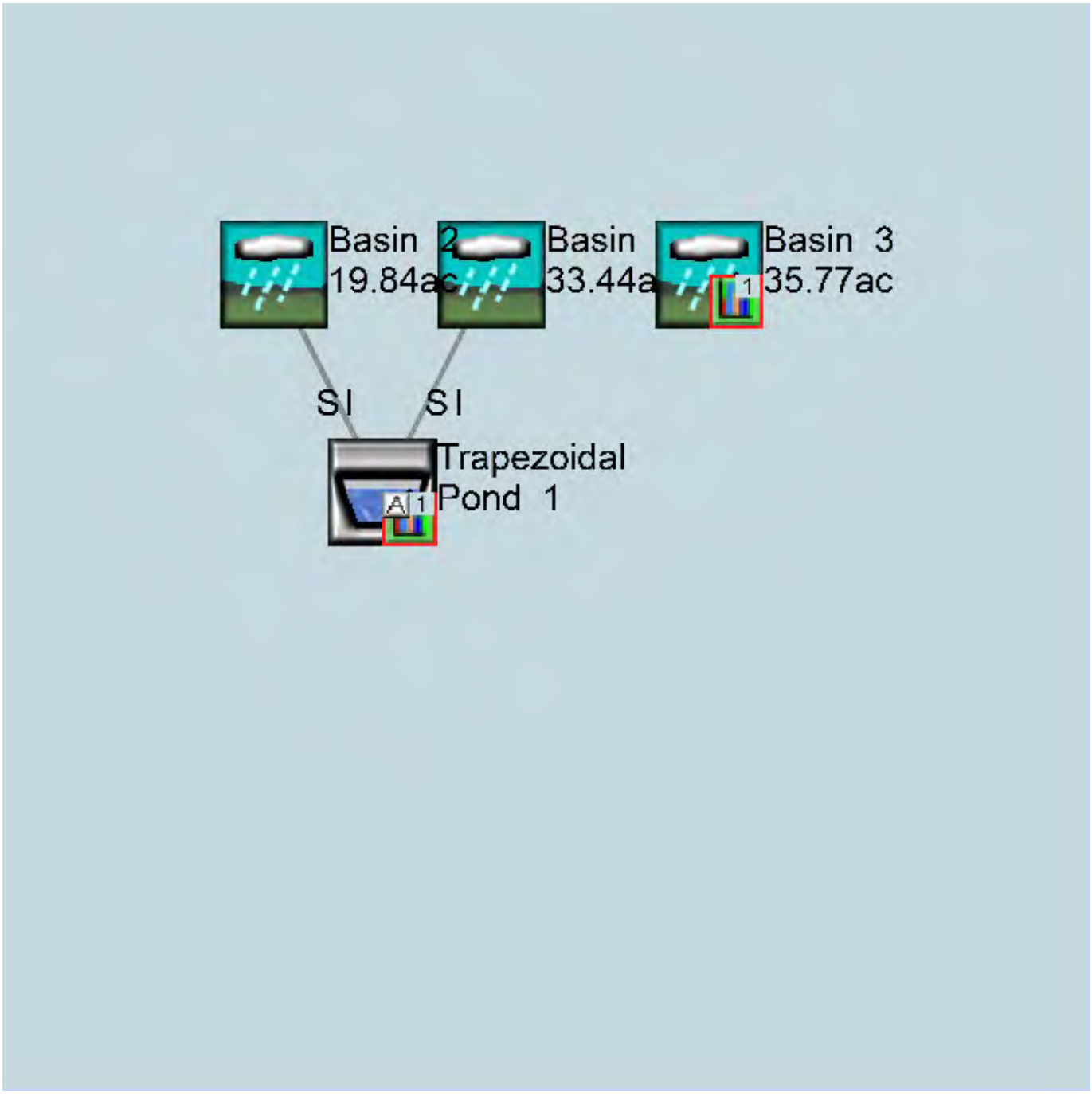
IMPLND Changes

No IMPLND changes have been made.

Appendix
Predeveloped Schematic



Mitigated Schematic



Predeveloped UCI File

Mitigated UCI File

Predeveloped HSPF Message File

Mitigated HSPF Message File

Disclaimer

Legal Notice

This program and accompanying documentation are provided 'as-is' without warranty of any kind. The entire risk regarding the performance and results of this program is assumed by End User. Clear Creek Solutions Inc. and the governmental licensee or sublicensees disclaim all warranties, either expressed or implied, including but not limited to implied warranties of program and accompanying documentation. In no event shall Clear Creek Solutions Inc. be liable for any damages whatsoever (including without limitation to damages for loss of business profits, loss of business information, business interruption, and the like) arising out of the use of, or inability to use this program even if Clear Creek Solutions Inc. or their authorized representatives have been advised of the possibility of such damages. Software Copyright © by : Clear Creek Solutions, Inc. 2005-2025; All Rights Reserved.

Clear Creek Solutions, Inc.
6200 Capitol Blvd. Ste F
Olympia, WA. 98501
Toll Free 1(866)943-0304
Local (360)943-0304

www.clearcreeksolutions.com

WWHM2012

PROJECT REPORT

General Model Information

WWHM2012 Project Name: Sth Basin Rev w roof to wetland w 34 Ac removed

Site Name:	Lacamas NS
Site Address:	
City:	
Report Date:	12/9/2025
Gage:	Lacamas
Data Start:	1948/10/01
Data End:	2008/09/30
Timestep:	15 Minute
Precip Scale:	1.300
Version Date:	2025/05/13
Version:	4.3.2

POC Thresholds

Low Flow Threshold for POC1:	50 Percent of the 2 Year
High Flow Threshold for POC1:	50 Year

Landuse Basin Data

Predeveloped Land Use

Basin 1

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
SG4, Forest, Flat	54.83
Pervious Total	54.83
Impervious Land Use	acre
Impervious Total	0
Basin Total	54.83

Element Flow Componants:

Surface	Interflow	Groundwater

Componant Flows To:

POC 1	POC 1

Basin 2

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
SG4, Forest, Flat	34.23
Pervious Total	34.23
Impervious Land Use	acre
Impervious Total	0
Basin Total	34.23

Element Flow Componants:

Surface	Interflow	Groundwater

Componant Flows To:

POC 1	POC 1

Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
SG4, Lawn, Flat	21.03
Pervious Total	21.03

Impervious Land Use	acre
ROADS FLAT	6.05
ROOF TOPS FLAT	4.13
SIDEWALKS FLAT	2.23
Impervious Total	12.41
Basin Total	33.44

Element Flow Componants:

Surface	Interflow	Groundwater
Componant Flows To:		
Trapezoidal Pond 1	Trapezoidal Pond 1	

Basin 2

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
SG4, Lawn, Flat	11.26
Pervious Total	11.26

Impervious Land Use	acre
ROADS FLAT	3.73
ROOF TOPS FLAT	3.42
SIDEWALKS FLAT	1.43
Impervious Total	8.58
Basin Total	19.84

Element Flow Componants:

Surface	Interflow	Groundwater
Componant Flows To:		
Trapezoidal Pond 1	Trapezoidal Pond 1	

Routing Elements
Predeveloped Routing

Mitigated Routing

Trapezoidal Pond 1

Bottom Length: 170.00 ft.
Bottom Width: 170.00 ft.
Depth: 5 ft.
Volume at riser head: 2.6907 acre-feet.
Side slope 1: 0 To 1
Side slope 2: 0 To 1
Side slope 3: 0 To 1
Side slope 4: 0 To 1
Discharge Structure
Riser Height: 4 ft.
Riser Diameter: 54 in.
Notch Type: Rectangular
Notch Width: 1.750 ft.
Notch Height: 1.250 ft.
Orifice 1 Diameter: 11.000 in Elevation:0 ft.
Element Outlets:
Outlet 1 Outlet 2
Outlet Flows To:

Pond Hydraulic Table

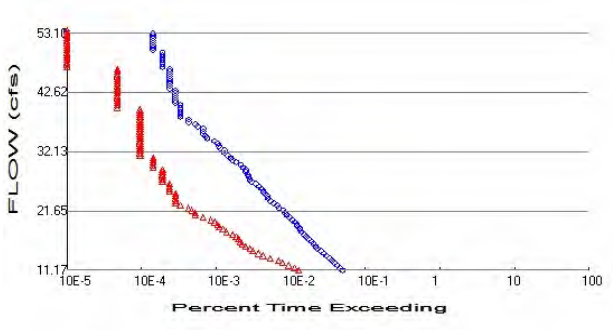
Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.663	0.000	0.000	0.000
0.0556	0.663	0.036	0.773	0.000
0.1111	0.663	0.073	1.094	0.000
0.1667	0.663	0.110	1.340	0.000
0.2222	0.663	0.147	1.547	0.000
0.2778	0.663	0.184	1.730	0.000
0.3333	0.663	0.221	1.895	0.000
0.3889	0.663	0.258	2.047	0.000
0.4444	0.663	0.294	2.189	0.000
0.5000	0.663	0.331	2.321	0.000
0.5556	0.663	0.368	2.447	0.000
0.6111	0.663	0.405	2.566	0.000
0.6667	0.663	0.442	2.681	0.000
0.7222	0.663	0.479	2.790	0.000
0.7778	0.663	0.516	2.895	0.000
0.8333	0.663	0.552	2.997	0.000
0.8889	0.663	0.589	3.095	0.000
0.9444	0.663	0.626	3.191	0.000
1.0000	0.663	0.663	3.283	0.000
1.0556	0.663	0.700	3.373	0.000
1.1111	0.663	0.737	3.461	0.000
1.1667	0.663	0.774	3.546	0.000
1.2222	0.663	0.810	3.630	0.000
1.2778	0.663	0.847	3.711	0.000
1.3333	0.663	0.884	3.791	0.000
1.3889	0.663	0.921	3.869	0.000
1.4444	0.663	0.958	3.946	0.000
1.5000	0.663	0.995	4.021	0.000
1.5556	0.663	1.032	4.095	0.000
1.6111	0.663	1.068	4.167	0.000
1.6667	0.663	1.105	4.239	0.000

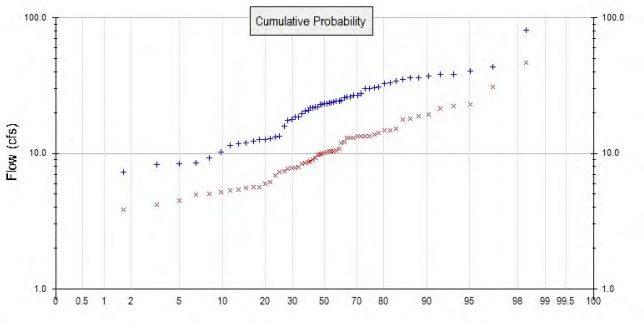
1.7222	0.663	1.142	4.309	0.000
1.7778	0.663	1.179	4.378	0.000
1.8333	0.663	1.216	4.446	0.000
1.8889	0.663	1.253	4.512	0.000
1.9444	0.663	1.290	4.578	0.000
2.0000	0.663	1.326	4.643	0.000
2.0556	0.663	1.363	4.707	0.000
2.1111	0.663	1.400	4.770	0.000
2.1667	0.663	1.437	4.833	0.000
2.2222	0.663	1.474	4.894	0.000
2.2778	0.663	1.511	4.955	0.000
2.3333	0.663	1.548	5.015	0.000
2.3889	0.663	1.584	5.075	0.000
2.4444	0.663	1.621	5.133	0.000
2.5000	0.663	1.658	5.191	0.000
2.5556	0.663	1.695	5.249	0.000
2.6111	0.663	1.732	5.305	0.000
2.6667	0.663	1.769	5.362	0.000
2.7222	0.663	1.806	5.417	0.000
2.7778	0.663	1.842	5.499	0.000
2.8333	0.663	1.879	5.667	0.000
2.8889	0.663	1.916	5.882	0.000
2.9444	0.663	1.953	6.134	0.000
3.0000	0.663	1.990	6.415	0.000
3.0556	0.663	2.027	6.724	0.000
3.1111	0.663	2.064	7.056	0.000
3.1667	0.663	2.100	7.410	0.000
3.2222	0.663	2.137	7.785	0.000
3.2778	0.663	2.174	8.179	0.000
3.3333	0.663	2.211	8.591	0.000
3.3889	0.663	2.248	9.020	0.000
3.4444	0.663	2.285	9.466	0.000
3.5000	0.663	2.322	9.928	0.000
3.5556	0.663	2.358	10.40	0.000
3.6111	0.663	2.395	10.89	0.000
3.6667	0.663	2.432	11.40	0.000
3.7222	0.663	2.469	11.92	0.000
3.7778	0.663	2.506	12.45	0.000
3.8333	0.663	2.543	13.00	0.000
3.8889	0.663	2.580	13.55	0.000
3.9444	0.663	2.617	14.12	0.000
4.0000	0.663	2.653	14.71	0.000
4.0556	0.663	2.690	15.38	0.000
4.1111	0.663	2.727	16.57	0.000
4.1667	0.663	2.764	18.09	0.000
4.2222	0.663	2.801	19.88	0.000
4.2778	0.663	2.838	21.91	0.000
4.3333	0.663	2.875	24.14	0.000
4.3889	0.663	2.911	26.55	0.000
4.4444	0.663	2.948	29.13	0.000
4.5000	0.663	2.985	31.85	0.000
4.5556	0.663	3.022	34.71	0.000
4.6111	0.663	3.059	37.68	0.000
4.6667	0.663	3.096	40.75	0.000
4.7222	0.663	3.133	43.91	0.000
4.7778	0.663	3.169	47.13	0.000
4.8333	0.663	3.206	50.41	0.000
4.8889	0.663	3.243	53.73	0.000

4.9444	0.663	3.280	57.07	0.000
5.0000	0.663	3.317	60.42	0.000
5.0556	0.663	3.354	63.75	0.000

Analysis Results

POC 1





\+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1
Total Pervious Area: 89.06
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 32.29
Total Impervious Area: 20.99

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	22.344109
5 year	34.979818
10 year	41.874478
25 year	48.90844
50 year	53.096113
100 year	56.543096

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	9.667273
5 year	15.246935
10 year	19.640866
25 year	26.031016
50 year	31.428534
100 year	37.396735

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1949	17.448	10.326
1950	22.877	9.750
1951	30.220	8.745
1952	17.715	12.999
1953	23.899	7.417
1954	33.306	9.307
1955	18.543	6.883
1956	36.364	22.233
1957	27.656	10.561
1958	20.516	19.256

1959	11.927	4.511
1960	11.780	6.099
1961	32.747	13.017
1962	21.974	8.569
1963	24.417	7.938
1964	23.303	8.461
1965	20.892	12.113
1966	26.700	10.336
1967	23.265	8.330
1968	30.419	9.865
1969	24.787	18.822
1970	81.020	46.940
1971	12.814	5.299
1972	21.788	7.851
1973	21.699	13.374
1974	34.171	22.882
1975	18.621	7.252
1976	26.765	11.961
1977	0.729	3.861
1978	38.152	18.115
1979	25.823	14.859
1980	15.792	5.433
1981	36.269	15.196
1982	24.410	13.464
1983	40.608	14.240
1984	13.249	5.947
1985	10.213	10.085
1986	12.615	5.607
1987	22.014	10.319
1988	8.500	4.925
1989	9.236	5.657
1990	8.378	5.154
1991	23.763	7.661
1992	26.142	5.575
1993	30.729	17.788
1994	23.493	13.349
1995	19.493	14.729
1996	37.280	31.090
1997	43.174	21.454
1998	34.903	10.279
1999	26.084	12.988
2000	12.631	4.200
2001	7.279	3.833
2002	38.095	9.894
2003	29.949	13.405
2004	8.219	5.020
2005	12.286	7.817
2006	22.984	9.046
2007	11.378	13.717
2008	13.352	10.859

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	81.0204	46.9396
2	43.1735	31.0901
3	40.6079	22.8820
4	38.1521	22.2332

5	38.0949	21.4544
6	37.2802	19.2562
7	36.3635	18.8224
8	36.2693	18.1154
9	34.9032	17.7882
10	34.1706	15.1961
11	33.3057	14.8587
12	32.7471	14.7289
13	30.7287	14.2396
14	30.4193	13.7169
15	30.2198	13.4639
16	29.9486	13.4054
17	27.6561	13.3740
18	26.7653	13.3490
19	26.7001	13.0167
20	26.1422	12.9988
21	26.0842	12.9875
22	25.8228	12.1128
23	24.7866	11.9606
24	24.4166	10.8590
25	24.4099	10.5607
26	23.8989	10.3357
27	23.7633	10.3259
28	23.4933	10.3193
29	23.3027	10.2792
30	23.2653	10.0847
31	22.9836	9.8944
32	22.8768	9.8648
33	22.0144	9.7502
34	21.9736	9.3071
35	21.7883	9.0464
36	21.6993	8.7448
37	20.8921	8.5690
38	20.5158	8.4613
39	19.4933	8.3304
40	18.6209	7.9376
41	18.5433	7.8514
42	17.7147	7.8170
43	17.4476	7.6608
44	15.7916	7.4175
45	13.3524	7.2520
46	13.2489	6.8834
47	12.8138	6.0993
48	12.6306	5.9473
49	12.6152	5.6571
50	12.2862	5.6075
51	11.9265	5.5752
52	11.7803	5.4329
53	11.3782	5.2993
54	10.2127	5.1538
55	9.2359	5.0198
56	8.5003	4.9248
57	8.3785	4.5114
58	8.2195	4.1999
59	7.2790	3.8607
60	0.7288	3.8325

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
11.1721	1041	267	25	Pass
11.5955	960	237	24	Pass
12.0190	894	198	22	Pass
12.4425	811	164	20	Pass
12.8660	746	144	19	Pass
13.2894	694	112	16	Pass
13.7129	631	90	14	Pass
14.1364	583	78	13	Pass
14.5599	536	65	12	Pass
14.9833	484	60	12	Pass
15.4068	456	52	11	Pass
15.8303	425	47	11	Pass
16.2538	402	44	10	Pass
16.6772	367	42	11	Pass
17.1007	336	39	11	Pass
17.5242	314	35	11	Pass
17.9477	298	29	9	Pass
18.3711	280	26	9	Pass
18.7946	265	23	8	Pass
19.2181	253	22	8	Pass
19.6416	238	20	8	Pass
20.0650	221	18	8	Pass
20.4885	201	14	6	Pass
20.9120	186	11	5	Pass
21.3355	175	11	6	Pass
21.7589	168	10	5	Pass
22.1824	145	9	6	Pass
22.6059	139	7	5	Pass
23.0294	126	6	4	Pass
23.4528	113	6	5	Pass
23.8763	104	6	5	Pass
24.2998	101	6	5	Pass
24.7233	95	6	6	Pass
25.1467	90	5	5	Pass
25.5702	85	5	5	Pass
25.9937	80	5	6	Pass
26.4172	71	5	7	Pass
26.8406	62	4	6	Pass
27.2641	59	4	6	Pass
27.6876	57	4	7	Pass
28.1111	56	4	7	Pass
28.5345	53	4	7	Pass
28.9580	52	4	7	Pass
29.3815	48	3	6	Pass
29.8050	45	3	6	Pass
30.2284	39	3	7	Pass
30.6519	35	3	8	Pass
31.0754	33	3	9	Pass
31.4989	30	2	6	Pass
31.9223	27	2	7	Pass
32.3458	27	2	7	Pass
32.7693	24	2	8	Pass
33.1928	23	2	8	Pass

33.6162	22	2	9	Pass
34.0397	20	2	10	Pass
34.4632	16	2	12	Pass
34.8867	15	2	13	Pass
35.3101	14	2	14	Pass
35.7336	14	2	14	Pass
36.1571	14	2	14	Pass
36.5806	12	2	16	Pass
37.0041	11	2	18	Pass
37.4275	9	2	22	Pass
37.8510	9	2	22	Pass
38.2745	7	2	28	Pass
38.6980	7	2	28	Pass
39.1214	7	2	28	Pass
39.5449	7	2	28	Pass
39.9684	7	1	14	Pass
40.3919	7	1	14	Pass
40.8153	6	1	16	Pass
41.2388	6	1	16	Pass
41.6623	6	1	16	Pass
42.0858	6	1	16	Pass
42.5092	6	1	16	Pass
42.9327	6	1	16	Pass
43.3562	5	1	20	Pass
43.7797	5	1	20	Pass
44.2031	5	1	20	Pass
44.6266	5	1	20	Pass
45.0501	5	1	20	Pass
45.4736	5	1	20	Pass
45.8970	5	1	20	Pass
46.3205	5	1	20	Pass
46.7440	5	1	20	Pass
47.1675	4	0	0	Pass
47.5909	4	0	0	Pass
48.0144	4	0	0	Pass
48.4379	4	0	0	Pass
48.8614	4	0	0	Pass
49.2848	4	0	0	Pass
49.7083	4	0	0	Pass
50.1318	3	0	0	Pass
50.5553	3	0	0	Pass
50.9787	3	0	0	Pass
51.4022	3	0	0	Pass
51.8257	3	0	0	Pass
52.2492	3	0	0	Pass
52.6726	3	0	0	Pass
53.0961	3	0	0	Pass

Water Quality

Water Quality BMP Flow and Volume for POC #1

On-line facility volume:	2.3746 acre-feet
On-line facility target flow:	3.2304 cfs.
Adjusted for 15 min:	3.2304 cfs.
Off-line facility target flow:	1.7176 cfs.
Adjusted for 15 min:	1.7176 cfs.

POC 2

POC #2 was not reported because POC must exist in both scenarios and both scenarios must have been run.

Model Default Modifications

Total of 0 changes have been made.

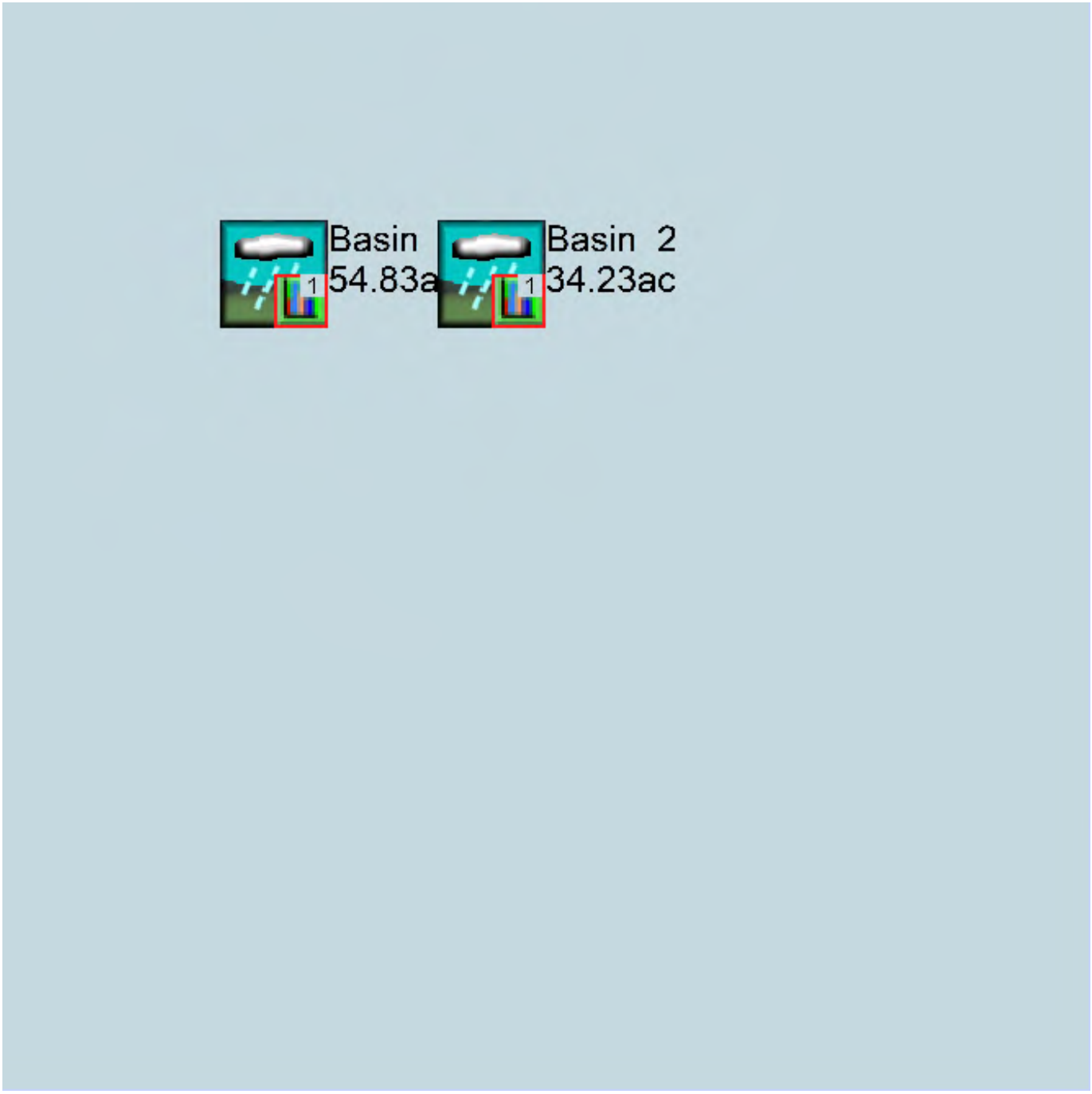
PERLND Changes

No PERLND changes have been made.

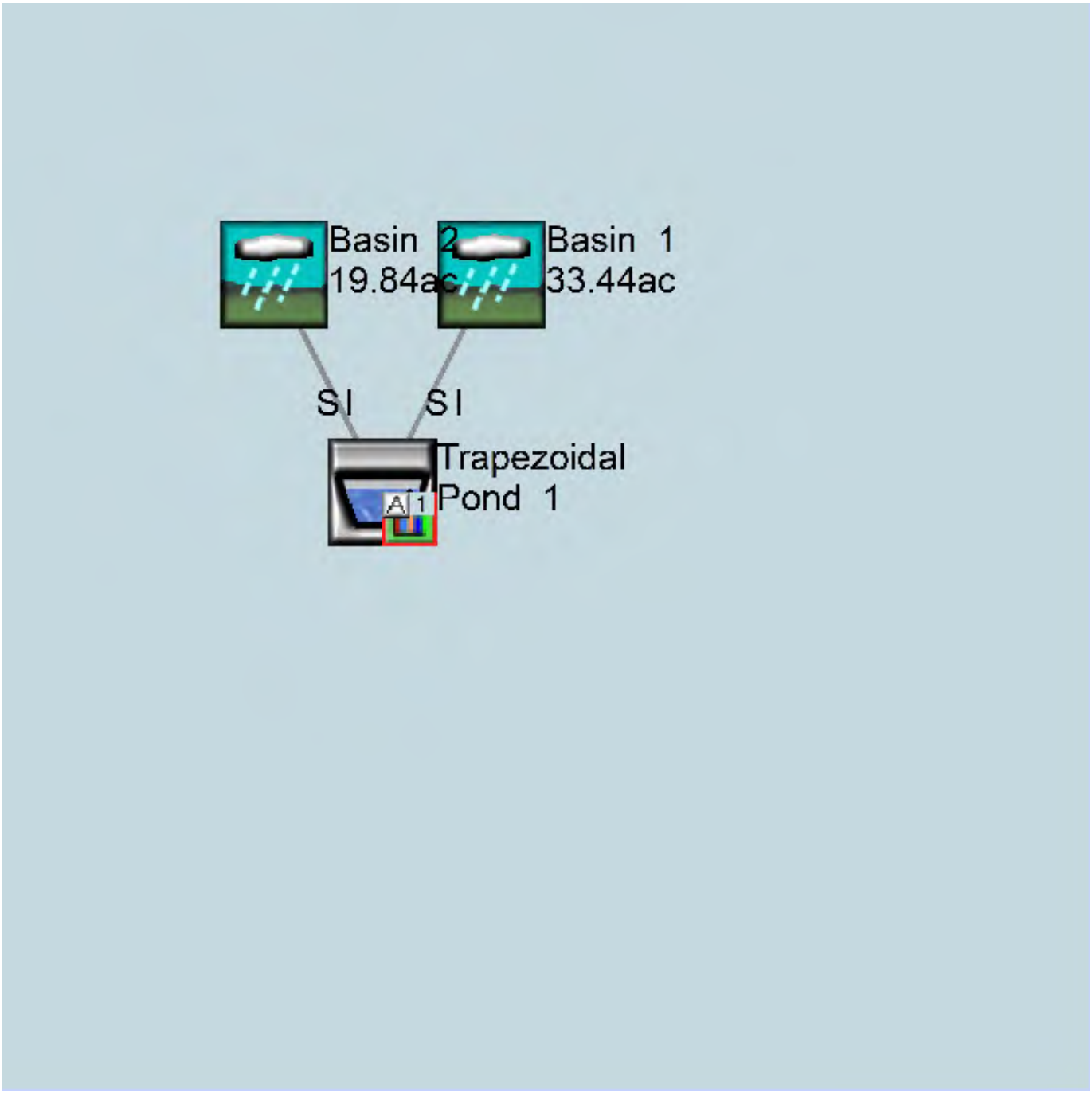
IMPLND Changes

No IMPLND changes have been made.

Appendix
Predeveloped Schematic



Mitigated Schematic



Predeveloped UCI File

Mitigated UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1948 10 01        END    2008 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                   UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   Sth Basin Rev w roof to wetland w 34 Ac removed.wdm
MESSU       25   MitSth Basin Rev w roof to wetland w 34 Ac removed.MES
            27   MitSth Basin Rev w roof to wetland w 34 Ac removed.L61
            28   MitSth Basin Rev w roof to wetland w 34 Ac removed.L62
            30   POCSth Basin Rev w roof to wetland w 34 Ac removed1.dat
END FILES

OPN SEQUENCE
    INGRP              INDELT 00:15
      PERLND      34
      IMPLND       1
      IMPLND       4
      IMPLND       8
      RCHRES       1
      COPY         1
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title----------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Trapezoidal Pond  1         MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                          in  out           ***
   34     SG4, Lawn, Flat         1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   34         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
```

```
    <PLS > ***************** Print-flags **************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   34         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   34         0    0    0    0    0    0    0    0    0    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   34              0         6      0.02       400      0.05         0      0.96
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   34              0         0         3         2         0         0         0
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                              ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   34           0.1       0.2      0.25         2       0.4      0.25
  END PWAT-PARM4

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
             ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
   34              0         0         0         0       2.5         1         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                  in  out           ***
    1      ROADS/FLAT             1    1    1   27    0
    4      ROOF TOPS/FLAT         1    1    1   27    0
    8      SIDEWALKS/FLAT         1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
    1         0    0    1    0    0    0
    4         0    0    1    0    0    0
    8         0    0    1    0    0    0
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
    1         0    0    4    0    0    4    1    9
    4         0    0    4    0    0    0    1    9
    8         0    0    4    0    0    0    1    9
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
    1         0    0    0    0    0
    4         0    0    0    0    0
    8         0    0    0    0    0
```

```
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >       IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
    1            400      0.01       0.1       0.1
    4            400      0.01       0.1       0.1
    8            400      0.01       0.1       0.1
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >       IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
    1              0         0
    4              0         0
    8              0         0
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
    1              0         0
    4              0         0
    8              0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                 <--Area-->     <-Target->   MBLK   ***
<Name>   #                 <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND  34                      21.03     RCHRES   1      2
PERLND  34                      21.03     RCHRES   1      3
IMPLND   1                       6.05     RCHRES   1      5
IMPLND   4                       4.13     RCHRES   1      5
IMPLND   8                       2.23     RCHRES   1      5
Basin  2***
PERLND  34                      11.26     RCHRES   1      2
PERLND  34                      11.26     RCHRES   1      3
IMPLND   1                       3.73     RCHRES   1      5
IMPLND   4                       3.42     RCHRES   1      5
IMPLND   8                       1.43     RCHRES   1      5

******Routing******
PERLND  34                      21.03     COPY     1     12
IMPLND   1                       6.05     COPY     1     15
IMPLND   4                       4.13     COPY     1     15
IMPLND   8                       2.23     COPY     1     15
PERLND  34                      21.03     COPY     1     13
PERLND  34                      11.26     COPY     1     12
IMPLND   1                       3.73     COPY     1     15
IMPLND   4                       3.42     COPY     1     15
IMPLND   8                       1.43     COPY     1     15
PERLND  34                      11.26     COPY     1     13
RCHRES   1                          1     COPY   501     16
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   48.4        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
```

```
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<----------------><---> User T-series  Engl Metr LKFG             ***
                                       in  out                              ***
    1     Trapezoidal Pond-007    1    1    1    1   28    0    1
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
    1         1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ****************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
    1         4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                   ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
          FG FG FG FG  possible  exit  *** possible  exit      possible  exit
           *  *  *  *    *  *  *  *  *      *  *  *  *  *         ***
    1      0  1  0  0    4  0  0  0  0       0  0  0  0  0        2  2  2  2  2
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><-------->       ***
    1              1      0.03       0.0       0.0       0.5       0.0
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                      ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
    1           0         4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
  FTABLE      1
   91    4
     Depth      Area    Volume  Outflow1 Velocity  Travel Time***
      (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
  0.000000  0.663453  0.000000  0.000000
  0.055556  0.663453  0.036858  0.773941
  0.111111  0.663453  0.073717  1.094518
  0.166667  0.663453  0.110575  1.340505
  0.222222  0.663453  0.147434  1.547882
  0.277778  0.663453  0.184292  1.730585
  0.333333  0.663453  0.221151  1.895760
  0.388889  0.663453  0.258009  2.047655
  0.444444  0.663453  0.294868  2.189036
  0.500000  0.663453  0.331726  2.321823
  0.555556  0.663453  0.368585  2.447416
  0.611111  0.663453  0.405443  2.566872
  0.666667  0.663453  0.442302  2.681010
  0.722222  0.663453  0.479160  2.790484
  0.777778  0.663453  0.516019  2.895822
  0.833333  0.663453  0.552877  2.997461
  0.888889  0.663453  0.589736  3.095764
  0.944444  0.663453  0.626594  3.191040
  1.000000  0.663453  0.663453  3.283553
  1.055556  0.663453  0.700311  3.373531
  1.111111  0.663453  0.737170  3.461169
```

1.166667	0.663453	0.774028	3.546643
1.222222	0.663453	0.810887	3.630105
1.277778	0.663453	0.847745	3.711691
1.333333	0.663453	0.884604	3.791521
1.388889	0.663453	0.921462	3.869705
1.444444	0.663453	0.958321	3.946340
1.500000	0.663453	0.995179	4.021515
1.555556	0.663453	1.032038	4.095311
1.611111	0.663453	1.068896	4.167800
1.666667	0.663453	1.105755	4.239049
1.722222	0.663453	1.142613	4.309121
1.777778	0.663453	1.179471	4.378071
1.833333	0.663453	1.216330	4.445952
1.888889	0.663453	1.253188	4.512813
1.944444	0.663453	1.290047	4.578697
2.000000	0.663453	1.326905	4.643646
2.055556	0.663453	1.363764	4.707699
2.111111	0.663453	1.400622	4.770893
2.166667	0.663453	1.437481	4.833260
2.222222	0.663453	1.474339	4.894833
2.277778	0.663453	1.511198	4.955640
2.333333	0.663453	1.548056	5.015711
2.388889	0.663453	1.584915	5.075070
2.444444	0.663453	1.621773	5.133744
2.500000	0.663453	1.658632	5.191754
2.555556	0.663453	1.695490	5.249123
2.611111	0.663453	1.732349	5.305872
2.666667	0.663453	1.769207	5.362020
2.722222	0.663453	1.806066	5.417587
2.777778	0.663453	1.842924	5.499568
2.833333	0.663453	1.879783	5.667232
2.888889	0.663453	1.916641	5.882604
2.944444	0.663453	1.953500	6.134037
3.000000	0.663453	1.990358	6.415719
3.055556	0.663453	2.027217	6.723977
3.111111	0.663453	2.064075	7.056216
3.166667	0.663453	2.100934	7.410474
3.222222	0.663453	2.137792	7.785204
3.277778	0.663453	2.174651	8.179143
3.333333	0.663453	2.211509	8.591237
3.388889	0.663453	2.248368	9.020586
3.444444	0.663453	2.285226	9.466413
3.500000	0.663453	2.322084	9.928038
3.555556	0.663453	2.358943	10.40486
3.611111	0.663453	2.395801	10.89633
3.666667	0.663453	2.432660	11.40198
3.722222	0.663453	2.469518	11.92136
3.777778	0.663453	2.506377	12.45407
3.833333	0.663453	2.543235	12.99975
3.888889	0.663453	2.580094	13.55804
3.944444	0.663453	2.616952	14.12865
4.000000	0.663453	2.653811	14.71129
4.055556	0.663453	2.690669	15.38219
4.111111	0.663453	2.727528	16.56997
4.166667	0.663453	2.764386	18.09334
4.222222	0.663453	2.801245	19.88708
4.277778	0.663453	2.838103	21.91256
4.333333	0.663453	2.874962	24.14242
4.388889	0.663453	2.911820	26.55499
4.444444	0.663453	2.948679	29.13175
4.500000	0.663453	2.985537	31.85585
4.555556	0.663453	3.022396	34.71140
4.611111	0.663453	3.059254	37.68288
4.666667	0.663453	3.096113	40.75491
4.722222	0.663453	3.132971	43.91205
4.777778	0.663453	3.169830	47.13866
4.833333	0.663453	3.206688	50.41891
4.888889	0.663453	3.243547	53.73678
4.944444	0.663453	3.280405	57.07606
5.000000	0.663453	3.317264	60.42046

```
  END FTABLE  1
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.3            PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.3            IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    0.8            PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    0.8            IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
RCHRES   1 HYDR   RO     1 1        1      WDM   1000 FLOW     ENGL      REPL
RCHRES   1 HYDR   STAGE  1 1        1      WDM   1001 STAG     ENGL      REPL
COPY     1 OUTPUT MEAN   1 1     48.4      WDM    701 FLOW     ENGL      REPL
COPY   501 OUTPUT MEAN   1 1     48.4      WDM    801 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK        2
PERLND     PWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    2

  MASS-LINK        3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    3

  MASS-LINK        5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    5

  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13

  MASS-LINK       15
IMPLND     IWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   15

  MASS-LINK       16
RCHRES     ROFLOW                          COPY           INPUT  MEAN
  END MASS-LINK   16


END MASS-LINK

END RUN
```

Predeveloped HSPF Message File

Mitigated HSPF Message File

Disclaimer

Legal Notice

This program and accompanying documentation are provided 'as-is' without warranty of any kind. The entire risk regarding the performance and results of this program is assumed by End User. Clear Creek Solutions Inc. and the governmental licensee or sublicensees disclaim all warranties, either expressed or implied, including but not limited to implied warranties of program and accompanying documentation. In no event shall Clear Creek Solutions Inc. be liable for any damages whatsoever (including without limitation to damages for loss of business profits, loss of business information, business interruption, and the like) arising out of the use of, or inability to use this program even if Clear Creek Solutions Inc. or their authorized representatives have been advised of the possibility of such damages. Software Copyright © by : Clear Creek Solutions, Inc. 2005-2025; All Rights Reserved.

Clear Creek Solutions, Inc.
6200 Capitol Blvd. Ste F
Olympia, WA. 98501
Toll Free 1(866)943-0304
Local (360)943-0304

www.clearcreeksolutions.com