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FINAL
City of Centralia
Comprehensive Plan
Transportation Element

Final Draft Version

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1. Introduction

The City of Centralia was settled in 1852 along the junction of the Chehalis and Skookumchuck Rivers. Once known as a "Hub City," or midway point, between Seattle and Portland, major rail routes transferred in Centralia to transport goods across the state. Rail industry and passenger trains spurred local economic activity. The Port of Centralia's industrial parks continue to drive economic and freight activity between Portland and Seattle. Recreational open spaces and attractions, such as Borst Park, the Factory Outlets, and Downtown, continue to draw visitors throughout the region. Population and employment are anticipated to increase placing an increasing demand for quality transportation infrastructure. The purpose of the Transportation Element Update of the Comprehensive Plan is to document the conditions of transportation system(s) in the City of Centralia while planning for preservation of an efficient and functional transportation network. The Transportation Element Update updates the transportation solutions list from 2017, identifies new improvements, and prioritizes amongst all project solutions.

The Transportation Element is compliant with existing federal, state and local policies. It is compliant with the elements of the Growth Management Act (GMA) and it is consistent with safety design standards implemented by the Washington State Department of Transportation (WSDOT). The Transportation Element is also consistent with Lewis County Planning and Development goals, the Lewis County Arterial Analysis Study, Parks and Open Space Plan, and the WSDOT Master Transportation Plan.

The study area for the Centralia Transportation Element update includes the area within the city limits of Centralia as well as the designated Urban Growth Area (UGA). The city of Centralia is located approximately 25 miles south of Olympia and 42 miles North of Kelso along Interstate 5 (I-5) in Washington. All roadway facilities in the study area fall under the jurisdiction of the City of Centralia, Lewis County or the Washington State Department of Transportation (WSDOT). I-5 and SR 507 are state highway facilities located within the study area. The study area is primarily level terrain with some rising elevations in the eastern portion of the study area. The confluence of the Chehalis and Skookumchuck Rivers are located within the study area as well as Borst, Hayes and Plumber lakes. Centralia contains some significant floodplain areas. Existing land uses include commercial, industrial, low and medium density residential, public facilities and parks and open space.

Commercial development is mostly concentrated in three areas: near the Harrison and Mellen interchanges, in the Central Business District (CBD), and in the southeast portion of the city near Gold Street and Kresky Avenue. Industrial land is primarily located along Harrison Avenue, west of I-5 in the northeastern portion of the city. Other industrial areas are located south and outside the city limits within the UGA along Old Highway 99.

Residential is the primary land use when measured by acreage within the city. Significant residential concentrations are located in the southwest portion of the city, west of the Chehalis River, surrounding the CBD, and to the east of the CBD and rail lines. Public facilities are dispersed throughout the city with only Centralia High School located outside the city limits, but within the designated UGA.

2. Community Outreach and Engagement

The Centralia transportation element update gave impetus to the partnership with members of the local community and key stakeholders. Key elements of the plan were presented to the community and stakeholders at open houses and workshops by the consultants and City officials, wherein meaningful feedback was received, reflecting the transportation needs of the present-day community in Centralia.

In an effort to comprehensively connect with the community, a Planning and Transportation Open House was conducted on September 19, 2024, at Borst Park Kitchens from 5 - 7 PM which was attended by about 120 people. At this event, the Existing Conditions Technical Memorandum and the 6-year Transportation Improvement Projects were presented to the attendees. Specifically, the following five maps/boards were presented and discussed in detail with the members of the community and the stakeholders:

- Crashes and Traffic Level of Service (LOS)
- Speed Limits and Signalized Intersections
- Transit Routes and Stops
- Pedestrian and Bicycle Facilities with Americans with Disability Act (ADA) Ramps
- Planned Transportation Projects

The Open House promoted a detailed fruitful discussion, and the consultants and City officials received valuable feedback on topics such as traffic safety and speed, active transportation safety, traffic congestion in select locations, truck traffic to and from Port, enforcement of speed limits, and necessary safety upgrades, among others. The image below presents a snapshot of activities at this Open House.

Attendees looking at presentation boards at the Open House on September 19, 2024.

On February 25, 2025, a joint workshop was conducted with the Centralia City Council and Planning Commission at the City Hall in Centralia. The agenda and discussion items at this workshop included the project overview, public outreach, existing conditions, future conditions for 2045, short-term 6-year approved Transportation Improvement Projects, and longer-term 20-year transportation solutions. These topics were followed by a discussion session.

At this workshop, the description of the existing conditions described findings such as deficient intersections, high crash locations, and pedestrian and bicycle network gaps. The future conditions of 2045 included the updated regional travel demand model network and traffic forecasts, intersections analysis, the Regional Transit Plan, and Hub City Greenways, and discussed findings such as congested intersections, traffic and non-motorized safety concerns, planned improved connectivity via transit, and improvements to ADA ramps and sidewalks. Furthermore, the workshop presented a list of the short-term 6-year Transportation Improvement Projects (TIP), and the longer-term 20-year transportation solutions.

Additionally, on February 6, 2025, a presentation was made to the Sertoma Club on the Centralia Comprehensive Plan Transportation Element update which was attended by 25 community members. Another presentation was made to the Lewis County Master Builders Club on April 16, 2025 which was attended by 50 community members.

A second Open House took place on May 15th, 2025, at the Borst Park Kitchens from 5-7 PM which was attended by 60 people. At this Open House, the community members and stakeholders got an opportunity to provide their comments to the consultants and the City officials on the Comprehensive Plan, Climate Resilience Plan, Transportation Master Plan, and the Westside Connector Project.

An attendee talking about the Transportation Master Plan at the Open House on May 15th, 2025

Community members and City officials at the May 15th, 2025 Open House

3. Goals and Policies

This section illustrates the 28 transportation goals and 56 policies in the existing 2024 Centralia Transportation Element. Where appropriate, goals and policies have been updated or new goals and policies have been added to remain consistent with the 1990 Growth Management Act (GMA), or updates to the transportation system since 2017. The GMA requires that comprehensive plans include a transportation element which is consistent with relevant Countywide Planning Policies (CCWPs) and the Revised Code of Washington (RCW) 36.70A.070(6). Changes to goals and policies are shown with a strikethrough for deletions and an underline for additions.

3.1 General

Goal T-1 Provide a safe, convenient and economical circulation system for all modes of transportation.

Policy T-1.1 Provide arterial streets which are of sufficient width and number to handle anticipated traffic loads.

Policy T-1.2 Circulation system improvement on arterials should be designed to promote maximum traffic flow efficiency and safety.

Policy T-1.3 Ensure that all streets and sidewalks meet City standards in newly developed areas, and encourage the construction of sidewalks in newly developed areas.

Policy T-1.4 Upgrade existing City streets and walkways which do not meet adopted standards, consistent with available funding.

Policy T-1.5 Design arterials and local access streets to meet functional requirements and be consistent with the character of the surrounding area.

Policy T-1.6 Require all street and transportation related design and construction to follow adopted Development Guidelines and Public Works Standards.

Policy T-1.7 Require dedication of adequate right-of-way to accommodate future traffic volumes, when development occurs adjacent to arterials, and require construction of new local access streets and/or widening of existing rights-of-way as may be warranted in conjunction with land use or development decisions.

Policy T-1.8 Encourage street improvements to City standards when utility mainline extensions or improvements are made.

Policy T-1.9 Discourage private road development within the City except as may be incorporated in planned unit developments provided the structural road section meets minimum City street design standards.

Policy T-1.10 Establish and amend, as appropriate, uniform and fair administrative policies, procedures and directives to deal with the operation and administration of street and transportation systems.

Policy T-1.11 Require the installation or development of sidewalks, curbs, gutters, street lighting, bicycle paths or other such improvements when new development occurs.

Policy T-1.12 Require developers to contribute their fair share of necessary off-site transportation improvements. Require developers to pay all costs for on-site, contiguous or frontage improvements, as well as other new traffic improvements that may be necessary, or required by, or as a result of, the development.

Policy T-1.13 Within the constraints of funding sources and grants, fund road improvements according to the following priority: 1) maintain the existing arterial and collector road network; 2) make spot improvements to existing streets that enhance safety and capacity; 3) construct new roads and streets, and 4) make necessary storm drainage improvements.

Goal T-2 Incorporate climate change and resilience principles into guidelines and plans for transportation infrastructure and improvements.

Policy T – 2.1 Develop emergency evacuation routes with resilient transportation infrastructure.

Policy T-2.2 Regularly assess transportation systems for resilience in the context of climate or sudden impact events.

Policy T – 2.3 Regularly assess transportation infrastructure and systems to ensure that they follow sustainability principles in all aspects of their operation.

3.2 Street Classification

Goal T-3 Maintain street classification standards compliant with the federal and state agencies.

Policy T-3.1 Classify all City streets as Principal Arterials, Minor Arterials, Major Collectors, Minor Collectors or local roads, consistent with federal/regional/state classification systems, as follows:

a. Locate and design Principal Arterials to handle large traffic volumes and freight passing through the City or traveling for considerable distances (generally in excess of two miles) within the City;

b. Locate and design Minor Arterials to handle moderate traffic volumes traveling over relatively short distances within the City, or to Principal Arterial streets as part of longer trips;

c. Locate and design Principal Arterials and Minor Arterials to pass around rather than through cohesive residential areas wherever possible;

d. Locate and design Major and Minor Collectors to pick up traffic from within cohesive residential areas and feed it to the Principal Arterial and Minor Arterial street system, and not to carry through traffic.

e. Design local roads in such a manner as to provide convenient access to adjacent properties and to discourage through traffic movements.

Policy T-3.2 The City's adopted functional classification system shall be as shown on the Washington State Functional Classification Map Application.

3.3 Circulation System – Residential

Goal T-4 Provide an adequate residential circulation system.

Policy T-4.1 Establish a street system that promotes and maintains the integrity of neighborhoods and discourages industrial and commercial traffic from passing through residential areas.

Policy T-4.2 Identify traffic problems and facilitate their improvement.

Policy T-4.3 Coordinate transportation improvements and plans with emergency services, such as fire and police services.

3.4 Circulation System – Non-Residential

Goal T-5 Encourage provision of terminal facilities for inter-City rail and truck lines which are adequate to assure that the goods distribution needs of local industries, businesses and residences are fully met in a fashion compatible with other City goals and policies.

Policy T-5.1 Provide local vehicular access to arterials while minimizing the number of curb cuts and conflicts with through traffic.

Policy T-5.2 Design and maintain designated truck routes to accommodate freight truck traffic.

3.5 Barrier Free

Goal T-6 Provide adequate barrier free transportation facilities.

Policy T-6.1 Design and construct transportation facilities to be barrier-free and easily accessible to all citizens, consistent with the American with Disabilities Act.

3.6 Level of Service and Concurrency

Goal T-7 Provide a transportation system at a multimodal level of service (LOS) which will accommodate planned future growth within the City and their adopted UGAs.

Goal T-8 Maintain and monitor motor vehicle Level of Service (LOS) standards for Centralia roadways and intersections. The motor vehicle LOS will be measured by volume/capacity on roadways and delay at intersections.

Goal T-9 The City adopts LOS standard D for motor vehicles on Centralia roadways and intersections.

Goal T-10 As mandated by state law, the City of Centralia adopts LOS standard D for motor vehicles on all state highways (including highways of statewide significance), or whichever LOS is currently adopted by the Washington State Department of Transportation, consistent with the regional transportation plan. In Centralia, state routes include I-5 and SR 507.

Goal T -11 Evaluate multimodal level of service standards (transit use, demand management, walking and bicycling) in addition to motor vehicle LOS standards and to relieve congestion where appropriate. The multimodal level of service standards are presented in Appendix A – Multimodal Level of Service Development Memorandum.

Goal T-12 The City will coordinate with Lewis County and other jurisdictions regarding designation and adoption of regional multimodal LOS standards for identified regional roadway facilities.

Goal T-13 If transportation improvements needed to maintain adopted multimodal LOS standards are not able to be funded, the City shall:

- Phase development consistent with the land use plan until such time that adequate resources can be identified to provide adequate transportation improvements; or
- Reassess the City's land use plan to reduce the travel demand placed on the system to the degree necessary to meet adopted transportation multimodal LOS standards; or

- Reassess the City's adopted multimodal LOS standards to reflect service levels that can be maintained given known financial resources.

Goal T-14 Projects shall be considered funded pursuant to Goal TG-3.6 when:

- Incorporated into the adopted City budget, or
- Upon grant agreement, or
- Upon developer agreement, or
- Upon a legally enforceable mechanism, such as a local improvement district, or
- Some combinations of the above.

Goal T-15 Require that new development shall be allowed only if:

(1) all transportation facilities are adequate at the time of development and transportation impacts will not negatively impact or reduce LOS elsewhere, and

(2) a financial commitment is in place to complete the necessary improvements or strategies to accommodate transportation impacts within six years, whether through the Transportation Mitigation Fee or other local transportation impact fee, to protect investment in and the efficiency of existing transportation facilities and services and promote compact growth.

Goal T-16 Require developers if needed to conduct traffic studies or analyses, as decided at pre-application meeting(s) or per the City Engineer, to determine development impacts on the transportation system.

Goal T-17 Maintain a system for collecting traffic mitigation fees and require developers to mitigate development impact through improvements or strategies such as walking and bicycling, transit, ridesharing or transportation demand management, where practicable.

Goal T – 18 Require that transport infrastructure suits the rate of growth of new infill development, in particular Accessory Dwelling Units (ADUs) and townhouses.

Policy T – 18.1 Upgrade transportation services and requirements as needed to accommodate new infill Accessory Dwelling Units (ADUs) and multi-family residences in residential areas.

3.7 Pedestrian and Bicycle

Goal T-19 Provide a sufficient walking and bicycling transportation system.

Policy T-19.1 Incorporate planned new sidewalks and bicycle facilities, and provide for such facilities with street improvement projects.

Policy T-19.2 Design streets with features that encourage walking and bicycling.

Policy T-19.3 Provide sidewalks and pedestrian crossings where arterial or collector streets bisect residential areas (in order to retain neighborhood cohesion).

Policy T-19.4 Establish complete street policy guide that incorporates the Hub City Greenways Trail system to prioritize safe routes for all users and sets requirements for new developments.

3.8 Parking

Goal T-20 Encourage parking patterns from impacting circulation near corridors.

Policy T-20.1 Reduce congestion and enhance circulation by developing and maintaining off- street parking in high traffic corridors.

Policy T–20.2 Require that on-street parking and maximum traffic flow are in alignment with the increase in multi-family dwellings.

3.9 Regional Transportation and Intergovernmental Coordination

Goal T-21 Encourage coordination with regional and intergovernmental agencies.

Policy T-21.1 Work with Lewis County, Lewis Conty Transit, Thurston County and other regional transit agencies and Chehalis in any regional transportation or transit program to coordinate efforts in the provision of regional transportation improvements, including an assessment of impacts of the transportation plan and land use assumptions on the transportation systems of adjacent jurisdictions.

Policy T-21.2 The City should coordinate with local jurisdictions, Lewis County, Thurston County, the City of Chehalis and the State to program and construct improvements that will maintain LOS standards on Centralia roadways and state routes within Centralia.

Policy T-21.3 Coordinate with Lewis County, other jurisdictions and other government agencies to improve or replace deficient bridges and other highway components, including construction of an additional freeway interchange north of the City with an access road to route commercial and industrial traffic onto Reynolds Road and/or to industrial/commercial development.

Policy T-21.4 Work with Lewis County and Chehalis and be involved in the multi- county regional transportation planning organization to coordinate efforts to provide for multi-jurisdictional or regional transportation improvements.

Policy T-21.5 Coordinate with Lewis County to maintain the Countywide transportation model.

Policy T-21.6 Coordinate with Lewis County and other jurisdictions to identify hazardous locations on regional road systems and allocate resources toward improvements, when available.

Goal T-22 Encourage provision of terminal facilities for inter-City and intermodal transportation providers adequate to meet needs for movement of passengers and goods to and from Centralia.

Policy T-22.1 Facilitate circulation via all modes of transportation between Centralia and Chehalis and other regional jurisdictions.

Policy T-22.2 Ensuring economic stability and mobility for rural areas by providing reliable transport infrastructure for the purpose of trade/ business.

3.10 Airport

Goal T-23 Encourage air transportation activities that support industrial and commercial health.

Policy T-23.1 Support expansion of the Chehalis/Centralia regional airport to have a positive impact on the industrial and commercial activities in the City.

3.11 Public Transit

Goal T-24 Support a public transit system to provide low-cost service to a variety of persons in the Centralia/Chehalis area in order to assure mobility for those who do not or cannot drive and to reduce, to some degree, dependence on the private automobile for movement of people.

Policy T-24.1 Encourage the use and expansion of public transportation throughout the area.

Policy T-24.2 Support, in appropriate ways, the operation of public transportation in the Centralia/Chehalis area, including both fixed route and demand response transit.

Policy T-24.3 Promote routes within Centralia to areas with concentrations of elderly or handicapped persons.

Policy T-24.4 Promote routes, where appropriate, that provide transportation for employees to the hospital, clinics, schools, downtown and other generators of usage.

Policy T-24.5 Promote scheduling of service, including bus headways, for maximum usage for those persons who do not or cannot use an automobile for transportation.

Policy T-24.6 Encourage, in appropriate ways, programs and development of facilities that encourage reduction of single occupant vehicle trips.

Goal T-25 Support a local and regional public transit system which contributes to the relief of traffic congestion, promotes energy conservation, and enhances mobility for the community.

Policy T-25.1 Coordinate decisions regarding transportation improvements with planned land uses.

Policy T-25.2 Cooperate with Lewis County Transit when appropriate in providing bus pullouts along arterials where:

a. sufficient ridership exists;

b. passenger and operator safety is improved or maintained;

c. there is sufficient existing right-of-way;

d. the pull-out would not adversely affect pedestrian movement;

e. storm drainage is not adversely affected;

f. there is a sharing of the improvement costs between the developer, the City and Lewis County Transit; and

g. the City has sufficient funding to assist in the financing of the improvement.

Policy T-25.3 Support Lewis County Transit in expansion of their transportation service to include all areas of the County.

Policy T-25.4 Encourage ridesharing, vanpool programs and other TDM measures where possible to reduce demand for roadway space and reduce peak-hour auto traffic.

Policy T-25.5 Support new and expanded local public transportation connections to new rail stations for conventional and high-speed rail, including other publicly shared mobility modes that support public transportation goals.

3.12 Rail

Goal T-26 Encourage an efficient and safe rail transportation network.

Policy T-26.1 Encourage the use, improvement and expansion of both passenger and freight railroad services including high speed rail, as support for City of Centralia goals.

Policy T-26.2 Improve the quality and safety of railroad crossings to facilitate traffic circulation, including grade separations where feasible.

Policy T-26.3 Work with the railroads serving Centralia to assure that facilities and schedules remain adequate to serve efficiently local industry, businesses and residents.

Policy T-26.4 Work with the railroads, WSDOT and federal regulatory agencies to assure the rail operations create the minimum possible disruption to vehicular and pedestrian traffic.

Policy T-26.5 Encourage the use and improvement of the depot site as a major component in the revitalization of the downtown area.

3.13 Utility

Goal T-27 Provide effective service delivery and maintenance of utilities.

Policy T-27.1 Promote joint planning and coordination through timely and effective notice to all affected utilities (private or public) of all road construction, including maintenance and repair of existing roads.

3.14 Access

Goal 28 Provide adequate access for transportation networks within the city.

Policy T-28.1 Maintain the State access management standards on state facilities that are consistent with the State's design manual.

Policy T-28.2 Ensure adequate road access to scenic and recreational areas to accommodate local and tourist traffic.

4. Complete Streets

4.1 Introduction

The City of Centralia (City) intends to provide transportation choices to citizens, offering opportunities for reduced commuter costs and healthy mobility options by providing connected, integrated, and safe alternative modes of transportation. The City will maintain and operate appropriate facilities for the safe and shared accommodation of pedestrians, bicyclists, transit, motorists, emergency responders, and freight as appropriate for community need and context.

"Complete streets" result from internal decision-making processes and are implemented through maintenance or widening projects, new or redeveloped land use developments, or new construction. Complete streets should be reflected in transportation and land use planning studies; City design and development guidelines, policies, and municipal codes; capital planning priorities; inter-jurisdictional and developer agreements; and construction plans as associated with street projects and land use developments.

4.2 Definitions

Complete streets are streets planned, designed, constructed, operated, and maintained to safely and comfortably accommodate all users. The City recognizes that depending on the context, streets may serve diverse activities, functions, and intensity of uses.

All users are defined as individuals of all ages and abilities including, but not limited to, pedestrians, bicyclists, public/paratransit users, people with disabilities, emergency responders, motorists, freight providers, commercial vehicles, delivery/service personnel, adjacent land users, and people driven modes (wheelchairs, skateboarders, rollerblades, etc.)

4.3 Goal

The goal of this Complete Street Policy is to integrate complete streets principles into the City's plans and programs to support the development of a complete and connected network of streets and trails that safely and comfortably serve all users as well as support the Hub City Greenway Trails.

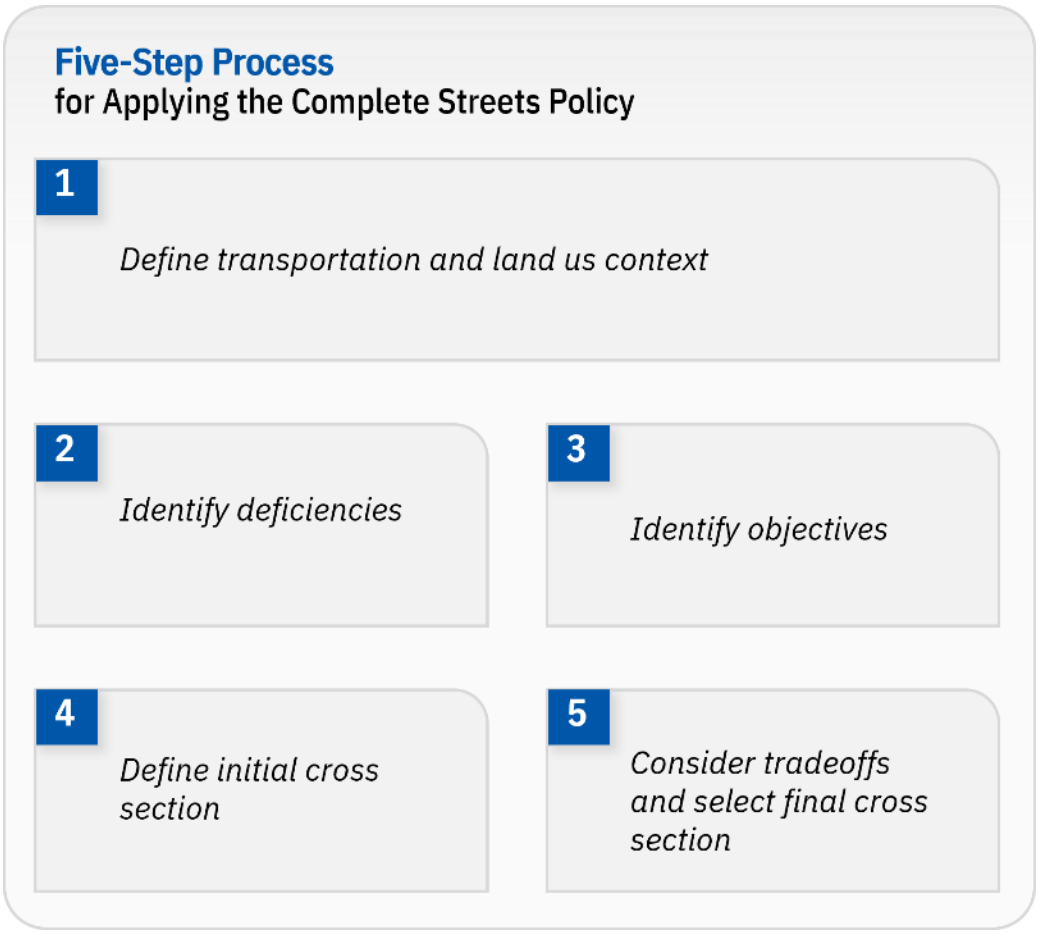
Complete Streets Principles:

- Streets that prioritize, promote, enhance, and encourage safety and comfort for all users.
- Connected multimodal system.
- Transportation options not limited to single-occupancy vehicles.
- Access to trails.
- Access to transit through walking and biking.

4.4 Applicability

The Complete Streets Policy shall apply to all City-owned transportation facilities in the public right-of-way (streets, sidewalks, alleys, bridges, etc.) and shall encourage privately constructed and owned streets, sidewalks, alleys, and parking lots to also adhere to this policy through funding requirements and development review, where possible. Figure 1 below shows a simplified Five Step Process for integrating this policy into a project.

Figure 1. Five Step Process for Applying the Complete Streets Policy



Where Washington State Department of Transportation (WSDOT) roadway segments traverse the City, the City design and mobility standards shall be followed. In the City of Centralia's 2018 Comprehensive Plan, the City adopted LOS standard D for Centralia roadways and intersections as measured by volume/capacity on roadways and delay at intersections (Goal T-8). There were no Multimodal Levels of Service (MMLOS) developed as part of the 2018 Comprehensive Plan. The City is adopting new MMLOS as part of this comprehensive plan. Exhibit A provides the framework for development of the City's MMLOS, the methodology and the MMLOS Standards to be used within the City of Centralia. As the GMA requirements allow jurisdictions to be flexible in establishing MMLOS standards, the standards outlined in Exhibit A have been developed to best assist the City of Centralia in accommodating multiple modes of travel, while still being appropriate for the City's unique characteristics.

Where Hub City Greenways Urban Trails are proposed (generally following arterials and collector streets), the City's preferred typical cross-section should include 8- to 12-foot-wide shared use paths accompanied with curbs, gutters, and streets lights in accordance with City of Centralia standard details for Urban Trail Roadway Classifications unless otherwise modified by the City Engineer.

Because movement of commercial goods (freight) is important to the City's economy and has unique right-of-way needs to support that role, freight will be a priority on streets classified as a designated freight route (by WSDOT or the City). Complete street infrastructure improvements that are consistent with freight mobility may be considered on these streets, but infrastructure improvements should maintain access, mobility and safety for all modes and all users.

4.5 Design

The City of Centralia endeavors to use the best and latest design guidelines, standards, and recommendations available. When designing Complete Streets, the City of Centralia strives to provide development flexibility within safe design parameters and balance design solutions for all roadway users. A balanced approach weighs the needs and comforts of all users against a variety of trade-offs such as street design and width, desired operating speed, hierarchy of streets, real estate impacts, connectivity, parking impacts, wayfinding signs, and signal variation.

Design criteria shall be based on the thoughtful application of engineering, architectural and urban design principles in addition to prescriptive guidelines. Best practices in policies, design criteria, standards and guidelines related to street design, construction and operations can be found in, but are not limited to, the following:

- City of Centralia Design and Development Guidelines
- Guidelines provided by the American Association of State Highway Transportation Officials (AASHTO)
- Guidelines provided by the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide
- Guidelines provided by the Washington State Department of Transportation (WSDOT)
- Guidelines provided in the Manual on Uniform Traffic Control Devices (MUTCD)
- Guidelines provided in the ADA Standards for Accessible Design
- Guidelines provided by the Highway Capacity Manual published by the Transportation Research Board

4.6 Coordination

The City of Centralia recognizes that multi-jurisdictional contributions are necessary for an effective Complete Streets policy and will work cooperatively within all City departments and other planning partners. Coordination should take place early in the design. In areas where Washington State Highways exist on City roadways, City staff shall coordinate with WSDOT to ensure Complete Streets elements on state routes meet both the requirements of RCW 47.04.035 and City Complete Streets design standards to the maximum extent possible. In Urban Growth Areas and areas adjacent to other jurisdictional boundaries, the City shall coordinate with those agencies to ensure that the improvements meet both jurisdiction's design standards and Complete Streets Policies, if applicable.

4.7 Implementation

The City of Centralia views Complete Streets as integral to transportation investment decision-making practices and processes and an opportunity to improve streets and transportation networks for all users. The City views all transportation improvements and project phases as opportunities to implement complete streets. Project phases include, but are not limited to, planning, programming, design, right-of-way acquisition, subdivision and land development, new construction, construction engineering, reconstruction, operation, repair, maintenance, and funding identification.

4.7.1 Complete Streets Implementation Task Force

The policy will be carried out by the Engineering Department in collaboration with the Community Development and Parks & Recreation Departments. A Complete Streets Implementation Task Force (Task Force) will be formed to integrate the Complete Streets policy across City departments into all existing plans, manual, checklists, decision-trees, rules, regulations, and programs as appropriate.

The Task Force will review current design standards, including subdivision regulations which apply to new roadway construction, to ensure that they reflect the best available design standards and guidelines, and effectively implement Complete Streets where feasible.

The Task Force will include members from the following City departments:

- City Manager
- Community Development
- Police Department
- Engineering
- Parks & Recreation
- Public Works

4.7.2 Implementation Partners

Implementation will require the on-going support of key stakeholders at the city, county, regional, state, and federal levels to coordinate and weave Complete Streets Principles into relevant City programs and processes.

Implementation Partners could include members from the following city departments and stakeholder groups:

- Community Development
- Engineering
- Parks & Recreation
- Public Works
- WSDOT
- Federal Highway Administration
- Southwest Regional Transportation Planning Organization
- Lewis County Transit
- Lewis County
- Centralia College
- Centralia School District
- Citizens, businesses, interest groups and neighborhoods.

Additional City implementation responsibilities:

Implementation Partners can meet periodically and determine best ways to collaborate on best practices such as:

- City staff shall identify all current and potential future sources of funding for street improvements and recommend improvements to the projects selection criteria to support Complete Streets projects;
- The City shall promote inter-departmental project coordination (one-dig projects) among the City departments with an interest in the activities that occur within the public right-of-way in order to better use fiscal resources;
- The City shall develop and institute better ways to measure performance and collect data on how well the streets are serving all users;
- The City shall educate on and enforce proper road use behavior by all users and adopt additional laws and regulations as necessary to ensure people are protected to the greatest extent possible.

4.8 Exemptions

During the planning and design process, conditions may arise where it may be inappropriate to provide bicycle, pedestrian, or transit facilities to the extend desired to reduce level of stress for those road users. These exceptions include:

1. Limited access facilities where bicyclists and pedestrians are prohibited by law from using the road. In this instance, it is necessary to accommodate bicyclists and pedestrians elsewhere within the same transportation corridor and to provide safe, comfortable crossings for bicyclists and pedestrians at interchanges and connecting neighborhoods, activity centers, or the regional trail network.
2. Transit accommodations are not required where there is no existing or planned transit service.
3. An equivalent alternative already exists or is programmed in the Transportation Improvement Program (TIP) as a separate project, for the specific use being exempted.
4. The cost of providing bicycle or pedestrian facilities would be excessively disproportionate to the need or probable use.
5. The available right-of-way width is insufficient to add a separate facility and the City determines it is infeasible or excessive to take additional right-of-way.
6. Emergency repairs (such as a water main leak) that require immediate, rapid response; however, temporary accommodations for all modes should still be made. Depending on the severity of the repairs, opportunities to improve multimodal access should still be considered where possible.
7. Routine maintenance of the transportation network that does not change the roadway geometry or operations, such as chip sealing, striping, thin asphalt overlays, mowing, sweeping, and spot repair.
8. A demonstrated absence of current and future need.

4.9 Evaluation and Performance Standards

The application of Complete Streets should be regularly evaluated for successes, to determine progress and effectiveness, as well as an opportunity for improvement. The City shall measure the success of this policy in a report to the City Planning Commission and City Council every three years, or more frequently if needed. This report should feature qualitative and quantitative data categorized by mode to provide performance measurements such as, but not limited to miles of bicycle and pedestrian facilities added, compliments and complaints, frequency and severity of motorized and non-motorized crashes, exemptions approved from this policy, number of bike friendly businesses, etc.

Modifications shall be made to this policy, guidelines and requirements as needed based on the results of the performance period and feedback from stakeholders.

5. Improvement Project Criteria

The prioritization of improvement projects is based upon a criterion that reflects the goals and policies in the Transportation Element. The criterion qualitatively evaluates how well the proposed project improves, promotes, or maximizes each transportation benefit. The criteria are consistent with the requirements of the Growth Management Act and Lewis County planning policies. Performance from the evaluation criterion, level of complexity, cost, and availability of funding all help determine the prioritization of projects for the transportation improvement program (TIP).

5.1 Transportation Element Project/Strategy Criteria

The following Table 1 illustrates the different transportation element criteria that were adopted to evaluate the projects. These criteria cover elements ranging from vehicle mobility, safety, multi-modalism, freight mobility, and funding, to connectivity, environment, and sustainability, among others.

Table 1. Transportation Element Evaluation Criteria

Transportation Element Criteria	Criteria
(1) Vehicle Mobility	The project/strategy improves existing and future vehicular mobility (including grade separation of rail crossings).
(2) Safety	The project/strategy addresses existing identified safety issues.
(3) Multi-modalism	The project/strategy promotes transit, pedestrian or bicycle modes.
(4) Coordination and Regional Transportation	The project/strategy promotes coordination among jurisdictions or the advancement of regional transportation projects/priorities
(5) Freight Mobility	The project/strategy promotes freight mobility.
(6) Funding	The project/strategy is positioned to receive non-local funding.
(7) Cost	The project/strategy maximizes benefit in comparison to expense.
(8) Economic Development	The project/strategy promotes economic health.
(9) Neighborhood Integrity	The project/strategy promotes neighborhood communities.
(10) Connectivity	The project/strategy improves connections between trip generators, such as schools, parks, downtown, freight centers, employment centers and higher density residential areas.
(11) Environment	The project minimizes environmental impacts or improves environmental conditions.
(12) Sustainability	The project promotes the principles of sustainability and resiliency in every aspect of transportation development and implementation.

6. Existing Transportation Conditions and Deficiencies

The condition and characteristics of several modes of transportation were inventoried to provide a baseline of analysis for transportation needs and improvements throughout the City of Centralia. The transportation system is comprised of vehicular roadway, rail, freight and truck, transit, and bicycle and pedestrian trails and facilities. Traffic operations at major intersections were evaluated for existing deficiencies. Gap analysis was conducted for the non-motorized network to determine segments where pedestrian and bicycle infrastructure is absent. This section summarizes existing conditions and deficiencies.

6.1 Existing Land Use

In Centralia, the most common land uses are commercial, industrial, and low density residential. Minor land uses include rural, very low and medium density residential, public facilities and parks, and open space (See Centralia Land Use Map, Centralia Comprehensive Plan, Adopted July 12, 2022).

- Commercial development is primarily clustered along the I-5 corridor on either side of the Harrison Avenue and Mellen Street interchanges or along the SR 507 corridor and Main Street in the Central Business District (CBD).
- Additional commercial development is in the southeast portion of the city surrounding Gold Street and Kresky Avenue.
- Industrial land is largely along Harrison Avenue, west of I-5 in the northeastern portion of the city. Other industrial areas are located outside the city limits within the UGA.
- The primary land use within the city, as measured by total acreage, is residentially zoned land. Significant residential concentrations are located in the southwest portion of the city, west of the Chehalis River, surrounding the CBD, and to the east of the CBD and rail lines. Additional rural and very low-density residential land uses are located east of I-5 and north of the city limits within the UGA.
- Public facilities are dispersed throughout the city. There is a large public area east of I-5 at the south end of the city. Centralia High School is outside the city limits, but within the UGA.

Population and job growth are anticipated within the study area due to increased pressure on already densely populated urban areas in the state (such as Seattle, Tacoma, and Vancouver) and pending industrial development.

6.2 Jurisdictional and Functional Classification of Roadways

East of I-5 the roadway network for the City of Centralia has a grid pattern. Historically the grid pattern paralleled the north-south railroad, and that pattern exists today in the downtown area.

The City of Centralia has jurisdiction over most of the roadways within the study area. I-5 and SR 507 are owned and maintained by WSDOT. Lewis County has jurisdiction over several roadways within the Centralia UGA. Most of the City's roadways are classified as local roadways with some classified as arterials or collectors (see Figure 2). The City of Centralia has six roadway functional classifications:

Interstate Highways — Interstate highways have the highest roadway classification and serve larger volumes of interstate and regional traffic at higher speeds when traffic permits. Access is controlled and connections are generally to other interstate highways, principal arterials and minor arterials.

Principal Arterials — Principal arterials provide a high level of mobility with limited access and signal control. High volumes of traffic and freight travel at a range of speeds; trips on principal arterials are typically for longer

distances within the city (e.g. in excess of 2 miles) or through the city. Connections are made to interstate highways, arterials, and collectors.

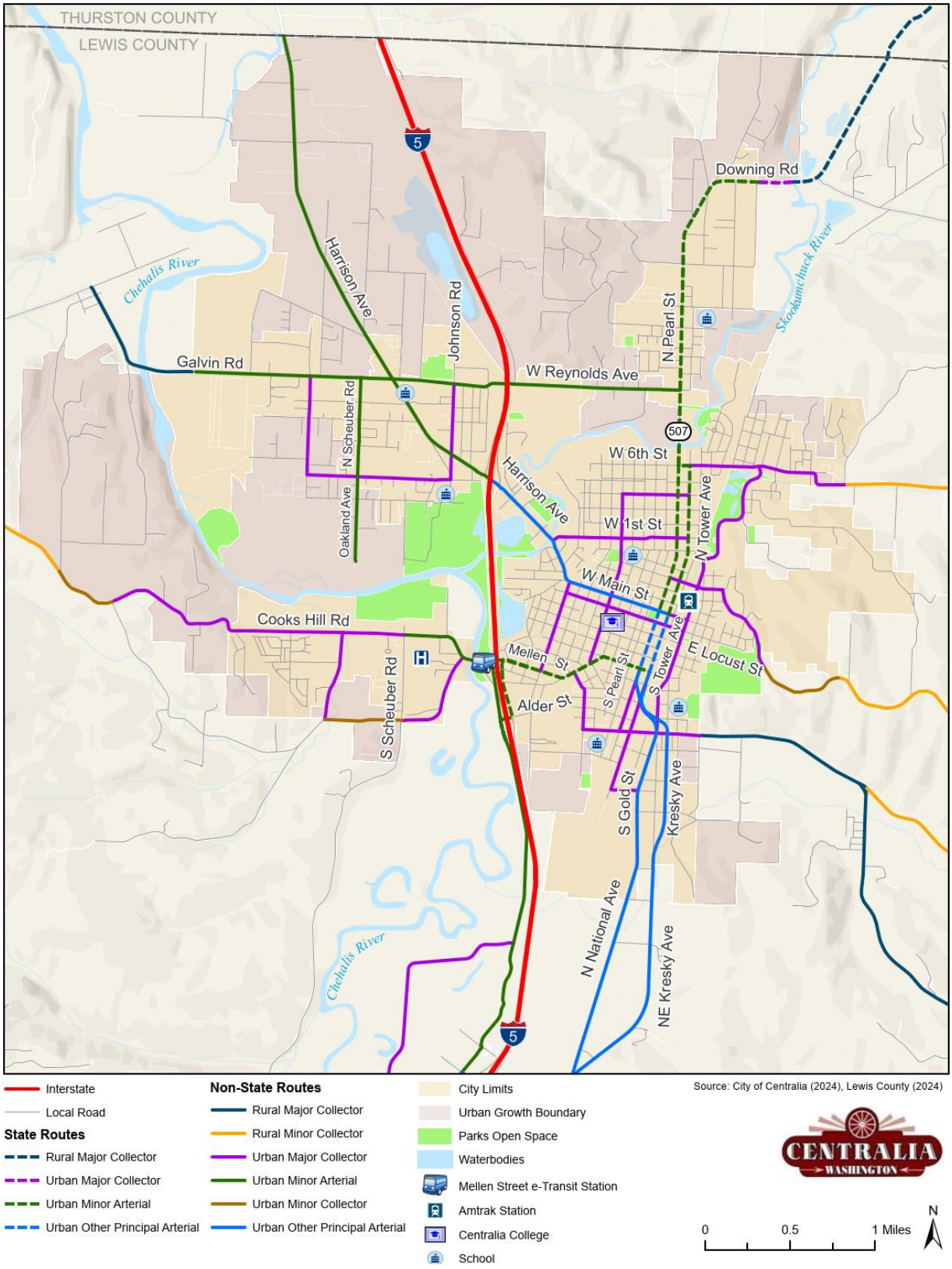
Minor Arterials — Minor arterials provide a high level of mobility with more access and signal control as compared to principal arterials. High volumes of traffic travel at a range of speeds. Trips are generally shorter than principal arterial trips and often remain within the city. Connections are made to interstate highways, principal arterials, other minor arterials, major collectors, and minor collectors.

Major Collectors — Major collectors provide a slightly lower level of mobility with a higher level of access and control. Speeds will be limited when compared to some arterials. Through-trips are not typical on major collectors. Connections are made to principal arterials, minor arterials, other major collectors, minor collectors, and local roadways.

Minor Collectors — Minor collectors provide medium to low levels of mobility with a high level of access. Minor collectors typically have low traffic volumes and travel speeds. Minor collectors do not carry through-trips and connections are made to principal arterials, minor arterials, major collectors, other minor collectors, and local roadways.

Local Access — Local access roadways provide the highest level of access while limited to a low level of speed. Local roadways do not carry through-traffic. Trips on local roadways are short, and connections are usually made to major or minor collectors.

Figure 2. Functional Roadway Classifications



6.3 Existing Roadway Characteristics

An inventory of roadway facilities and characteristics sets a baseline of information for future improvement of the transportation system. The roadway network for the City of Centralia is a grid pattern with many parallel roads and intersecting cross-streets.

6.3.1 Study Area Roadway Facilities

The major roadways within the study area according to the Federal Highway Administration's functional classification designation have been described below.

6.3.1.1 Interstates

Interstate 5 (I-5)

Interstate 5 is a limited access facility that provides access between the United States borders with Canada and Mexico. It is the primary north-south interstate roadway facility for the pacific coast states (Washington, Oregon and California), and is a designated freight route. I-5 is part of the National Highway System (NHS).

North of the Harrison Avenue interchange, I-5 is a six-lane facility (three general purpose lanes in each direction). South of the Harrison Avenue interchange, I-5 is a four-lane facility with two general purpose lanes in each direction.

On-ramp to northbound I-5 from Harrison Avenue

In 2023, the average daily traffic (ADT) volume on I-5 at the Thurston/Lewis County line (milepost 85.57) was approximately 70,000 vehicles. The percentage of heavy vehicles on I-5 at this location, per WSDOT permanent traffic recorder (R019), was approximately 17 percent. Traffic volumes on I-5 within Centralia were slightly lower at approximately 50,000 vehicles per day at the Harrison Avenue overcrossing (milepost 82.73) and approximately 65,000 vehicles per day at the Mellen Street interchange (milepost 81.67). South of Mellen Street, traffic volumes on I-5 were approximately 76,000 vehicles per day.

WSDOT manages a network of cameras along I-5 that capture real-time traffic conditions to support incident response and active congestion monitoring. Traffic cameras on I-5 are located approximately one-half mile north of the Galvin Road/Reynolds Avenue crossing, at the Harrison Avenue interchange, at the Skookumchuck River crossing, at the Mellen Street interchange, approximately one-half mile south of the Art Lehmann Drive crossing, and near the Chehalis-Centralia Airport.

WSDOT has recently installed ramp metering for freeway entrances through the urban areas of Centralia and Chehalis to include northbound ramp meters at 13th Street, Main Street (SR6) and Chamber Way in Chehalis and southbound ramp meters at Harrison Avenue and Mellen Street in Centralia as well as Chamber Way and Main Street (SR6) in Chehalis. Ramp meters are not active yet and the impacts to local roadways is unknown.

Travelers access I-5 within Centralia at either the Harrison Avenue interchange or via the C-D lanes at the Mellen Street and Art Lehmann Drive interchanges, where traffic signals at ramp terminals intersect with the arterial network.

6.3.1.2 Principal Arterials

Pearl Street and Tower Avenue (SR 507)

Pearl Street and Tower Avenue serve Centralia's downtown area and form a one-way road couplet. Traffic on Pearl Street travels southbound while traffic on Tower Avenue travels northbound. Both roadways have two lanes, with designated parallel parking on both sides of the street and multiple driveway accesses. There are sidewalks on both sides of the streets. Pearl Street is a Principal Arterial south of W Main Street while Tower Avenue is a principal arterial from Main Street to Cherry Street and a Major Collector south of Chestnut Street.

Main Street looking east towards Tower Avenue

Gold Street and Kresky Avenue

Gold Street and Kresky Avenue are designated principal arterials and maintain the one-way couplet orientation from Pearl Street and Tower Avenue until the southern Centralia city limits. Traffic on Gold Street travels southbound while traffic on Kresky Avenue travels northbound. Both roads have two travel lanes with multiple driveway access to business and residential uses.

Harrison Avenue

Harrison Avenue is a principal arterial east of I-5 where it is the primary east-west roadway that links downtown to the I-5 freeway and provides access to many commercial, retail, and industrial sites. Harrison Avenue varies between two travel lanes in each direction with a center two-way left-turn median, dedicated turning lanes closer to I-5, and as a dual-direction, single travel lane roadway closer to Main Street. Much of the traffic traveling to and from the city relies on the I-5/Harrison Avenue interchange because it is located adjacent to retail activity and provides a direct route into Centralia's downtown and major residential areas.

W Main Street

W Main Street is an east-west principal arterial connecting Tower Avenue and Pearl Street to Harrison Avenue. The street generally has one travel lane in each direction, sometimes separated by a center two-way left-turn lane, with parallel parking, driveway access, and sidewalks on both sides of the road.

6.3.1.3 Minor Arterials

Pearl Street and Tower Avenue (SR 507)

North of Main Street, Pearl Street and Tower Avenue are designated as minor arterials. They serve Centralia's downtown area and form a one-way road couplet between Main Street and W 6th Street. Pearl Street operates as the southbound facility and Tower Avenue as the northbound. North of W 6th Street, northbound traffic continues onto Pearl Street, a two-way, undivided facility with one travel lane in each direction.

Mellen Street (SR 507)

Mellen Street is a minor arterial running east-west serving the south end of the city. From Alder Street west of downtown it connects with I-5 and extends to Cooks Hill Road just west of I-5. The Mellen Street interchange provides access to a concentration of medical facilities on the west side of I-5 and serves as a direct route to the southern portion of downtown, east of I-5. The Mellen Street undercrossing of I-5 facilitates traffic in the westbound direction only; eastbound traffic on Mellen Street is routed to an overcrossing approximately 0.30 miles south of Mellen Street via the southbound collector-distributor lanes (parallel to I-5). From this overcrossing, traffic travels north on Ellsbury Street to Mellen Street eastbound, or to Yew Street via Art Lehmann Drive.

Mellen Street looking eastbound towards I-5

Harrison Avenue

Harrison Avenue west of I-5 is designated as a minor arterial. Between I-5 and Caveness Drive, Harrison Avenue has two travel lanes in each direction, separated by a center two-way left-turn lane. Harrison Avenue provides access to many businesses. West of Caveness Drive the roadway narrows to a single lane in each direction with a center two-way left-turn lane to its intersection with Reynolds Avenue/Galvin Road. West of that intersection it is one lane in each direction with no center turn lane to the Thurston-Lewis County line.

SE Corner of Reynolds Avenue/Galvin Road at Harrison Avenue

W Reynolds Avenue and Galvin Road

Reynolds Avenue is an east-west minor arterial stretching east from the Harrison Avenue intersection to Pearl Street (SR 507). Reynolds Avenue is an important connection to SR 507. Galvin Road is an east-west minor arterial that runs west from Harrison Avenue to the western city limits, serving industrial traffic in the northwest of the city.

Oakland Avenue and N Scheuber Road

Oakland Avenue and Scheuber Road are north-south minor arterials located west of I-5. They both currently carry primarily residential traffic. This roadway is designated as a link to a potential new north-south connection over the Chehalis River connecting to Cooks Hill Road and S Scheuber Road.

Alder Street and W Cherry Street

Alder Street and W Cherry Street are east-west minor arterials that connect Mellen Street to Pearl Street and Tower Avenue. Alder Street and W Cherry Street comprise segments of SR 507.

Cooks Hill Road

Cooks Hill Road is an east-west minor-arterial that connects Providence General Hospital and the southwest portion of the city to the Mellen Street interchange.

Airport Road

Airport Road is a north-south minor-arterial that runs adjacent to I-5 and connects the Chehalis-Centralia Airport to the Mellen Street interchange.

6.3.1.4 Major Collectors

Yew Street

Yew Street is a major collector operating in the north-south direction connecting Mellen Street and W Main Street. Yew Street has one travel lane in each direction and primarily provides residential access.

Cooks Hill Road

Cooks Hill Road is an east-west major collector between Blanchard Road and S Scheuber Road.

Locust Street (Centralia College Boulevard)

Locust Street is a major collector operating in the east-west direction serving Centralia College and connecting Yew Street and Washington Avenue to Pearl Street, Tower Avenue, and S Gold Street.

Washington Avenue

Washington Avenue is a major collector operating in the north-south direction connecting First Street, Main Street, and Alder Street. Washington Avenue serves Edison Elementary School and Centralia College.

Summa Street

Summa Street is a major collector operating in the east-west direction connecting Woodland Avenue to Pearl Street, Tower Avenue, and Gold Street. East of Pacific Avenue, Summa Street becomes Salzer Valley Road, a minor collector. This road serves Jefferson-Lincoln Elementary School.

Summa Street looking east towards S Gold Street

Other Major Collectors

Johnson Road, Eshom Road, Woodland Avenue, Military Road, Scammon Creek Road, N Gold Street are additional north-south major collector streets in Centralia. Borst Avenue, Marion Street, Sixth Street, Fourth Street, First Street, Maple Street, Floral Street, E Main Street, are additional east-west collector streets in the city.

6.3.1.5 Minor Collectors

Roads designated as minor collectors are generally on the UGA border or outside of UGA boundaries. Salzer Valley Road, Seminary Hill Road, Little Hanaford Road, Graf Road, and the west end of Cooks Hill Road are minor collectors.

6.3.2 Lanes and Speed Limits

Physical roadway characteristics can contribute to potential roadway issues or problem areas. Most roadways within Centralia are undivided four-lane or two-lane facilities, although some are separated with center two-way left-turn lanes or other forms of medians. Roads within Centralia have a speed limit of 25 miles per hour (mph) unless otherwise posted. Roads in the city limits are generally posted with speeds of 25 or 30 mph with some roadways posted as 35 mph. In the Urban Growth Area, there are some roads with speeds of 40 mph and outside the Urban Growth Area there are roads posted at 50 mph. **Error! Reference source not found.** shows the number of lanes and speed limits for the roadways within the study area. Roadways within school zones have a speed limit of 20 mph from 7:30 a.m. to 4:00 p.m. on school days.

6.3.3 Traffic Control

Traffic control is critical for traffic flow and safety. Most intersections in the city are stop-controlled, where vehicles on at least one approach leg of the intersection are controlled by a stop sign. The majority of the signalized intersections are concentrated in the downtown area and along the roads connecting I-5 to the downtown area (See Figure 2). Of the intersections analyzed for existing and future traffic conditions, 18 intersections are signalized and four are stop-controlled, as listed in Table 2.

Figure 3. Signalized Intersections and Speed Limits

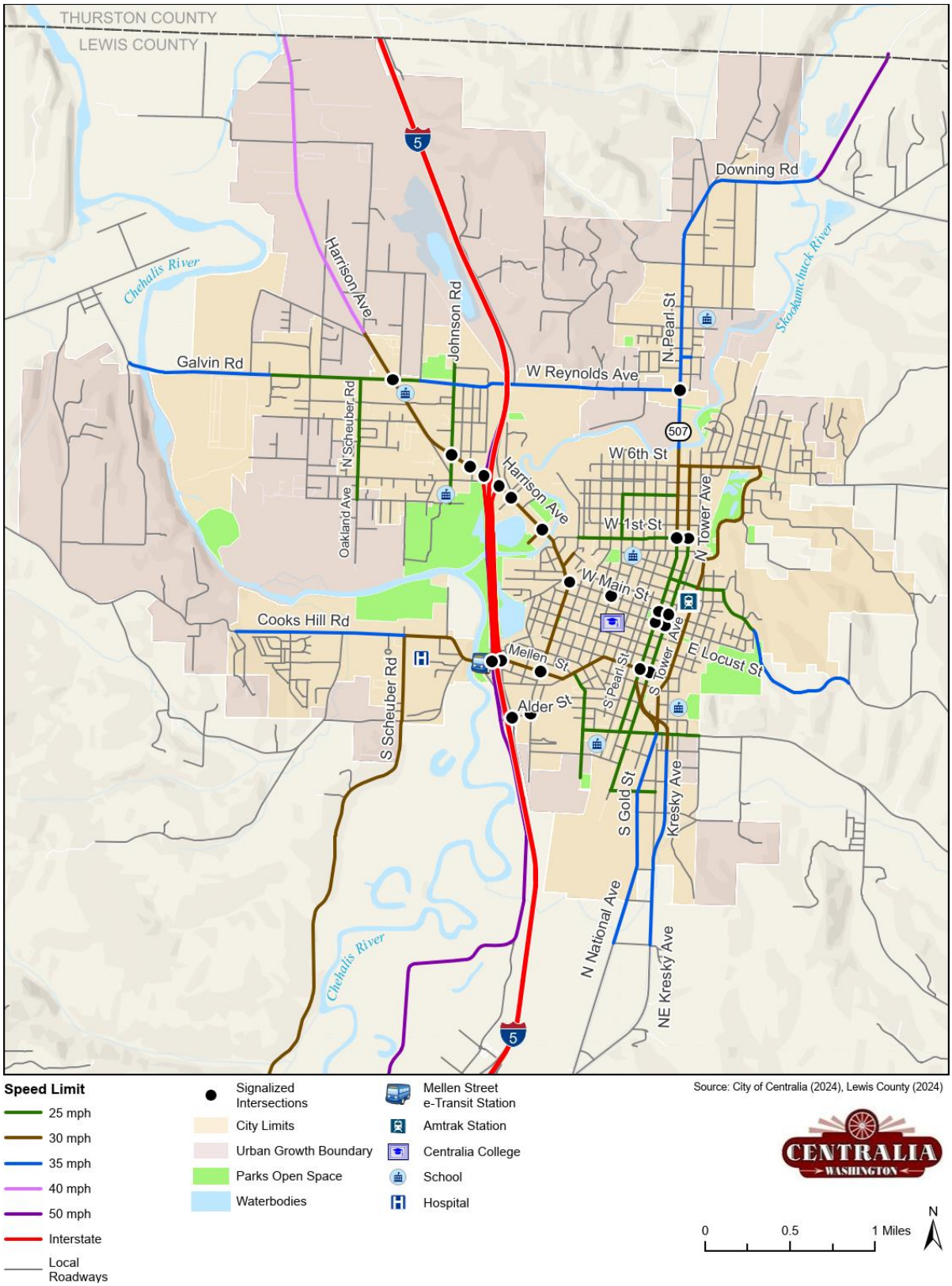


Table 2. Intersection Control Type (Study Intersections Only)

	Intersection	Intersection Control Type	Jurisdiction
1	Harrison Avenue and W Reynolds Avenue	Signal	Centralia
2	Pearl Street and W Reynolds Avenue	Signal	WSDOT
3	Johnson Road and Harrison Avenue	Signal	Centralia
4	Belmont Avenue and Harrison Avenue	Signal	Centralia
5	I-5 Southbound Ramps and Harrison Avenue	Signal	WSDOT
6	I-5 Northbound Ramps and Harrison Avenue	Signal	WSDOT
7	High Street and Harrison Avenue	Signal	Centralia
8	Bridge Street and Harrison Avenue	Signal	Centralia
9	Harrison Avenue and W 1st Street	Unsignalized	Centralia
10	Harrison Avenue and W Main Street	Signal	Centralia
11	Yew Street and W Main Street	Signal	Centralia
12	Pearl Street and W Main Street	Signal	WSDOT
13	Tower Avenue and W Main Street	Signal	WSDOT
14	I-5 SB Collector/Distributor Lane and Mellen Street	Signal	WSDOT
15	I-5 NB Collector/Distributor Lane and Mellen Street	Signal	WSDOT
16	Yew Street and Mellen Street	Signal	WSDOT
17	Pearl Street and Cherry Street	Signal	WSDOT
18	Tower Avenue and Cherry Street	Signal	WSDOT
19	S Yew Street and Alder Street	AWSC	Centralia
20	S Yew Street and Art Lehmann Drive	Signal	Centralia
21	Gold Street and Summa Street	TWSC	Centralia
22	Kresky Avenue and Summa Street	TWSC	Centralia

AWSC – All-way stop-controlled
TWSC – Two-way stop-controlled

6.4 Existing Traffic Conditions and Deficiencies

The project team conducted traffic operational analyses at key intersections within the study area to assess the existing operational conditions and identify deficiencies. This section summarizes the existing traffic conditions and the resulting operational level of service (LOS) at each study intersection. More detailed methods and assumptions for traffic operations are outlined in Appendix C – Transportation Element Update Methods and Assumptions.

6.4.1 Study Intersections and Raw Traffic Counts

The project team collected intersection turning movement counts for the 22 study area intersections listed in Table 2 the intersection data was collected on a typical weekday (Thursday) afternoon in May 2024. The team collected vehicle counts in 15-minute intervals for a 2-hour window during the afternoon peak period between 4:00 and 6:00 p.m. Appendix B – Traffic Count Data includes the raw traffic count data used in this analysis.

6.4.2 Mobility Standards

Centralia roadways are governed by mobility standards from three jurisdictions: Washington State, Cowlitz-Wahkiakum Council of Governments, and City of Centralia.

6.4.2.1 State Highway Mobility Standards

State highway mobility standards are included in the WSDOT Highway System Plan (HSP) as a method to gauge reasonable and consistent standards for traffic flow along state highways. These mobility standards consider the significance (statewide, regional) and location (rural, urban) of each state highway. Mobility standards are based on the Highway Capacity Manual definitions of level of service at an intersection and are defined by the jurisdiction under which the intersection is maintained. Four of the study intersections are governed by WSDOT HSP standards. These are the I-5 northbound and southbound ramp terminals at the Harrison Avenue and Mellen Street interchanges. The WSDOT HSP sets the mobility standard for urban highways of statewide significance at LOS D. WSDOT is currently in the process of updating the HSP.

6.4.2.2 Cowlitz-Wahkiakum Council of Governments Mobility Standards

For State Highways that are not of statewide significance, the local regional transportation planning organization (RTPO) sets the mobility standard. The Cowlitz-Wahkiakum Council of Governments (CWCOG) operational standard is LOS D, which include the following six locations: W Reynolds Avenue at Pearl Street, W Main Street at Pearl Street, W Main Street at Tower Avenue, Mellen Street at Yew Street, Cherry Street at Pearl Street, and Cherry Street at Tower Avenue.

6.4.2.3 City of Centralia Mobility Standards

City of Centralia mobility standards are used to evaluate intersections under City of Centralia jurisdiction. The City of Centralia operational standard is LOS D and applies to the following twelve intersections: W Reynolds Avenue at Harrison Avenue, Johnson Road at Harrison Avenue, N. Belmont Avenue at Harrison Avenue, High Street at Harrison Avenue, Bridge Street at Harrison Avenue, W 1st Street at Harrison Avenue, Harrison Avenue and W Main Street, W Main Street at Yew Street, S Yew Street and Alder Street, S Yew Street and Art Lehmann Drive, Summa Street at S. Gold Street, and Summa Street at Kresky Avenue.

6.4.3 Operational Analysis

Table 3 below presents the existing intersection delays and LOS for the study intersections. For signalized and all-way stop-controlled intersections, the team reported LOS and average delay for overall intersection. For one-way or two-way stop-controlled intersections, the movement with the worst operating performance defines the LOS. The team used Synchro software package (Version 11) to assess intersection operations. Appendix C – Transportation Element Update Methods and Assumptions provides the traffic operations methods and assumptions. Appendix D – Synchro Output Reports (Existing Conditions) provides the complete report output for each intersection.

All but three intersections currently operate better than the WSDOT, CWCOG, and City of Centralia LOS D thresholds (Table 3). Two intersections currently operate at the LOS D threshold and one of the study intersections exceeds the LOS threshold.

- The Johnson Road/Harrison Avenue intersection operates at LOS D. Although this location currently meets the standard, it will likely experience increased delays in the future that would exceed LOS D.

- The intersection of Summa Street with S. Gold Street operates at LOS D, with eastbound vehicles experiencing an average delay of 31 seconds. This is a two-way stop-controlled location.
- Summa Street at Kresky Avenue operates at LOS F, also a two-way stop-controlled intersection. Eastbound vehicles experience an average delay over 65 seconds.

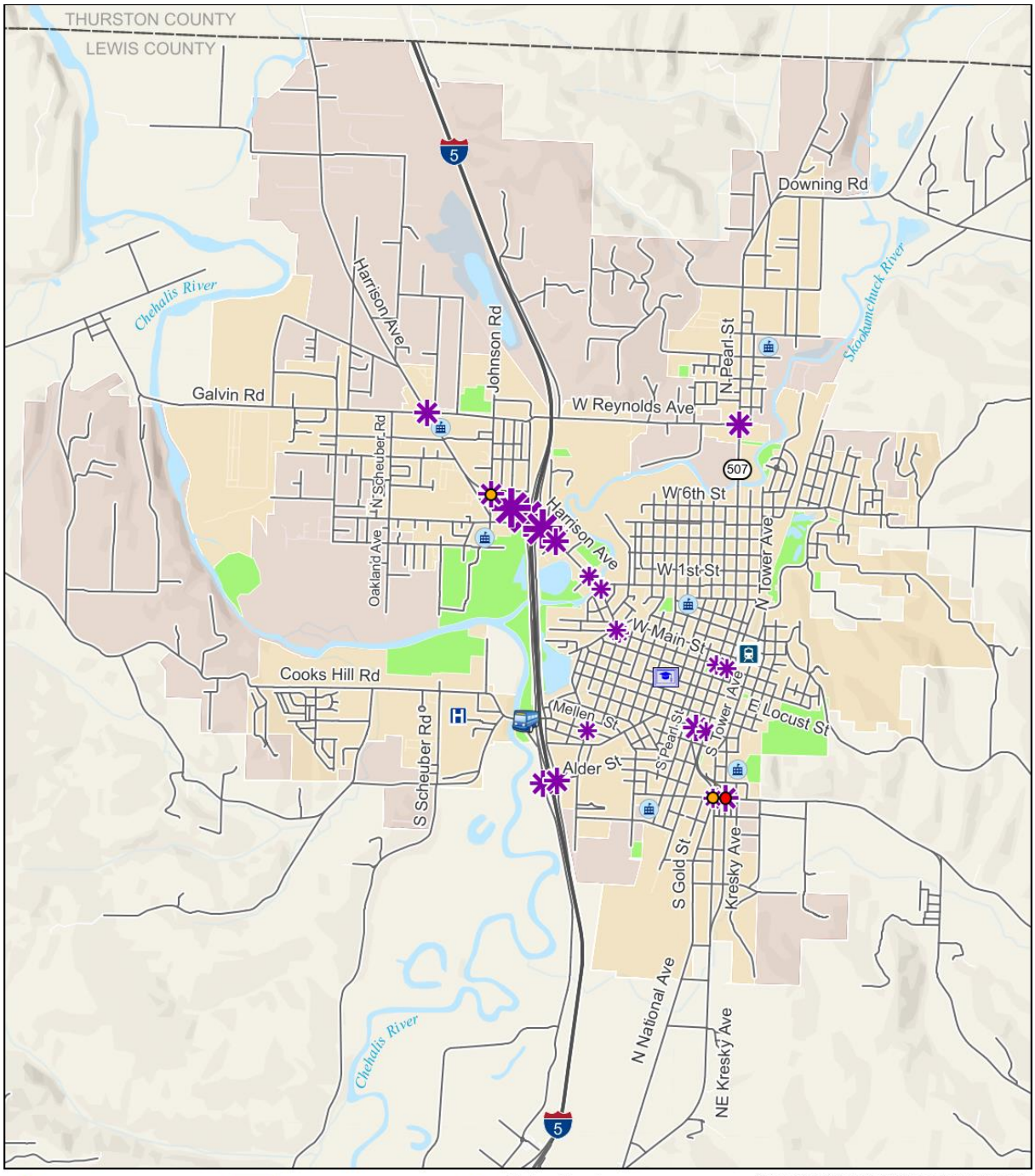
The Summa Street intersections are located at the south end of the viaduct between Pearl Street/Tower Avenue and S. Gold Street/Kresky Avenue, where north-south traffic is not required to stop. East-west traffic on Summa Street must stop, and vehicles observe noticeable delays as they attempt to find acceptable gaps in traffic before turning onto or crossing the major street traffic stream. S. Gold Street and Kresky Avenue are both principal arterials with relatively high volumes in the p.m. peak hour as they provide a parallel to I-5 between Centralia and Chehalis. Table 3 compares the LOS standards with the observed LOS results for the study intersections.

Table 3. Existing 2024 PM Peak Hour Intersections Operations Summary

	Intersection Name	Intersection Control Type	Jurisdiction	Existing 2024	
1	Harrison Avenue and W Reynolds Avenue	Signal	Centralia	24.3	C
2	Pearl Street and W Reynolds Avenue	Signal	WSDOT	24.6	C
3	Johnson Road and Harrison Avenue	Signal	Centralia	54.3	D
4	N Belmont Avenue and Harrison Avenue	Signal	Centralia	20.9	C
5	I-5 Southbound Ramps and Harrison Avenue	Signal	WSDOT	21.9	C
6	I-5 Northbound Ramps and Harrison Avenue	Signal	WSDOT	32.3	C
7	High Street and Harrison Avenue	Signal	Centralia	15.2	B
8	Bridge Street and Harrison Avenue	Signal	Centralia	16.0	B
9	Harrison Avenue and W 1st Street	Unsignalized	Centralia	11.3	B
10	Harrison Avenue and W Main Street	Signal	Centralia	18.8	B
11	Yew Street and W Main Street	Signal	Centralia	15.0	B
12	Pearl Street and W Main Street	Signal	WSDOT	12.7	B
13	Tower Avenue and W Main Street	Signal	WSDOT	8.3	B
14	I-5 SB C-D Lane and Mellen Street	Signal	WSDOT	26.3	C
15	I-5 NB C-D Lane and Mellen Street	Signal	WSDOT	18.1	B
16	Yew Street and Mellen Street	Signal	WSDOT	17.9	B
17	Pearl Street and Cherry Street	Signal	WSDOT	12.4	B
18	Tower Avenue and Cherry Street	Signal	WSDOT	12.1	B
19	S Yew Street and Alder Street	AWSC	Centralia	8.5	A
20	S Yew Street and Art Lehmann Drive	Signal	Centralia	22.4	C
21	S Gold Street and Summa Street	TWSC	Centralia	30.6	D
22	Kresky Avenue and Summa Street	TWSC	Centralia	**66.2**	**F**

AWSC – All-way stop-controlled
TWSC – Two-way stop-controlled
LOS – Level of service
For one- or two-way stop-controlled intersections, delay is reported for the worst movement. For signalized intersections, delay is reported as the average for the entire intersection.
Orange text indicates that the intersection currently operates at the capacity standard of LOS D;
Bold, red text indicates that the intersection exceeds the capacity standard of LOS D; i.e. it operates LOS E or F.

Figure 4. Existing Transportation Deficiencies



UNDER 23 U.S. CODE § 148 AND 23 U.S. CODE § 407, SAFETY DATA, REPORTS, SURVEYS, SCHEDULES, LISTS COMPILED OR COLLECTED FOR THE PURPOSE OF IDENTIFYING, EVALUATING, OR PLANNING THE SAFETY ENHANCEMENT OF POTENTIAL CRASH SITES, HAZARDOUS ROADWAY CONDITIONS, OR RAILWAY-HIGHWAY CROSSINGS ARE NOT SUBJECT TO DISCOVERY OR ADMITTED INTO EVIDENCE IN A FEDERAL OR STATE COURT PROCEEDING OR CONSIDERED FOR OTHER PURPOSES IN ANY ACTION FOR DAMAGES ARISING FROM ANY OCCURRENCE AT A LOCATION MENTIONED OR ADDRESSED IN SUCH REPORTS, SURVEYS, SCHEDULES, LISTS, OR DATA.

6.5 Safety

Crash history for the City of Centralia and the specific study intersections within Centralia's UGA are profiled below (Table 4, Table 5, and Table 6). WSDOT provided historical crash data from January 1, 2015 to December 31, 2023. The project team analyzed the data for potential crash patterns that could be a result of existing geometric or operational deficiencies. Table 4 summarizes all crashes within the City of Centralia from 2015-2023 by crash type and the percentage of total crashes.

Table 4. Crashes by Type, Citywide

Crash Type	Count	Percent of Total
Rear End	760	22%
Angle	1,001	29%
Fixed Object	520	15%
Sideswipe Same Direction	444	13%
Pedestrian/Bike	105	3%
Head On/Sideswipe Opposite Direction	55	2%
Non-collision	36	1%
Other	474	14%
Total	3,395	100%

Table 5 lists crashes by severity. Crashes are classified as property damage only (PDO), injury, fatal, and pedestrian/bicycle related. Overall, there were 3,395 crashes within Centralia in the period. Nearly three-quarters of crashes (72%) were property damage only with no injuries reported. Three percent of crashes were pedestrian- or bicycle-related crashes.

There were seven fatal crashes during the 9-year report period. Two of the fatal crashes recorded excessive speed as the contributing factor, one was due to reckless driving, one was due to driver illness, and the last was unknown. Two of the fatal crashes involved pedestrians, one due to distractions outside the vehicle and the other due to an unclassified pedestrian action.

Table 5. Crashes by Severity, Citywide

Years of Crashes	PDO Crash	Injury Crash	Fatal Crash	Pedestrian/Bicycle Crash	Total
2015-2023	2,452 (72%)	875 (28%)	7 (<1%)	105 (3%)	3,395 (100%)

Notes: PDO = Property Damage Only

Table 6 summarizes the crashes at the study area intersections by year. The intersection of Harrison Avenue/I-5 Southbound Ramps had the highest number of crashes (123), and the intersection of Harrison Avenue/I-5 Northbound Ramps had the second highest number of crashes (94) over the nine-year study period. Both intersections are signalized I-5 ramp terminals, which have higher vehicle volumes and drivers that are unfamiliar with the area, when compared with other intersections within the study area. The intersection with the third highest number of crashes was N Belmont Avenue and Harrison Avenue (92). This intersection is influenced by the adjacent I-5 ramps and the busy shopping center driveway which composes its south leg.

Table 6. Average Yearly Crashes by Study Intersection

	Intersection	Crashes by Year									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
1	Harrison Avenue and W Reynolds Avenue	5	4	3	3	7	8	5	4	6	45
2	Pearl Street and W Reynolds Avenue	2	4	2	4	7	3	2	3	5	32
3	Johnson Road and Harrison Avenue	4	4	3	7	3	6	8	1	2	38
4	N Belmont Avenue and Harrison Avenue	10	8	13	10	10	9	13	13	6	92
5	I-5 Southbound Ramps and Harrison Avenue	21	11	11	19	10	12	15	16	8	123
6	I-5 Northbound Ramps and Harrison Avenue	5	5	8	17	14	14	10	10	11	94
7	High Street and Harrison Avenue	5	10	3	3	6	2	8	4	4	45
8	Bridge Street and Harrison Avenue	2	3	4	4	1	1	3	1	4	23
9	Harrison Avenue and W 1st Street	2	4	5	1	3	3	3	1	1	23
10	Harrison Avenue and W Main Street	0	1	1	1	0	0	2	1	0	6
11	Yew Street and W Main Street	0	2	3	2	2	2	3	2	0	16
12	Pearl Street and W Main Street	3	1	4	2	1	1	2	8	5	27
13	Tower Avenue and W Main Street	1	3	2	3	1	1	2	6	2	21
14	I-5 SB C-D Lane and Mellen Street	8	3	2	14	2	0	4	0	5	38
15	I-5 NB C-D Lane and Mellen Street	3	5	4	2	4	5	4	4	4	35
16	Yew Street and Mellen Street	1	1	1	1	0	4	2	2	2	14
17	Pearl Street and Cherry Street	2	4	6	8	5	2	9	5	3	44
18	Tower Avenue and Cherry Street	2	0	1	1	2	2	4	2	1	15
19	S Yew Street and Alder Street	0	0	0	0	0	0	1	0	0	1
20	S Yew Street and Art Lehmann Drive	0	0	0	0	0	0	0	0	0	0
21	S Gold Street and Summa Street	7	4	2	4	1	0	1	4	4	27
22	Kresky Avenue and Summa Street	2	2	7	6	5	6	4	4	10	46
	Total	85	79	85	112	84	81	105	91	83	805

6.6 Transit Facilities Conditions and Deficiencies

Bus Service and Paratransit

Lewis County Transit operates the local bus service in the Centralia-Chehalis area. Lewis County Transit provides accessible fixed-route, dial-a-ride, and ADA complementary paratransit service.

Demand Response Service

Lewis County Transit Dial-a-Ride, called DARTT, offers demand response service throughout the Centralia and Chehalis area, with connections to nearby cities, including Olympia. Rides must be requested at least one day prior. Requests and information are available through the Lewis County Transit smartphone application, or by calling the scheduling service. Rides are open to the general public to locations in Lewis County, Monday through Friday, from 8:00 a.m. to 5:00 p.m.

ADA complementary paratransit service, called LIFTT, provides door-to-door accommodations for qualified individuals between any locations within ¾-mile of a Lewis County Transit non-express fixed route bus stop.

Paratransit service is required by the Americans with Disabilities Act to complement fixed route transit and offer mobility to people unable to access bus service. Paratransit is reservation-based at least the day before, although same-day requests may be provided if there is capacity.

Lewis County Transit buses provide secure locations for two wheelchairs per bus. Lewis County Transit buses also provide bike racks with a capacity of two bikes per bus. Paratransit buses accommodate three wheelchairs.

Lewis County Transit also offers deviated fixed-route service to qualified paratransit riders, who can request 'off-route' stops within a few blocks of a bus stop.

Fixed Route Service

Lewis County Transit operates nine buses on four fixed routes from 6:00 a.m. to 7:00 p.m. on weekdays and from 7:00 a.m. to 4:00 p.m. on Saturdays and Sundays. The Purple and Brown express routes operate during the weekdays only. The fixed routes are described below and shown in Figure 5 below. All routes stop and end runs at the Mellen Street Energy (Transit) Station, located on Airport Road just south of Mellen Street.

Blue Line – North Centralia serves the north Centralia area hourly between approximately 6:00 a.m. and 7:00 p.m. on weekdays and between 7:00 a.m. and 4:00 p.m. on weekends. This route serves Providence Hospital, Jefferson – Lincoln Elementary, Washington Elementary, Oakview Elementary, and the Amtrak station.

Yellow Line – Centralia - Chehalis serves the Centralia – Chehalis area hourly between approximately 6:00 a.m. and 7:00 p.m. on weekdays and between 7:00 a.m. and 4:00 p.m. on weekends. This route serves Valley View Medical, Providence Medical, Chehalis Library, and Centralia College.

Orange Line – West Centralia serves the West Centralia area hourly between approximately 6:00 a.m. and 7:00 p.m. on weekdays and between 7:00 a.m. and 4:00 p.m. on weekends. This route serves Centralia College, Cascade Health, Great Wolf Lodge, Centralia High School, and Port of Centralia.

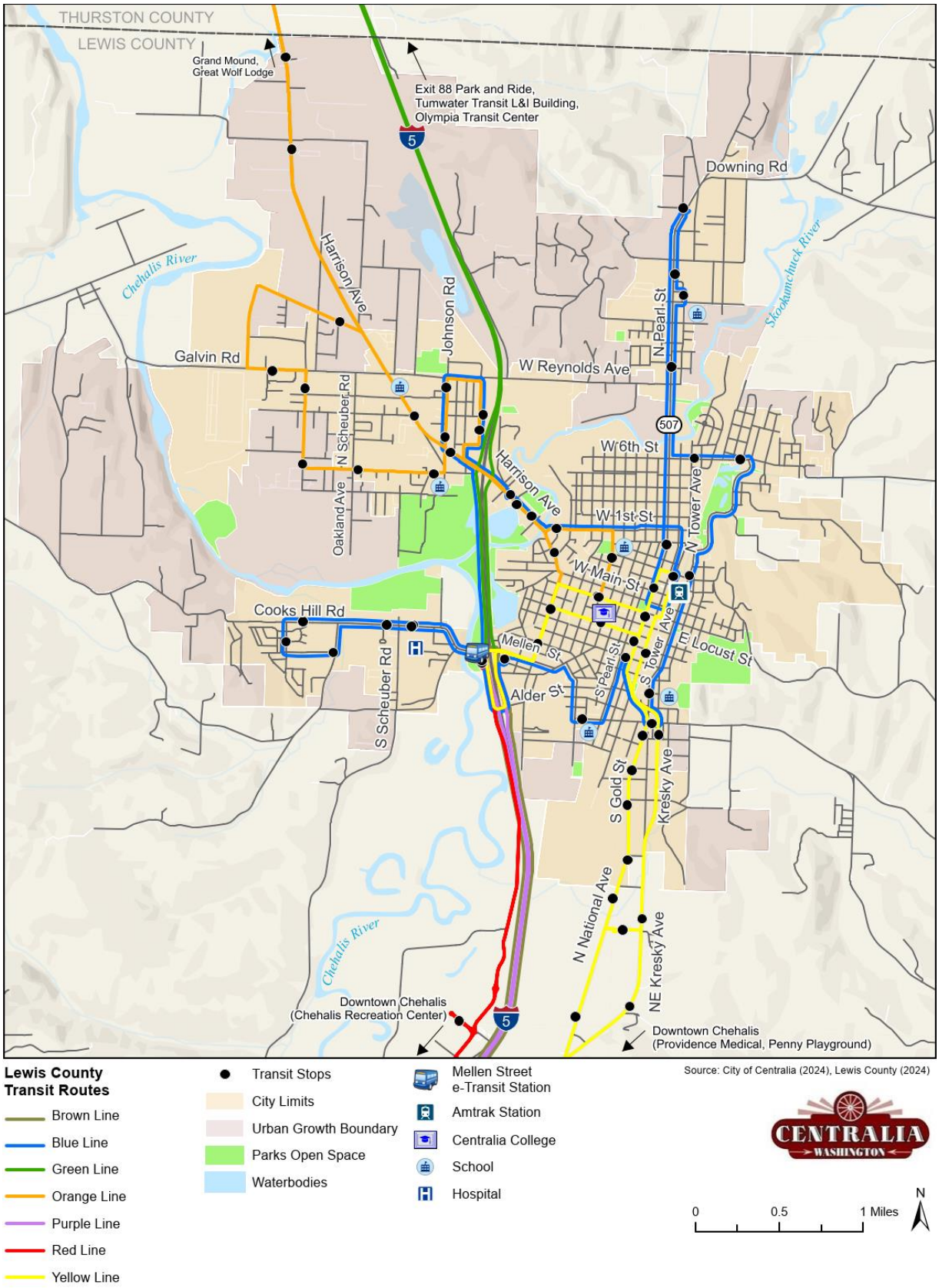
Red Line – Chehalis serves the Chehalis area hourly between approximately 6:00 a.m. and 7:00 p.m. on weekdays and between 7:00 a.m. and 4:00 p.m. on weekends. This route serves Chehalis Recreation Center, Penny Playground, Chehalis Library, and WF West High School.

Green Line – Centralia – Olympia provides express service to and from Olympia between approximately 6:00 a.m. and 7:00 p.m. on weekdays and between 7:00 a.m. and 4:00 p.m. on weekends. The Green Line departs every two hours with a break from 12:00 p.m. and 1:00 p.m. Monday through Friday and 11:00 a.m. and 12:00 p.m. Saturday and Sunday. This route serves the Mellen Street Energy Transit Station, the Exit 88 Park and Ride, the Tumwater Transit L&I Building, and the Olympia Transit Center.

Purple Line – Centralia – Kelso provides express service to and from Kelso between approximately 6:00 a.m. and 7:00 p.m. on weekdays. The Purple Line departs every two hours with a break from 12:00 p.m. and 1:00 p.m. Monday through Friday. This route serves the Mellen Street Energy Transit Station, the Exit 68 Energy Transit Station, and the Castle Rock Park and Ride.

Brown Line – Centralia – Morton – provides express service to and from Morton between approximately 6:00 a.m. and 7:00 p.m. on weekdays. The Brown Line departs every two hours with a break from 12:00 p.m. and 1:00 p.m. Monday through Friday. This route serves the Exit 68 Energy Station, the Salkum Library, and the Arbor Health-Morton Hospital.

Figure 5. Transit Routes



Fares

Lewis County Transit fixed-route service is fare-free for all riders. Qualified individuals are also able to utilize Lewis County Paratransit service fare-free. Passengers 18 years old and younger are also able to ride free on Lewis County Transit DARTT. For all other passengers, the DARTT base fare is $3.00 and riders are charged an additional $0.30 per mile.

Facilities

Lewis County Transit operations center is located at 212 East Locust Street in Centralia. The agency updated the facility in 2022, to create more operations space, fleet management, and facilities shop spaces.

Lewis County Transit serves a transit center and park-and-ride facility called the Mellen Street Energy (or "e-Transit") Station, located at Mellen Street and I-5 in Centralia. The transit center was completed in June 2021 and includes bus charging equipment, personal vehicle charging stations, a park-and-ride facility, and bus stop amenities. All routes start and stop at this location. Lewis County Transit routes also serve the Exit 68 e-Transit Station, where bus charging equipment is located with bus shelter amenities.

The Greyhound Bus Station is on Lewis County Transit Centralia Blue Line and shares operating space with a local gas station near the intersection of Mellen Street and Marsh Avenue. This station primarily functions as a passenger loading and unloading point, providing daily service between Seattle and Portland with local stops in Tacoma, Olympia, Centralia, and Kelso.

Passenger Train Service

Amtrak Cascades and Coast Starlight train routes serve the Centralia/Chehalis area with a depot in downtown Centralia. It sits alongside Burlington Northern Santa Fe track. In 2023, the Centralia depot had 18,000 boardings and alightings. Currently there are seven passenger trains daily in each direction. Additional rail information is discussed in the Freight (Rail and Truck) section.

Commercial and Private Transportation

Private transportation is available in Centralia through taxi services or on-demand ride sharing services. Taxis providing door-to-door service can be pre-arranged with multiple companies serving the Centralia and Chehalis area. Private rideshare services that similarly connect people on-demand through online applications are available in Centralia and can provide services within the area and to regional destinations.

Private bus companies offer routes that serve Centralia, connecting to regional destinations like Portland, Seattle and beyond. Current services include Greyhound and Flixbus.

6.7 Pedestrian and Bicycle Facilities Conditions and Deficiencies

6.7.1 Pedestrian Facilities

Pedestrian facilities have been inventoried and described in the following sections. Sidewalks and ADA ramps are shown in Figure 6. Existing and proposed trails are shown in Figure 7.

6.7.1.1 Sidewalks

The team inventoried sidewalk facilities along arterials, collectors, and adjacent to schools within the study area and classified them as good or poor. Sidewalks in good condition were five (5) feet wide or more and may have shown minor signs of damage and cracking but were still easily navigable.

Sidewalks in substandard condition were less than five feet wide, showed significant damage and cracking or presented a barrier for people with disabilities or using mobility devices. Sidewalks along both sides of arterials and collectors in downtown Centralia are sufficient, meaning they are in good condition and at least five (5) feet wide with only minor signs of damage and cracking. They are easily navigable for people with disabilities or using mobility devices. Sidewalks are absent on:

- Reynolds Avenue
- Galvin Road
- Scammon Creek Road
- Pearl Street north of E 5th Street
- Seminary Hill Road, notably between the Seminary Hill Natural Area and downtown

Sidewalks are on both sides of Cooks Hill Road from Military Road west to S. Scheuber Road and one side from S. Scheuber Road to just west of Landing Way. Sidewalks on E Magnolia Street are sufficient between N Gold and Wilding Streets. See Figure 6 for more information.

Centralia Middle School lacks sidewalks on the western edge of its parcel. All other public schools have sidewalks where the school abuts a local road. However, schools abutting residential land do not have sidewalks along that side.

6.7.1.2 ADA Ramps

ADA ramps are present throughout downtown Centralia and in the east side of the city. On the west side of I-5, ramps are present along Harrison Avenue but do not extend beyond W. Reynolds Road. Three public schools on the west side of I-5 do not have a connected network of ADA ramps within the sidewalk network. The 2022 ADA Transition Plan (page 10) describes the locations of proposed improvements the City plans to construct before 2032, including ADA ramp installations, accessible push buttons, and pedestrian crossing beacons. The *City of Centralia ADA Transition Plan for Public Right-of-Way, 2022 Update* was prepared by the City to address the requirements of Title II of the Americans with Disabilities Act. This document included an evaluation of current facilities and developed a program access plan to address deficiencies.

6.7.1.3 Trails

Within city limits there is a pedestrian trail network in the Seminary Hill Natural Area. The approximately 3-mile network is comprised of nine designated trails with trailhead access located at the parking lot entrance near the intersection of E. Locust Street and Barner Drive.

The Chehalis River Discovery Trail opened in September 2006 and travels south from the Centralia wastewater treatment plant along the Chehalis River for about 1.5 miles. It is located on city-owned property outside of the city limits. Marked trail access and interpretive signage is located at the terminus of Goodrich Road.

The I-5 Trail, or Airport Road Trail, extends along the west side of I-5 between the interstate and the Chehalis River and connects to Mellen Street. The Riverside Trail is located in Riverside Park between Harrison Avenue and the Skookumchuck River. There are three parking lots.

Future plans to expand open and recreational space include the development of an impervious trail that follows the Chehalis River and connects the Discovery Trail to Schafer County Park in Lewis County. Sections of this trail plan are located outside of the UGA and will require shared implementation efforts between the County and other agencies. Additional trail plans include the development of a 2.5-mile trail along the former Chicago Milwaukee St. Paul and Pacific Rail rights-of-way. A portion of this planned trail network will cross I-5 at the

Skookumchuck River underpass. Another urban trail is planned along Harrison Avenue, extending along Reynolds Avenue and connecting to Schaefer County Park. Existing and proposed trails are shown in Figure 7 below.

6.7.2 Bicycle Facilities

There are two types of bicycle facilities in Centralia: signed bicycle routes and bicycle lanes. Streets with signed bicycle routes are shown in Figure 6. Bicycle lanes are provided on Harrison Avenue from First Street to Lowe Street, First Street to Main Street, Haviland Street to Galvin Road, and Belmont Avenue to Johnson Road. Most of the existing bicycle network is located in the eastern part of the city, with Harrison Avenue and Borst Avenue having the only bicycle lanes on the west side of I-5. There are approximately 6.45 miles of bicycle facilities east of I-5. There are less than 1.5 miles of bicycle facilities in the western part of the city.

Three public schools on the west side of I-5 have access to existing bicycle facilities along Borst Avenue and Harrison Avenue, but this network does not connect across I-5. Bicycle facilities are generally absent on streets that connect schools and parks to neighborhoods or commercial areas.

Future arterial sections of the West Connector, such as N Scheuber Road between Mt. Vista and Galvin Road, and other urban arterial routes will include adequate shoulder widths that allow for the designation of future bike routes.

Figure 6. Pedestrian and Bicycle Facilities

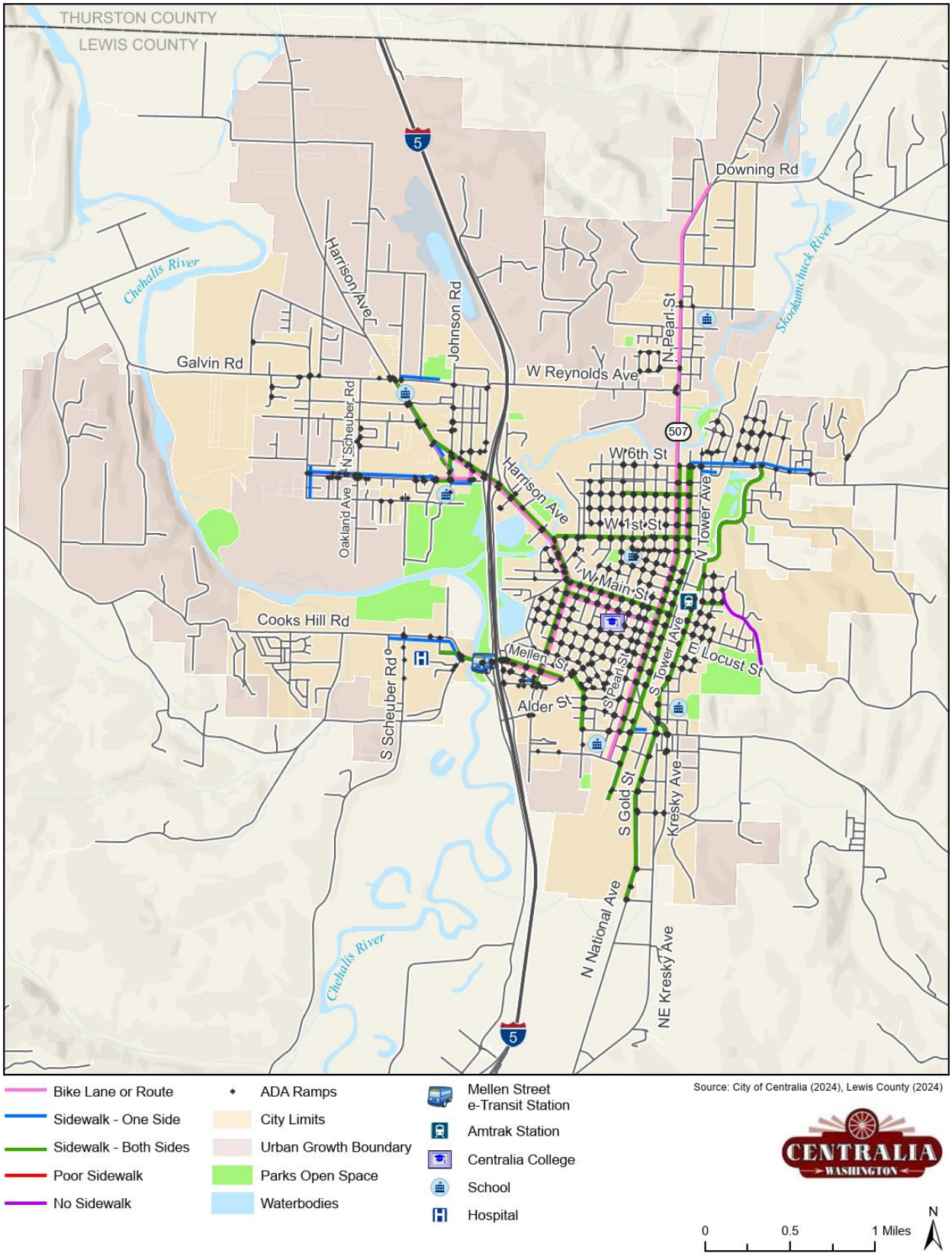
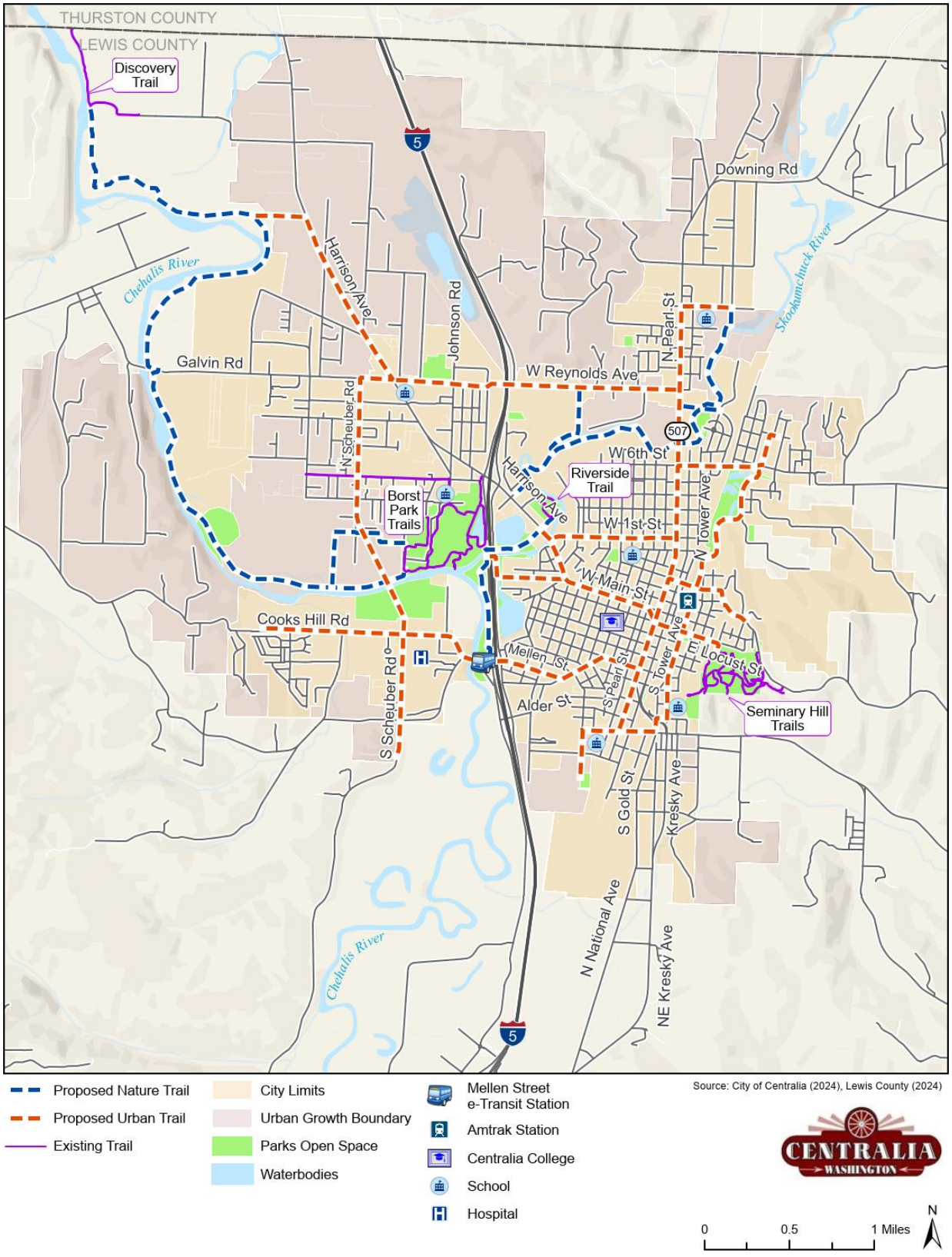


Figure 7. Existing and Proposed Trails



6.8 Freight (Rail and Truck) Network Conditions and Deficiencies

Rail

Freight rail operates to, from and through Centralia along the Burlington Northern Santa Fe (BNSF) Railroad, Union Pacific Railroad, and Tacoma Railroad tracks. The Burlington Northern Santa Fe (BNSF) line crosses streets at three grade-separated crossings: E 6th Street, N Pearl Avenue and N Tower Avenue and five at-grade crossings at E. Maple Street, E. Main Street, E. Locust Street, W. Summa Street and E. Floral Street. The Tacoma Rail's Mountain Division line interconnects and interchanges rail cars at a switchyard near the intersection of E Maple Street and N Gold Street.

Freight trains switch cars and transfer loads at Blakeslee Junction, near where tracks and West Reynolds Avenue pass under I-5. Transferring loads and interconnecting freight cars cause congestion and delays among freight cars. WSDOT recently implemented new rail connections at Blakeslee Junction to reduce congestion at crossing streets by increasing passing speed among rail cars. The Union Pacific Railroad provides rail freight connections between the Port of Centralia and the Blakeslee Junction switchyard.

Truck Routes

Truck route locations are important for understanding the flow of freight movement through the city. I-5 is a significant freight route and carries interstate and international freight. The City of Centralia has signed, designated truck routes, including the following:

- W 1st Street from Harrison Avenue to Pearl Street
- South Viaduct and S. Gold Street from E. Floral Street to Chestnut Street
- Mellen Street/Alder Street/Cherry Street from I-5 to Tower Avenue
- Harrison Avenue from Johnson Road to the County line/city limits

Other streets in the city are designated truck routes, but may not be signed, including the following:

- Galvin Road/Reynolds Avenue from the west city limits to Pearl Street
- Johnson Road from Reynolds Avenue to Harrison Avenue
- N. Scheuber Road from Oakland Avenue to Galvin Road
- Harrison Avenue/Main Street from I-5 to Tower Avenue
- Yew Street from Mellen Street to Main Street
- Cooks Hill Road/Mellen Street from S. Scheuber Road to I-5
- Pearl Street/Tower Avenue
- Gold Street and Kresky Avenue from Summa Street to south city limits

On W 1st Street and on Johnson Road, trucks are restricted from 6:00 a.m. to 7:00 p.m. with truck speeds limited to 20 mph. The Harrison Avenue and Galvin Road/Reynolds Avenue truck routes provide freight connections between the Port of Centralia and I-5. These routes, along with N. Scheuber Road, are the only truck routes located west of I-5. The truck routes on Gold Street and Cherry Street provide some connectivity between the rail freight routes and I-5. Freight routing is absent on Central Boulevard, though it is a common route for freight vehicles that transfer and pick up loads at a local switchyard. There are County designated routes on Cooks Hill Road and Reynolds Avenue, but they are not signed at this time.

While some routes have been designated, there are also routes regularly used by large trucks that do not follow these designated streets. While the roadways have sufficient capacity, the geometry at intersections does not always permit larger tractor-trailer trucks to use these routes to access their destinations. Future arterial sections of the West Connector will allow for freight route designations.

6.9 Air Facilities

6.9.1 Public Air Facilities

The nearest public air transportation services are at the Centralia-Chehalis Airport, located approximately 3 miles southwest of the Centralia City Center. Average air traffic is about 130 aircraft operations per day, with nearly 50% local general aviation, roughly 40% transient general aviation, approximately 10% air taxi and 1% military. The airport has two concrete runways and both are in good condition. Runway 16/34 is 5,000 feet long and 150-feet wide and has weight limits of 85,000 pounds for double tandem, and 30,000 pounds for single wheel and double wheel aircraft. Access to the airport is via NW Airport Road or NW Louisiana Avenue.

6.9.2 Private Air Facilities

There are five (5) private airports within ten miles of Centralia.

• Skyqueen Airport is located 2 miles east of Centralia at Seminary Hill.

• Skatter Creek Airport is located 8.4 miles northwest of Centralia at Rochester.

• Wissler's Airport is located 8.7 miles northeast of Centralia at Tenino.

• Dwight Field Airport is located 9.1 miles southeast of Centralia at Chehalis.

• Sorrel Airport is located 9.3 miles northwest of Centralia at Tenino.

6.10 Water Transportation

There are two rivers in the study area – the Chehalis River and Skookumchuck River. The Chehalis River flows into Grays Harbor in Aberdeen and is navigable. Within the study area, the Chehalis River flows parallel and west of I-5, while the Skookumchuck River flows east-west and is crossed by I-5.

7. Future Conditions and Deficiencies

This section summarizes and identifies future travel demand conditions through the year 2045, compliant with the GMA. This long-range time frame represents the standard 20-year horizon for long-range planning documents.

The future baseline transportation conditions consider anticipated growth in households, employment, and land use within the city. It also accounts for the planned completion of local and regional transportation improvements. With these future changes, potential transportation deficiencies at the study area intersections have been identified.

7.1 Study Area Planned and Programmed Improvements

The study area for the Centralia Comprehensive Plan Transportation Element Update includes the area within the city limits of Centralia as well as the designated Urban Growth Area (UGA). By the year 2045, planned improvements to the transportation network are expected to be complete. Table 7 includes a list of these local and regional transportation system elements, by jurisdiction, assumed to be constructed by the horizon year.

Table 7. Assumed Future Baseline Transportation Improvements

Improvement Project	Description	Reference[1,2]
Gallagher Road Extension	Construct new urban roadway to Harrison Avenue from the intersection of Gallagher Road and Ives Road.	Lewis County Six-Year TIP
Kresky Ave/Summa St Signal	Installation of a new traffic signal system, ADA ramps, asphalt paving, sidewalk, and striping	City of Centralia Six-Year TIP
Alder Street Improvements	Widening and reconstruction of Alder Street from the I-5 collector distributor lane to the intersection of Alder Street and Mellen Street. It also includes curb, gutter, sidewalks, and illumination along the length of the project.	City of Centralia Six-Year TIP
Harrison Avenue Improvements	Widening of the roadway, sidewalks, streetlights, stormwater, and utilities	City of Centralia Six-Year TIP
Westside Connector Phase 1 (Future Bridge and Connection)	New bridge and roadways to provide a westside connection over the Chehalis River	City of Centralia Six-Year TIP
Westside Connector Phase 1 (N Scheuber Rd Improvements)	Reconstruction of N. Scheuber Road to include roadway widening, utility improvements, addition of sidewalk and bicycle lanes, street lighting, intersection improvements, roadway delineation and permanent signs	City of Centralia Six-Year TIP
Harrison Avenue – I-5 to Johnson Rd	Add capacity for EB turn onto SB CD Lane, safety improvements eliminating left turn movements between signals, grind and pave asphalt roadway, ADA improvements, striping, signage, and other related work	City of Centralia Six-Year TIP

[1] Lewis County Six-Year Transportation Improvement Program (2024-2029) report date 11/21/2023

[2] City of Centralia Six-Year Transportation Improvement Program (2025-2030) report date 6/25/2024.

7.2 Traffic Forecasting

Future year demand data were obtained from the Thurston Regional Planning Council's (TRPC) travel demand forecast model. This regional forecast demand model includes land use growth forecasts for the City of Centralia and reflects projected housing and employment growth within the study area. It also includes the planned transportation improvements listed in Table 7.
Appendix E – Forecast Methods and Assumptions Memorandum includes detailed information about the demand forecasting process and the methods and assumptions that were used in the development of future year travel demand.

7.3 Future Traffic Operations

Future traffic operations, and the identification of potential deficiencies, were based on projected growth in land use and the number of people working and residing in Centralia. This growth is expected to affect existing roadways through an increase in traffic volumes, which would result in more delays and longer queues at certain study intersections. More detailed methods and assumptions for traffic operations are outlined in Appendix C – Transportation Element Update Methods and Assumptions.

7.3.1 Analysis Years

Intersection analysis for the PM peak hour will be analyzed for the conditions listed below.

- Existing Year (2024)
- No Build with Existing Network (2045)
- No Build with Planned Improvements (2045)
- Potential Strategies (2045)

The existing year of 2024 is selected to provide an assessment of the current facilities and intersection operations. The existing analysis will serve as a basis for comparison with future forecasted conditions. The future forecast year of 2045 was selected to capture changes in traffic and growth through a 20-year timeframe horizon.

Three conditions were or will be analyzed for the horizon year (2045). Future No Build with Existing Network assigns forecasted future volumes to the existing Synchro Network. Future No Build with Planned Improvements assigns forecasted future volumes to a Synchro network with added intersection and roadway improvements planned in local or regional transportation improvement programs (TIP). The Potential Strategies condition will be analyzed in the next phase of the project and will include recommended further system improvements that are necessary to keep the roadway network operating at an acceptable level.

7.3.2 Future Delay and Level of Service

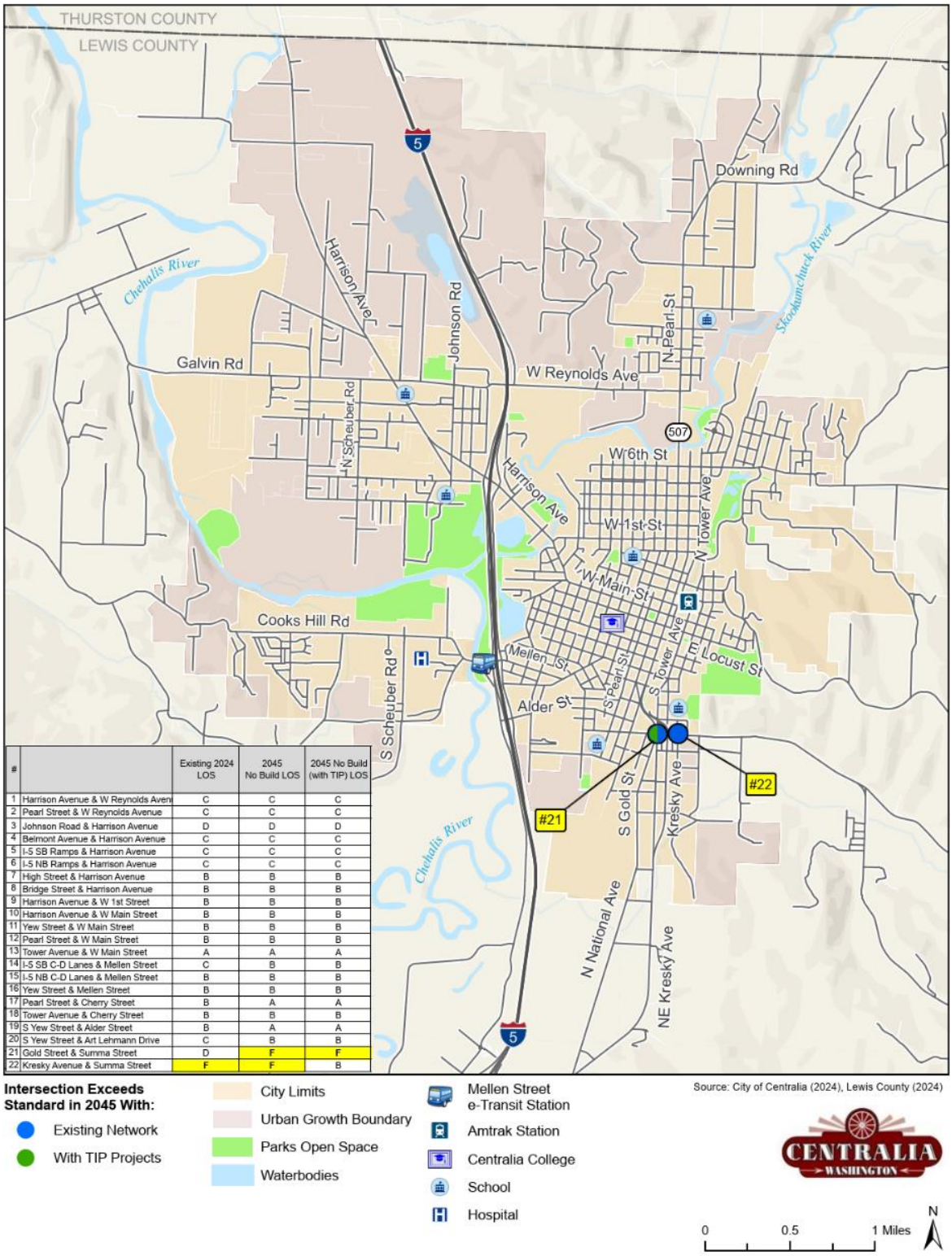
Table 8 presents the No Build with Existing Network (2045) and No Build with Planned Improvements (2045) intersection delays and operational level of service (LOS) at each of the study intersections, compared to existing conditions. For signalized intersections, the LOS and delay for overall intersection operations is reported. For stop-controlled intersections, the stop-controlled movement with the worst operating performance is reported. The LOS threshold for all study intersections is LOS D. Bold text/shaded cells indicate the intersection exceeds the capacity standard of LOS D; i.e. it operates LOS E or F. Intersections operating within the LOS standard but with individual movements at LOS F or with volume to capacity (V/C) ratios greater than 1.0 are also identified.

Table 8. No Build (2045) PM Peak Hour Intersection Operations Summary

	Intersection Name	Intersection Control Type	Jurisdiction	Existing		2045 No Build (w/ Existing Network)		2045 No Build (w/ Planned Improvements)	
				LOS	Delay	LOS	Delay	LOS	Delay
1	Harrison Ave & West Reynolds Ave	Signal	Centralia	C	24.3	C	30.8	C	30.8
2	Pearl St & West Reynolds Ave	Signal	WSDOT	C	24.6	C	32.6	C	32.6
3	Johnson Rd & Harrison Ave	Signal	Centralia	D	54.3[1]	D	51.3[1]	D	51.0[1]
4	Belmont Ave & Harrison Ave	Signal	Centralia	C	20.9	C	23.9	C	30.2
5	I-5 SB Ramps & Harrison Ave	Signal	WSDOT	C	21.9	C	22.2	C	22.4
6	I-5 NB Ramps & Harrison Ave	Signal	WSDOT	C	32.3	C	23.7	C	23.6
7	High St & Harrison Ave	Signal	Centralia	B	15.2	B	14.5	B	14.4
8	Bridge St & Harrison Ave	Signal	Centralia	B	16.0	B	16.1	B	16.0
9	Harrison Ave & West 1st St	OWSC	Centralia	B	11.3	B	13.3	B	13.3
10	Harrison Ave & West Main St	Signal	Centralia	B	18.8	B	18.5	B	18.5
11	Yew St & West Main St	Signal	Centralia	A	15.0	B	15.5	B	15.5
12	Pearl St & West Main St	Signal	WSDOT	B	12.7	B	14.1	B	14.1
13	Tower Ave & West Main St	Signal	WSDOT	A	8.3	A	7.9	A	7.9
14	I-5 SB C/D Lane & Mellen St	Signal	WSDOT	C	26.3	B	17.4	B	17.4
15	I-5 NB C/D Lane & Mellen St	Signal	WSDOT	B	18.1	B	18.5	B	18.5
16	Yew St & Mellen St	Signal	WSDOT	B	17.9	B	19.3	B	19.3
17	Pearl St & Cherry St	Signal	WSDOT	B	12.4	A	8.3	A	8.3
18	Tower Ave & Cherry St	Signal	WSDOT	B	12.1	B	16.2	B	16.2
19	South Yew St & Alder St	OWSC	Centralia	B	10.6	B	8.8	B	8.8
20	South Yew St & Art Lehmann Dr	Signal	Centralia	C	22.4	B	10.9	B	10.8
21	Gold St & Summa St	TWSC	Centralia	D	30.6	F	>300	F	>300
22	Kresky Ave & Summa St	TWSC	Centralia	F	66.2	F	>300	B	12.8

OWSC: One-way stop controlled, TWSC: Two-way stop controlled, LOS: Level of service. Delay is reported in average seconds per vehicle.
[1] Intersection has one or more movements with V/C > 1.0 and/or LOS F, [2] With construction of planned sign

Figure 8. Future Transportation Deficiencies



#		Existing 2024 LOS	2045 No Build LOS	2045 No Build (with TIP) LOS
1	Harrison Avenue & W Reynolds Aven	C	C	C
2	Pearl Street & W Reynolds Avenue	C	C	C
3	Johnson Road & Harrison Avenue	D	D	D
4	Belmont Avenue & Harrison Avenue	C	C	C
5	I-5 SB Ramps & Harrison Avenue	C	C	C
6	I-5 NB Ramps & Harrison Avenue	C	C	C
7	High Street & Harrison Avenue	B	B	B
8	Bridge Street & Harrison Avenue	B	B	B
9	Harrison Avenue & W 1st Street	B	B	B
10	Harrison Avenue & W Main Street	B	B	B
11	Yew Street & W Main Street	B	B	B
12	Pearl Street & W Main Street	B	B	B
13	Tower Avenue & W Main Street	A	A	A
14	I-5 SB C-D Lanes & Mellen Street	C	B	B
15	I-5 NB C-D Lanes & Mellen Street	B	B	B
16	Yew Street & Mellen Street	B	B	B
17	Pearl Street & Cherry Street	B	A	A
18	Tower Avenue & Cherry Street	B	B	B
19	S Yew Street & Alder Street	B	A	A
20	S Yew Street & Art Lehmann Drive	C	B	B
21	Gold Street & Summa Street	D	F	F
22	Kresky Avenue & Summa Street	F	F	B

7.3.2.1 No Build Existing Network

This section reports the delay and LOS for the No Build Existing Network (2045) condition, in which future volumes were added to the existing roadway network without any intersection or roadway improvements. Phase splits and coordinated signal offsets were optimized under this scenario.

All study intersections are projected to operate at LOS D or better with the exception of Gold Street/Summa Street and Kresky Avenue/Summa Street, as discussed below. Intersection delays and operational level of service (LOS) are shown in Table 8. Appendix F – Synchro Output Reports (Future Conditions) provides the complete report output for each intersection under No Build with Existing Network 2045 conditions.

Intersections Operating Below LOS Standard

Two intersections are projected to operate at LOS F, Gold Street/Summa Street and Kresky Avenue/Summa Street. The Gold Street/Summa Street intersection currently operates at LOS D and Kresky Avenue/Summa Street currently operates at LOS F. Both are expected to see an increase in traffic volume compared to existing conditions. Vehicle delays on the east-west stop-controlled approaches at both locations are expected to increase significantly.

At the intersection of Summa Street/Gold Street, eastbound and westbound traffic must stop and find an acceptable gap in traffic before turning onto or crossing Gold Street. Delays for westbound stop-controlled vehicles could exceed 5 minutes per vehicle on average, due to the high volume of traffic (that is not required to stop) traveling southbound on Gold Street.

The intersection of Summa Street/Kresky Avenue would be worse than in existing conditions for similar reasons. Increased traffic volumes on Kresky Avenue would result in high delays on the eastbound and westbound stop-controlled approaches. Vehicles on Summa Street could also wait for more than 5 minutes before finding acceptable gaps in traffic on Kresky Avenue.

Other Deficiencies

One intersection on the Harrison Avenue corridor currently has individual movements that are LOS F and/or have V/C greater than 1.0 in the existing condition, though the average intersection delay is within the standard.

The northbound and southbound approaches of the Johnson Road/Harrison Avenue currently operate at LOS F and LOS E, respectively. The constrained geometry of the intersection currently requires split phasing for these approaches, which limits the available green time and results in higher delay. Under No Build Existing Network (2045) conditions volumes are expected to increase, but delay at these movements is projected to improve after optimization of phase splits and coordinated signal offsets.

7.3.2.2 No Build with Planned Improvements

This section reports the delay and LOS for the No Build with Planned Improvements (2045) condition, in which future volumes were added to the roadway network with planned and programmed intersection and roadway improvements included. Phase splits and coordinated signal offsets were also optimized under this scenario.

All study intersections are projected to operate at LOS D or better with the exception of Gold Street/Summa Street, as discussed below. Intersection delays and operational level of service (LOS) are shown in Table 8.

Appendix F – Synchro Output Reports (Future Conditions) provides the complete report output for each intersection under No Build with Planned Improvements (2045) conditions.

Intersections with Improved LOS

Under No Build with Planned Improvements (2045), the intersection of Kresky Avenue/Summa Street is projected to improve to LOS B with the addition of the planned signalization at that location.

Intersections Operating Below LOS Standard

The Gold Street/Summa Street intersection would continue to operate at LOS F, as no improvements are proposed at that location. Delays would be identical to the No Build Existing Network condition.

Other Deficiencies

The Johnson Road/Harrison Avenue intersection projected to have individual deficient movements in the No Build Existing Network (2045) condition is not projected to change substantially with planned improvements. Elimination of mid-block left turn movements between Johnson Road and Belmont Avenue would result in additional left turn movements at the intersections of Johnson Road/Harrison Avenue and Belmont Avenue/ Harrison Avenue. The increase in delay from these additional movements is projected to be mostly offset by optimization to phase splits and signal offsets.

8. Potential Transportation System Solutions

This chapter consists of a list of Approved Transportation Improvement Program and Long-Range Projects for the 2025 Centralia Comprehensive Plan Transportation Element (Centralia Long Range Transportation Plan). These will be evaluated as per the Transportation Plan goals and performance criteria.

Table 9 summarizes projects by type, including location, a short description, and whether the project is in the city of Centralia or regional urban growth area (UGA) jurisdictional boundary.

Figure 9 below shows the map of the approved improvement projects. The project types include:

- Intersection capacity
- Maintenance
- Non-Motorized
- Roadway capacity
- Safety
- Freight

Table 9. Adopted 2024-2029 Six-Year Transportation Projects

#	Title	Location	Description	Jurisdiction
Intersection Capacity				
TIP-1	Kresky Ave/Summa Street Signal	Kresky Avenue and Summa Street	Install new traffic signal system, ADA ramps, asphalt paving, sidewalk, striping	City
Maintenance				
TIP-2	Central Boulevard Area Transportation Improvement	B Street from 6th Street to Kearney Street, Kearney Street from B Street to Central Boulevard, and Central Boulevard from Kearney Street to the dead end	Reconstruction of B Street, Kearney Street, and Central Boulevard. Includes new curb, gutter, and sidewalks along both sides of the street and new storm drainage improvements, new signs, lane markings	City
TIP-3	Cooks Hill Road Paving	Cooks Hill Road, Scheuber Road to West City Limits	Pavement repair and 2-inch HMA overlay. It will also include roadway delineation, signs, and related work.	City
TIP-4	First Street Asphalt Paving	First Street, Harrison Avenue to Tower Ave.	Grind and repave First Street to include roadway delineation and signage	City
TIP-5	Seminary Hill Asphalt Paving	Seminary Hill Road, City Limits to Maple Street	Grind and repave roadway, ADA replacement, Street Lighting, delineation and signage.	City
Non-Motorized				

#	Title	Location	Description	Jurisdiction
TIP-6	Seminary Hill Bicycle and Pedestrian Path	Seminary Hill Road, Byrd Street to E Maple Street	Install a joint use path along Seminary Hill Road for bicycles and pedestrians.	City
TIP-7	Hayes Lake Bicycle and Pedestrian Path Project	Adjacent to the Skookumchuck River - Bridge Street to Borst Park	Construction of a path from the Hayes Lake public access at the end of Bridge Street along the Skookumchuck River to the existing path adjacent to Borst Lake at Borst Park.	City
TIP-8	City-Wide Bicycle Safety Improvement	Citywide	Striping of bicycle routes and sign installation on all functionally classified roads within bicycle route.	City
Roadway Capacity				
TIP-9	Harrison Avenue Improvements (I-5 to Johnson Road)	Harrison Avenue, I-5 to Johnson Road	Add capacity for East-bound turn onto South-bound C-D Lane, Safety Improvements eliminating left turn movements between signals, Grind and pave asphalt roadway, ADA improvements, striping, signage, and other related work.	City
TIP-10	Westside Connector Phase 1, Stage 1 (N Scheuber Road Improvements)	N Scheuber Road, Galvin Road to Mount Vista Road	Reconstruction of N. Scheuber Road for roadway widening, utility improvements, addition of sidewalk and bicycle lanes, street lighting, intersection improvements, roadway striping and permanent signs	City, UGA
TIP-11	Westside Connector Phase 1, Stage 2 (Future Bridge and Connection)	N. Scheuber Road to S. Scheuber Road/Cooks Hill Rd	New bridge and roadways to provide a westside connection over the Chehalis River	UGA
TIP-12[1]	Reynolds Avenue Improvements East	Reynolds Avenue, N Tower Avenue to City Limits	Widening of roadway, sidewalks, streetlights, stormwater	City, UGA, WSDOT
TIP-13[1]	Reynolds Avenue West Improvements	Reynolds Avenue, Harrison Avenue to City Limits (East of I-5)	Widening, sidewalk, street lighting, stormwater, utilities, roadway delineation, and signs	City
TIP-14[1]	Harrison Avenue Improvements	Harrison Ave, Galvin Road to City Limits	Widening of the roadway, sidewalks, streetlights, stormwater, utilities	City
TIP-15	Main Street Complete Street Improvements	Main Street, Yew Street to Tower Avenue	Reconstruction of Main Street to install Complete Streets elements for bike/ped/ transit facilities, repave roadway, striping and signs	City, WSDOT

#	Title	Location	Description	Jurisdiction
Safety				
TIP-16	Washington & Oakview School Student Safety	Oakview Avenue, Pearl to 228 E Oakview	Sidewalks, ADA ramps, RRFB pedestrian crossings, roadway widening, paving, striping, signs, stormwater, and other related work.	City

Source: Centralia 2024-2029 Six-Year Transportation Improvement Plan

[1] Projects TIP 12-TIP 14 are part of the larger Reynolds Avenue and Harrison Avenue Corridor Improvement Project, which also includes a proposed roundabout at the intersection of Harrison Avenue/Ives Road/Future N. Scheuber Road.

Figure 9. Adopted 2024-2029 Transportation Improvement Plan Projects

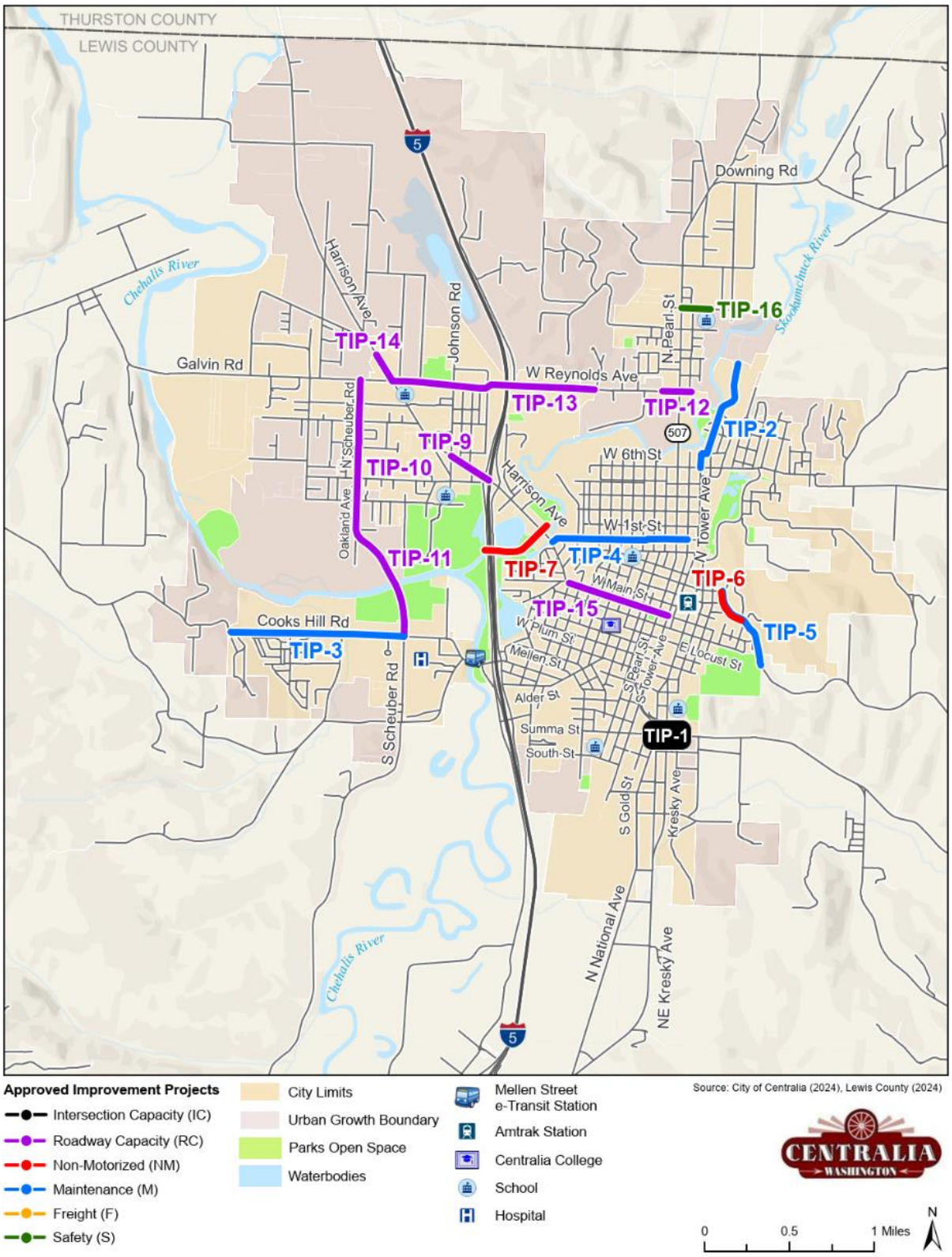


Table 10 below summarizes the long-range transportation projects, to be completed beyond the 6-year TIP timeframe (year 2031 or beyond). The projects are organized in the same project types as the TIP projects, with the addition of transit projects. The projects do not have a separate location column like the previous table, and have the project source included in the summary. Figure 13 below shows the map of the 20-year transportation solutions. The project source can include:

- Existing transportation plans are listed by name, from any jurisdiction
- Existing deficiency denotes projects that address existing issues identified in this plan.
- Projected deficiency denotes projects that address issues expected to arise in the future due to projected changes in transportation demand, as identified in this plan.
- North Lewis County Industrial Access Transportation Study (NLCIATS) report, Dec 2023
- Open House Comments

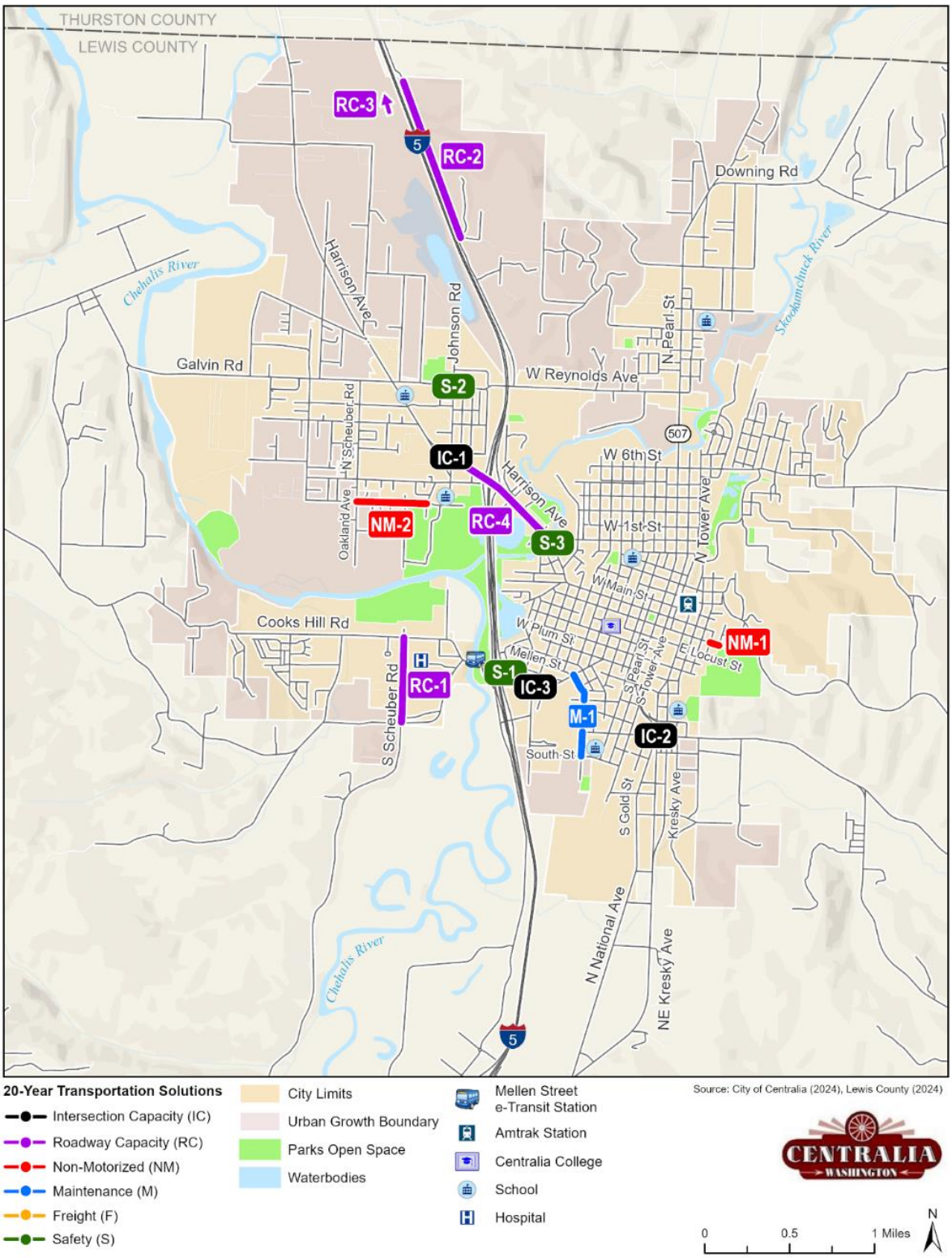
Table 10. Long Range Transportation Projects

#	Title	Description	Jurisdiction	Source
Freight				
F-1	City-wide Truck Route Wayfinding	Sign designated truck routes throughout Centralia.	City	2017 Transportation Plan
Intersection Capacity				
IC-1	Harrison/Johnson Improvements	Restripe to provide northbound right turn lane and extend westbound left turn pocket	City	Existing Deficiency
IC-2	Gold/Summa Intersection Improvements	Install signal or roundabout at Gold Street and Summa Street. Further analysis to confirm design at time of installation	City	Projected Deficiency
IC-3	Alder/Yew Intersection Improvements	Install signal or roundabout at Alder Street and Yew Street. Further analysis to confirm design at time of installation.	City	Projected Deficiency
Non-Motorized				
NM-1	Locust Sidewalk Improvements	New sidewalk to connect residential to recreational	City	2017 Transportation Plan
NM-2	Centralia Middle School Sidewalk improvements	Add pedestrian facility on western edge of school lot to connect with athletic facilities. Add sidewalk on Mt. Vista between Allen and S. Scheuber Road	City	2017 Transportation Plan
Roadway Capacity				
RC-1	Westside Connector Phase 2 (S. Scheuber Road – Cooks Hill Rd to City Limits)	Reconstruction of S. Scheuber Road to include roadway widening, utility improvements, addition of sidewalk and bicycle lanes, street lighting, intersection improvements, roadway delineation and permanent signs	City	Planned Project

#	Title	Description	Jurisdiction	Source
RC-2	Blair Extension	Upgrade to 4/5 lane principal arterial road from Old Highway 99 to Hobson Road	UGA	2017 Transportation Plan
RC-3	North Lewis County Industrial Access/ I-5 Interchange	Construct new interchange along I-5 just north of the UGA Boundary	UGA, WSDOT	NLCIATS
RC-4	Harrison Ave Adaptive Signals	Install Adaptive Signals along Harrison Avenue from Johnson Road to E Bridge Street	City, WSDOT	Projected Deficiency, NLCIATS
Safety				
S-1	NB Mellen Street Ramp Safety Improvements	Install "No Turn on Red" signage at northbound approach.	WSDOT	Open House
S-2	Reynolds and Johnson Safety Improvements	Improve intersection sight distance, lower speed limit on Reynolds Avenue	City	Existing Deficiency
S-3	W 1st Street/Harrison Avenue RRFB	Add RRFB to crossing at W 1st Street and Harrison Avenue	City	Open House
S-4	City-wide Intersection Safety Improvements	Consider adding crosswalks, ADA ramps, and illumination at intersections where reconstruction is warranted.	City	2017 Transportation Plan
Transit				
T-1	Transition Flag Bus Stops to Permanent Stops	Replace flag bus stops with conventional roadside stops at higher ridership. Where feasible, add bench, shelter and signage	City	Lewis County Transit 2023 Annual Report & Transit Development Plan
T-2	Various Vehicle, Equipment, and Facilities Upgrades	Various transit vehicle, equipment, and facilities upgrades	City, UGA	Lewis County Transit 2023 Annual Report & Transit Development Plan
T-3	Lewis County Transit Operations and Fleet Center	Lewis County Transit Operations and Fleet Center	City, UGA	Lewis County Transit 2023 Annual Report & Transit Development Plan
T-4	Local School District Integration	Integrate transportation services with local school districts to provide opportunities for students	City, UGA	Lewis County Transit 2023 Annual Report & Transit Development Plan

#	Title	Description	Jurisdiction	Source
T-5	Bus Service to Rural Lewis County & Nearby Jurisdictions	Additional bus service to rural Lewis County and neighboring jurisdictions	City, UGA	Lewis County Transit 2023 Annual Report & Transit Development Plan
Maintenance				
M-1	Woodland Avenue Paving	Place 2-inch overlay, signs, lane markings, & Sidewalk/ADA ramps on Woodland Ave from Jefferson to Alder and from Summa to South St	City, UGA	Existing Deficiency

Figure 10. 20-Year Transportation Solutions



8.1 Transportation Deficiencies

Based on the review of existing transportation conditions, the team identified the following deficiencies or issues requiring investments and solutions. The order does not reflect a prioritization:

- **Operations at Stops –** Controlled Study Intersections – Two key intersections experience significant delays on the stop-controlled minor approaches. The locations are Summa Street at South Gold Street, and Summa Street at Kresky Avenue. The poor operations are a result of high volumes along the uncontrolled major approaches. When delayed motorists disregard safety to overcome the delays, it can contribute to higher rates of crashes.
- **Roadway Safety –** Three intersections recorded relatively high numbers of crashes compared to other study intersections. The intersection of Harrison Avenue and the I-5 Southbound Ramps had the highest number of crashes (123) and the intersection of Harrison Avenue and the I-5 Northbound Ramps had the second highest number of crashes (94) over the five-year study period. North Belmont Avenue and Harrison Avenue had the third highest number of crashes (92). Harrison Avenue at West 1st Street had 60 crashes, which has recently been re-designed and has experienced far fewer crashes per year. All other study intersections recorded fewer than 50 crashes.
- **Truck Routes –** West of I-5, Harrison Avenue from Johnson Road north to the County line/city limits is a signed truck route. Although many truck route options extend east from the I-5/Harrison Avenue interchange, it is common for trucks to deviate from designated truck routes to reach their destination. Trucks that deviate from designated truck routes can negatively affect the transportation system for all modes of travel. Most city streets are not designed to accommodate truck traffic, either structurally or geometrically. Trucks also put pedestrians or people on bicycles at risk when they do not use the designated routes.
- **Pedestrian and Bicycle Facility Gaps –** There are gaps in the Centralia pedestrian and bicycle network, including the Reynolds Avenue/Galvin Road corridor, Scammon Creek Road, South Scheuber Road, Pearl Street north of East 5th Street, and Seminary Hill Road just east of downtown Centralia. Sidewalk facilities are sufficient in the downtown area. Bicycle routes are primarily signed in the downtown area, but there are only two segments of dedicated bike lane. Many of the signed bike routes coincide with common truck routes. Limited bike lanes discourage bike transportation and may create a safety hazard with different modes using the same space.
- **Pedestrian and Bicycle Facilities near Schools –** Centralia Middle School lacks pedestrian facilities along its western boundary. Bicycle facilities are generally absent on streets that connect schools and parks to neighborhoods or commercial areas.
- **Transit Facilities –** Transit services and capital projects are defined in the Lewis County Transit Development Plan and updated on a regular basis. Current projects include service expansion to regional neighboring cities, replacing diesel engines with fuel efficient propulsion systems, and improving bus stop amenities.

8.2 Solutions

Transportation solutions generally fall into one or more of the following categories.

Freight

Freight solutions include projects that focus on streamlining freight movement by signing designated truck routes throughout the city of Centralia.

Capacity

Capacity solutions add roadway space to the network through additional lane miles, expanding right-of-way, or some other tools to enable additional vehicle through-put.

Non-motorized

Non-motorized solutions include projects designed to improve access and safety of those using bike lanes, sidewalks and crossings. Projects can include extending facilities or closing gaps and focus on projects near non-motorized trip generators such as schools.

Maintenance

Maintenance solutions are focused on maintaining existing infrastructure and keeping roadways and other transportation facilities in a state of good repair. Projects are focused on rehabilitation and reconstruction of roadways.

Safety

Safety solutions focus on projects such as adding crosswalks, ADA ramps and illumination at intersections, often through programs to add improvements during roadway reconstruction. These improvements increase the visibility of vulnerable users and help slow vehicles, creating safer conditions where different modes interact. For example, at intersections, a protected left signal phase can reduce vehicle crashes stemming from misjudged gaps by turning vehicles.

Transit

Transit solutions focus on increasing service to make transit easier and more convenient for riders, as well as infrastructure improvements like formalizing "flag stop" locations that do not currently have stop amenities like seating, shelters or signage.

8.2.1 Solutions Evaluation and Prioritization

State and local transportation projects are funded or likely to be funded in a six-year planning timeframe are regionally adopted Transportation Improvement Plan (TIP) Projects.

Long-range projects include investment beyond the near term to the year of 2045. The lists of TIP Projects and Long-Range Projects have been provided in the 7.1 Transportation Strategies List Technical Memorandum. For the purposes of the solutions evaluation, the project team assumed these projects would be designed and constructed by the year 2045, the City of Centralia Comprehensive Plan Transportation Element planning horizon year.

The project team evaluated transportation solutions based on a planning level, qualitative evaluation method, using high, medium and low ratings for each project. The qualitative evaluation method compares the projects to each other. The rating levels are represented by the symbology below.

Fully meets or addresses criterion	●
Partially meets or addresses the criterion	⦿
Does not meet or address criterion	○
Not applicable to criterion	N/A

Table 11 below describes the evaluation criteria the City used to evaluate transportation projects as solutions to the deficiencies and needs summarized above. The criteria are based on the City's goals, objectives, and policies. The goals, objectives and policies are described in Task 3.2 Transportation Element Evaluation Criteria Technical Memorandum.

Table 11. Evaluation Criteria

Transportation Element	Criteria
1. Vehicle Mobility	The project/strategy improves existing and future vehicular mobility (including grade separation of rail crossings).
2. Safety	The project/strategy removes existing identified safety issues.
3. Multi-modalism	The project/strategy promotes transit, pedestrian or bicycle modes of transportation
4. Coordination and Regional Transportation	The project/strategy promotes coordination among jurisdictions or the advancement of regional transportation projects/priorities (e.g. those identified in the Lewis County Arterial Analysis Study)
5. Freight Mobility	The project/strategy promotes freight mobility
6. Funding	The project/strategy is positioned to receive non-local funding.
7. Cost	The project/strategy maximizes benefit in comparison to expense.
8. Economic Development	The project/strategy promotes economic health.
9. Neighborhood Integrity	The project/strategy promotes neighborhood communities.
10. Connectivity	The project/strategy improves connections between trip generators, such as schools, parks, downtown, freight centers, employment centers and higher density residential areas.
11. Environment	The project minimizes environmental impacts.
12. Sustainability	The project respects the principles of sustainability and adopts it in every aspect of its development and implementation.
13. Emergency Access	The project enhances or provides for emergency access routes

Table 12 below shows the evaluation matrix for each long-range transportation solution and evaluation criteria, following the method described above. The study team used the results from the evaluation to set a level of priority – or "tier" – which the City may us to determine future project phasing. Project priority may change over time as the City or its partners continue to develop solution details, or if City goals, criteria or priorities change.

The study team identified seven projects from the list of long-range projects that are recommended to be added to the upcoming 2026-2031 City Transportation Improvement Plan. These projects are denoted as Tier 1 in the rightmost column. Table 13 summarizes the recommended 2026-2031 TIP Projects, as shown in

Figure 9.

Table 12. Long Range Solutions Evaluation

No.	Title	Description	Vehicle Mobility	Safety	Multi-Modalism	Coordination and Regional	Freight Mobility	Funding	Cost	Economic Development	Neighborhood Integrity	Connectivity	Environment	Sustainability	Emergency Access	Tier
F-1	City-wide Truck Route Wayfinding	Sign designated truck routes throughout Centralia	⊙	⊙	○	○	●	○	●	⊙	⊙	●	⊙	○	⊙	II
IC-1	Harrison/Johnson Improvements	Restripe to provide northbound right turn lane and extend westbound left turn pocket	●	●	⊙	⊙	●	●	⊙	⊙	⊙	●	○	⊙	●	II
IC-2	Gold/Summa Intersection Improvements	Install signal or roundabout at Gold Street and Summa Street. Further analysis to confirm design at the time of installation	●	●	⊙	⊙	●	●	⊙	⊙	⊙	●	○	⊙	●	II
IC-3	Alder/Yew Intersection Improvements	Install signal or roundabout at Alder Street and Yew Street. Further analysis to confirm design at time of installation.	●	●	⊙	●	⊙	●	●	●	●	●	●	●	⊙	I
NM-1	Locust Sidewalk Improvements	New sidewalk to connect residential to recreational	⊙	●	●	●	⊙	⊙	●	●	●	●	●	●	⊙	I
NM-2	Centralia Middle School Sidewalk Improvements	Add pedestrian facility on west edge of school lot to connect with athletic facilities. Add sidewalk on Mt. Vista between Allen and S. Scheuber Road	⊙	●	●	●	⊙	⊙	●	●	●	●	●	●	⊙	I

No.	Title	Description	Vehicle Mobility	Safety	Multi-Modalism	Coordination and Regional	Freight Mobility	Funding	Cost	Economic Development	Neighborhood Integrity	Connectivity	Environment	Sustainability	Emergency Access	Tier
RC-1	Westside Connector Phase 2 (S. Scheuber Road – Cooks Hill Rd to City Limits)	Reconstruction of S. Scheuber Road: widening, utility improvements, addition of sidewalk and bicycle lanes, street lighting, intersection improvements, roadway delineation and permanent signs	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	II
RC-2	Blair Extension	Upgrade to 4 to 5-lane principal arterial road from Old Highway 99 to Hobson Road	●	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	●	⊙	○	●	II
RC-3	North Lewis County Industrial Access/ I-5 Interchange	Construct new interchange along I-5 just north of the UGA Boundary	●	●	○	●	●	●	⊙	●	○	⊙	⊙	⊙	●	II
RC-4	Harrison Ave Adaptive Signals	Install adaptive signals along Harrison Avenue from Johnson Road to East Bridge Street	●	●	⊙	⊙	●	○	●	○	●	●	●	●	●	I
S-1	NB Mellen Street Ramp Safety Improvements	Install "No Turn on Red" signage at northbound approach of the Mellen Street onramp.	●	●	○	⊙	●	●	⊙	⊙	⊙	●	○	○	●	II
S-2	Reynolds and Johnson Safety Improvements	Improve intersection sight distance, lower speed limit on Reynolds Avenue	●	●	●	⊙	●	●	●	⊙	●	●	⊙	⊙	●	I

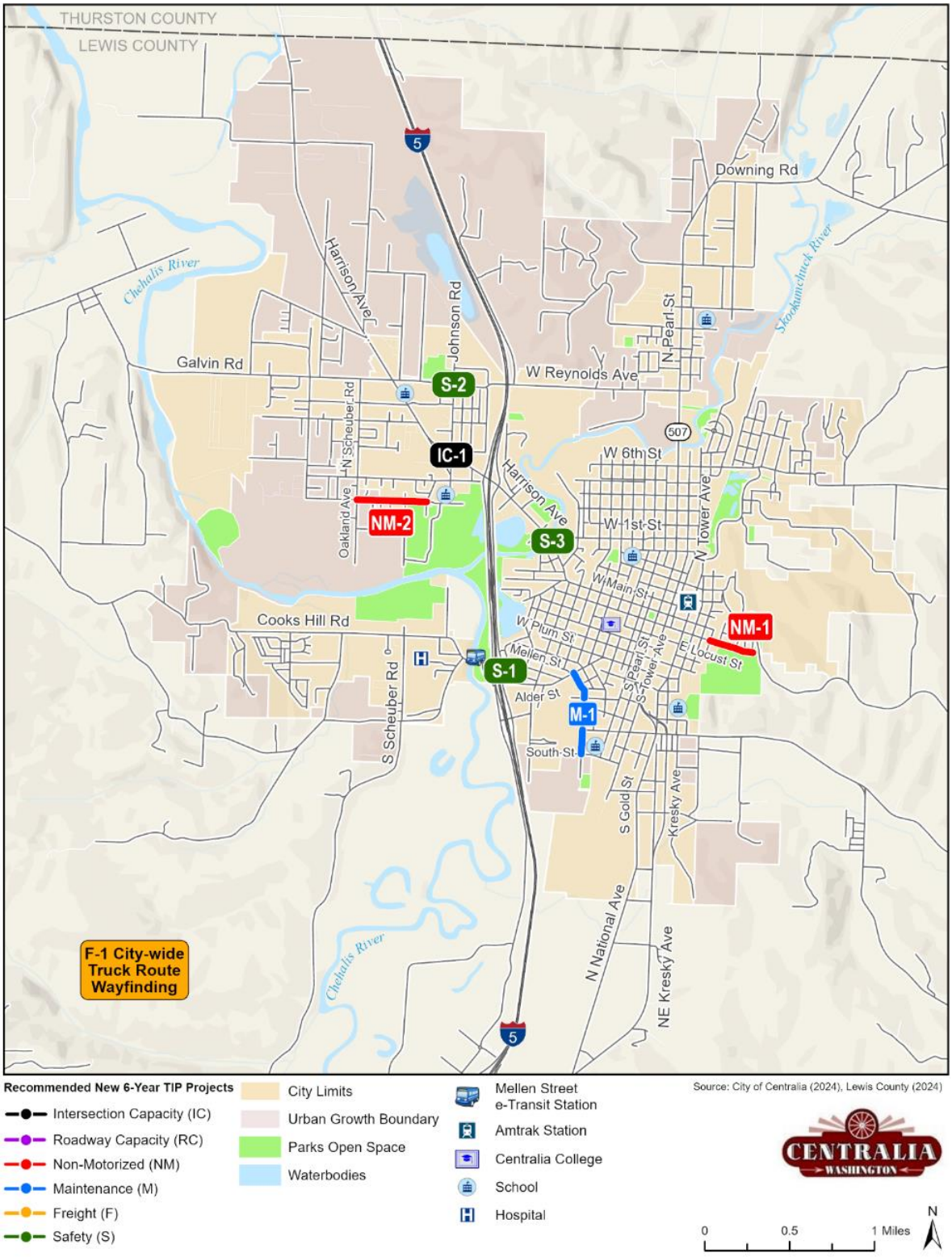
No.	Title	Description	Vehicle Mobility	Safety	Multi-Modalism	Coordination and Regional	Freight Mobility	Funding	Cost	Economic Development	Neighborhood Integrity	Connectivity	Environment	Sustainability	Emergency Access	Tier
S-3	W 1st Street/Harrison Avenue RRFB	Add Rectangular Rapid Flashing Beacon to crossing at West 1st Street and Harrison Avenue	⊙	●	●	●	⊙	⊙	●	●	●	●	●	●	⊙	I
S-4	City-wide Intersection Safety Improvements	Add crosswalks, ADA ramps, and illumination at intersections where reconstruction is warranted.	●	●	●	●	●	⊙	⊙	⊙	⊙	⊙	⊙	●	●	II
M-1	Woodland Avenue Paving	Place 2-inch overlay, signs, lane markings, & Sidewalk/ADA ramps on Woodland Ave from Jefferson to Alder and from Summa to South St	●	●	⊙	●	⊙	●	●	●	●	●	●	●	⊙	I
T-1	Transition Flag Bus Stops to Permanent Stops	Replace flag bus stops with conventional roadside stops at higher ridership. Where feasible, add bench, shelter and signage.	⊙	●	●	●	○	⊙	●	⊙	●	●	●	●	⊙	II
T-2	Various Vehicle, Equipment, and Facilities Upgrades	Various transit vehicle, equipment, and facilities upgrades	○	●	●	●	⊙	●	●	○	○	⊙	●	●	○	II
T-3	Lewis County Transit Operations and Fleet Center	Design and construct operations and fleet center to support expansion	⊙	⊙	●	●	⊙	●	⊙	●	●	●	⊙	●	⊙	II

No.	Title	Description	Vehicle Mobility	Safety	Multi-Modalism	Coordination and Regional	Freight Mobility	Funding	Cost	Economic Development	Neighborhood Integrity	Connectivity	Environment	Sustainability	Emergency Access	Tier
T-4	Local School District Integration	Integrate transportation services with local school districts to provide opportunities for students	⊙	●	●	●	⊙	○	●	●	●	●	⊙	⊙	⊙	II
T-5	Bus Service to Rural Lewis County & Nearby Jurisdictions	Additional bus service to rural Lewis County and neighboring jurisdictions	⊙	⊙	●	●	⊙	⊙	⊙	●	●	●	⊙	⊙	⊙	II

Table 13. Recommended Six-Year Transportation Improvement Plan Projects

No.	Title	Location	Description	Jurisdiction
F-1	City-wide Truck Route Wayfinding	City-wide	Sign designated truck routes throughout Centralia	City
IC-1	Harrison/ Johnson Improvements	At Harrison Avenue and Johnson Road	Restripe to provide northbound right turn lane and extend westbound left turn pocket	City
NM-1	Locust Sidewalk Improvements	E Locust St, S Berry St to Seminary Hill trail	Construct a new sidewalk to existing sidewalk in residential area to the Seminary Hill Natural Area picnic shelter	City
NM-2	Centralia Middle School Sidewalk Improvements	Mt. Vista Dr, Allen Ave to S. Scheuber Road	Add pedestrian facility on eastern edge of school lot to connect with athletic facilities. Add sidewalk on Mt. Vista between Allen and S. Scheuber Road	City
S-1	NB Mellen St Ramp Safety Improvement	Ellsbury Street and Mellen St	WSDOT Initiated Project: Install "No Turn on Red" signage at northbound approach.	City
S-2	Reynolds and Johnson Safety Improvements	W Reynolds Ave and Johnson Rd	Improve intersection sight distance, lower speed limit on Reynolds Avenue	City
S-3	W 1st St/Harrison Ave RRFB	W 1st Street and Harrison Avenue	Add RRFB to crossing at W 1st Street and Harrison Avenue	City
M-1	Woodland Avenue Paving	Woodland Ave from Jefferson to Alder St and from Summa to South St	Place 2-inch overlay, signs, lane markings, & Sidewalk/ADA ramps	City/UGA

Figure 11. Recommended Six-Year Transportation Improvement Plan Projects



9. Funding Strategies

This chapter summarizes potential funding sources for transportation projects in the City of Centralia 6 Year Transportation Improvement Program (TIP). Transportation projects identified in this memorandum address deficiencies and needs identified in the TIP (FY 2025-2030). The Washington State Growth Management Act (GMA) requires a funding strategy for the transportation element that includes:

a) An analysis of funding capability to judge needs against probable funding resources.

b) A multi-year financing plan based on the needs identified in the comprehensive plan, the appropriate parts of which shall serve as the basis for the six-year street, road, or transit program; and

c) If probable funding falls short of meeting identified needs, a discussion of how additional funding will be raised, or how land use assumptions will be reassessed to ensure that the level of service standards will be met.

This funding strategies memorandum addresses GMA requirements by identifying available funding for transportation improvements, evaluating available funding against transportation needs identified in the TIP, quantifying funding gaps, and identifying potential funding sources to meet transportation needs.

9.1 City of Centralia Funding

Transportation capital improvements are typically high cost and require a mix of funding sources. Funding sources are affected by things like economic changes, political priorities, grant program eligibility requirements and grant program evaluation criteria. The following section summarizes existing local transportation funding sources.

Street Fund/Fuel Tax Distributions

The Centralia Street Fund is used for transportation system maintenance and capital projects. The mission of the street department is to maintain and improve the City's transportation network of streets and sidewalks to promote public safety by ensuring that the traffic control signs and signals work and meet standards. A portion of the Washington State fuel tax is distributed to Centralia's Street Fund on a monthly per capita basis. The City receives about 10.7% of the statewide $0.23 per gallon tax and about 8.3% of the statewide $0.03 fuel tax levies. The City's Street Fund also receives revenues from franchise fees and sales tax revenue. The sales tax revenues are in addition to the sales tax funding the Transportation Benefit District.

Transportation Benefit District

The City established a Transportation Benefit District (TBD) in 2015 that levies a 0.20% sales tax within the City, revenues from which are devoted solely to transportation services. The tax expires in the year 2025 and will be presented for renewal to Centralia voters in 2025. The renewal of this tax is crucial as the funding for the City's projects is dependent on it. The Transportation Benefit District sales tax is projected to provide over $800,000 additional revenue for the fund in 2025.

Transportation Mitigation Fees

The Transportation Mitigation Fee funds infrastructure and other improvements required to mitigate address private development impacts. The fee applies only to projects for which the direct impact is determined through the State Environmental Protection Act (SEPA) process. The fee is a proportionate share of the direct transportation impact to the transportation system. The City must comply with

allowable uses and fees assessed can only be used for an identified project. The Transportation Mitigation Fee differs from an Impact Fee. Impact fees are typically applied to any development that will have increased burden on any part of the transportation system, and can be collected before specific transportation improvement projects are identified and adopted into the TIP.

Paths and Trails Fund

Revenues allocated under the Paths and Trails Fund includes at least 0.42% of the City's gas tax revenue (Chapter 47.30 RCW). The revenue must be spent on pedestrian, equestrian or bicycle paths. The amount is transferred into this Fund from the City's Street Fund. The available funds sunset from the City budget after 10 years.

Real Estate Excise Tax (REET)

The REET is a 0.50% tax imposed on property sales citywide (in addition to the 1.28% Washington State REET). Revenues from the 0.50% local REET tax may be spent on transportation projects (in addition to other City infrastructure projects). Projects must be listed in the City's adopted Comprehensive Plan to be eligible. REETs are collected by the County Treasurer and distributed to the City. The annual REET Revenue for 2025 is projected to be $400,000 annually, which is shared across transportation and other types of infrastructure improvements. REET total revenues, and the amount used for transportation, can change more each year compared to other dedicated funding sources.

Table 14. Transportation-Specific Centralia Local Revenue FY 2023 – 2026

Sources of Revenue	Revenue				
	2023	2024	2025	2026	*Average*
Street Fund Revenue	$1,803,000	$1,886,000	$1,660,000	$1,667,000	*$1,754,000*
Transportation Benefit District Fund	$2,155,000	$1,699,000	$1,849,000	$1,649,000	*$1,838,000*
Path and Trails Fund	$21,000	$23,000	$25,000	$28,000	*$24,000*
Total	*$3,979,000*	*$3,608,000*	*$3,534,000*	*$3,344,000*	*$3,616,000*

Source: City of Centralia 2025-2026 Adopted Budget

Note: Revenues and totals are rounded to the nearest thousandth dollar. Transportation Benefit, and Path and Trails Funds values include beginning balance carried over from prior years. Years 2023-2024 reflect amended budgets, and years 2025-2026 reflect adopted budgets.

9.2 Future City Funding

The City estimates investing a mix of local, state and federal funds totaling about $69.6 million between the years 2025 and 2030. Over 80% of this near-term spending is funded by Federal and State transportation grants or programs, some of which may be competitive. The projects require about $12.1 million in local funds over 6 years, or about $2 million annually on average. The City uses local funds for street preservation and maintenance along with providing local matching funds for Federal and State capital project grants. Other possible ways to raise local funds are described in the section below. Table 15 below summarizes the funding planned for transportation improvements.

Table 15. FY 2025-2030 Transportation Improvement Program Funding Needs (in 1000s)

Source	*Year*						
	2025	**2026**	**2027**	**2028**	**2029**	**2030**	***Total***
Federal	$1,051	$17,776	$4,553	$516	$5,298	$1,838	*$31,032*
State	$7,838	$18,659	$0	$0	$0	$0	*$26,497*
Local	$4,469	$5,746	$694	$80	$827	$287	*$12,102*
Total	*$13,358*	*$42,181*	*$5,247*	*$596*	*$6,125*	*$2,125*	*$69,632*

Source: City of Centralia FY2025 – 2030 6-Year Transportation Improvement Program; values shown in thousands of dollars.

9.2.1 Additional Funding Sources:

The City can pursue other local funding and partnership opportunities to raise funds for transportation and other expenditures, as need and opportunity arise. Potential sources of revenue are described below.

- **Transportation Benefit District (TBD**): The City's Transportation Benefit Fund comes from a 0.2% sales tax levy in the City. According to the adopted 2025-2026 Centralia budget, the Fund will provide an estimated $800,000 in 2026. The TBF expires in 2025. Without the TBF, Centralia will have about half the estimated transportation budget every year. The City can choose to renew and/or increase the tax levy to maintain or increase transportation resources.

- **The Washington State Transportation Improvement Board (TIB):** The Washington TIB distributes grant funding generated by $0.03 sales tax. Cities and counties are eligible for competitive funding. The grant programs range from $3 million to $75 million. Individual grant awards vary but generally award between $4 to $5 million. The City has applied for and won TIB grants in the past.

- **Transportation Impact Fee:** Washington State law allows a local jurisdiction to assess fees for mitigating the transportation impacts of new development. The revenue from these fees may be used for any transportation project in the jurisdiction but typically are used on projects reasonably benefiting the development and mitigating transportation impacts. An impact fee differs from the Transportation Mitigation Fund in that the fee is not dependent on the SEPA determination process, and would apply only within the City limits (not the Urban Growth Act region boundary).

  Centralia may consider supporting transportation improvements by adding a transportation impact fee for projects that are within the City's boundary and not required to contribute to the Transportation Mitigation Fee. The impact fee would require City Council to adopt an ordinance implementing the new program. The new funds would provide the City the ability to flexibly address safety, operations and maintenance improvements.

- **City General Funds and Bonds:** Many City services compete for general funds. Some jurisdictions devote general funds to transportation. The City has floated bonds to pay for capital improvement projects. Bonds are a loan however that must be repaid over time, letting the City defer costs but not raising additional funding.

- **Intergovernmental Coordination:** Centralia could pursue joint funding ventures with adjacent jurisdictions to increase transportation resources, especially where transportation projects serve areas across jurisdictional lines. Examples of intergovernmental include cost sharing, contributing staff and equipment time, expediting planning or permitting, or contributing property or facilities. The City could leverage utility improvement projects and funding, such as water or sewer pipe

replacement, to augment transportation project funding.Recommended System Improvements and Costs

The purpose of this section is to recommend and describe identified system improvements and their associated planning-level costs. Recommended improvements are based on identified existing and anticipated system deficiencies. Recommended improvements were designed to improve operating performance of the system while allowing for cost-effective maintenance.

Prioritization for completing the identified system improvements were categorized into high-priority (targeted for near-term implementation), medium-priority (targeted for mid-term implementation), and low-priority (targeted for long-term implementation) or as funding opportunities through redevelopment occurs). Prioritization of the projects was determined according to performance evaluation criteria. Cost estimates are provided for the recommended system improvements.

Table 16. Recommended Transportation Projects with Cost Estimates

#	Title	From/To	Description	Tier	Cost Estimate
FREIGHT/ TRUCK					
F-1	City-wide Truck Route Wayfinding	City-wide	Sign designated truck routes throughout Centralia	II	$30,000
INTERSECTION CAPACITY					
IC-1	Harrison/Johnson Improvements	At Harrison Avenue and Johnson Road	Restripe to provide northbound right turn lane and extend westbound left turn pocket	II	$200,000
IC-2	Gold/Summa Intersection Improvements	Gold Street and Summa Street	Install signal or roundabout at Gold Street and Summa Street. Further analysis to confirm design at time of installation	II	TBD
IC-3	Alder/Yew Intersection Improvements	Alder Street and Yew Street	Install signal or roundabout at Alder Street and Yew Street. Further analysis to confirm design at time of installation.	I	$1.5 Million
NON-MOTORIZED					
NM-1	Locust Sidewalk Improvements	E Locust St, S Berry St to Seminary Hill trail	Provide sidewalk to connect residential to recreational	I	$70,000
NM-2	Centralia Middle School Sidewalk improvements	Mt. Vista Dr, Allen Ave to S. Scheuber Road	Add pedestrian facility on eastern edge of school lot to connect with athletic facilities. Add sidewalk on Mt. Vista between Allen and S. Scheuber Road	I	$600,000

#	Title	From/To	Description	Tier	Cost Estimate
ROADWAY CAPACITY					
RC-1	Westside Connector Phase 2	(S. Scheuber Road – Cooks Hill Rd to City Limits	Reconstruction of S. Scheuber Road to include roadway widening, utility improvements, addition of sidewalk and bicycle lanes, street lighting, intersection improvements, roadway delineation and permanent signs	II	TBD
RC-2	Blair Extension	Blair Road, from Old Hwy 99 to Hobson Road	Upgrade to 4/5 lane principal arterial road	II	$165 mil
RC-3	North Lewis County Industrial Access/ I-5 Interchange	Between Exit 82 and Exit 88	Construct new interchange at construction of Downing Road arterial	II	$100 mil
RC-4	Harrison Ave Adaptive Signals	Harrison Avenue from Johnson Road to E Bridge Street	Install Adaptive Signals along Harrison Avenue from Johnson Road to E Bridge Street	I	TBD
SAFETY					
S-1	NB Mellen St Ramp Safety Improvements	Ellsbury Street and Mellen St	WSDOT Initiated Project: Install "No Turn on Red" signage at northbound approach.	II	$20,000
S-2	Reynolds and Johnson Safety Improvements	W Reynolds Ave and Johnson Rd	Improve intersection sight distance, lower speed limit on Reynolds Avenue	I	$50,000
S-3	W 1st St/Harrison Ave RRFB	W 1st Street and Harrison Avenue	Add RRFB to crossing at W 1st Street and Harrison Avenue	I	$36,000
S-4	City-wide Intersection Safety Improvements	Citywide	Consider adding crosswalks, ADA ramps, and illumination at intersections where reconstruction is warranted.	II	TBD
MAINTENANCE					
M-1	Woodland Avenue Paving	Woodland Ave from Jefferson to Alder St and from Summa to South St	Place 2-inch overlay, signs, lane markings, & Sidewalk/ADA ramps	I	$876,000

#	Title	From/To	Description	Tier	Cost Estimate
TRANSIT					
T-1	Transition Flag Bus Stops to Permanent Stops	Citywide	Replace flag bus stops with conventional roadside stops at higher ridership. Where feasible, add bench, shelter and signage Language from TDP: Install shelters at the top 25% most active stops and benches at 50% of the most active stops by 2029. 102 stops = 26 stops/shelters, 13 stops/benches in shelters	II	TBD
T-2	Various Vehicle, Equipment, and Facilities Upgrades	Citywide	Various transit vehicle, equipment, and facilities upgrades	II	TBD
T-3	Lewis County Transit Operations and Fleet Center	TBD	Lewis County Transit Operations and Fleet Center	II	TBD
T-4	Local School District Integration	Citywide	Integrate transportation services with local school districts to provide opportunities for students	II	TBD
T-5	Bus Service to Rural Lewis County & Nearby Jurisdictions	Citywide	Additional bus service to rural Lewis County and neighboring jurisdictions	II	TBD

Appendix A – Multimodal Level of Service Development Memorandum

Multimodal Level of Service Development Memorandum

Date: May 22, 2025
Project name: 2025 Centralia Comprehensive Plan Transportation Element
Attention: Patty Page, City of Centralia
Emil Pierson, City of Centralia
Prepared by: Christopher Pylant
Copies to: Neha Rathi, Jacobs

1100 112th Ave NE, Suite 500
Bellevue, WA 98004
T 425-453-5000
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1. Introduction and Regulatory Framework

This memorandum describes the development of Multimodal Levels of Service (MMLOS) for the City of Centralia Comprehensive Plan Transportation Element update.

The Washington State Growth Management Act (GMA) requires that local jurisdictions adopt performance standards for multiple travel modes. Specifically, the GMA requires:

RCW 36.70A.070(6)(a)(iii)(B) and (C) amended in 2023, WAC 365-196-430

Adopted multimodal levels of service standards for all locally owned arterials, locally and regionally operated transit routes that serve UGAs, state-owned or operated transit routes that serve urban areas if the department of transportation has prepared such standards, and active transportation facilities to serve as a gauge to judge performance of the system and success in helping to achieve environmental justice.

2. Methodology

Existing MMLOS standards were reviewed including those from the cities of Tacoma, Bellevue, and Enumclaw as well as the standards proposed by Lewis County. As the GMA requirements allow jurisdictions to be flexible in establishing MMLOS standards, the standards outlined in the following section have been developed to best assist the City of Centralia accommodate multiple modes of travel while still being appropriate for the City's unique characteristics. The City will continue to reevaluate its MMLOS standards as more data becomes available.

3. Multimodal Level of Service Standards

3.1 Active Transportation Level of Service

Active transportation Level of Service is based on level of traffic stress (LTS). LTS is a performance metric that provides a means of comparing the relative quality of active transportation facilities at different locations along the roadway network. LTS is related to the comfort active transportation users feel. Facilities with lower LTS are associated with greater separation between vehicles and active transportation modes and lower vehicle speeds. LTS is a ranking system where level 1 feels the most safe and comfortable for all users and 4 is the most uncomfortable.

3.1.1 Pedestrian Level of Service

Pedestrian Level of Service can be evaluated along roadway segments and at intersections. An overview of user stress for all available pedestrian Level of Service metrics is provided in Table 1.

Table 1 Pedestrian LOS - Overall

LOS	Segments	Intersections	Crosswalks
Level 1	No traffic stress, most people would find comfortable, accessible, and safe	All ADA curb ramps present	Marked crosswalks present every 350 feet or less.
Level 2	Little traffic stress, but requires more attention, especially for children	Some ADA curb ramps present	Marked crosswalks present every 700 feet or less (based on pedestrian demand, land use, and safety considerations)
Level 3	Moderate traffic stress	Some ADA curb ramps present	Marked crosswalks > 700 feet.
Level 4	High traffic stress, not comfortable or accessible for most people	No Curb Ramps present	No marked crosswalks present.

Segments

Along segments, pedestrian LOS standards reflect the presence of sidewalks or pathways and their separation from motor vehicles as well as the availability of crosswalks. Assessment parameters for pedestrian LOS using these features are shown in Table 2 and Table 3, respectively.

Table 2 Pedestrian LOS Assessment – Sidewalks and Paths

Speed Limit (mph)	No Ped Facility	Sidewalk	Sidewalk with buffer	Separated Pathway
<=25	2	1	1	1
30	3	2	1	1
35	4	3	2	1

Table 3 Pedestrian LOS Assessment – Crosswalk Density

Lanes	Speed Limit (mph)	Marked crosswalk every 300 feet or less	Marked crosswalk every 600 feet or less	Marked crosswalks > 600 feet apart	No marked crosswalks Present
1 through lane	<=25	1	1	2	2
	30	1	2	2	3
	35	1	2	3	4
2+ through lanes	<=25	1	2	3	4
	30	1	2	3	4
	35	1	2	3	4

Intersections

In addition to traffic stress on road segments, pedestrian LOS should also be assessed using the availability of Americans with Disabilities Act (ADA) compliant crosswalk ramps at intersections. Standards for pedestrian LOS are presented in Table 4.

Table 4 Pedestrian LOS Assessment – ADA Ramps

Speed Limit (mph)	No Ramps	Non-ADA Ramp	ADA Ramp
Any	4	2-3	1

3.1.2 Bicycle Level of Service

Bicycle Level of Service is evaluated by the type of bicycle facility provided and its separation from motor vehicles. A description of user stress for bicycles is shown in Table 5 and assessment parameters for bicycle LOS are provided in

Table 6.

Table 5 Bicycle LOS

Level 1	A level that most riders of all ages and abilities feel safe using
Level 2	Comfortable for most adults but requires more attention, especially for children
Level 3	Moderate traffic stress, tolerable for confident riders
Level 4	High traffic stress, not comfortable for most riders

Table 6 Bicycle LOS Assessment

Lanes	Speed Limit (mph)	No Facilities	Sharrows or Shared Lane	Bike Lane	Shared Use Path
1 through lane	<=25	2	1	1	1
	30	3	2	1	1
	35	4	3	2	1
2+ through lanes	<=25	3	2	1	1
	30	4	3	2	1
	35	4	4	3	1

3.2 Transit Level of Service

Transit Level of Service is evaluated by the transit frequency, pedestrian LOS within ¼ mile of transit stops, and whether transit stops are connected to pedestrian facilities for at least 350 feet in either direction. A description of user stress for transit is shown in Table 5 and an assessment of transit LOS is provided in

Table 6.

Table 7 Transit LOS

Level 1	Easy pedestrian access to stations or stops
Level 2	Stops that have frequent service but need an improvement to pedestrian access, or infrequent service with easy access
Level 3	Stops that have frequent service but poor pedestrian access, or infrequent service with access that needs improvement
Level 4	Stops with infrequent service and poor pedestrian access.

Table 8 Transit LOS Assessment

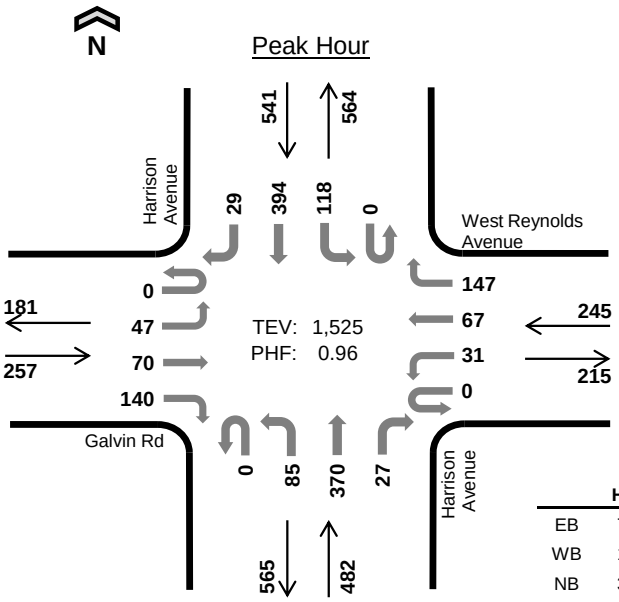
Frequency	Lowest Pedestrian LOS within 1/4 mile	Connected Stop[1]	Stop not Connected
<= 1 hour headways	1	1	3
	2	2	3
	3	3	4
	4	4	4
>1 Hour headways	1	2	3
	2	3	4
	3	4	4
	4	4	4

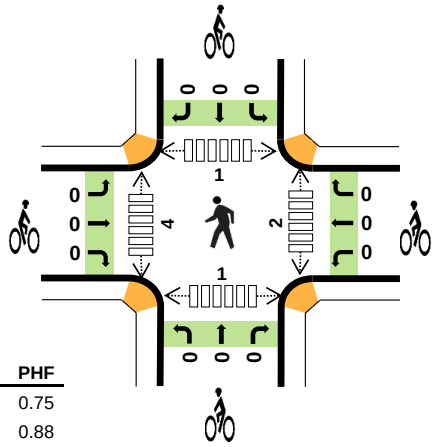
[1] Connected Stop = Stop served by sidewalk extending at least 350 feet

Appendix B – Traffic Count Data

Harrison Avenue
West Reynolds Avenue

Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM





	HV %:	PHF
EB	7.0%	0.75
WB	1.6%	0.88
NB	3.9%	0.91
SB	3.0%	0.95
TOTAL	3.7%	0.96

Two-Hour Count Summaries

Interval Start		Galvin Rd Eastbound				West Reynolds Avenue Westbound				Harrison Avenue Northbound				Harrison Avenue Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		**0**	**17**	**26**	**43**	**0**	**2**	**11**	**34**	**0**	**25**	**97**	**8**	**0**	**36**	**91**	**7**	**397**	0
4:15 PM		**0**	**10**	**19**	**23**	**0**	**10**	**18**	**42**	**0**	**19**	**106**	**8**	**0**	**24**	**93**	**8**	**380**	0
4:30 PM		**0**	**6**	**11**	**40**	**0**	**11**	**21**	**33**	**0**	**20**	**90**	**6**	**0**	**32**	**102**	**5**	**377**	0
4:45 PM		**0**	**14**	**14**	**34**	**0**	**8**	**17**	**38**	**0**	**21**	**77**	**5**	**0**	**26**	**108**	**9**	**371**	**1,525**
5:00 PM		0	7	17	38	0	8	15	34	0	25	78	6	0	33	99	8	368	1,496
5:15 PM		0	14	12	22	0	7	17	29	0	24	89	10	0	25	106	8	363	1,479
5:30 PM		0	7	11	24	0	7	13	33	0	14	86	6	0	30	94	6	331	1,433
5:45 PM		0	6	10	21	0	8	11	20	0	15	76	5	0	18	65	4	259	1,321
Count Total		0	81	120	245	0	61	123	263	0	163	699	54	0	224	758	55	2,846	0
Peak Hour	**All**	**0**	**47**	**70**	**140**	**0**	**31**	**67**	**147**	**0**	**85**	**370**	**27**	**0**	**118**	**394**	**29**	**1,525**	**0**
	HV	**0**	**1**	**2**	**15**	**0**	**1**	**0**	**3**	**0**	**10**	**9**	**0**	**0**	**1**	**12**	**3**	**57**	**0**
	HV%	**-**	**2%**	**3%**	**11%**	**-**	**3%**	**0%**	**2%**	**-**	**12%**	**2%**	**0%**	**-**	**1%**	**3%**	**10%**	**4%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	**7**	**0**	**4**	**3**	***14***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
4:15 PM	**7**	**4**	**7**	**4**	***22***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**1**	*2*
4:30 PM	**0**	**0**	**5**	**5**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**4**	**0**	**3**	**4**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**4**	**1**	**0**	***5***
5:00 PM	1	0	6	3	*10*	0	0	0	0	*0*	2	1	0	2	*5*
5:15 PM	4	0	4	2	*10*	0	0	0	0	*0*	0	2	0	0	*2*
5:30 PM	3	0	5	4	*12*	0	0	0	0	*0*	0	1	0	1	*2*
5:45 PM	2	0	1	1	*4*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	28	4	35	26	*93*	0	0	0	0	*0*	4	8	1	4	*17*
Peak Hour	**18**	**4**	**19**	**16**	***57***	**0**	**0**	**0**	**0**	***0***	**2**	**4**	**1**	**1**	***8***

Two-Hour Count Summaries - Heavy Vehicles

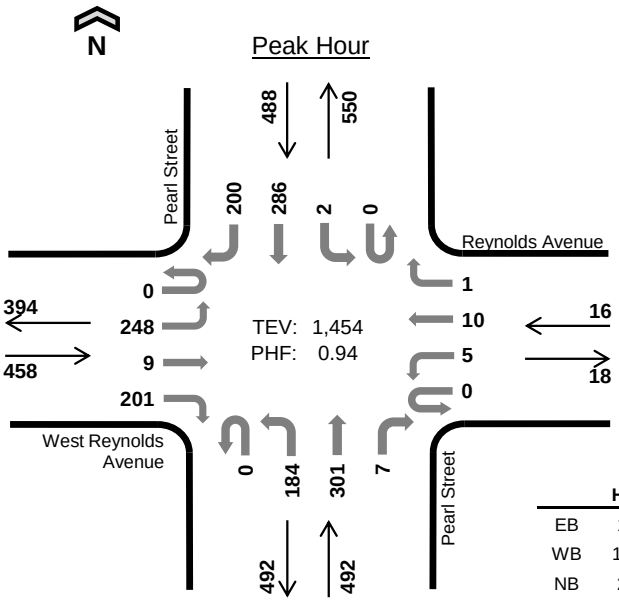
Interval Start	Galvin Rd				West Reynolds Avenue				Harrison Avenue				Harrison Avenue				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**1**	**1**	**5**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**3**	**0**	**14**	0
4:15 PM	**0**	**0**	**1**	**6**	**0**	**1**	**0**	**3**	**0**	**3**	**4**	**0**	**0**	**0**	**2**	**2**	**22**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**3**	**0**	**0**	**1**	**3**	**1**	**10**	0
4:45 PM	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**4**	**0**	**11**	**57**
5:00 PM	0	0	0	1	0	0	0	0	0	2	4	0	0	0	3	0	10	53
5:15 PM	0	0	0	4	0	0	0	0	0	2	2	0	0	0	2	0	10	41
5:30 PM	0	1	0	2	0	0	0	0	0	1	4	0	0	0	4	0	12	43
5:45 PM	0	0	0	2	0	0	0	0	0	1	0	0	0	0	1	0	4	36
Count Total	0	2	2	24	0	1	0	3	0	16	19	0	0	1	22	3	93	0
Peak Hour	**0**	**1**	**2**	**15**	**0**	**1**	**0**	**3**	**0**	**10**	**9**	**0**	**0**	**1**	**12**	**3**	**57**	**0**

Two-Hour Count Summaries - Bikes

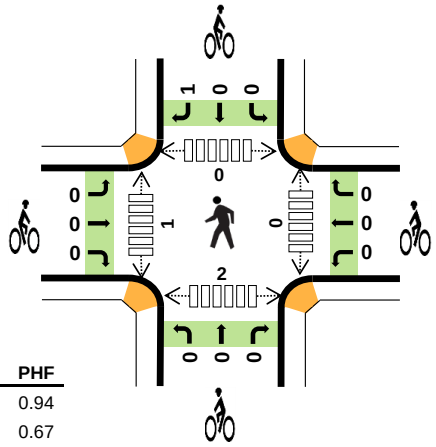
Interval Start	Galvin Rd			West Reynolds Avenue			Harrison Avenue			Harrison Avenue			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Pearl Street
West Reynolds Avenue



Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM



	HV %:	PHF
EB	1.1%	0.94
WB	12.5%	0.67
NB	2.8%	0.77
SB	1.6%	0.92
TOTAL	2.0%	0.94

Two-Hour Count Summaries

Interval Start		West Reynolds Avenue Eastbound				Reynolds Avenue Westbound				Pearl Street Northbound				Pearl Street Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		**0**	**42**	**3**	**64**	**0**	**4**	**0**	**0**	**0**	**46**	**112**	**2**	**0**	**1**	**69**	**45**	**388**	0
4:15 PM		**0**	**70**	**1**	**42**	**0**	**0**	**5**	**1**	**0**	**53**	**59**	**2**	**0**	**0**	**79**	**43**	**355**	0
4:30 PM		**0**	**66**	**2**	**54**	**0**	**1**	**4**	**0**	**0**	**51**	**69**	**1**	**0**	**1**	**74**	**58**	**381**	0
4:45 PM		**0**	**70**	**3**	**41**	**0**	**0**	**1**	**0**	**0**	**34**	**61**	**2**	**0**	**0**	**64**	**54**	**330**	**1,454**
5:00 PM		0	87	4	52	0	3	6	0	0	46	64	2	0	0	32	39	335	1,401
5:15 PM		0	46	6	37	0	0	0	0	0	35	53	3	0	0	55	36	271	1,317
5:30 PM		0	47	0	30	0	0	2	0	0	23	40	0	0	0	50	40	232	1,168
5:45 PM		0	40	1	36	0	0	0	0	0	30	52	1	0	0	59	44	263	1,101
Count Total		0	468	20	356	0	8	18	1	0	318	510	13	0	2	482	359	2,555	0
Peak Hour	**All**	**0**	**248**	**9**	**201**	**0**	**5**	**10**	**1**	**0**	**184**	**301**	**7**	**0**	**2**	**286**	**200**	**1,454**	**0**
	HV	**0**	**1**	**0**	**4**	**0**	**1**	**1**	**0**	**0**	**3**	**11**	**0**	**0**	**0**	**7**	**1**	**29**	**0**
	HV%	**-**	**0%**	**0%**	**2%**	**-**	**20%**	**10%**	**0%**	**-**	**2%**	**4%**	**0%**	**-**	**0%**	**2%**	**1%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	**3**	**1**	**5**	**3**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:15 PM	**2**	**1**	**8**	**1**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
4:30 PM	**0**	**0**	**1**	**3**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**1**	*2*
4:45 PM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***
5:00 PM	0	0	1	2	*3*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	0	0	1	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	1	0	1	1	*3*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	0	1	*1*	0	0	2	0	*2*	1	0	1	0	*2*
Count Total	6	2	17	13	*38*	0	0	2	1	*3*	1	1	1	2	*5*
Peak Hour	**5**	**2**	**14**	**8**	***29***	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**0**	**2**	***3***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	West Reynolds Avenue				Reynolds Avenue				Pearl Street				Pearl Street				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**1**	**4**	**0**	**0**	**0**	**2**	**1**	**12**	0
4:15 PM	**0**	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**2**	**6**	**0**	**0**	**0**	**1**	**0**	**12**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**3**	**0**	**4**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**29**
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3	20
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	10
5:30 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	3	9
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9
Count Total	0	2	0	4	0	1	1	0	0	5	12	0	0	0	10	3	38	0
Peak Hour	**0**	**1**	**0**	**4**	**0**	**1**	**1**	**0**	**0**	**3**	**11**	**0**	**0**	**0**	**7**	**1**	**29**	**0**

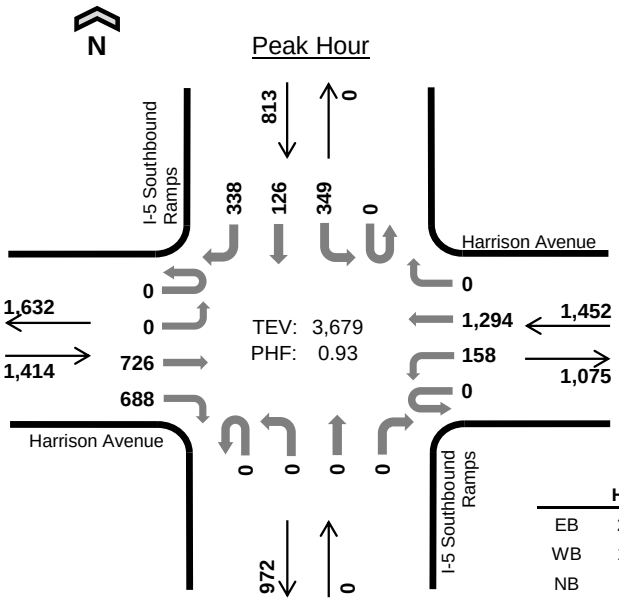
Two-Hour Count Summaries - Bikes

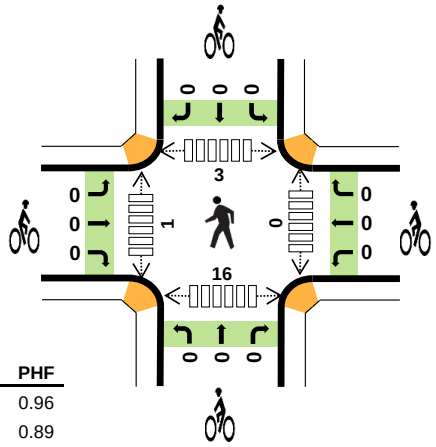
Interval Start	West Reynolds Avenue			Reynolds Avenue			Pearl Street			Pearl Street			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**1**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	2	0	0	0	2	2
Count Total	0	0	0	0	0	0	0	0	2	0	0	1	3	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

I-5 Southbound Ramps
Harrison Avenue

Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	2.4%	0.96
WB	1.6%	0.89
NB	-	-
SB	1.0%	0.92
TOTAL	1.8%	0.93

Two-Hour Count Summaries

Interval Start		Harrison Avenue Eastbound				Harrison Avenue Westbound				I-5 Southbound Ramps Northbound				I-5 Southbound Ramps Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	199	197	0	47	284	0	0	0	0	0	0	82	32	66	907	0
4:15 PM		0	0	186	148	0	38	298	0	0	0	0	0	0	104	43	86	903	0
4:30 PM		**0**	**0**	**199**	**168**	**0**	**39**	**301**	**0**	**0**	**0**	**0**	**0**	**0**	**88**	**40**	**73**	**908**	0
4:45 PM		**0**	**0**	**160**	**163**	**0**	**34**	**299**	**0**	**0**	**0**	**0**	**0**	**0**	**84**	**38**	**92**	**870**	3,588
5:00 PM		**0**	**0**	**157**	**203**	**0**	**44**	**329**	**0**	**0**	**0**	**0**	**0**	**0**	**80**	**25**	**72**	**910**	3,591
5:15 PM		**0**	**0**	**210**	**154**	**0**	**41**	**365**	**0**	**0**	**0**	**0**	**0**	**0**	**97**	**23**	**101**	**991**	**3,679**
5:30 PM		0	0	217	131	0	36	300	0	0	0	0	0	0	90	29	104	907	3,678
5:45 PM		0	0	147	121	0	33	229	0	0	0	0	0	0	70	36	105	741	3,549
Count Total		0	0	1,475	1,285	0	312	2,405	0	0	0	0	0	0	695	266	699	7,137	0
Peak Hour	**All**	**0**	**0**	**726**	**688**	**0**	**158**	**1,294**	**0**	**0**	**0**	**0**	**0**	**0**	**349**	**126**	**338**	**3,679**	**0**
	HV	**0**	**0**	**17**	**17**	**0**	**3**	**20**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**6**	**65**	**0**
	HV%	**-**	**-**	**2%**	**2%**	**-**	**2%**	**2%**	**-**	**-**	**-**	**-**	**-**	**-**	**0%**	**1%**	**2%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	12	5	0	1	*18*	0	0	0	0	*0*	0	0	3	2	*5*
4:15 PM	12	11	0	2	*25*	0	0	0	0	*0*	0	0	3	2	*5*
4:30 PM	**10**	**8**	**0**	**4**	***22***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**7**	*9*
4:45 PM	**11**	**3**	**0**	**0**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
5:00 PM	**4**	**7**	**0**	**2**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**3**	*4*
5:15 PM	**9**	**5**	**0**	**2**	***16***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**5**	***6***
5:30 PM	7	5	0	1	*13*	0	0	0	0	*0*	0	0	4	1	*5*
5:45 PM	4	1	0	1	*6*	0	0	0	0	*0*	0	0	2	1	*3*
Count Total	69	45	0	13	*127*	0	0	0	0	*0*	0	1	15	22	*38*
Peak Hour	**34**	**23**	**0**	**8**	***65***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**3**	**16**	***20***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Harrison Avenue Eastbound				Harrison Avenue Westbound				I-5 Southbound Ramps Northbound				I-5 Southbound Ramps Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	6	6	0	0	5	0	0	0	0	0	0	0	1	0	18	0
4:15 PM	0	0	9	3	0	1	10	0	0	0	0	0	0	1	0	1	25	0
4:30 PM	**0**	**0**	**7**	**3**	**0**	**2**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**2**	**22**	0
4:45 PM	**0**	**0**	**5**	**6**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	79
5:00 PM	**0**	**0**	**1**	**3**	**0**	**1**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**13**	74
5:15 PM	**0**	**0**	**4**	**5**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**16**	**65**
5:30 PM	0	0	3	4	0	0	5	0	0	0	0	0	0	0	1	0	13	56
5:45 PM	0	0	1	3	0	0	1	0	0	0	0	0	0	0	0	1	6	48
Count Total	0	0	36	33	0	4	41	0	0	0	0	0	0	2	3	8	127	0
Peak Hour	**0**	**0**	**17**	**17**	**0**	**3**	**20**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**6**	**65**	**0**

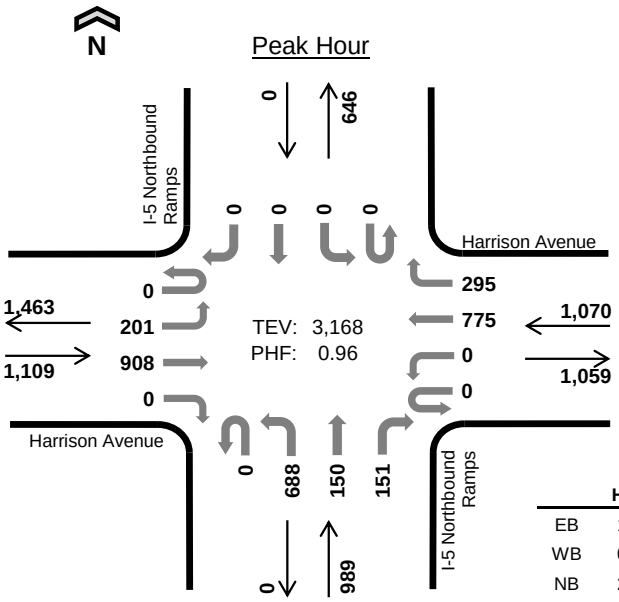
Two-Hour Count Summaries - Bikes

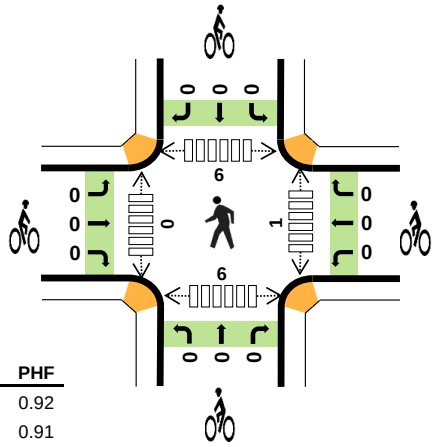
Interval Start	Harrison Avenue Eastbound			Harrison Avenue Westbound			I-5 Southbound Ramps Northbound			I-5 Southbound Ramps Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

I-5 Northbound Ramps
Harrison Avenue

Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	1.2%	0.92
WB	0.7%	0.91
NB	2.1%	0.84
SB	-	-
TOTAL	1.3%	0.96

Two-Hour Count Summaries

Interval Start	Harrison Avenue Eastbound				Harrison Avenue Westbound				I-5 Northbound Ramps Northbound				I-5 Northbound Ramps Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	51	212	0	0	0	190	88	0	143	59	39	0	0	0	0	782	0
4:15 PM	0	58	241	0	0	0	176	72	0	186	24	52	0	0	0	0	809	0
4:30 PM	0	63	229	0	0	0	190	49	0	122	42	50	0	0	0	0	745	0
4:45 PM	**0**	**54**	**220**	**0**	**0**	**0**	**180**	**72**	**0**	**158**	**38**	**32**	**0**	**0**	**0**	**0**	**754**	3,090
5:00 PM	**0**	**54**	**208**	**0**	**0**	**0**	**192**	**68**	**0**	**193**	**55**	**47**	**0**	**0**	**0**	**0**	**817**	3,125
5:15 PM	**0**	**43**	**227**	**0**	**0**	**0**	**219**	**75**	**0**	**193**	**35**	**36**	**0**	**0**	**0**	**0**	**828**	3,144
5:30 PM	**0**	**50**	**253**	**0**	**0**	**0**	**184**	**80**	**0**	**144**	**22**	**36**	**0**	**0**	**0**	**0**	**769**	**3,168**
5:45 PM	0	35	173	0	0	0	127	51	0	123	33	39	0	0	0	0	581	2,995
Count Total	0	408	1,763	0	0	0	1,458	555	0	1,262	308	331	0	0	0	0	6,085	0
Peak Hour All	**0**	**201**	**908**	**0**	**0**	**0**	**775**	**295**	**0**	**688**	**150**	**151**	**0**	**0**	**0**	**0**	**3,168**	**0**
Peak Hour HV	**0**	**8**	**5**	**0**	**0**	**0**	**5**	**2**	**0**	**16**	**5**	**0**	**0**	**0**	**0**	**0**	**41**	**0**
Peak Hour HV%	**-**	**4%**	**1%**	**-**	**-**	**-**	**1%**	**1%**	**-**	**2%**	**3%**	**0%**	**-**	**-**	**-**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	6	2	3	0	*11*	0	0	0	0	*0*	3	0	3	5	*11*
4:15 PM	12	3	6	0	*21*	0	0	0	0	*0*	0	0	1	2	*3*
4:30 PM	5	3	5	0	*13*	1	0	0	0	*1*	0	0	2	4	*6*
4:45 PM	**4**	**1**	**3**	**0**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
5:00 PM	**1**	**2**	**8**	**0**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**3**	*5*
5:15 PM	**5**	**1**	**7**	**0**	***13***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**2**	**2**	*5*
5:30 PM	**3**	**3**	**3**	**0**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**0**	***2***
5:45 PM	2	1	2	0	*5*	0	0	0	0	*0*	0	0	1	1	*2*
Count Total	38	16	37	0	*91*	1	0	0	0	*1*	4	0	13	18	*35*
Peak Hour	**13**	**7**	**21**	**0**	***41***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**6**	**6**	***13***

Two-Hour Count Summaries - Heavy Vehicles

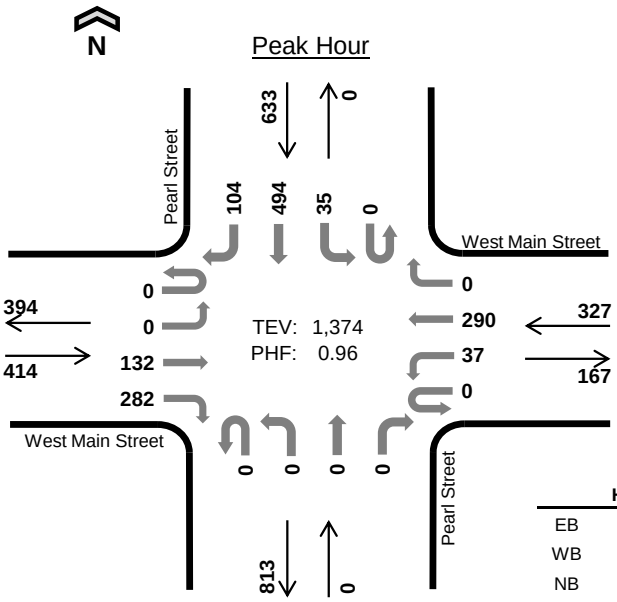
Interval Start	Harrison Avenue Eastbound				Harrison Avenue Westbound				I-5 Northbound Ramps Northbound				I-5 Northbound Ramps Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	3	3	0	0	0	2	0	0	2	1	0	0	0	0	0	11	0
4:15 PM	0	5	7	0	0	0	1	2	0	5	1	0	0	0	0	0	21	0
4:30 PM	0	2	3	0	0	0	3	0	0	5	0	0	0	0	0	0	13	0
4:45 PM	**0**	**2**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**8**	53
5:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**5**	**3**	**0**	**0**	**0**	**0**	**0**	**11**	53
5:15 PM	**0**	**4**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**13**	45
5:30 PM	**0**	**2**	**1**	**0**	**0**	**0**	**1**	**2**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**41**
5:45 PM	0	2	0	0	0	0	0	1	0	2	0	0	0	0	0	0	5	38
Count Total	0	20	18	0	0	0	11	5	0	30	7	0	0	0	0	0	91	0
Peak Hour	**0**	**8**	**5**	**0**	**0**	**0**	**5**	**2**	**0**	**16**	**5**	**0**	**0**	**0**	**0**	**0**	**41**	**0**

Two-Hour Count Summaries - Bikes

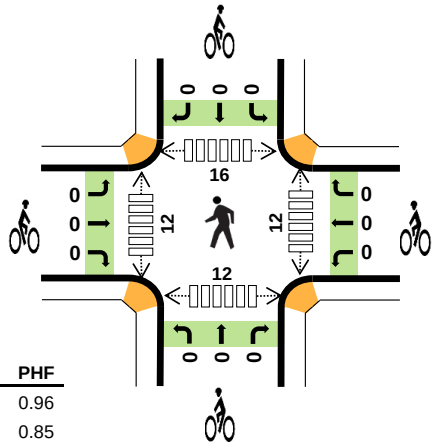
Interval Start	Harrison Avenue Eastbound			Harrison Avenue Westbound			I-5 Northbound Ramps Northbound			I-5 Northbound Ramps Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Pearl Street
West Main Street



Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM



	HV %:	PHF
EB	0.2%	0.96
WB	0.0%	0.85
NB	-	-
SB	2.1%	0.89
TOTAL	1.0%	0.96

Two-Hour Count Summaries

Interval Start		West Main Street Eastbound				West Main Street Westbound				Pearl Street Northbound				Pearl Street Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	38	67	0	9	66	0	0	0	0	0	0	3	135	21	339	0
4:15 PM		**0**	**0**	**43**	**62**	**0**	**9**	**70**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**119**	**33**	**344**	0
4:30 PM		**0**	**0**	**21**	**79**	**0**	**7**	**72**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**148**	**20**	**357**	0
4:45 PM		**0**	**0**	**25**	**76**	**0**	**9**	**64**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**123**	**29**	**330**	1,370
5:00 PM		**0**	**0**	**43**	**65**	**0**	**12**	**84**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**104**	**22**	**343**	**1,374**
5:15 PM		0	0	34	56	0	6	63	0	0	0	0	0	0	5	102	11	277	1,307
5:30 PM		0	0	34	55	0	5	54	0	0	0	0	0	0	6	87	23	264	1,214
5:45 PM		0	0	19	51	0	6	38	0	0	0	0	0	0	7	103	26	250	1,134
Count Total		0	0	257	511	0	63	511	0	0	0	0	0	0	56	921	185	2,504	0
Peak Hour	**All**	**0**	**0**	**132**	**282**	**0**	**37**	**290**	**0**	**0**	**0**	**0**	**0**	**0**	**35**	**494**	**104**	**1,374**	**0**
	HV	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**11**	**1**	**14**	**0**
	HV%	**-**	**-**	**0%**	**0%**	**-**	**0%**	**0%**	**-**	**-**	**-**	**-**	**-**	**-**	**3%**	**2%**	**1%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	0	2	*3*	0	0	0	1	*1*	7	2	4	7	*20*
4:15 PM	**1**	**0**	**0**	**5**	***6***	**0**	**0**	**0**	**0**	***0***	**4**	**2**	**2**	**3**	*11*
4:30 PM	**0**	**0**	**0**	**3**	***3***	**0**	**0**	**0**	**0**	***0***	**3**	**3**	**6**	**4**	*16*
4:45 PM	**0**	**0**	**0**	**3**	***3***	**0**	**0**	**0**	**0**	***0***	**3**	**1**	**4**	**3**	*11*
5:00 PM	**0**	**0**	**0**	**2**	***2***	**0**	**0**	**0**	**0**	***0***	**2**	**6**	**4**	**2**	***14***
5:15 PM	0	0	0	2	*2*	0	0	0	0	*0*	4	0	2	1	*7*
5:30 PM	1	0	0	0	*1*	0	0	0	0	*0*	2	0	2	3	*7*
5:45 PM	0	0	0	2	*2*	0	0	0	0	*0*	2	3	1	5	*11*
Count Total	3	0	0	19	*22*	0	0	0	1	*1*	27	17	25	28	*97*
Peak Hour	**1**	**0**	**0**	**13**	***14***	**0**	**0**	**0**	**0**	***0***	**12**	**12**	**16**	**12**	***52***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	West Main Street Eastbound				West Main Street Westbound				Pearl Street Northbound				Pearl Street Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	3	0
4:15 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**6**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**3**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**3**	15
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**14**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	10
5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	8
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	7
Count Total	0	0	1	2	0	0	0	0	0	0	0	0	0	2	14	3	22	0
Peak Hour	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**11**	**1**	**14**	**0**

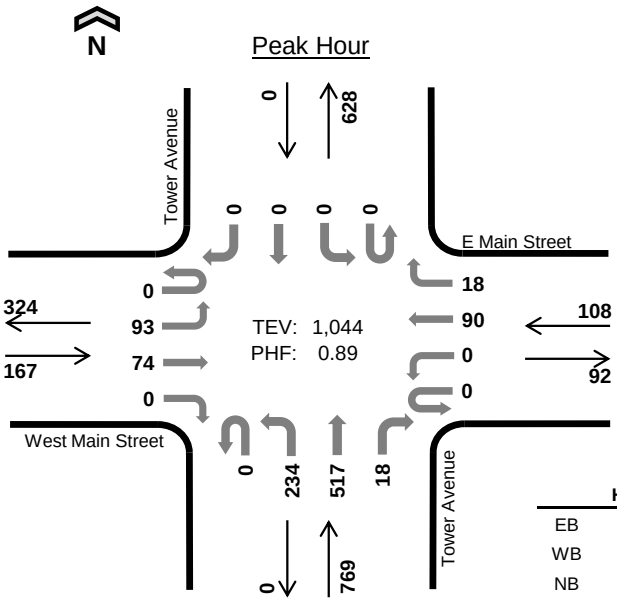
Two-Hour Count Summaries - Bikes

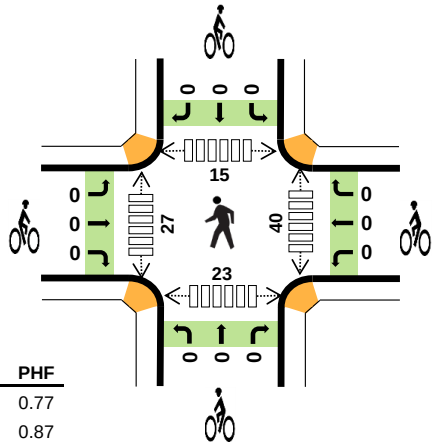
Interval Start	West Main Street Eastbound			West Main Street Westbound			Pearl Street Northbound			Pearl Street Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	1	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Tower Avenue
West Main Street

Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	0.6%	0.77
WB	0.0%	0.87
NB	0.5%	0.91
SB	-	-
TOTAL	0.5%	0.89

Two-Hour Count Summaries

Interval Start		West Main Street Eastbound				E Main Street Westbound				Tower Avenue Northbound				Tower Avenue Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	26	14	0	0	0	22	5	0	51	125	6	0	0	0	0	249	0
4:15 PM		**0**	**30**	**24**	**0**	**0**	**0**	**25**	**6**	**0**	**58**	**116**	**5**	**0**	**0**	**0**	**0**	**264**	0
4:30 PM		**0**	**15**	**15**	**0**	**0**	**0**	**17**	**4**	**0**	**60**	**128**	**4**	**0**	**0**	**0**	**0**	**243**	0
4:45 PM		**0**	**20**	**11**	**0**	**0**	**0**	**20**	**5**	**0**	**50**	**133**	**4**	**0**	**0**	**0**	**0**	**243**	999
5:00 PM		**0**	**28**	**24**	**0**	**0**	**0**	**28**	**3**	**0**	**66**	**140**	**5**	**0**	**0**	**0**	**0**	**294**	**1,044**
5:15 PM		0	20	20	0	0	0	15	2	0	55	129	7	0	0	0	0	248	1,028
5:30 PM		0	25	14	0	0	0	6	2	0	51	115	5	0	0	0	0	218	1,003
5:45 PM		0	17	7	0	0	0	9	3	0	38	103	5	0	0	0	0	182	942
Count Total		0	181	129	0	0	0	142	30	0	429	989	41	0	0	0	0	1,941	0
Peak Hour	**All**	**0**	**93**	**74**	**0**	**0**	**0**	**90**	**18**	**0**	**234**	**517**	**18**	**0**	**0**	**0**	**0**	**1,044**	**0**
	HV	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**5**	**0**
	HV%	**-**	**1%**	**0%**	**-**	**-**	**-**	**0%**	**0%**	**-**	**0%**	**1%**	**0%**	**-**	**-**	**-**	**-**	**0%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	1	4	0	*6*	0	0	0	0	*0*	10	5	10	6	*31*
4:15 PM	**0**	**0**	**3**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**8**	**5**	**8**	**1**	*22*
4:30 PM	**1**	**0**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**16**	**10**	**5**	**14**	*45*
4:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**4**	**3**	**1**	**3**	*11*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**12**	**9**	**1**	**5**	***27***
5:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	8	6	2	3	*19*
5:30 PM	1	0	1	0	*2*	0	0	0	0	*0*	11	9	1	4	*25*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	13	10	6	7	*36*
Count Total	3	1	9	0	*13*	0	0	0	0	*0*	82	57	34	43	*216*
Peak Hour	**1**	**0**	**4**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**40**	**27**	**15**	**23**	***105***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	West Main Street				E Main Street				Tower Avenue				Tower Avenue				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	0	0	0	0	1	0	0	4	0	0	0	0	0	6	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	11
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	1	2	0	0	0	0	1	0	0	9	0	0	0	0	0	13	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**5**	**0**

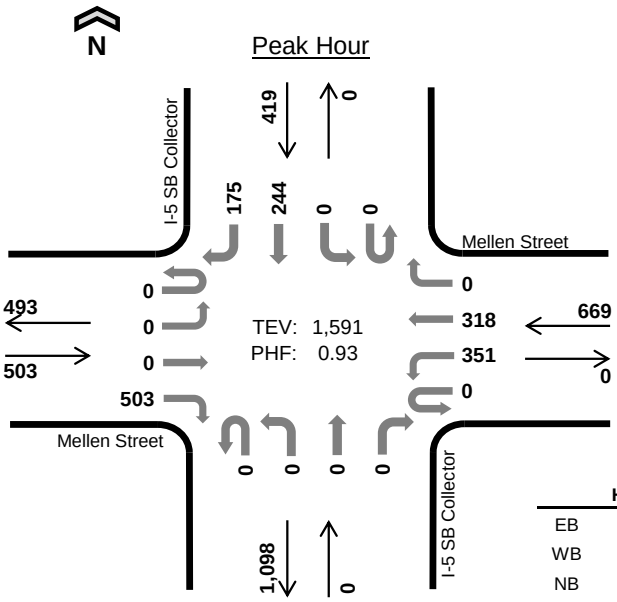
Two-Hour Count Summaries - Bikes

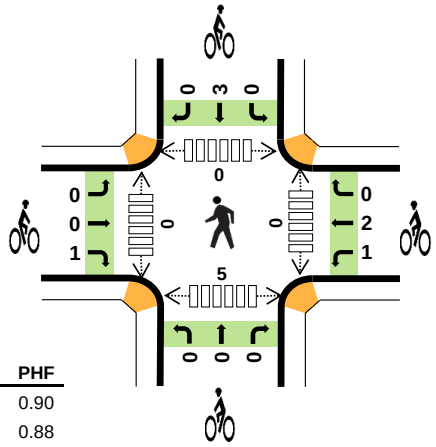
Interval Start	West Main Street			E Main Street			Tower Avenue			Tower Avenue			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

I-5 SB Collector
Mellen Street

Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	2.0%	0.90
WB	0.7%	0.88
NB	-	-
SB	0.7%	0.89
TOTAL	1.1%	0.93

Two-Hour Count Summaries

Interval Start		Mellen Street Eastbound				Mellen Street Westbound				I-5 SB Collector Northbound				I-5 SB Collector Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	146	0	94	78	0	0	0	0	0	0	0	51	45	414	0
4:15 PM		**0**	**0**	**0**	**103**	**0**	**70**	**79**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**52**	**47**	**351**	0
4:30 PM		**0**	**0**	**0**	**126**	**0**	**95**	**66**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**65**	**53**	**405**	0
4:45 PM		**0**	**0**	**0**	**135**	**0**	**80**	**90**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**58**	**43**	**406**	1,576
5:00 PM		**0**	**0**	**0**	**139**	**0**	**106**	**83**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**69**	**32**	**429**	**1,591**
5:15 PM		0	0	0	101	0	72	56	0	0	0	0	0	0	0	56	33	318	1,558
5:30 PM		0	0	0	109	0	62	60	0	0	0	0	0	0	0	41	33	305	1,458
5:45 PM		0	0	0	74	0	53	80	0	0	0	0	0	0	0	61	54	322	1,374
Count Total		0	0	0	933	0	632	592	0	0	0	0	0	0	0	453	340	2,950	0
Peak Hour	**All**	**0**	**0**	**0**	**503**	**0**	**351**	**318**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**244**	**175**	**1,591**	**0**
	HV	**0**	**0**	**0**	**10**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**18**	**0**
	HV%	**-**	**-**	**-**	**2%**	**-**	**0%**	**2%**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0%**	**1%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	6	3	0	1	*10*	2	1	0	1	*4*	0	0	0	0	*0*
4:15 PM	**1**	**1**	**0**	**1**	***3***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**3**	*3*
4:30 PM	**3**	**0**	**0**	**1**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**3**	**0**	**1**	***4***	**0**	**1**	**0**	**2**	***3***	**0**	**0**	**0**	**2**	*2*
5:00 PM	**6**	**1**	**0**	**0**	***7***	**0**	**2**	**0**	**1**	***3***	**0**	**0**	**0**	**0**	***0***
5:15 PM	0	1	0	0	*1*	0	1	0	0	*1*	0	0	0	1	*1*
5:30 PM	0	0	0	1	*1*	1	2	0	0	*3*	0	0	0	1	*1*
5:45 PM	0	4	0	1	*5*	2	0	0	0	*2*	0	0	0	3	*3*
Count Total	16	13	0	6	*35*	6	7	0	4	*17*	0	0	0	10	*10*
Peak Hour	**10**	**5**	**0**	**3**	***18***	**1**	**3**	**0**	**3**	***7***	**0**	**0**	**0**	**5**	***5***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Mellen Street Eastbound				Mellen Street Westbound				I-5 SB Collector Northbound				I-5 SB Collector Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	6	0	1	2	0	0	0	0	0	0	0	1	0	10	0
4:15 PM	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	0
4:30 PM	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**4**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	21
5:00 PM	**0**	**0**	**0**	**6**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**18**
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	16
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	13
5:45 PM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	1	5	14
Count Total	0	0	0	16	0	2	11	0	0	0	0	0	0	0	2	4	35	0
Peak Hour	**0**	**0**	**0**	**10**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**18**	**0**

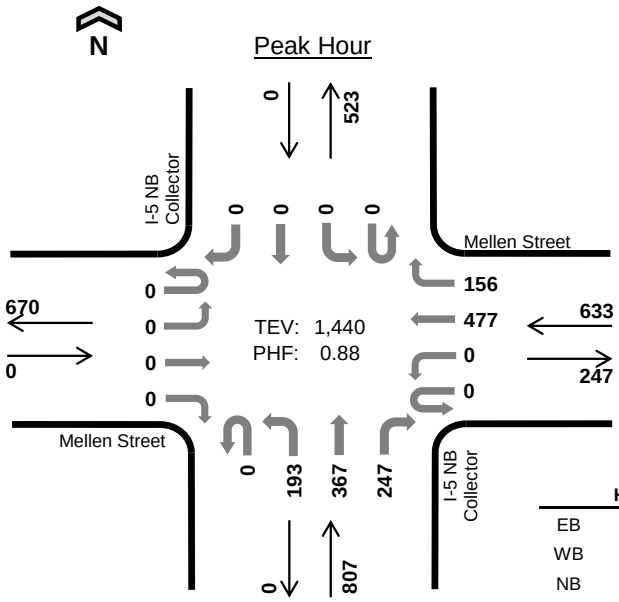
Two-Hour Count Summaries - Bikes

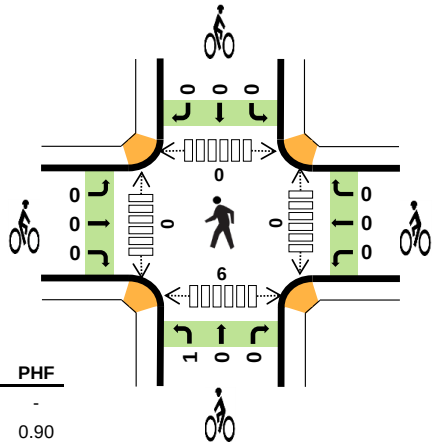
Interval Start	Mellen Street Eastbound			Mellen Street Westbound			I-5 SB Collector Northbound			I-5 SB Collector Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	2	0	1	0	0	0	0	0	0	1	4	0
4:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	8
5:00 PM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**7**
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	7
5:30 PM	0	0	1	0	2	0	0	0	0	0	0	0	3	10
5:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	2	9
Count Total	0	0	6	1	6	0	0	0	0	0	3	1	17	0
Peak Hour	**0**	**0**	**1**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**7**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

I-5 NB Collector
Mellen Street

Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	-	-
WB	1.1%	0.90
NB	1.5%	0.87
SB	-	-
TOTAL	1.3%	0.88

Two-Hour Count Summaries

Interval Start	Mellen Street Eastbound				Mellen Street Westbound				I-5 NB Collector Northbound				I-5 NB Collector Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	113	43	0	50	100	55	0	0	0	0	361	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**103**	**35**	**0**	**44**	**77**	**65**	**0**	**0**	**0**	**0**	**324**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**126**	**38**	**0**	**36**	**87**	**50**	**0**	**0**	**0**	**0**	**337**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**115**	**40**	**0**	**59**	**94**	**64**	**0**	**0**	**0**	**0**	**372**	1,394
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**133**	**43**	**0**	**54**	**109**	**68**	**0**	**0**	**0**	**0**	**407**	**1,440**
5:15 PM	0	0	0	0	0	0	94	39	0	32	95	51	0	0	0	0	311	1,427
5:30 PM	0	0	0	0	0	0	86	17	0	41	78	53	0	0	0	0	275	1,365
5:45 PM	0	0	0	0	0	0	80	31	0	59	65	48	0	0	0	0	283	1,276
Count Total	0	0	0	0	0	0	850	286	0	375	705	454	0	0	0	0	2,670	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**0**	**477**	**156**	**0**	**193**	**367**	**247**	**0**	**0**	**0**	**0**	**1,440**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**4**	**0**	**2**	**2**	**8**	**0**	**0**	**0**	**0**	**19**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**-**	**1%**	**3%**	**-**	**1%**	**1%**	**3%**	**-**	**-**	**-**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	2	3	0	*5*	0	0	1	0	*1*	0	0	0	1	*1*
4:15 PM	**0**	**0**	**3**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
4:30 PM	**0**	**0**	**4**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**3**	*3*
4:45 PM	**0**	**4**	**2**	**0**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
5:00 PM	**0**	**3**	**3**	**0**	***6***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**1**	***1***
5:15 PM	0	2	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	2	0	*2*	0	0	0	0	*0*	0	0	0	1	*1*
5:45 PM	0	3	2	0	*5*	0	0	0	0	*0*	0	0	0	4	*4*
Count Total	0	14	19	0	*33*	0	0	2	0	*2*	0	0	0	12	*12*
Peak Hour	**0**	**7**	**12**	**0**	***19***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**6**	***6***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Mellen Street Eastbound				Mellen Street Westbound				I-5 NB Collector Northbound				I-5 NB Collector Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	2	0	0	0	0	3	0	0	0	0	5	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**3**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**4**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**6**	18
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**6**	**19**
5:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	18
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	16
5:45 PM	0	0	0	0	0	0	3	0	0	1	0	1	0	0	0	0	5	15
Count Total	0	0	0	0	0	0	10	4	0	3	3	13	0	0	0	0	33	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**4**	**0**	**2**	**2**	**8**	**0**	**0**	**0**	**0**	**19**	**0**

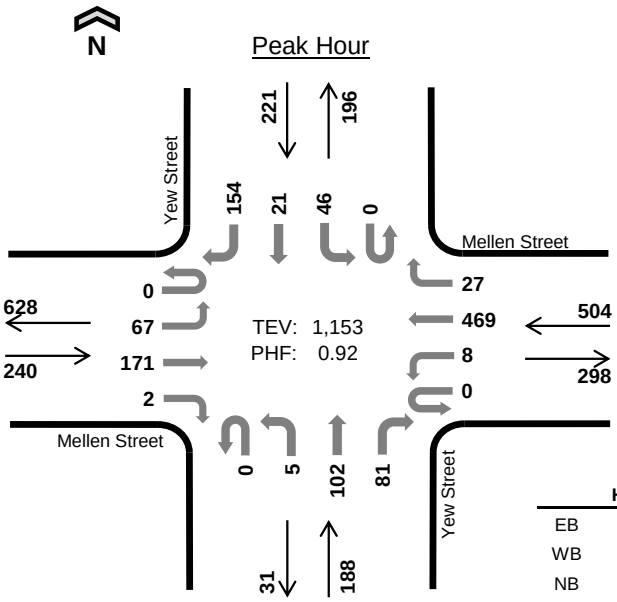
Two-Hour Count Summaries - Bikes

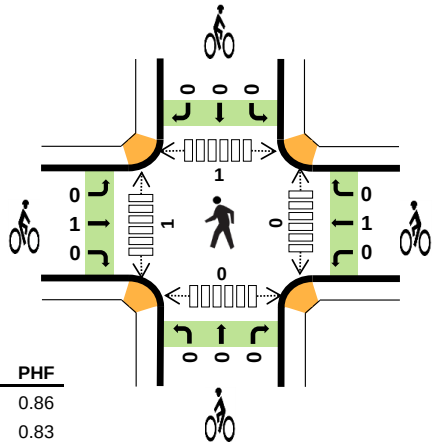
Interval Start	Mellen Street Eastbound			Mellen Street Westbound			I-5 NB Collector Northbound			I-5 NB Collector Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	2	0	0	0	0	0	2	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Yew Street
Mellen Street

Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	2.5%	0.86
WB	1.4%	0.83
NB	0.5%	0.90
SB	1.4%	0.88
TOTAL	1.5%	0.92

Two-Hour Count Summaries

Interval Start	Mellen Street Eastbound				Mellen Street Westbound				Yew Street Northbound				Yew Street Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	24	34	1	0	1	127	1	0	2	28	20	0	12	7	33	290	0
4:15 PM	**0**	**19**	**51**	**0**	**0**	**0**	**101**	**1**	**0**	**1**	**30**	**15**	**0**	**12**	**3**	**35**	**268**	0
4:30 PM	**0**	**10**	**32**	**1**	**0**	**1**	**115**	**5**	**0**	**0**	**20**	**22**	**0**	**13**	**8**	**42**	**269**	0
4:45 PM	**0**	**17**	**48**	**0**	**0**	**3**	**117**	**9**	**0**	**3**	**22**	**27**	**0**	**15**	**7**	**36**	**304**	1,131
5:00 PM	**0**	**21**	**40**	**1**	**0**	**4**	**136**	**12**	**0**	**1**	**30**	**17**	**0**	**6**	**3**	**41**	**312**	**1,153**
5:15 PM	0	20	32	0	0	4	102	6	0	1	19	21	0	11	6	28	250	1,135
5:30 PM	0	10	39	0	0	3	69	0	0	1	21	27	0	10	2	27	209	1,075
5:45 PM	0	18	32	2	0	2	91	3	0	0	23	17	0	8	5	25	226	997
Count Total	0	139	308	5	0	18	858	37	0	9	193	166	0	87	41	267	2,128	0
Peak Hour All	**0**	**67**	**171**	**2**	**0**	**8**	**469**	**27**	**0**	**5**	**102**	**81**	**0**	**46**	**21**	**154**	**1,153**	**0**
Peak Hour HV	**0**	**1**	**5**	**0**	**0**	**1**	**4**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**17**	**0**
Peak Hour HV%	**-**	**1%**	**3%**	**0%**	**-**	**13%**	**1%**	**7%**	**-**	**0%**	**1%**	**0%**	**-**	**0%**	**0%**	**2%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	1	0	1	*5*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	**2**	**1**	**0**	**0**	***3***	**1**	**1**	**0**	**0**	***2***	**0**	**1**	**0**	**0**	*1*
4:30 PM	**2**	**1**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**2**	**1**	**2**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	*1*
5:00 PM	**2**	**3**	**0**	**1**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:15 PM	1	3	0	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	0	0	*0*	0	0	0	1	*1*	0	0	0	0	*0*
5:45 PM	0	0	0	3	*3*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	10	11	1	7	*29*	1	1	0	1	*3*	0	1	1	0	*2*
Peak Hour	**6**	**7**	**1**	**3**	***17***	**1**	**1**	**0**	**0**	***2***	**0**	**1**	**1**	**0**	***2***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Mellen Street Eastbound				Mellen Street Westbound				Yew Street Northbound				Yew Street Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	1	5	0
4:15 PM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	0
4:30 PM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**5**	16
5:00 PM	**0**	**1**	**1**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**6**	**17**
5:15 PM	0	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	4	18
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	13
Count Total	0	4	6	0	0	2	7	2	0	0	1	0	0	0	0	7	29	0
Peak Hour	**0**	**1**	**5**	**0**	**0**	**1**	**4**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**17**	**0**

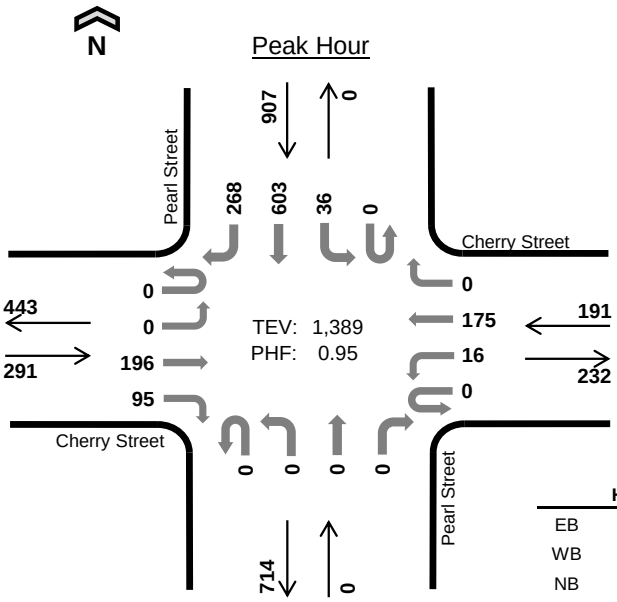
Two-Hour Count Summaries - Bikes

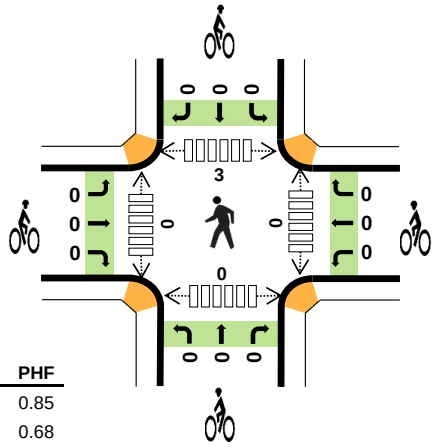
Interval Start	Mellen Street Eastbound			Mellen Street Westbound			Yew Street Northbound			Yew Street Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	1	0	0	1	0	0	0	0	0	1	0	3	0
Peak Hour	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Pearl Street
Cherry Street

Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	1.4%	0.85
WB	1.6%	0.68
NB	-	-
SB	1.4%	0.94
TOTAL	1.4%	0.95

Two-Hour Count Summaries

Interval Start	Cherry Street Eastbound				Cherry Street Westbound				Pearl Street Northbound				Pearl Street Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	45	21	0	4	38	0	0	0	0	0	0	3	169	59	339	0
4:15 PM	**0**	**0**	**49**	**26**	**0**	**3**	**35**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**143**	**56**	**319**	0
4:30 PM	**0**	**0**	**45**	**23**	**0**	**3**	**37**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**160**	**72**	**348**	0
4:45 PM	**0**	**0**	**57**	**29**	**0**	**4**	**39**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**143**	**70**	**356**	1,362
5:00 PM	**0**	**0**	**45**	**17**	**0**	**6**	**64**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**157**	**70**	**366**	**1,389**
5:15 PM	0	0	50	15	0	4	41	0	0	0	0	0	0	4	120	54	288	1,358
5:30 PM	0	0	50	20	0	5	25	0	0	0	0	0	0	5	108	41	254	1,264
5:45 PM	0	0	43	20	0	4	30	0	0	0	0	0	0	9	130	36	272	1,180
Count Total	0	0	384	171	0	33	309	0	0	0	0	0	0	57	1,130	458	2,542	0
Peak Hour All	**0**	**0**	**196**	**95**	**0**	**16**	**175**	**0**	**0**	**0**	**0**	**0**	**0**	**36**	**603**	**268**	**1,389**	**0**
Peak Hour HV	**0**	**0**	**2**	**2**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**5**	**20**	**0**
Peak Hour HV%	**-**	**-**	**1%**	**2%**	**-**	**0%**	**2%**	**-**	**-**	**-**	**-**	**-**	**-**	**0%**	**1%**	**2%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	0	0	2	*4*	1	0	0	0	*1*	0	2	2	0	*4*
4:15 PM	**2**	**2**	**0**	**3**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**2**	**1**	**0**	**2**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**0**	*2*
5:00 PM	**0**	**0**	**0**	**7**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	***1***
5:15 PM	1	0	0	2	*3*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	0	0	*0*	0	0	0	1	*1*	0	0	0	0	*0*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	7	3	0	17	*27*	1	0	0	1	*2*	0	2	5	0	*7*
Peak Hour	**4**	**3**	**0**	**13**	***20***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**3**	**0**	***3***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Cherry Street Eastbound				Cherry Street Westbound				Pearl Street Northbound				Pearl Street Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	0	4	0
4:15 PM	**0**	**0**	**1**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**7**	0
4:30 PM	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**5**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	17
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**2**	**7**	**20**
5:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	3	16
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Count Total	0	0	3	4	0	0	3	0	0	0	0	0	0	0	11	6	27	0
Peak Hour	**0**	**0**	**2**	**2**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**5**	**20**	**0**

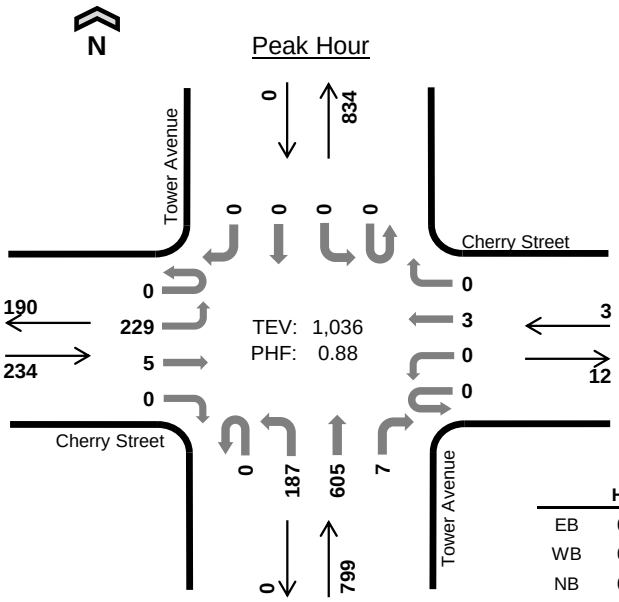
Two-Hour Count Summaries - Bikes

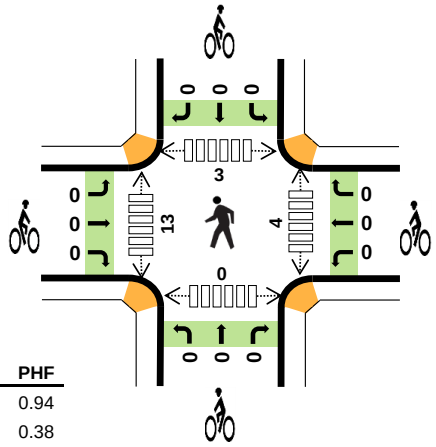
Interval Start	Cherry Street Eastbound			Cherry Street Westbound			Pearl Street Northbound			Pearl Street Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	1	0	0	0	0	0	0	0	0	0	1	2	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Tower Avenue
Cherry Street

Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	0.4%	0.94
WB	0.0%	0.38
NB	0.1%	0.86
SB	-	-
TOTAL	0.2%	0.88

Two-Hour Count Summaries

Interval Start	Cherry Street Eastbound				Cherry Street Westbound				Tower Avenue Northbound				Tower Avenue Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	52	3	0	0	0	0	0	0	42	159	2	0	0	0	0	258	0
4:15 PM	0	49	3	0	0	0	2	0	0	37	142	2	0	0	0	0	235	0
4:30 PM	**0**	**54**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**37**	**151**	**2**	**0**	**0**	**0**	**0**	**248**	0
4:45 PM	**0**	**59**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**43**	**143**	**2**	**0**	**0**	**0**	**0**	**250**	991
5:00 PM	**0**	**60**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**66**	**164**	**2**	**0**	**0**	**0**	**0**	**293**	1,026
5:15 PM	**0**	**56**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**41**	**147**	**1**	**0**	**0**	**0**	**0**	**245**	**1,036**
5:30 PM	0	52	4	0	0	0	1	0	0	27	120	2	0	0	0	0	206	994
5:45 PM	0	47	0	0	0	0	1	0	0	35	113	2	0	0	0	0	198	942
Count Total	0	429	15	0	0	0	7	0	0	328	1,139	15	0	0	0	0	1,933	0
Peak Hour All	**0**	**229**	**5**	**0**	**0**	**0**	**3**	**0**	**0**	**187**	**605**	**7**	**0**	**0**	**0**	**0**	**1,036**	**0**
Peak Hour HV	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**
Peak Hour HV%	**-**	**0%**	**0%**	**-**	**-**	**-**	**0%**	**-**	**-**	**0%**	**0%**	**0%**	**-**	**-**	**-**	**-**	**0%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	4	0	*5*	0	0	0	0	*0*	1	1	0	0	*2*
4:15 PM	1	0	5	0	*6*	0	0	0	0	*0*	1	2	0	0	*3*
4:30 PM	**1**	**0**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**4**	**0**	**0**	*4*
4:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**2**	**4**	**0**	**0**	*6*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**2**	**3**	**3**	**0**	*8*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**0**	***2***
5:30 PM	0	0	2	0	*2*	0	0	1	0	*1*	1	4	0	0	*5*
5:45 PM	0	0	0	0	*0*	0	0	2	0	*2*	0	1	0	0	*1*
Count Total	3	0	12	0	*15*	0	0	3	0	*3*	7	21	3	0	*31*
Peak Hour	**1**	**0**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**4**	**13**	**3**	**0**	***20***

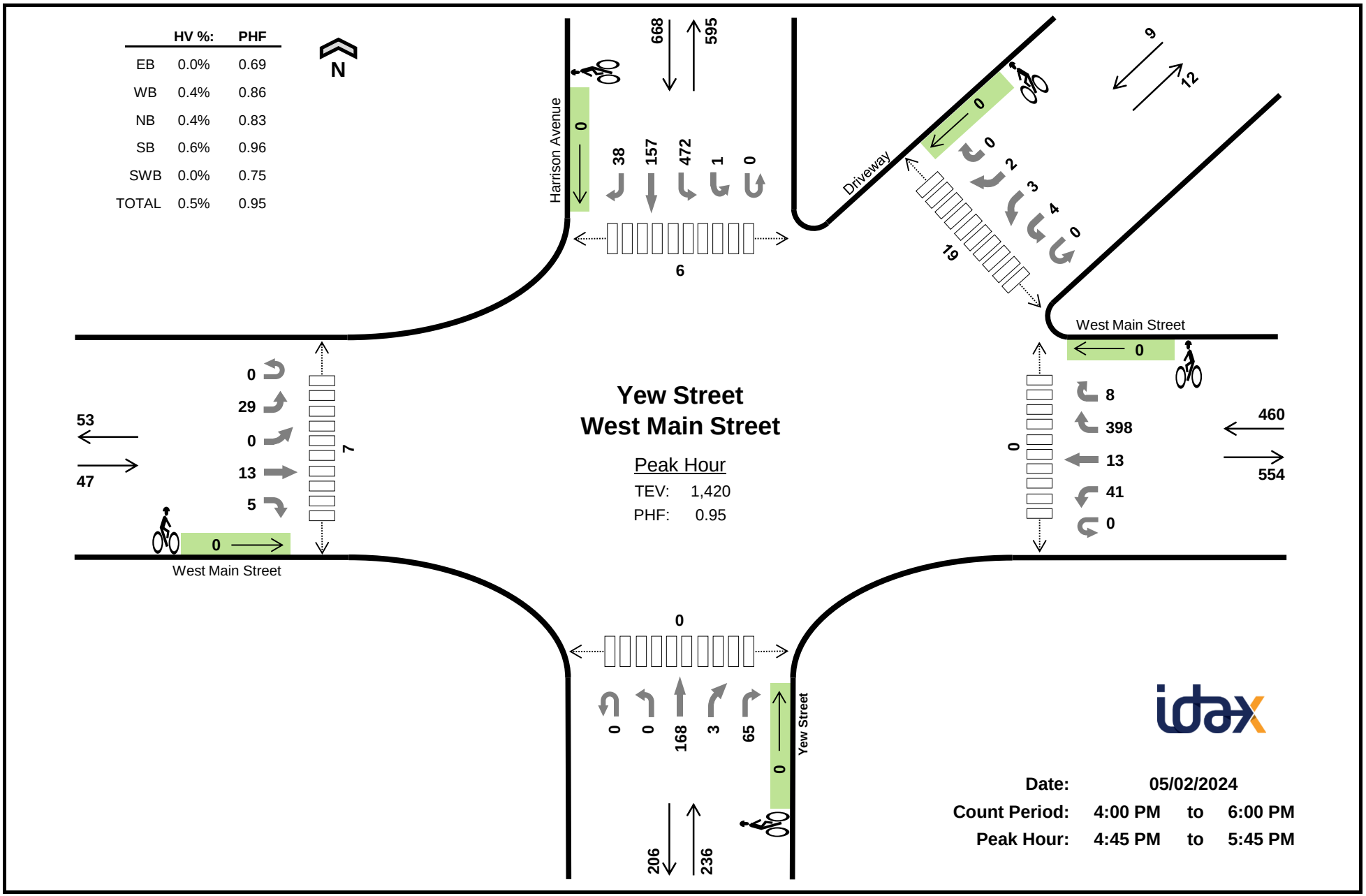
Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Cherry Street Eastbound				Cherry Street Westbound				Tower Avenue Northbound				Tower Avenue Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	0	0	0	4	0	0	0	0	0	5	0
4:15 PM	0	1	0	0	0	0	0	0	0	2	3	0	0	0	0	0	6	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	13
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	8
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
5:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	3	0	0	0	0	0	0	0	2	10	0	0	0	0	0	15	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Cherry Street Eastbound			Cherry Street Westbound			Tower Avenue Northbound			Tower Avenue Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	1	1	0	0	0	2	3
Count Total	0	0	0	0	0	0	0	2	1	0	0	0	3	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.


HV %: PHF
EB 0.0% 0.69
WB 0.4% 0.86
NB 0.4% 0.83
SB 0.6% 0.96
SWB 0.0% 0.75
TOTAL 0.5% 0.95
N
Harrison Avenue
668
595
0
38
157
472
1
0
6
Driveway
9
12
0
0
2
3
4
0
19
West Main Street
0
8
398
13
41
0
460
554
0
53
47
0
29
0
13
5
7
0
West Main Street
Yew Street
West Main Street
Peak Hour
TEV: 1,420
PHF: 0.95
0
0
0
168
3
65
0
Yew Street
206
236
Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM

Two-Hour Count Summaries

Interval Start	West Main Street Eastbound					West Main Street Westbound					Yew Street Northbound					Harrison Avenue Southbound					Driveway Southwestbound					15-min Total	Rolling One Hour
	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
4:00 PM	0	7	0	3	0	0	5	1	131	2	0	1	46	2	20	0	0	102	42	13	0	1	0	0	0	376	0
4:15 PM	0	4	0	2	0	0	10	4	105	2	0	2	29	0	27	0	0	113	33	16	0	0	1	0	0	348	0
4:30 PM	0	6	0	1	0	0	7	2	88	1	0	0	30	1	13	0	0	112	51	6	0	0	1	0	0	319	0
4:45 PM	**0**	**8**	**0**	**2**	**1**	**0**	**10**	**1**	**104**	**2**	**0**	**0**	**42**	**1**	**17**	**0**	**1**	**108**	**44**	**8**	**0**	**2**	**1**	**0**	**0**	**352**	1,395
5:00 PM	**0**	**7**	**0**	**3**	**0**	**0**	**16**	**4**	**111**	**3**	**0**	**0**	**38**	**1**	**14**	**0**	**0**	**134**	**32**	**8**	**0**	**0**	**0**	**1**	**0**	**372**	1,391
5:15 PM	**0**	**9**	**0**	**5**	**3**	**0**	**7**	**3**	**97**	**0**	**0**	**0**	**54**	**0**	**17**	**0**	**0**	**104**	**47**	**11**	**0**	**0**	**2**	**1**	**0**	**360**	1,403
5:30 PM	**0**	**5**	**0**	**3**	**1**	**0**	**8**	**5**	**86**	**3**	**0**	**0**	**34**	**1**	**17**	**0**	**0**	**126**	**34**	**11**	**0**	**2**	**0**	**0**	**0**	**336**	**1,420**
5:45 PM	0	6	0	3	0	0	8	4	64	1	0	0	25	2	13	0	1	88	42	12	0	2	0	0	0	271	1,339
Count Total	0	52	0	22	5	0	71	24	786	14	0	3	298	8	138	0	2	887	325	85	0	7	5	2	0	2,734	0
Peak Hour All	**0**	**29**	**0**	**13**	**5**	**0**	**41**	**13**	**398**	**8**	**0**	**0**	**168**	**3**	**65**	**0**	**1**	**472**	**157**	**38**	**0**	**4**	**3**	**2**	**0**	**1,420**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**7**	**0**
Peak Hour HV%	**-**	**0%**	**-**	**0%**	**0%**	**-**	**2%**	**0%**	**0%**	**0%**	**-**	**-**	**1%**	**0%**	**0%**	**-**	**0%**	**0%**	**1%**	**5%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals						Bicycles						Pedestrians (Crossing Leg)					
	EB	WB	NB	SB	SWB	Total	EB	WB	NB	SB	SWB	Total	East	West	North	South	Northeast	Total
4:00 PM	0	1	1	2	0	*4*	0	0	0	0	0	*0*	7	2	6	0	1	*16*
4:15 PM	0	0	0	4	0	*4*	0	0	0	0	0	*0*	1	1	0	0	3	*5*
4:30 PM	0	0	0	3	0	*3*	0	0	0	0	0	*0*	0	0	0	0	5	*5*
4:45 PM	**0**	**1**	**0**	**3**	**0**	***4***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	**2**	***2***
5:00 PM	**0**	**0**	**1**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**4**	**6**	**0**	**1**	***11***
5:15 PM	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	**7**	***8***
5:30 PM	**0**	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**0**	**9**	***11***
5:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	3	0	1	0	47	*51*
Count Total	0	3	2	13	0	*18*	0	0	0	0	0	*0*	11	10	13	0	75	*109*
Peak Hr	**0**	**2**	**1**	**4**	**0**	***7***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**7**	**6**	**0**	**19**	*32*

Two-Hour Count Summaries - Heavy Vehicles

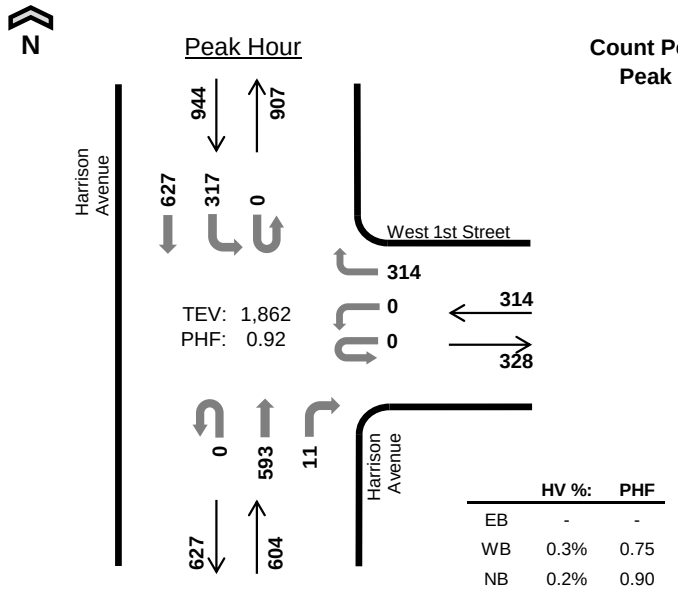
Interval Start	West Main Street					West Main Street					Yew Street					Harrison Avenue					Driveway					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Southwestbound						
	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
4:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	4	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	4	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**4**	15
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	13
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	9
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**7**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Count Total	0	0	0	0	0	0	1	0	2	0	0	0	2	0	0	0	0	2	5	6	0	0	0	0	0	18	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	7	**0**

Two-Hour Count Summaries - Bikes

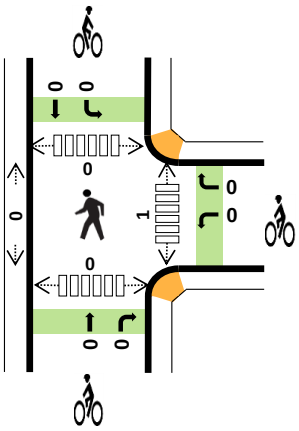
Interval Start	West Main Street					West Main Street					Yew Street					Harrison Avenue					Driveway					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Southwestbound						
	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	**0**

Harrison Avenue
West 1st Street

Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	-	-
WB	0.3%	0.75
NB	0.2%	0.90
SB	0.7%	0.95
TOTAL	0.5%	0.92



Two-Hour Count Summaries

Interval Start	0 Eastbound				West 1st Street Westbound				Harrison Avenue Northbound				Harrison Avenue Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	58	0	0	182	0	0	81	145	0	466	0
4:15 PM	0	0	0	0	0	0	0	70	0	0	148	3	0	78	167	0	466	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**81**	**0**	**0**	**124**	**0**	**0**	**86**	**153**	**0**	**444**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**62**	**0**	**0**	**156**	**1**	**0**	**68**	**158**	**0**	**445**	1,821
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**67**	**0**	**0**	**163**	**4**	**0**	**78**	**153**	**0**	**465**	1,820
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**104**	**0**	**0**	**150**	**6**	**0**	**85**	**163**	**0**	**508**	**1,862**
5:30 PM	0	0	0	0	0	0	0	72	0	0	124	2	0	82	160	0	440	1,858
5:45 PM	0	0	0	0	0	0	0	45	0	0	95	3	0	65	131	0	339	1,752
Count Total	0	0	0	0	0	0	0	559	0	0	1,142	19	0	623	1,230	0	3,573	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**314**	**0**	**0**	**593**	**11**	**0**	**317**	**627**	**0**	**1,862**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**3**	**4**	**0**	**9**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**-**	**0%**	**0%**	**-**	**1%**	**1%**	**-**	**0%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	1	3	*4*	0	0	0	0	*0*	2	0	0	0	*2*
4:15 PM	0	2	3	3	*8*	0	0	0	0	*0*	3	0	0	0	*3*
4:30 PM	**0**	**0**	**0**	**3**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**0**	**2**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
5:15 PM	**0**	**1**	**0**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:30 PM	0	1	2	1	*4*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	4	7	14	*25*	0	0	0	0	*0*	6	0	0	0	*6*
Peak Hr	**0**	**1**	**1**	**7**	***9***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	***1***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				West 1st Street				Harrison Avenue				Harrison Avenue				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	4	0
4:15 PM	0	0	0	0	0	0	0	2	0	0	3	0	0	0	3	0	8	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**3**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**2**	17
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**2**	15
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**9**
5:30 PM	0	0	0	0	0	0	0	1	0	0	2	0	0	1	0	0	4	10
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Count Total	0	0	0	0	0	0	0	4	0	0	7	0	0	4	10	0	25	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**3**	**4**	**0**	**9**	**0**

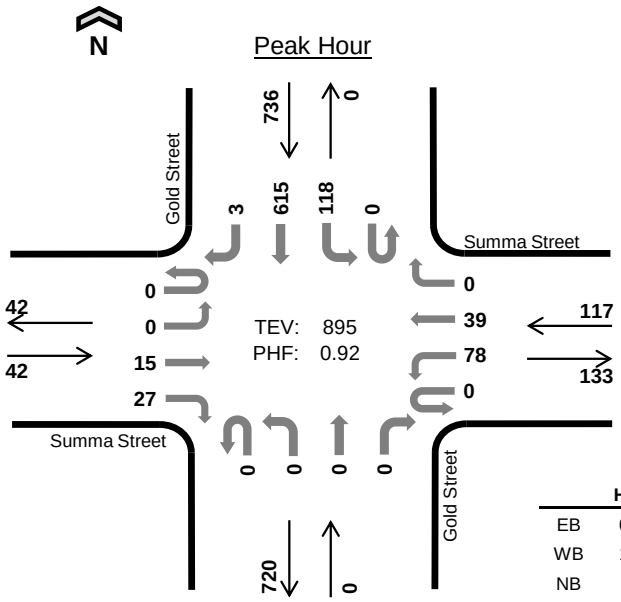
Two-Hour Count Summaries - Bikes

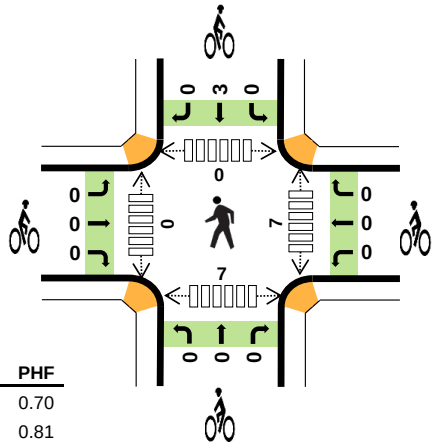
Interval Start	0			West 1st Street			Harrison Avenue			Harrison Avenue			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Gold Street
Summa Street

Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM





	HV %:	PHF
EB	0.0%	0.70
WB	1.7%	0.81
NB	-	-
SB	0.8%	0.90
TOTAL	0.9%	0.92

Two-Hour Count Summaries

Interval Start		Summa Street Eastbound				Summa Street Westbound				Gold Street Northbound				Gold Street Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		**0**	**0**	**4**	**7**	**0**	**16**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**26**	**176**	**2**	**239**	0
4:15 PM		**0**	**0**	**4**	**5**	**0**	**23**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**24**	**143**	**0**	**210**	0
4:30 PM		**0**	**0**	**2**	**5**	**0**	**23**	**13**	**0**	**0**	**0**	**0**	**0**	**0**	**37**	**162**	**0**	**242**	0
4:45 PM		**0**	**0**	**5**	**10**	**0**	**16**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**31**	**134**	**1**	**204**	**895**
5:00 PM		0	0	5	5	0	15	8	0	0	0	0	0	0	36	146	2	217	873
5:15 PM		0	0	5	3	0	21	7	0	0	0	0	0	0	24	121	1	182	845
5:30 PM		0	0	1	4	0	8	3	0	0	0	0	0	0	33	98	2	149	752
5:45 PM		0	0	6	3	0	18	7	0	0	0	0	0	0	63	97	7	201	749
Count Total		0	0	32	42	0	140	64	0	0	0	0	0	0	274	1,077	15	1,644	0
Peak Hour	**All**	**0**	**0**	**15**	**27**	**0**	**78**	**39**	**0**	**0**	**0**	**0**	**0**	**0**	**118**	**615**	**3**	**895**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**3**	**0**	**8**	**0**
	HV%	**-**	**-**	**0%**	**0%**	**-**	**1%**	**3%**	**-**	**-**	**-**	**-**	**-**	**-**	**3%**	**0%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	**0**	**1**	**0**	**2**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:15 PM	**0**	**1**	**0**	**3**	***4***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**3**	*4*
4:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**3**	***3***	**1**	**0**	**0**	**0**	*1*
4:45 PM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***	**5**	**0**	**0**	**4**	***9***
5:00 PM	0	1	0	0	*1*	0	0	0	0	*0*	2	0	0	1	*3*
5:15 PM	0	0	0	2	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	1	*1*
5:45 PM	0	1	0	0	*1*	0	0	0	0	*0*	1	0	0	1	*2*
Count Total	0	4	0	8	*12*	0	0	0	3	*3*	10	0	0	10	*20*
Peak Hour	**0**	**2**	**0**	**6**	***8***	**0**	**0**	**0**	**3**	***3***	**7**	**0**	**0**	**7**	***14***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Summa Street Eastbound				Summa Street Westbound				Gold Street Northbound				Gold Street Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**3**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**4**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**8**
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	6
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	4
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	4
Count Total	0	0	0	0	0	3	1	0	0	0	0	0	0	4	4	0	12	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**3**	**0**	**8**	**0**

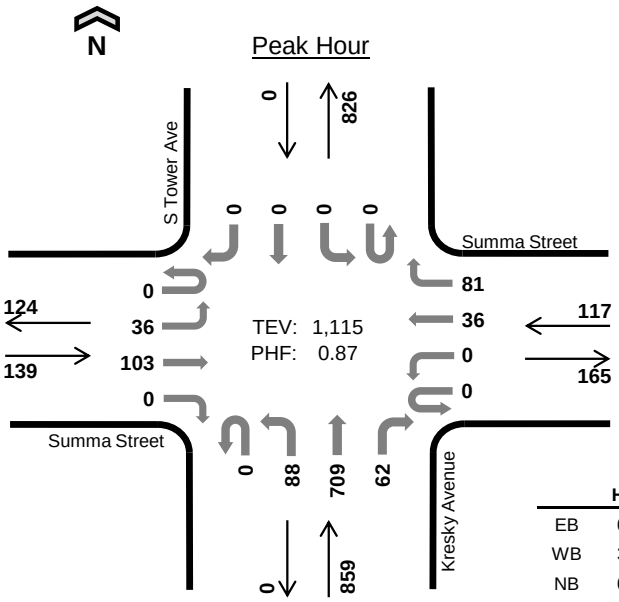
Two-Hour Count Summaries - Bikes

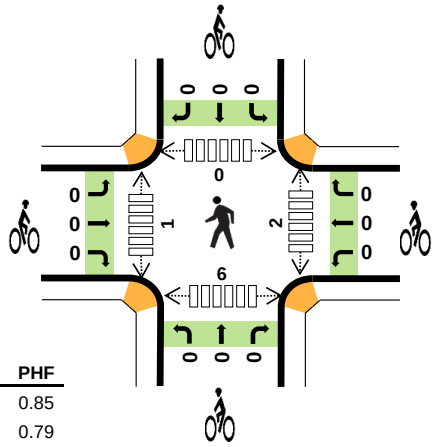
Interval Start	Summa Street Eastbound			Summa Street Westbound			Gold Street Northbound			Gold Street Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	3	0	3	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Kresky Avenue
Summa Street

Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	0.7%	0.85
WB	3.4%	0.79
NB	0.6%	0.86
SB	-	-
TOTAL	0.9%	0.87

Two-Hour Count Summaries

Interval Start		Summa Street Eastbound				Summa Street Westbound				Kresky Avenue Northbound				S Tower Ave Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	10	20	0	0	0	4	17	0	20	168	10	0	0	0	0	249	0
4:15 PM		**0**	**9**	**21**	**0**	**0**	**0**	**9**	**28**	**0**	**30**	**152**	**11**	**0**	**0**	**0**	**0**	**260**	0
4:30 PM		**0**	**6**	**26**	**0**	**0**	**0**	**6**	**13**	**0**	**29**	**181**	**13**	**0**	**0**	**0**	**0**	**274**	0
4:45 PM		**0**	**8**	**28**	**0**	**0**	**0**	**11**	**22**	**0**	**15**	**158**	**19**	**0**	**0**	**0**	**0**	**261**	1,044
5:00 PM		**0**	**13**	**28**	**0**	**0**	**0**	**10**	**18**	**0**	**14**	**218**	**19**	**0**	**0**	**0**	**0**	**320**	**1,115**
5:15 PM		0	10	17	0	0	0	12	21	0	24	156	14	0	0	0	0	254	1,109
5:30 PM		0	10	27	0	0	0	3	14	0	11	132	13	0	0	0	0	210	1,045
5:45 PM		0	34	28	0	0	0	14	24	0	9	112	15	0	0	0	0	236	1,020
Count Total		0	100	195	0	0	0	69	157	0	152	1,277	114	0	0	0	0	2,064	0
Peak Hour	**All**	**0**	**36**	**103**	**0**	**0**	**0**	**36**	**81**	**0**	**88**	**709**	**62**	**0**	**0**	**0**	**0**	**1,115**	**0**
	HV	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**3**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**10**	**0**
	HV%	**-**	**3%**	**0%**	**-**	**-**	**-**	**3%**	**4%**	**-**	**0%**	**1%**	**2%**	**-**	**-**	**-**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	0	1	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	**1**	**4**	**0**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**6**	*7*
5:00 PM	**0**	**0**	**3**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**0**	***2***
5:15 PM	1	0	1	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	1	0	0	*1*	0	0	0	0	*0*	2	0	0	1	*3*
Count Total	4	5	8	0	*17*	0	0	0	0	*0*	4	1	0	7	*12*
Peak Hour	**1**	**4**	**5**	**0**	***10***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**0**	**6**	***9***

Two-Hour Count Summaries - Heavy Vehicles

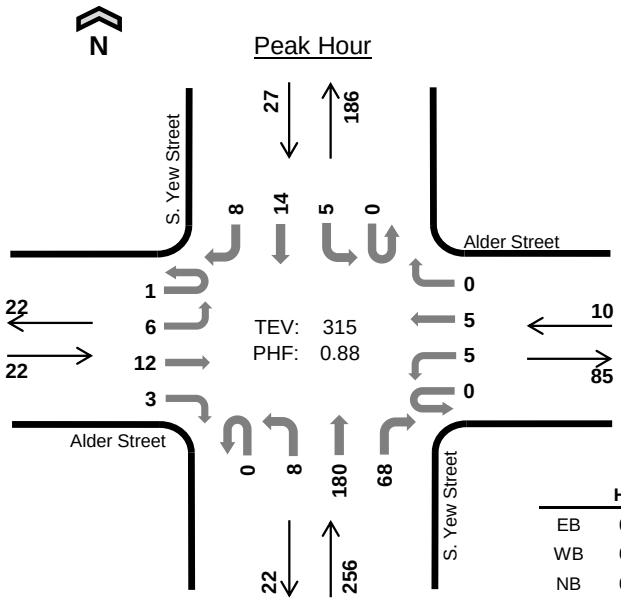
Interval Start	Summa Street Eastbound				Summa Street Westbound				Kresky Avenue Northbound				S Tower Ave Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0
4:15 PM	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	10
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**10**
5:15 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	7
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	7
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	7
Count Total	0	2	2	0	0	0	2	3	0	0	7	1	0	0	0	0	17	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**3**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**10**	**0**

Two-Hour Count Summaries - Bikes

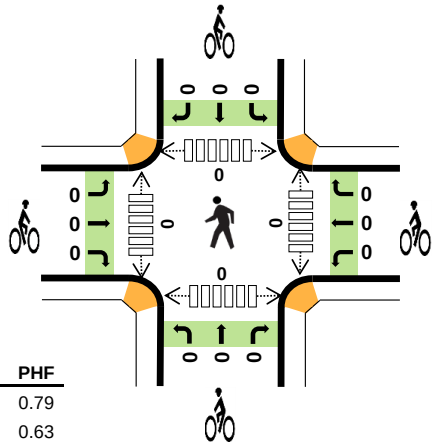
Interval Start	Summa Street Eastbound			Summa Street Westbound			Kresky Avenue Northbound			S Tower Ave Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

S. Yew Street
Alder Street



Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	0.0%	0.79
WB	0.0%	0.63
NB	0.0%	0.91
SB	0.0%	0.61
TOTAL	0.0%	0.88

Two-Hour Count Summaries

Interval Start		Alder Street Eastbound				Alder Street Westbound				S. Yew Street Northbound				S. Yew Street Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	1	0	0	2	0	0	2	51	11	0	0	5	1	73	0
4:15 PM		0	1	1	1	0	0	0	0	0	2	43	13	0	1	3	0	65	0
4:30 PM		0	1	2	1	0	0	4	1	0	2	40	11	0	1	9	1	73	0
4:45 PM		**0**	**3**	**1**	**1**	**0**	**1**	**2**	**0**	**0**	**4**	**48**	**18**	**0**	**3**	**3**	**5**	**89**	300
5:00 PM		**0**	**1**	**3**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**47**	**16**	**0**	**1**	**1**	**0**	**73**	300
5:15 PM		**1**	**1**	**3**	**1**	**0**	**1**	**0**	**0**	**0**	**2**	**38**	**16**	**0**	**0**	**8**	**1**	**72**	307
5:30 PM		**0**	**1**	**5**	**1**	**0**	**1**	**1**	**0**	**0**	**2**	**47**	**18**	**0**	**1**	**2**	**2**	**81**	**315**
5:45 PM		0	0	0	1	0	0	2	0	0	1	39	13	0	1	4	1	62	288
Count Total		1	8	15	7	0	5	13	1	0	15	353	116	0	8	35	11	588	0
Peak Hour	**All**	**1**	**6**	**12**	**3**	**0**	**5**	**5**	**0**	**0**	**8**	**180**	**68**	**0**	**5**	**14**	**8**	**315**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	HV%	**0%**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**-**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**0%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	2	*2*
4:30 PM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	1	*1*
4:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	3	*3*
Peak Hour	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

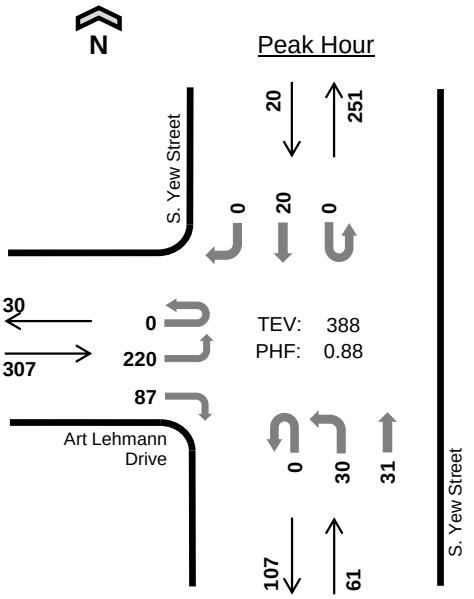
Interval Start	Alder Street Eastbound				Alder Street Westbound				S. Yew Street Northbound				S. Yew Street Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Two-Hour Count Summaries - Bikes

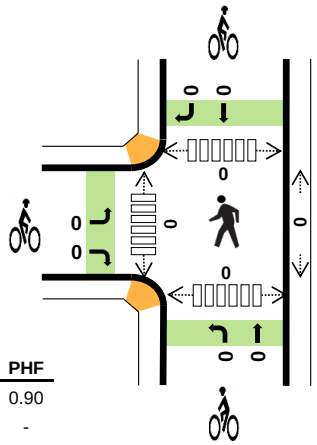
Interval Start	Alder Street Eastbound			Alder Street Westbound			S. Yew Street Northbound			S. Yew Street Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

S. Yew Street
Art Lehmann Drive



Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM



	HV %:	PHF
EB	0.3%	0.90
WB	-	-
NB	0.0%	0.66
SB	0.0%	0.63
TOTAL	0.3%	0.88

Two-Hour Count Summaries

Interval Start		Art Lehmann Drive Eastbound				0 Westbound				S. Yew Street Northbound				S. Yew Street Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	62	0	21	0	0	0	0	0	8	4	0	0	0	7	0	102	0
4:15 PM		**0**	**47**	**0**	**27**	**0**	**0**	**0**	**0**	**0**	**5**	**13**	**0**	**0**	**0**	**5**	**0**	**97**	0
4:30 PM		**0**	**49**	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**4**	**5**	**0**	**0**	**0**	**8**	**0**	**82**	0
4:45 PM		**0**	**62**	**0**	**23**	**0**	**0**	**0**	**0**	**0**	**3**	**8**	**0**	**0**	**0**	**3**	**0**	**99**	380
5:00 PM		**0**	**62**	**0**	**21**	**0**	**0**	**0**	**0**	**0**	**18**	**5**	**0**	**0**	**0**	**4**	**0**	**110**	**388**
5:15 PM		0	48	0	16	0	0	0	0	0	8	5	0	0	0	2	0	79	370
5:30 PM		0	59	0	9	0	0	0	0	0	5	7	0	0	0	6	0	86	374
5:45 PM		1	49	0	14	0	0	0	0	0	5	3	0	0	0	4	1	77	352
Count Total		1	438	0	147	0	0	0	0	0	56	50	0	0	0	39	1	732	0
Peak Hour	**All**	**0**	**220**	**0**	**87**	**0**	**0**	**0**	**0**	**0**	**30**	**31**	**0**	**0**	**0**	**20**	**0**	**388**	**0**
	HV	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
	HV%	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**0%**	**0%**	**-**	**-**	**-**	**0%**	**-**	**0%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	1	0	0	*1*
4:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	2	0	0	0	*2*	0	0	0	0	*0*	0	1	0	0	*1*
Peak Hr	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Art Lehmann Drive				0				S. Yew Street				S. Yew Street				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

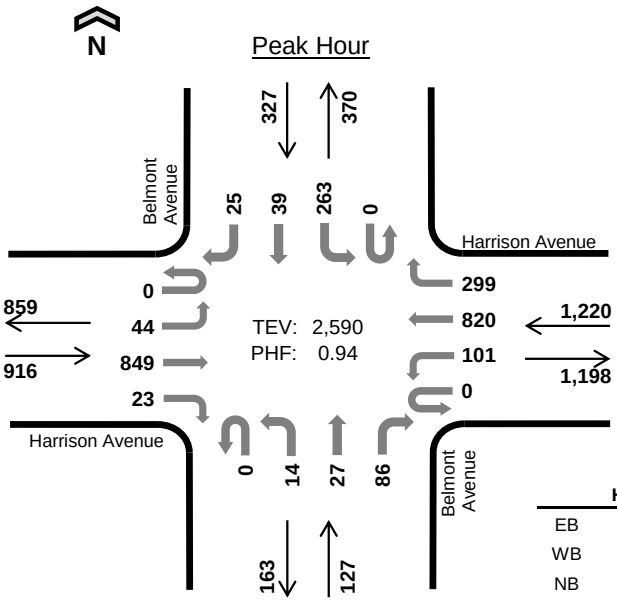
Two-Hour Count Summaries - Bikes

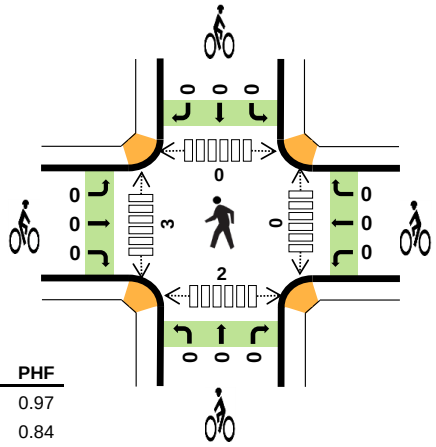
Interval Start	Art Lehmann Drive			0			S. Yew Street			S. Yew Street			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Belmont Avenue
Harrison Avenue

Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	2.9%	0.97
WB	2.1%	0.84
NB	0.8%	0.71
SB	0.6%	0.88
TOTAL	2.2%	0.94

Two-Hour Count Summaries

Interval Start		Harrison Avenue Eastbound				Harrison Avenue Westbound				Belmont Avenue Northbound				Belmont Avenue Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	10	240	7	0	23	193	56	0	1	8	17	0	76	8	2	641	0
4:15 PM		0	14	203	6	0	21	179	72	0	4	6	14	0	74	5	5	603	0
4:30 PM		**0**	**7**	**213**	**8**	**0**	**30**	**189**	**71**	**0**	**2**	**5**	**16**	**0**	**71**	**10**	**6**	**628**	0
4:45 PM		**0**	**11**	**208**	**7**	**0**	**16**	**169**	**83**	**0**	**3**	**9**	**19**	**0**	**68**	**9**	**8**	**610**	2,482
5:00 PM		**0**	**7**	**217**	**3**	**0**	**19**	**210**	**68**	**0**	**8**	**10**	**27**	**0**	**75**	**12**	**6**	**662**	2,503
5:15 PM		**0**	**19**	**211**	**5**	**0**	**36**	**252**	**77**	**0**	**1**	**3**	**24**	**0**	**49**	**8**	**5**	**690**	**2,590**
5:30 PM		0	9	193	6	0	27	213	59	0	1	7	22	0	64	9	6	616	2,578
5:45 PM		0	8	124	6	0	21	150	65	0	2	6	20	0	84	11	4	501	2,469
Count Total		0	85	1,609	48	0	193	1,555	551	0	22	54	159	0	561	72	42	4,951	0
Peak Hour	**All**	**0**	**44**	**849**	**23**	**0**	**101**	**820**	**299**	**0**	**14**	**27**	**86**	**0**	**263**	**39**	**25**	**2,590**	**0**
	HV	**0**	**0**	**27**	**0**	**0**	**0**	**23**	**3**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**56**	**0**
	HV%	**-**	**0%**	**3%**	**0%**	**-**	**0%**	**3%**	**1%**	**-**	**0%**	**0%**	**1%**	**-**	**1%**	**0%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	11	5	0	0	*16*	0	1	0	0	*1*	2	0	0	3	*5*
4:15 PM	8	12	1	2	*23*	0	0	0	0	*0*	0	2	1	0	*3*
4:30 PM	**7**	**7**	**0**	**0**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**2**	*4*
4:45 PM	**10**	**4**	**1**	**0**	***15***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**3**	**8**	**0**	**1**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**7**	**7**	**0**	**1**	***15***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***
5:30 PM	6	5	0	0	*11*	0	0	0	0	*0*	0	2	0	0	*2*
5:45 PM	5	2	0	0	*7*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	57	50	2	4	*113*	0	1	0	0	*1*	2	7	1	5	*15*
Peak Hour	**27**	**26**	**1**	**2**	***56***	**0**	**0**	**0**	**0**	***0***	**0**	**3**	**0**	**2**	***5***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Harrison Avenue Eastbound				Harrison Avenue Westbound				Belmont Avenue Northbound				Belmont Avenue Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	11	0	0	0	4	1	0	0	0	0	0	0	0	0	16	0
4:15 PM	0	0	8	0	0	0	12	0	0	0	1	0	0	2	0	0	23	0
4:30 PM	**0**	**0**	**7**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	0
4:45 PM	**0**	**0**	**10**	**0**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**15**	68
5:00 PM	**0**	**0**	**3**	**0**	**0**	**0**	**7**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**12**	64
5:15 PM	**0**	**0**	**7**	**0**	**0**	**0**	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**15**	**56**
5:30 PM	0	0	6	0	0	0	3	2	0	0	0	0	0	0	0	0	11	53
5:45 PM	0	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	7	45
Count Total	0	0	57	0	0	0	44	6	0	0	1	1	0	4	0	0	113	0
Peak Hour	**0**	**0**	**27**	**0**	**0**	**0**	**23**	**3**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**56**	**0**

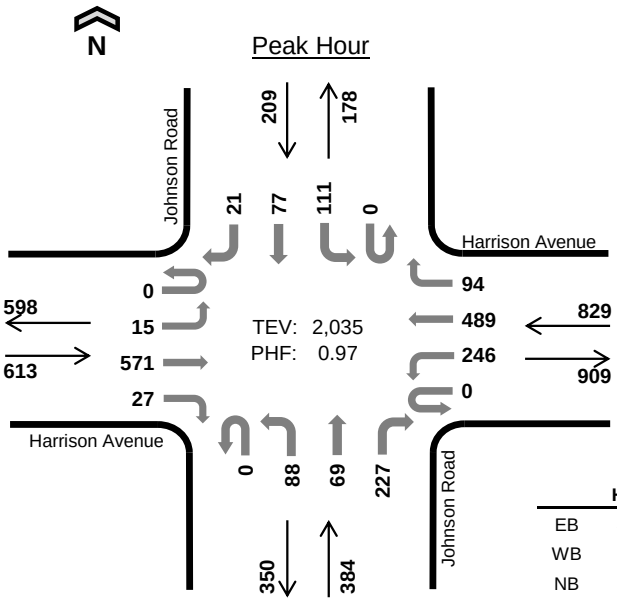
Two-Hour Count Summaries - Bikes

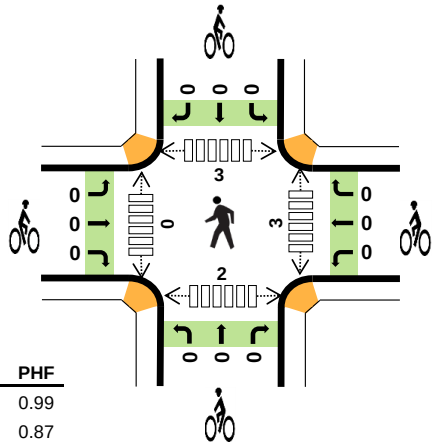
Interval Start	Harrison Avenue Eastbound			Harrison Avenue Westbound			Belmont Avenue Northbound			Belmont Avenue Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Johnson Road
Harrison Avenue

Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	4.2%	0.99
WB	2.3%	0.87
NB	0.3%	0.88
SB	1.9%	0.89
TOTAL	2.5%	0.97

Two-Hour Count Summaries

Interval Start		Harrison Avenue Eastbound				Harrison Avenue Westbound				Johnson Road Northbound				Johnson Road Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	1	141	6	0	39	115	36	0	28	20	60	0	45	13	1	505	0
4:15 PM		0	1	144	3	0	50	132	25	0	20	15	52	0	28	20	4	494	0
4:30 PM		**0**	**3**	**141**	**10**	**0**	**47**	**128**	**28**	**0**	**17**	**10**	**61**	**0**	**32**	**16**	**5**	**498**	0
4:45 PM		**0**	**4**	**143**	**7**	**0**	**64**	**108**	**23**	**0**	**29**	**20**	**54**	**0**	**32**	**21**	**6**	**511**	2,008
5:00 PM		**0**	**5**	**148**	**2**	**0**	**61**	**115**	**16**	**0**	**26**	**26**	**57**	**0**	**21**	**21**	**5**	**503**	2,006
5:15 PM		**0**	**3**	**139**	**8**	**0**	**74**	**138**	**27**	**0**	**16**	**13**	**55**	**0**	**26**	**19**	**5**	**523**	**2,035**
5:30 PM		0	5	107	9	0	68	123	24	0	21	16	70	0	23	18	2	486	2,023
5:45 PM		0	7	92	8	0	54	97	16	0	18	11	46	0	12	16	2	379	1,891
Count Total		0	29	1,055	53	0	457	956	195	0	175	131	455	0	219	144	30	3,899	0
Peak Hour	**All**	**0**	**15**	**571**	**27**	**0**	**246**	**489**	**94**	**0**	**88**	**69**	**227**	**0**	**111**	**77**	**21**	**2,035**	**0**
	HV	**0**	**0**	**26**	**0**	**0**	**0**	**16**	**3**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**2**	**50**	**0**
	HV%	**-**	**0%**	**5%**	**0%**	**-**	**0%**	**3%**	**3%**	**-**	**0%**	**0%**	**0%**	**-**	**2%**	**0%**	**10%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	6	2	1	1	*10*	0	0	0	0	*0*	2	1	3	2	*8*
4:15 PM	6	8	2	2	*18*	0	0	0	0	*0*	1	0	2	1	*4*
4:30 PM	**7**	**7**	**0**	**1**	***15***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
4:45 PM	**8**	**2**	**1**	**1**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**3**	**5**	**0**	**2**	***10***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**2**	*4*
5:15 PM	**8**	**5**	**0**	**0**	***13***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**2**	**0**	***3***
5:30 PM	5	4	1	1	*11*	0	0	0	0	*0*	1	1	1	0	*3*
5:45 PM	4	2	0	2	*8*	0	0	0	0	*0*	2	1	0	0	*3*
Count Total	47	35	5	10	*97*	0	0	0	0	*0*	9	3	9	5	*26*
Peak Hour	**26**	**19**	**1**	**4**	***50***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**3**	**2**	***8***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Harrison Avenue Eastbound				Harrison Avenue Westbound				Johnson Road Northbound				Johnson Road Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	6	0	0	0	2	0	0	0	0	1	0	1	0	0	10	0
4:15 PM	0	0	6	0	0	0	6	2	0	0	0	2	0	1	0	1	18	0
4:30 PM	**0**	**0**	**7**	**0**	**0**	**0**	**5**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**15**	0
4:45 PM	**0**	**0**	**8**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**12**	55
5:00 PM	**0**	**0**	**3**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**10**	55
5:15 PM	**0**	**0**	**8**	**0**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**50**
5:30 PM	0	0	5	0	0	0	4	0	0	0	0	1	0	0	1	0	11	46
5:45 PM	0	1	3	0	0	0	2	0	0	0	0	0	0	2	0	0	8	42
Count Total	0	1	46	0	0	0	30	5	0	0	0	5	0	6	1	3	97	0
Peak Hour	**0**	**0**	**26**	**0**	**0**	**0**	**16**	**3**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**2**	**50**	**0**

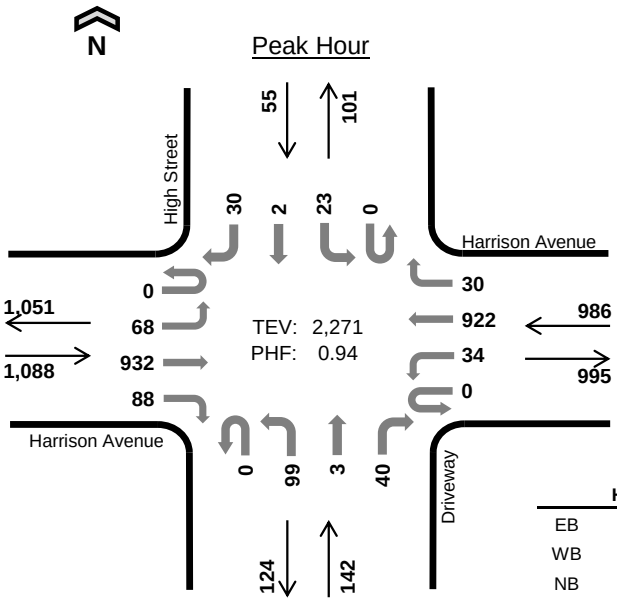
Two-Hour Count Summaries - Bikes

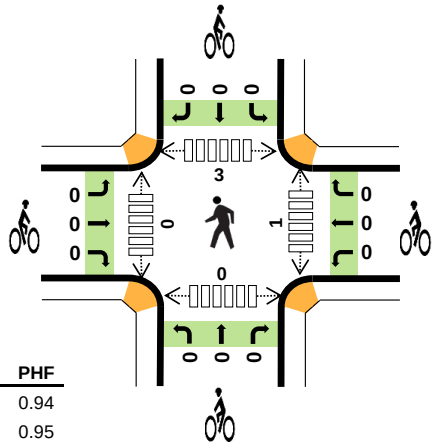
Interval Start	Harrison Avenue Eastbound			Harrison Avenue Westbound			Johnson Road Northbound			Johnson Road Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

High Street
Harrison Avenue

Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	0.6%	0.94
WB	0.5%	0.95
NB	1.4%	0.83
SB	0.0%	0.65
TOTAL	0.6%	0.94

Two-Hour Count Summaries

Interval Start		Harrison Avenue Eastbound				Harrison Avenue Westbound				Driveway Northbound				High Street Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	17	217	18	0	12	248	8	0	17	2	4	0	5	2	12	562	0
4:15 PM		0	22	248	23	0	10	198	6	0	27	1	6	0	14	2	11	568	0
4:30 PM		0	19	233	13	0	12	206	8	0	37	2	5	0	8	2	6	551	0
4:45 PM		**0**	**14**	**218**	**28**	**0**	**9**	**211**	**8**	**0**	**24**	**1**	**11**	**0**	**11**	**0**	**10**	**545**	2,226
5:00 PM		**0**	**20**	**215**	**16**	**0**	**6**	**230**	**11**	**0**	**20**	**0**	**8**	**0**	**3**	**1**	**8**	**538**	2,202
5:15 PM		**0**	**21**	**244**	**23**	**0**	**7**	**246**	**6**	**0**	**32**	**1**	**10**	**0**	**4**	**0**	**7**	**601**	2,235
5:30 PM		**0**	**13**	**255**	**21**	**0**	**12**	**235**	**5**	**0**	**23**	**1**	**11**	**0**	**5**	**1**	**5**	**587**	**2,271**
5:45 PM		0	16	209	16	0	7	138	2	0	31	1	5	0	3	0	6	434	2,160
Count Total		0	142	1,839	158	0	75	1,712	54	0	211	9	60	0	53	8	65	4,386	0
Peak Hour	**All**	**0**	**68**	**932**	**88**	**0**	**34**	**922**	**30**	**0**	**99**	**3**	**40**	**0**	**23**	**2**	**30**	**2,271**	**0**
	HV	**0**	**0**	**6**	**0**	**0**	**0**	**5**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**
	HV%	**-**	**0%**	**1%**	**0%**	**-**	**0%**	**1%**	**0%**	**-**	**2%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	1	0	2	*6*	0	1	0	0	*1*	2	0	2	0	*4*
4:15 PM	5	3	1	1	*10*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	3	2	1	0	*6*	0	0	0	0	*0*	0	0	2	0	*2*
4:45 PM	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**0**	*2*
5:00 PM	**1**	**1**	**1**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**1**	**0**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**0**	*2*
5:30 PM	**2**	**4**	**0**	**0**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:45 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	18	11	4	3	*36*	0	1	0	0	*1*	3	0	7	0	*10*
Peak Hour	**6**	**5**	**2**	**0**	***13***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**3**	**0**	***4***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Harrison Avenue Eastbound				Harrison Avenue Westbound				Driveway Northbound				High Street Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	2	0	0	0	1	0	0	0	0	0	0	1	1	0	6	0
4:15 PM	0	0	4	1	0	0	2	1	0	1	0	0	0	0	0	1	10	0
4:30 PM	0	0	3	0	0	0	2	0	0	1	0	0	0	0	0	0	6	0
4:45 PM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	24
5:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	21
5:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	13
5:30 PM	**0**	**0**	**2**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**13**
5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12
Count Total	0	1	16	1	0	0	10	1	0	4	0	0	0	1	1	1	36	0
Peak Hour	**0**	**0**	**6**	**0**	**0**	**0**	**5**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**

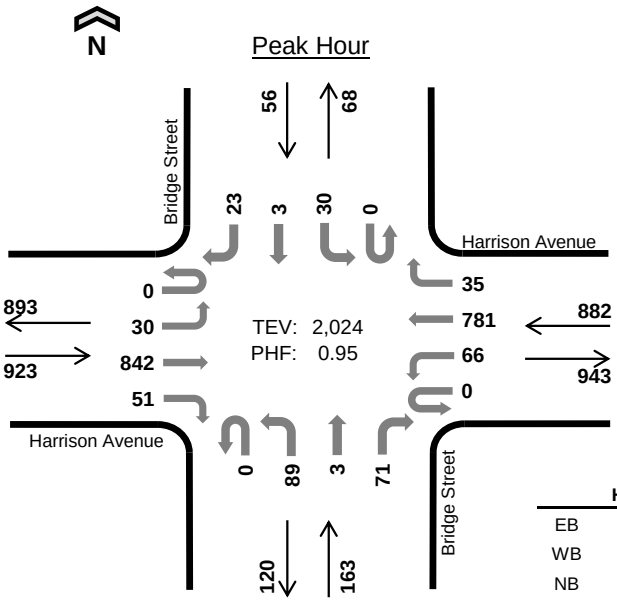
Two-Hour Count Summaries - Bikes

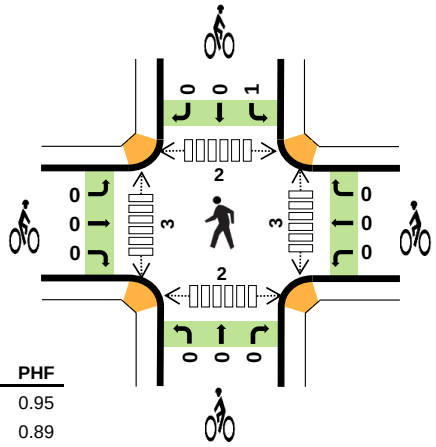
Interval Start	Harrison Avenue Eastbound			Harrison Avenue Westbound			Driveway Northbound			High Street Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Bridge Street
Harrison Avenue

Date: 05/02/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	0.5%	0.95
WB	0.3%	0.89
NB	0.0%	0.78
SB	1.8%	0.82
TOTAL	0.4%	0.95

Two-Hour Count Summaries

Interval Start	Harrison Avenue Eastbound				Harrison Avenue Westbound				Bridge Street Northbound				Bridge Street Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	7	199	11	0	22	222	8	0	18	0	21	0	6	0	7	521	0
4:15 PM	0	9	231	16	0	12	191	11	0	15	0	17	0	2	0	5	509	0
4:30 PM	**0**	**7**	**220**	**15**	**0**	**15**	**188**	**6**	**0**	**19**	**0**	**14**	**0**	**10**	**0**	**5**	**499**	0
4:45 PM	**0**	**10**	**198**	**13**	**0**	**21**	**177**	**4**	**0**	**25**	**2**	**20**	**0**	**8**	**2**	**7**	**487**	2,016
5:00 PM	**0**	**5**	**198**	**15**	**0**	**14**	**201**	**9**	**0**	**28**	**1**	**23**	**0**	**7**	**0**	**3**	**504**	1,999
5:15 PM	**0**	**8**	**226**	**8**	**0**	**16**	**215**	**16**	**0**	**17**	**0**	**14**	**0**	**5**	**1**	**8**	**534**	**2,024**
5:30 PM	0	5	223	9	0	18	184	8	0	25	0	13	0	6	1	7	499	2,024
5:45 PM	0	9	167	9	0	12	121	9	0	17	2	16	0	10	1	5	378	1,915
Count Total	0	60	1,662	96	0	130	1,499	71	0	164	5	138	0	54	5	47	3,931	0
Peak Hour All	**0**	**30**	**842**	**51**	**0**	**66**	**781**	**35**	**0**	**89**	**3**	**71**	**0**	**30**	**3**	**23**	**2,024**	**0**
Peak Hour HV	**0**	**0**	**5**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**9**	**0**
Peak Hour HV%	**-**	**0%**	**1%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**3%**	**0%**	**0%**	**0%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	2	0	0	*4*	0	1	0	1	*2*	0	1	1	4	*6*
4:15 PM	5	2	0	0	*7*	0	0	0	0	*0*	0	2	2	1	*5*
4:30 PM	**3**	**2**	**0**	**1**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
4:45 PM	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**1**	**2**	**0**	**0**	*3*
5:00 PM	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**1**	**1**	*4*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	***1***	**1**	**0**	**1**	**0**	***2***
5:30 PM	1	4	0	0	*5*	0	0	0	0	*0*	0	3	0	0	*3*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	13	11	0	1	*25*	0	1	0	2	*3*	3	9	5	7	*24*
Peak Hour	**5**	**3**	**0**	**1**	***9***	**0**	**0**	**0**	**1**	***1***	**3**	**3**	**2**	**2**	***10***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Harrison Avenue Eastbound				Harrison Avenue Westbound				Bridge Street Northbound				Bridge Street Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0
4:15 PM	0	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	7	0
4:30 PM	**0**	**0**	**3**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**6**	0
4:45 PM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	19
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	16
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**
5:30 PM	0	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	5	8
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Count Total	0	0	13	0	0	0	11	0	0	0	0	0	0	1	0	0	25	0
Peak Hour	**0**	**0**	**5**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**9**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Harrison Avenue Eastbound			Harrison Avenue Westbound			Bridge Street Northbound			Bridge Street Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	1	0	0	0	0	1	0	0	2	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**1**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	1	0	0	0	0	2	0	0	3	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Appendix C – Transportation Element Update Methods and Assumptions

Jacobs

Transportation Element Update Methods and Assumptions Technical Memorandum

Date: March 26, 2025

Project name: 2025 Centralia Comprehensive Plan Transportation Element

Attention: Patty Page, City of Centralia
Emil Pierson, City of Centralia

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This memorandum outlines the methods and assumptions that will be used for the traffic operations portion of the City of Centralia Comprehensive Plan Transportation Element update. The goal of this memo is to achieve consensus within the project team to help produce consistent and defensible analysis. This memo identifies the analysis years, study area limits, travel demand forecasting and operational analysis and assumptions.

1. Study Area Limits

The study area for this project includes the Centralia city limits and portions of the designated Urban Growth Areas (UGAs) of Centralia. Within the study area, 22 existing intersections have been identified for analysis. These study intersections are under various city, county, and state jurisdictions. The selected study locations, control types, and jurisdictions are listed in Table 1.

Table 1 Study Intersection Control Type and Ownership

	Intersection	Intersection Control Type	Jurisdiction
1	Harrison Avenue and W Reynolds Avenue	Signal	Centralia
2	Pearl Street and W Reynolds Avenue	Signal	WSDOT
3	Johnson Road and Harrison Avenue	Signal	Centralia
4	Belmont Avenue and Harrison Avenue	Signal	Centralia
5	I-5 Southbound Ramps and Harrison Avenue	Signal	WSDOT
6	I-5 Northbound Ramps and Harrison Avenue	Signal	WSDOT
7	High Street and Harrison Avenue	Signal	Centralia
8	Bridge Street and Harrison Avenue	Signal	Centralia
9	Harrison Avenue and W 1st Street	OWSC	Centralia
10	Harrison Avenue and W Main Street	Signal	Centralia
11	Yew Street and W Main Street	Signal	Centralia
12	Pearl Street and W Main Street	Signal	WSDOT
13	Tower Avenue and W Main Street	Signal	WSDOT
14	I-5 SB Collector/Distributor Lane and Mellen Street	Signal	WSDOT
15	I-5 NB Collector/Distributor Lane and Mellen Street	Signal	WSDOT
16	Yew Street and Mellen Street	Signal	WSDOT

17	Pearl Street and Cherry Street	Signal	WSDOT
18	Tower Avenue and Cherry Street	Signal	WSDOT
19	S Yew Street and Alder Street	OWSC	Centralia
20	S Yew Street and Art Lehmann Drive	Signal	Centralia
21	Gold Street and Summa Street	TWSC	Centralia
22	Kresky Avenue and Summa Street	TWSC	Centralia

OWSC – One-way stop-controlled
TWSC – Two-way stop-controlled
WSDOT – Washington State Department of Transportation

Each of the intersections is located on roadways that are identified as part of the City's functionally classified roadway network. The City's classification categories are consistent with the federally classified arterial system and will be documented in the existing conditions memorandum.

2. Analysis Years

Intersection analysis for the PM peak hour will be analyzed for the conditions listed below.

- Existing Year (2024)
- No Build Existing Network (2045)
- No Build with Planned Improvements (2045)

The existing year of 2024 is selected to provide an assessment of the current facilities and intersection operations. The existing analysis will serve as a basis for comparison with future forecasted conditions. The future forecast year of 2045 was selected to capture changes in traffic and growth through a 20-year timeframe horizon.

Three conditions were or will be analyzed for the future year (2045). No Build Existing Network assigns forecasted future volumes to the existing Synchro Network. No Build with Planned Improvements assigns forecasted future volumes to a Synchro network with added intersection and roadway improvements planned in local or regional transportation improvement programs (TIP).

3. Data Collection

Traffic counts will be collected at each of the study intersections in May 2024 on a typical weekday (Tuesday, Wednesday, or Thursday) while classes in the Centralia School District are in session. Vehicle turning movement counts, pedestrian counts, and bicycle counts at each intersection will be collected in the afternoon peak period between 4:00 p.m. and 6:00 p.m. This afternoon period captures the end-of-workday commute and typically represents a peak in traffic volumes.

Traffic signal information, including cycle lengths and phase timings, will either be provided by City staff or be collected via a field visit coinciding with traffic count data collection.

Crash data will be collected at all study intersections for the period between January 1, 2015 and December 31, 2023. This data will include information such as crash type, date and time, weather conditions, and crash severity.

4. Operational Analysis Methods/Parameters

4.1 General Parameters

Existing conditions will represent traffic volume data collected in 2024 and supplemented with historical data if necessary. The study intersections will be analyzed as a system for the same PM peak hour, which will be determined on a study area wide basis. If volume data collection shows that vehicle volumes peak at significantly different times, then analysis peak hours may be selected by area (for example, the I-5 interchange intersections may peak at a different time than the intersections on Reynolds Avenue) to best represent a conservative analysis.

The Lewis County EMME travel demand model will be used to forecast PM peak hour traffic volumes for the future 2045 conditions. Modeling assumptions and methodology are documented in a separate memorandum, *2025 Centralia Comprehensive Plan Transportation Element: Forecast Methods and Assumptions.*

4.2 Intersection Analysis

Software

All intersection analysis will be performed using the Synchro software package (version 11). This software implements methods from the Highway Capacity Manual (HCM) and will be used to analyze both signalized and unsignalized intersections. The level-of-service (LOS) and intersection delay (average per vehicle) results will be reported using the HCM 2000 methodology, as the HCM 6th edition methodology does not support exclusive pedestrian phases or shared through/turn lanes.

If roundabouts are considered during the project, the SIDRA software package will be used to analyze roundabout operations.

Synchro and SIDRA analysis parameters for local intersection operations are detailed in Table 2. Operational parameters are based on Synchro and SIDRA operational parameter protocols established by the Washington State Department of Transportation (WSDOT).

Table 2. Synchro and SIDRA Intersection Operations Parameters/Assumptions

Arterial Intersection Parameter	2017 Existing	Future Years
Peak Hour Factor (PHF)	From traffic count and by intersection (the same PHF will be applied to all movements approaching the intersection).	Use 0.85 for intersections with existing PHF $\leq$ 0.85 Use 0.95 for intersections with existing PHF > 0.85 and $\leq$ 0.95 If PHF is greater than 0.95, use existing.
Conflicting Bikes and Pedestrian per Hour	From traffic count, otherwise assume 10 pedestrians/cyclists	Same as existing
Area Type	"Other" for all areas	Same as existing
Ideal Saturation Flow (for all movements)	1,800 passenger cars per hour per lane (pc/hr/ln)	Same as existing
Lane Utilization	Default software assumptions	Same as existing

Lane Width	From as-built plans, otherwise assume 12’	If improvements are proposed, use agency standards/plans, otherwise same as existing.
Percent Heavy Vehicles	From traffic count, by approach, otherwise 2%	Same as existing
Percent Grade	From as-built plans, otherwise 0%	Same as existing
Parking Maneuvers per Hour	One parking maneuver per hour per legal space (on Pearl Street and Tower Avenue only)	Same as existing
Bus Blockages	Headway information provided by transit agencies	Same as existing
Intersection signal phasing and coordination	From agency signal phasing sheets, otherwise from field observation	Optimized by Synchro, using engineering judgment, assume coordination where practical.
Intersection signal timing optimization limits	From agency information, otherwise from field observation	Between 60 to max of (150 seconds, existing cycle length)
Minimum Green time	From agency information, otherwise based on MUTCD minimum pedestrian times (minimum of 7 seconds walk time and 3.5 feet per second for flashing don’t walk [FDW] clearance). If no crosswalk: 10 seconds Protected left phase: 15 seconds Protected/permissive left phase: 10 seconds	Same as existing
Yellow and all-red time	From agency information, otherwise Yellow (Y) = 4 seconds and Red (R) = 1 second	Same as existing
Right Turn on Red	Allow unless prohibited	Same as existing
SIDRA - Delay and Queue	Uncheck “Exclude Geometric Delay” and “HCM Delay Formula”	Same as existing
SIDRA - Lane Width	Single lane approach – Minimum of 15’ Multi-lane approach – Minimum of 14’ per lane	Same as existing
SIDRA - Circulating Width	Single lane – Minimum of 18’ to 20’ Multi-lane – Minimum of 15’ per lane	Same as existing
SIDRA - Entry Radius	90’ to 110’ unless a site specific design is available	Same as existing
SIDRA - Environment Factor	Assume 1.1 for opening year	Assume 1.0 for horizon year
SIDRA - Capacity Model	Assume SIDRA standard	Same as existing
SIDRA - Roundabout LOS Method	Assume same as signalized intersections	Same as existing
SIDRA - Delay Model	Uncheck “Exclude Geometric Delay” and “HCM Delay Formula”	Same as existing

Mobility Standards

Table 3 includes the current mobility standards for WSDOT, the Cowlitz-Wahkiakum Council of Governments (CWCOG), and City of Centralia intersections. The mobility standards are based on the Highway Capacity Manual definitions of level of service (LOS) and are applicable to both signalized and unsignalized intersections.

LOS is a qualitative measurement of traffic operations and can generally be described by six letter grades. Each letter grade, from LOS A to LOS F, categorizes operating conditions at an intersection based on the average vehicle delay time in seconds. LOS A generally represents ideal operating conditions with little to no

delay and where movements are not influenced by other vehicles on the roadway. LOS F typically represents poor operating conditions, including high delays and extreme congestion.

For signalized and all-way stop intersections, the reported LOS will be based on the intersection as a whole; for unsignalized intersections, the reported LOS will be based on the worst minor-street approach.

Table 3. Mobility Standards

Roadway Jurisdiction Classification	LOS Mobility Standards
WSDOT (ramp terminals)	LOS D
CWCOG (Highways not of statewide Significance)	LOS D
City of Centralia	LOS D

4.3 Crash Summary

Crash data will be summarized for all study intersections. This summary will identify the number, type, and severity of crashes that have occurred at each location during the most recent five years of recorded crash data. Serious injuries and fatal injuries at study intersections will be identified.

Potential enhancements that could improve safety at the study intersections will be developed as part of the future strategies package. Assessment of potential future safety deficiencies will not be provided.

5. Pedestrian and Bicycle

Pedestrian facilities will be identified along each of the federally classified roadways inside the study area noting location (side) and width (greater than or less than five feet). Marked or signed bicycle routes will also be identified within Centralia's urban growth area. Future proposed improvements will be based upon the identified deficiencies.

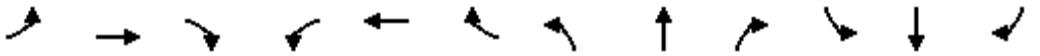
6. Transit

Current transit service plans, headways, and transit stop locations within the study area will be identified. Future service plans from Lewis County Transit will be considered in the future conditions assessment.

7. Freight and Rail

Existing freight and rail facilities within the study area will be identified. Future planned and programmed projects will be included in the future 2045 conditions. Any identified deficiencies, grade separations or future routes will be proposed for potential improvement strategies.

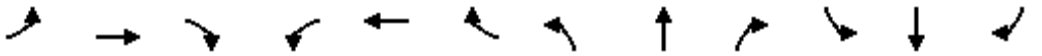
Appendix D – Synchro Output Reports (Existing Conditions)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	55	135	35	70	135	90	335	30	120	415	30
Future Volume (vph)	45	55	135	35	70	135	90	335	30	120	415	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		3.7	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1660	1748	1451	1710	1800	1497	1644	1706		1676	1743	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1660	1748	1451	1710	1800	1497	1644	1706		1676	1743	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	46	56	138	36	71	138	92	342	31	122	423	31
RTOR Reduction (vph)	0	0	116	0	0	119	0	3	0	0	3	0
Lane Group Flow (vph)	46	56	22	36	71	19	92	370	0	122	451	0
Confl. Peds. (#/hr)	1		2	2		1	7		2	2		7
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	4%	4%	4%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	4.3	10.7	10.7	3.1	9.5	9.5	7.9	25.5		8.7	24.5	
Effective Green, g (s)	4.3	10.7	10.7	3.1	9.5	9.5	7.9	25.5		8.7	24.5	
Actuated g/C Ratio	0.06	0.16	0.16	0.05	0.14	0.14	0.12	0.37		0.13	0.36	
Clearance Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		3.7	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	104	274	227	77	250	208	190	637		213	626	
v/s Ratio Prot	c0.03	0.03		0.02	c0.04		0.06	0.22		c0.07	c0.26	
v/s Ratio Perm			0.01			0.01						
v/c Ratio	0.44	0.20	0.10	0.47	0.28	0.09	0.48	0.58		0.57	0.72	
Uniform Delay, d1	30.8	25.0	24.6	31.7	26.3	25.6	28.2	17.1		28.0	18.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.0	0.4	0.2	4.4	0.6	0.2	1.9	1.4		3.7	4.1	
Delay (s)	33.8	25.4	24.8	36.2	26.9	25.8	30.2	18.4		31.7	23.0	
Level of Service	C	C	C	D	C	C	C	B		C	C	
Approach Delay (s)		26.7			27.6			20.8			24.8	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.59			
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	22.0	
Intersection Capacity Utilization	54.0%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group



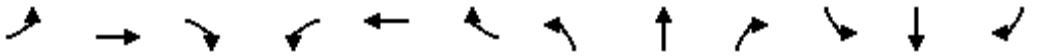
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	15	185	5	15	0	170	250	10	5	225	190
Future Volume (vph)	270	15	185	5	15	0	170	250	10	5	225	190
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0	5.0		5.0		4.5	5.0		4.5	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.98		1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.99		1.00	0.93	
Flt Protected		0.95	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1718	1497		1776		1710	1789		1693	1643	
Flt Permitted		0.72	1.00		0.92		0.22	1.00		0.58	1.00	
Satd. Flow (perm)		1296	1497		1651		397	1789		1026	1643	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	314	17	215	6	17	0	198	291	12	6	262	221
RTOR Reduction (vph)	0	0	150	0	0	0	0	1	0	0	35	0
Lane Group Flow (vph)	0	331	65	0	23	0	198	302	0	6	448	0
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		24.7	24.7		24.7		46.5	41.0		30.3	29.3	
Effective Green, g (s)		24.7	24.7		24.7		46.5	41.0		30.3	29.3	
Actuated g/C Ratio		0.30	0.30		0.30		0.57	0.50		0.37	0.36	
Clearance Time (s)		5.0	5.0		5.0		4.5	5.0		4.5	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		394	455		502		432	903		391	592	
v/s Ratio Prot							c0.07	0.17		0.00	c0.27	
v/s Ratio Perm		c0.26	0.04		0.01		0.19			0.01		
v/c Ratio		0.84	0.14		0.05		0.46	0.33		0.02	0.76	
Uniform Delay, d1		26.4	20.6		19.9		11.1	12.0		16.0	22.8	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		14.8	0.1		0.0		0.8	0.2		0.0	5.5	
Delay (s)		41.2	20.7		20.0		11.9	12.2		16.0	28.3	
Level of Service		D	C		B		B	B		B	C	
Approach Delay (s)		33.1			20.0			12.1			28.2	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	81.2	Sum of lost time (s)	14.5
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	575	30	250	490	95	90	70	230	115	80	25
Future Volume (vph)	15	575	30	250	490	95	90	70	230	115	80	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.5		4.0	4.5			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.98			0.92			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.97	
Satd. Flow (prot)	1644	3260		1676	3257			1622			1710	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.97	
Satd. Flow (perm)	1644	3260		1676	3257			1622			1710	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	15	593	31	258	505	98	93	72	237	119	82	26
RTOR Reduction (vph)	0	4	0	0	13	0	0	44	0	0	4	0
Lane Group Flow (vph)	15	620	0	258	590	0	0	358	0	0	223	0
Confl. Peds. (#/hr)	3		2	2		3			3	3		
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	4.4	33.4		20.1	49.1			26.4			18.6	
Effective Green, g (s)	4.4	33.4		20.1	49.1			26.4			18.6	
Actuated g/C Ratio	0.04	0.29		0.17	0.43			0.23			0.16	
Clearance Time (s)	4.0	4.5		4.0	4.5			4.0			4.0	
Vehicle Extension (s)	3.0	3.5		3.0	3.5			3.0			3.0	
Lane Grp Cap (vph)	62	946		292	1390			372			276	
v/s Ratio Prot	0.01	c0.19		c0.15	0.18			c0.22			c0.13	
v/s Ratio Perm												
v/c Ratio	0.24	0.66		0.88	0.42			0.96			0.81	
Uniform Delay, d1	53.7	35.8		46.3	23.1			43.8			46.5	
Progression Factor	1.00	1.00		1.28	1.62			1.00			1.00	
Incremental Delay, d2	2.0	3.5		20.8	0.7			36.7			15.7	
Delay (s)	55.7	39.3		80.2	38.2			80.5			62.2	
Level of Service	E	D		F	D			F			E	
Approach Delay (s)		39.7			50.8			80.5			62.2	
Approach LOS		D			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	54.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

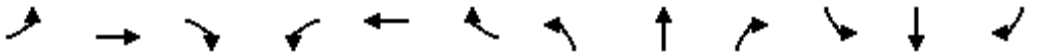
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	850	25	105	820	300	15	30	90	265	40	25
Future Volume (vph)	45	850	25	105	820	300	15	30	90	265	40	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	5.0		5.0	5.0		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.96		1.00	0.89		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.97	
Satd. Flow (prot)	1676	3336		1676	3218		1710	1598		1624	1618	
Flt Permitted	0.95	1.00		0.23	1.00		0.95	1.00		0.95	0.97	
Satd. Flow (perm)	1676	3336		400	3218		1710	1598		1624	1618	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	48	904	27	112	872	319	16	32	96	282	43	27
RTOR Reduction (vph)	0	1	0	0	26	0	0	89	0	0	6	0
Lane Group Flow (vph)	48	930	0	112	1165	0	16	39	0	178	168	0
Confl. Peds. (#/hr)			2	2			3					3
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		pm+pt	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases				2								
Actuated Green, G (s)	6.7	61.9		71.7	63.7		8.2	8.2		17.9	17.9	
Effective Green, g (s)	6.7	61.9		71.7	63.7		8.2	8.2		17.9	17.9	
Actuated g/C Ratio	0.06	0.54		0.62	0.55		0.07	0.07		0.16	0.16	
Clearance Time (s)	4.5	5.0		5.0	5.0		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.5		3.0	3.5		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	97	1795		338	1782		121	113		252	251	
v/s Ratio Prot	c0.03	0.28		0.02	c0.36		0.01	c0.02		c0.11	0.10	
v/s Ratio Perm				0.18								
v/c Ratio	0.49	0.52		0.33	0.65		0.13	0.34		0.71	0.67	
Uniform Delay, d1	52.5	17.0		10.3	17.9		50.1	50.8		46.1	45.8	
Progression Factor	1.20	0.62		0.58	0.72		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	0.7		0.5	1.6		0.5	1.8		8.7	6.6	
Delay (s)	65.8	11.3		6.5	14.5		50.6	52.7		54.8	52.4	
Level of Service	E	B		A	B		D	D		D	D	
Approach Delay (s)		14.0			13.8			52.4			53.6	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

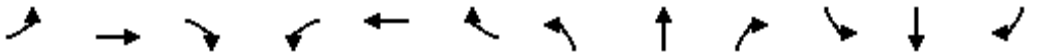
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	730	690	160	1295	0	0	0	0	350	130	340
Future Volume (vph)	0	730	690	160	1295	0	0	0	0	350	130	340
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0	5.0	4.5	5.0					4.5	4.5	4.5
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	0.88
Frpb, ped/bikes		1.00	0.97	1.00	1.00					1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.98	1.00
Satd. Flow (prot)		3353	1453	3285	3386					1608	1655	2609
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.98	1.00
Satd. Flow (perm)		3353	1453	3285	3386					1608	1655	2609
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	785	742	172	1392	0	0	0	0	376	140	366
RTOR Reduction (vph)	0	0	228	0	0	0	0	0	0	0	0	64
Lane Group Flow (vph)	0	785	514	172	1392	0	0	0	0	256	260	302
Confl. Peds. (#/hr)	3		16	16		3	1					1
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		62.8	62.8	11.3	78.6					26.9	26.9	26.9
Effective Green, g (s)		62.8	62.8	11.3	78.6					26.9	26.9	26.9
Actuated g/C Ratio		0.55	0.55	0.10	0.68					0.23	0.23	0.23
Clearance Time (s)		5.0	5.0	4.5	5.0					4.5	4.5	4.5
Vehicle Extension (s)		3.5	3.5	3.0	3.5					3.5	3.5	3.5
Lane Grp Cap (vph)		1831	793	322	2314					376	387	610
v/s Ratio Prot		0.23		0.05	c0.41					c0.16	0.16	
v/s Ratio Perm			c0.35									0.12
v/c Ratio		0.43	0.65	0.53	0.60					0.68	0.67	0.49
Uniform Delay, d1		15.5	18.3	49.3	9.8					40.1	40.0	38.2
Progression Factor		0.84	1.15	0.89	0.84					1.00	1.00	1.00
Incremental Delay, d2		0.7	3.7	1.4	0.9					5.2	4.7	0.7
Delay (s)		13.6	24.9	45.3	9.2					45.3	44.8	38.9
Level of Service		B	C	D	A					D	D	D
Approach Delay (s)		19.1			13.1			0.0			42.5	
Approach LOS		B			B			A			D	

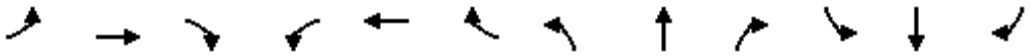
Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	885	0	0	785	265	670	170	165	0	0	0
Future Volume (vph)	215	885	0	0	785	265	670	170	165	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	0.97	0.95			0.95	1.00	0.97	1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.98	1.00	1.00	0.99			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3285	3386			3420	1500	3252	1765	1480			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3285	3386			3420	1500	3252	1765	1480			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	226	932	0	0	826	279	705	179	174	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	141	0	0	108	0	0	0
Lane Group Flow (vph)	226	932	0	0	826	138	705	179	66	0	0	0
Confl. Peds. (#/hr)	6		10	10		6			1	1		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	2%	2%	2%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	13.2	74.4			56.7	56.7	30.6	30.6	30.6			
Effective Green, g (s)	13.2	74.4			56.7	56.7	30.6	30.6	30.6			
Actuated g/C Ratio	0.11	0.65			0.49	0.49	0.27	0.27	0.27			
Clearance Time (s)	4.5	5.0			5.0	5.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.5			3.5	3.5	3.0	3.0	3.0			
Lane Grp Cap (vph)	377	2190			1686	739	865	469	393			
v/s Ratio Prot	c0.07	0.28			c0.24		c0.22	0.10				
v/s Ratio Perm						0.09			0.04			
v/c Ratio	0.60	0.43			0.49	0.19	0.82	0.38	0.17			
Uniform Delay, d1	48.4	9.9			19.5	16.3	39.5	34.5	32.4			
Progression Factor	1.02	1.10			1.28	4.31	1.00	1.00	1.00			
Incremental Delay, d2	2.3	0.6			0.9	0.5	6.0	0.5	0.2			
Delay (s)	51.5	11.4			25.8	70.6	45.5	35.0	32.6			
Level of Service	D	B			C	E	D	C	C			
Approach Delay (s)		19.3			37.2			41.6			0.0	
Approach LOS		B			D			D			A	

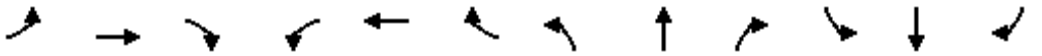
Intersection Summary			
HCM 2000 Control Delay	32.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	910	80	35	895	35	115	5	35	30	5	35
Future Volume (vph)	75	910	80	35	895	35	115	5	35	30	5	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	5.0		4.5	5.0			4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.99		1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.98	
Satd. Flow (prot)	1710	3379		1710	3396			1684	1480		1641	
Flt Permitted	0.95	1.00		0.95	1.00			0.68	1.00		0.82	
Satd. Flow (perm)	1710	3379		1710	3396			1202	1480		1378	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	81	978	86	38	962	38	124	5	38	32	5	38
RTOR Reduction (vph)	0	4	0	0	2	0	0	0	32	0	32	0
Lane Group Flow (vph)	81	1060	0	38	998	0	0	129	6	0	43	0
Confl. Peds. (#/hr)	5					5			1	1		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	9.5	78.0		5.6	74.1			17.4	17.4		17.4	
Effective Green, g (s)	9.5	78.0		5.6	74.1			17.4	17.4		17.4	
Actuated g/C Ratio	0.08	0.68		0.05	0.64			0.15	0.15		0.15	
Clearance Time (s)	4.5	5.0		4.5	5.0			4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.5		3.0	3.5			3.0	3.0		3.0	
Lane Grp Cap (vph)	141	2291		83	2188			181	223		208	
v/s Ratio Prot	c0.05	c0.31		0.02	0.29							
v/s Ratio Perm								c0.11	0.00		0.03	
v/c Ratio	0.57	0.46		0.46	0.46			0.71	0.03		0.21	
Uniform Delay, d1	50.8	8.7		53.2	10.3			46.4	41.6		42.7	
Progression Factor	1.08	0.92		0.94	0.74			1.00	1.00		1.00	
Incremental Delay, d2	5.2	0.6		3.7	0.6			12.5	0.0		0.5	
Delay (s)	60.2	8.6		53.7	8.3			58.9	41.6		43.2	
Level of Service	E	A		D	A			E	D		D	
Approach Delay (s)		12.2			10.0			55.0			43.2	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



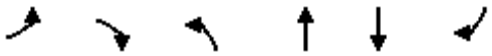
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	845	55	70	785	35	90	5	75	30	5	25
Future Volume (vph)	30	845	55	70	785	35	90	5	75	30	5	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	5.0		4.5	5.0			4.5			4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.94			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1710	3383		1710	3394			1631			1626	
Flt Permitted	0.95	1.00		0.95	1.00			0.82			0.83	
Satd. Flow (perm)	1710	3383		1710	3394			1375			1387	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	889	58	74	826	37	95	5	79	32	5	26
RTOR Reduction (vph)	0	4	0	0	2	0	0	25	0	0	20	0
Lane Group Flow (vph)	32	943	0	74	861	0	0	154	0	0	43	0
Confl. Peds. (#/hr)	2		2	2		2	3		3	3		3
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	5.3	63.4		9.1	67.2			28.5			28.5	
Effective Green, g (s)	5.3	63.4		9.1	67.2			28.5			28.5	
Actuated g/C Ratio	0.05	0.55		0.08	0.58			0.25			0.25	
Clearance Time (s)	4.5	5.0		4.5	5.0			4.5			4.5	
Vehicle Extension (s)	3.0	3.5		3.0	3.5			3.0			3.0	
Lane Grp Cap (vph)	78	1865		135	1983			340			343	
v/s Ratio Prot	0.02	c0.28		c0.04	c0.25							
v/s Ratio Perm								c0.11			0.03	
v/c Ratio	0.41	0.51		0.55	0.43			0.45			0.13	
Uniform Delay, d1	53.3	16.1		51.0	13.3			36.7			33.6	
Progression Factor	1.12	0.39		1.00	1.00			1.00			1.00	
Incremental Delay, d2	3.2	0.9		4.5	0.7			4.3			0.8	
Delay (s)	62.8	7.2		55.5	14.0			41.0			34.3	
Level of Service	E	A		E	B			D			C	
Approach Delay (s)		9.0			17.3			41.0			34.3	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	315	595	15	320	630
Future Volume (Veh/h)	0	315	595	15	320	630
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	342	647	16	348	685
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			1267			499
pX, platoon unblocked	0.87	0.87			0.87	
vC, conflicting volume	2037	656			648	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1782	530			521	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	29			62	
cM capacity (veh/h)	49	481			918	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	342	663	348	685
Volume Left	0	0	348	0
Volume Right	342	16	0	0
cSH	481	1700	918	1700
Volume to Capacity	0.71	0.39	0.38	0.40
Queue Length 95th (ft)	140	0	45	0
Control Delay (s)	28.9	0.0	11.3	0.0
Lane LOS	D		B	
Approach Delay (s)	28.9	0.0	3.8	
Approach LOS	D			

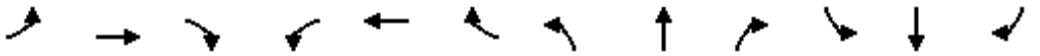
Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	15	15	565	635	35
Future Volume (vph)	30	15	15	565	635	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	0.98	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1681	1530	1710	1800	1766	
Flt Permitted	0.95	1.00	0.12	1.00	1.00	
Satd. Flow (perm)	1681	1530	224	1800	1766	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	16	16	595	668	37
RTOR Reduction (vph)	0	13	0	0	2	0
Lane Group Flow (vph)	32	3	16	595	703	0
Confl. Peds. (#/hr)	6		5			5
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Turn Type	Perm	Prot	custom	NA	NA	
Protected Phases		10	4 8	4 6 8	2	
Permitted Phases	10		6			
Actuated Green, G (s)	17.9	17.9	59.0	63.0	40.0	
Effective Green, g (s)	17.9	17.9	59.0	63.0	40.0	
Actuated g/C Ratio	0.20	0.20	0.66	0.71	0.45	
Clearance Time (s)	4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	338	308	466	1275	794	
v/s Ratio Prot		0.00	0.01	c0.33	c0.40	
v/s Ratio Perm	c0.02		0.02			
v/c Ratio	0.09	0.01	0.03	0.47	0.89	
Uniform Delay, d1	28.9	28.4	18.9	5.6	22.4	
Progression Factor	1.00	1.00	0.07	0.05	1.00	
Incremental Delay, d2	0.1	0.0	0.0	0.2	11.6	
Delay (s)	29.0	28.4	1.3	0.5	34.0	
Level of Service	C	C	A	A	C	
Approach Delay (s)	28.8			0.5	34.0	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	88.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

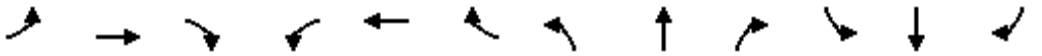
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	470	180	40	410	10	165	5	65	5	5	5
Future Volume (vph)	5	470	180	40	410	10	165	5	65	5	5	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00			1.00	
Frt		0.96		1.00	1.00		1.00	0.86			0.95	
Flt Protected		1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)		1715		1710	1791		1710	1548			1691	
Flt Permitted		1.00		0.35	1.00		0.75	1.00			0.94	
Satd. Flow (perm)		1716		624	1791		1346	1548			1618	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	5	505	194	43	441	11	177	5	70	5	5	5
RTOR Reduction (vph)	0	14	0	0	1	0	0	55	0	0	4	0
Lane Group Flow (vph)	0	690	0	43	451	0	177	20	0	0	11	0
Confl. Peds. (#/hr)	15					15						
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	custom	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	10	2 10			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		57.9		40.0	40.0		19.0	19.0			19.0	
Effective Green, g (s)		57.9		40.0	40.0		19.0	19.0			19.0	
Actuated g/C Ratio		0.65		0.45	0.45		0.21	0.21			0.21	
Clearance Time (s)				4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		1117		280	805		287	330			345	
v/s Ratio Prot		c0.12			0.25			0.01				
v/s Ratio Perm		c0.28		0.07			c0.13				0.01	
v/c Ratio		0.62		0.15	0.56		0.62	0.06			0.03	
Uniform Delay, d1		9.0		14.4	18.0		31.7	27.8			27.7	
Progression Factor		0.56		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		0.6		0.3	0.9		3.9	0.1			0.0	
Delay (s)		5.6		14.7	18.9		35.6	27.9			27.7	
Level of Service		A		B	B		D	C			C	
Approach Delay (s)		5.6			18.5			33.3			27.7	
Approach LOS		A			B			C			C	

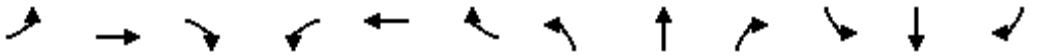
Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	88.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



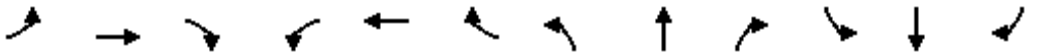
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	125	280	35	285	0	0	0	0	35	480	85
Future Volume (vph)	0	125	280	35	285	0	0	0	0	35	480	85
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.5	4.5		4.5						4.5	4.5
Lane Util. Factor		1.00	1.00		1.00						0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00						1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Frt		1.00	0.85		1.00						1.00	0.85
Flt Protected		1.00	1.00		0.99						1.00	1.00
Satd. Flow (prot)		1800	1311		1565						3371	1243
Flt Permitted		1.00	1.00		0.96						1.00	1.00
Satd. Flow (perm)		1800	1311		1506						3371	1243
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	136	304	38	310	0	0	0	0	38	522	92
RTOR Reduction (vph)	0	0	131	0	0	0	0	0	0	0	0	46
Lane Group Flow (vph)	0	136	173	0	348	0	0	0	0	0	560	46
Confl. Peds. (#/hr)	16		10	10		16	10		12	12		10
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Parking (#/hr)			5		5					10		10
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases			8	4						2		2
Actuated Green, G (s)		16.1	16.1		16.1						24.9	24.9
Effective Green, g (s)		16.1	16.1		16.1						24.9	24.9
Actuated g/C Ratio		0.32	0.32		0.32						0.50	0.50
Clearance Time (s)		4.5	4.5		4.5						4.5	4.5
Vehicle Extension (s)		3.0	3.0		3.0						3.0	3.0
Lane Grp Cap (vph)		579	422		484						1678	619
v/s Ratio Prot		0.08										
v/s Ratio Perm			0.13		c0.23						0.17	0.04
v/c Ratio		0.23	0.41		0.72						0.33	0.07
Uniform Delay, d1		12.4	13.2		15.0						7.6	6.5
Progression Factor		1.00	1.00		1.07						1.00	1.00
Incremental Delay, d2		0.2	0.7		4.8						0.5	0.2
Delay (s)		12.6	13.9		20.9						8.1	6.8
Level of Service		B	B		C						A	A
Approach Delay (s)		13.5			20.9			0.0			7.9	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



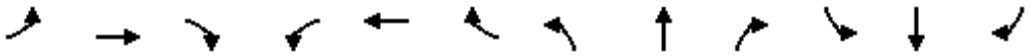
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	70	0	0	80	15	235	530	20	0	0	0
Future Volume (vph)	85	70	0	0	80	15	235	530	20	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.5			4.5			4.5				
Lane Util. Factor		1.00			1.00			0.95				
Frpb, ped/bikes		1.00			1.00			1.00				
Flpb, ped/bikes		1.00			1.00			0.99				
Frt		1.00			0.98			1.00				
Flt Protected		0.97			1.00			0.99				
Satd. Flow (prot)		1527			1757			3309				
Flt Permitted		0.77			1.00			0.99				
Satd. Flow (perm)		1207			1757			3309				
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	98	80	0	0	92	17	270	609	23	0	0	0
RTOR Reduction (vph)	0	0	0	0	13	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	178	0	0	96	0	0	900	0	0	0	0
Confl. Peds. (#/hr)	9		25	25		9	28		40	40		28
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Parking (#/hr)		5				5	10		10			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)		11.0			11.0			30.0				
Effective Green, g (s)		11.0			11.0			30.0				
Actuated g/C Ratio		0.22			0.22			0.60				
Clearance Time (s)		4.5			4.5			4.5				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		265			386			1985				
v/s Ratio Prot					0.05							
v/s Ratio Perm		c0.15						0.27				
v/c Ratio		0.67			0.25			0.45				
Uniform Delay, d1		17.8			16.1			5.5				
Progression Factor		0.61			1.00			0.90				
Incremental Delay, d2		6.5			0.3			0.6				
Delay (s)		17.3			16.4			5.6				
Level of Service		B			B			A				
Approach Delay (s)		17.3			16.4			5.6			0.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



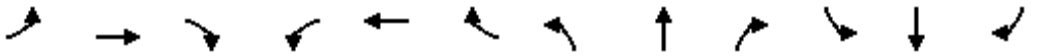
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	505	355	295	0	0	0	0	0	250	165
Future Volume (vph)	0	0	505	355	295	0	0	0	0	0	250	165
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)			5.0	5.0	5.0						5.5	5.5
Lane Util. Factor			1.00	1.00	1.00						1.00	1.00
Frpb, ped/bikes			0.99	1.00	1.00						1.00	0.98
Flpb, ped/bikes			1.00	1.00	1.00						1.00	1.00
Frt			0.86	1.00	1.00						1.00	0.85
Flt Protected			1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)			1521	1710	1800						1800	1492
Flt Permitted			1.00	0.95	1.00						1.00	1.00
Satd. Flow (perm)			1521	1710	1800						1800	1492
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	555	390	324	0	0	0	0	0	275	181
RTOR Reduction (vph)	0	0	186	340	0	0	0	0	0	0	0	139
Lane Group Flow (vph)	0	0	369	50	324	0	0	0	0	0	275	42
Confl. Peds. (#/hr)			3	3								
Confl. Bikes (#/hr)						4						3
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type			Perm	Prot	NA						NA	Perm
Protected Phases				1	6						4	
Permitted Phases			1 2									4
Actuated Green, G (s)			52.1	10.3	51.1						18.4	18.4
Effective Green, g (s)			52.1	10.3	51.1						18.4	18.4
Actuated g/C Ratio			0.65	0.13	0.64						0.23	0.23
Clearance Time (s)				5.0	5.0						5.5	5.5
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)			990	220	1149						414	343
v/s Ratio Prot				0.03	0.18						c0.15	
v/s Ratio Perm			c0.24									0.03
v/c Ratio			0.37	0.23	0.28						0.66	0.12
Uniform Delay, d1			6.4	31.3	6.4						28.0	24.4
Progression Factor			1.00	2.18	0.73						1.00	1.00
Incremental Delay, d2			0.2	0.5	0.6						4.0	0.2
Delay (s)			6.7	68.6	5.2						32.0	24.6
Level of Service			A	E	A						C	C
Approach Delay (s)		6.7			39.8			0.0			29.0	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	470	160	185	385	235	0	0	0
Future Volume (vph)	0	0	0	0	470	160	185	385	235	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)					5.0			5.0	5.0			
Lane Util. Factor					0.95			0.95	1.00			
Frpb, ped/bikes					1.00			1.00	0.98			
Flpb, ped/bikes					1.00			1.00	1.00			
Frt					0.96			1.00	0.85			
Flt Protected					1.00			0.98	1.00			
Satd. Flow (prot)					3257			3332	1482			
Flt Permitted					1.00			0.98	1.00			
Satd. Flow (perm)					3257			3332	1482			
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	0	0	0	534	182	210	438	267	0	0	0
RTOR Reduction (vph)	0	0	0	0	26	0	0	106	197	0	0	0
Lane Group Flow (vph)	0	0	0	0	690	0	0	542	70	0	0	0
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type					NA		Perm	NA	Perm			
Protected Phases					6			8				
Permitted Phases							8		8			
Actuated Green, G (s)					48.9			21.1	21.1			
Effective Green, g (s)					48.9			21.1	21.1			
Actuated g/C Ratio					0.61			0.26	0.26			
Clearance Time (s)					5.0			5.0	5.0			
Vehicle Extension (s)					3.0			3.0	3.0			
Lane Grp Cap (vph)					1990			878	390			
v/s Ratio Prot					c0.21							
v/s Ratio Perm								0.16	0.05			
v/c Ratio					0.35			0.62	0.18			
Uniform Delay, d1					7.7			25.9	22.8			
Progression Factor					1.00			1.00	1.00			
Incremental Delay, d2					0.5			1.3	0.2			
Delay (s)					8.1			27.2	23.0			
Level of Service					A			C	C			
Approach Delay (s)		0.0			8.1			26.0			0.0	
Approach LOS		A			A			C			A	

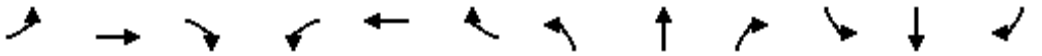
Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	155	5	15	470	35	5	95	90	45	25	150
Future Volume (vph)	70	155	5	15	470	35	5	95	90	45	25	150
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1676	1757		1693	1761		1710	1668		1693	1552	
Flt Permitted	0.23	1.00		0.65	1.00		0.64	1.00		0.40	1.00	
Satd. Flow (perm)	406	1757		1153	1761		1146	1668		718	1552	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	77	170	5	16	516	38	5	104	99	49	27	165
RTOR Reduction (vph)	0	0	0	0	2	0	0	32	0	0	128	0
Lane Group Flow (vph)	77	175	0	16	552	0	5	171	0	49	64	0
Confl. Peds. (#/hr)	1					1						
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	37.6	32.9		29.1	28.4		13.1	12.4		17.8	14.6	
Effective Green, g (s)	37.6	32.9		29.1	28.4		13.1	12.4		17.8	14.6	
Actuated g/C Ratio	0.57	0.50		0.44	0.43		0.20	0.19		0.27	0.22	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.3	
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	332	879		516	761		234	314		242	344	
v/s Ratio Prot	c0.02	0.10		0.00	c0.31		0.00	c0.10		c0.01	0.04	
v/s Ratio Perm	0.11			0.01			0.00			0.05		
v/c Ratio	0.23	0.20		0.03	0.73		0.02	0.55		0.20	0.19	
Uniform Delay, d1	8.5	9.1		10.3	15.4		21.1	24.1		18.2	20.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.0		0.0	2.9		0.0	1.0		0.2	0.1	
Delay (s)	8.6	9.1		10.3	18.3		21.1	25.1		18.4	20.8	
Level of Service	A	A		B	B		C	C		B	C	
Approach Delay (s)		9.0			18.1			25.0			20.3	
Approach LOS		A			B			C			C	

Intersection Summary					
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.60				
Actuated Cycle Length (s)	65.7	Sum of lost time (s)		16.8	
Intersection Capacity Utilization	61.8%	ICU Level of Service		B	
Analysis Period (min)	15				

c Critical Lane Group

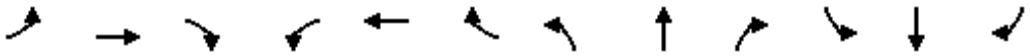


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	200	85	20	185	0	0	0	0	35	580	270
Future Volume (vph)	0	200	85	20	185	0	0	0	0	35	580	270
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.3	4.3		4.3						4.3	4.3
Lane Util. Factor		1.00	1.00		1.00						0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Frt		1.00	0.85		1.00						1.00	0.85
Flt Protected		1.00	1.00		1.00						1.00	1.00
Satd. Flow (prot)		1782	1325		1567						3376	1288
Flt Permitted		1.00	1.00		0.95						1.00	1.00
Satd. Flow (perm)		1782	1325		1502						3376	1288
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	215	91	22	199	0	0	0	0	38	624	290
RTOR Reduction (vph)	0	0	69	0	0	0	0	0	0	0	0	120
Lane Group Flow (vph)	0	215	22	0	221	0	0	0	0	0	662	170
Confl. Peds. (#/hr)	3					3						
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Parking (#/hr)			5		5					10		10
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases			8	4						2		2
Actuated Green, G (s)		12.1	12.1		12.1						29.3	29.3
Effective Green, g (s)		12.1	12.1		12.1						29.3	29.3
Actuated g/C Ratio		0.24	0.24		0.24						0.59	0.59
Clearance Time (s)		4.3	4.3		4.3						4.3	4.3
Vehicle Extension (s)		2.5	2.5		2.5						2.5	2.5
Lane Grp Cap (vph)		431	320		363						1978	754
v/s Ratio Prot		0.12										
v/s Ratio Perm			0.02		c0.15						0.20	0.13
v/c Ratio		0.50	0.07		0.61						0.33	0.23
Uniform Delay, d1		16.3	14.6		16.8						5.3	4.9
Progression Factor		1.00	1.00		0.39						1.59	3.78
Incremental Delay, d2		0.7	0.1		2.1						0.4	0.7
Delay (s)		17.0	14.7		8.7						8.9	19.3
Level of Service		B	B		A						A	B
Approach Delay (s)		16.3			8.7			0.0			12.1	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	5	0	0	5	0	190	605	10	0	0	0
Future Volume (vph)	230	5	0	0	5	0	190	605	10	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.5			4.5			4.5				
Lane Util. Factor		1.00			1.00			0.95				
Frpb, ped/bikes		1.00			1.00			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			1.00			1.00				
Flt Protected		0.95			1.00			0.99				
Satd. Flow (prot)		1498			1800			3359				
Flt Permitted		0.73			1.00			0.99				
Satd. Flow (perm)		1143			1800			3359				
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	261	6	0	0	6	0	216	688	11	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	267	0	0	6	0	0	914	0	0	0	0
Confl. Peds. (#/hr)	3					3	13		4	4		13
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Parking (#/hr)		5				5	10		10			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)		16.0			16.0			25.0				
Effective Green, g (s)		16.0			16.0			25.0				
Actuated g/C Ratio		0.32			0.32			0.50				
Clearance Time (s)		4.5			4.5			4.5				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		365			576			1679				
v/s Ratio Prot					0.00							
v/s Ratio Perm		c0.23						0.27				
v/c Ratio		0.73			0.01			0.54				
Uniform Delay, d1		15.1			11.6			8.6				
Progression Factor		0.83			1.00			1.00				
Incremental Delay, d2		7.2			0.0			1.3				
Delay (s)		19.8			11.6			9.9				
Level of Service		B			B			A				
Approach Delay (s)		19.8			11.6			9.9			0.0	
Approach LOS		B			B			A			A	

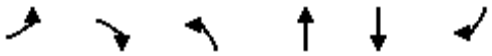
Intersection Summary			
HCM 2000 Control Delay	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	5	5	10	5	10	175	65	5	25	10
Future Volume (Veh/h)	10	10	5	5	10	5	10	175	65	5	25	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	12	12	6	6	12	6	12	203	76	6	29	12
Pedestrians								1				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								938			419	
pX, platoon unblocked												
vC, conflicting volume	286	350	36	281	280	203	41			279		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	286	350	36	281	280	203	41			279		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	98	99	99	98	99	99			100		
cM capacity (veh/h)	650	570	1041	654	624	843	1581			1295		

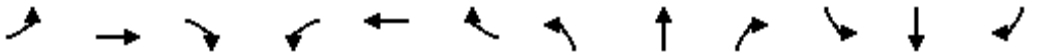
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	12	18	6	18	12	203	76	6	41
Volume Left	12	0	6	0	12	0	0	6	0
Volume Right	0	6	0	6	0	0	76	0	12
cSH	650	672	654	683	1581	1700	1700	1295	1700
Volume to Capacity	0.02	0.03	0.01	0.03	0.01	0.12	0.04	0.00	0.02
Queue Length 95th (ft)	1	2	1	2	1	0	0	0	0
Control Delay (s)	10.6	10.5	10.6	10.4	7.3	0.0	0.0	7.8	0.0
Lane LOS	B	B	B	B	A			A	
Approach Delay (s)	10.6		10.4		0.3			1.0	
Approach LOS	B		B						

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	23.8%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	225	80	35	25	20	0
Future Volume (vph)	225	80	35	25	20	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1710	1530	1710	1800	1800	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1710	1530	1710	1800	1800	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	268	95	42	30	24	0
RTOR Reduction (vph)	0	67	0	0	0	0
Lane Group Flow (vph)	268	29	42	30	24	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	Perm	Prot	NA	NA	Perm
Protected Phases	5		3	8	4	
Permitted Phases	2	2				4
Actuated Green, G (s)	9.6	9.6	0.8	12.4	6.6	
Effective Green, g (s)	9.6	9.6	0.8	12.4	6.6	
Actuated g/C Ratio	0.30	0.30	0.03	0.39	0.21	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	2.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	513	459	42	697	371	
v/s Ratio Prot	c0.16		c0.02	0.02	c0.01	
v/s Ratio Perm		0.02				
v/c Ratio	0.52	0.06	1.00	0.04	0.06	
Uniform Delay, d1	9.3	8.0	15.6	6.1	10.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.0	138.9	0.0	0.0	
Delay (s)	9.7	8.0	154.5	6.1	10.2	
Level of Service	A	A	F	A	B	
Approach Delay (s)	9.3			92.7	10.2	
Approach LOS	A			F	B	

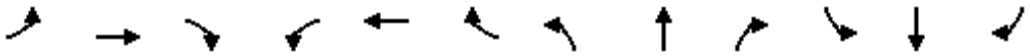
Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	32.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	30.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	20	25	75	35	0	0	0	0	130	565	5
Future Volume (Veh/h)	0	20	25	75	35	0	0	0	0	130	565	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	23	29	86	40	0	0	0	0	149	649	6
Pedestrians					8			5				
Lane Width (ft)					12.0			0.0				
Walking Speed (ft/s)					4.0			4.0				
Percent Blockage					1			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	967	955	330	676	955	8	649			8		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	967	955	330	676	955	8	649			8		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	90	96	69	83	100	100			91		
cM capacity (veh/h)	170	235	672	279	235	1071	947			1615		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	52	126	149	324	324	6
Volume Left	0	86	149	0	0	0
Volume Right	29	0	0	0	0	6
cSH	369	263	1615	1700	1700	1700
Volume to Capacity	0.14	0.48	0.09	0.19	0.19	0.00
Queue Length 95th (ft)	12	60	8	0	0	0
Control Delay (s)	16.4	30.6	7.5	0.0	0.0	0.0
Lane LOS	C	D	A			
Approach Delay (s)	16.4	30.6	1.4			
Approach LOS	C	D				

Intersection Summary				
Average Delay	5.9			
Intersection Capacity Utilization	36.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	100	0	0	40	75	85	715	65	0	0	0
Future Volume (Veh/h)	40	100	0	0	40	75	85	715	65	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	46	115	0	0	46	86	98	822	75	0	0	0
Pedestrians		1			2			6				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		0			0			1				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	717	1096	7	1121	1058	450	1			899		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	717	1096	7	1121	1058	450	1			899		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	79	43	100	100	78	85	94			100		
cM capacity (veh/h)	216	202	1074	85	212	561	1634			763		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	161	132	509	486
Volume Left	46	0	98	0
Volume Right	0	86	0	75
cSH	206	357	1634	1700
Volume to Capacity	0.78	0.37	0.06	0.29
Queue Length 95th (ft)	137	42	5	0
Control Delay (s)	66.2	20.9	1.9	0.0
Lane LOS	F	C	A	
Approach Delay (s)	66.2	20.9	1.0	
Approach LOS	F	C		

Intersection Summary				
Average Delay	11.2			
Intersection Capacity Utilization	50.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix E – Forecast Methods and Assumptions Memorandum

Forecast Methods and Assumptions Technical Memorandum

Date: March 26, 2025

Project name: 2025 Centralia Comprehensive Plan Transportation Element

Attention: Patty Page, City of Centralia
Emil Pierson, City of Centralia

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This memorandum describes the forecasting process and assumptions used in the development of future year travel demand for the City of Centralia Comprehensive Plan Transportation Element update. This memo identifies the study area limits of forecast modeling, the analysis years, and the travel demand forecasting methodology.

1. Study Area Limits

The project study area includes 15 existing intersections located within the City of Centralia city limits. Although within city limits, the study intersections are under various city, county, and state jurisdictions. The selected study intersection locations, control types, and jurisdictions are listed in Table 1.

Table 1 Study Intersection Control Type and Ownership

	Intersection	Intersection Control Type	Jurisdiction
1	Harrison Avenue and W Reynolds Avenue	Signal	Centralia
2	Pearl Street and W Reynolds Avenue	Signal	WSDOT
3	Johnson Road and Harrison Avenue	Signal	Centralia
4	Belmont Avenue and Harrison Avenue	Signal	Centralia
5	I-5 Southbound Ramps and Harrison Avenue	Signal	WSDOT
6	I-5 Northbound Ramps and Harrison Avenue	Signal	WSDOT
7	High Street and Harrison Avenue	Signal	Centralia
8	Bridge Street and Harrison Avenue	Signal	Centralia
9	Harrison Avenue and W 1st Street	OWSC	Centralia
10	Harrison Avenue and W Main Street	Signal	Centralia
11	Yew Street and W Main Street	Signal	Centralia
12	Pearl Street and W Main Street	Signal	WSDOT
13	Tower Avenue and W Main Street	Signal	WSDOT
14	I-5 SB Collector/Distributor Lane and Mellen Street	Signal	WSDOT
15	I-5 NB Collector/Distributor Lane and Mellen Street	Signal	WSDOT
16	Yew Street and Mellen Street	Signal	WSDOT
17	Pearl Street and Cherry Street	Signal	WSDOT
18	Tower Avenue and Cherry Street	Signal	WSDOT

19	S Yew Street and Alder Street	OWSC	Centralia
20	S Yew Street and Art Lehmann Drive	Signal	Centralia
21	Gold Street and Summa Street	TWSC	Centralia
22	Kresky Avenue and Summa Street	TWSC	Centralia

OWSC – One-way stop-controlled
TWSC – Two-way stop-controlled
WSDOT – Washington State Department of Transportation

2. Analysis Years

Intersection analysis for the PM peak hour will be analyzed for the conditions listed below.

- Existing Year (2024)
- No Build Existing Network (2045)
- No Build with Planned Improvements (2045)
- Potential Strategies (2045)

The existing year of 2024 is selected to provide an assessment of the current facilities and intersection operations. The existing analysis will serve as a basis for comparison with future forecasted conditions. The future forecast year of 2045 was selected to capture changes in traffic and growth through a 20-year timeframe horizon.

Three conditions were or will be analyzed for the future year (2045). No Build Existing Network assigns forecasted future volumes to the existing Synchro Network. No Build with Planned Improvements assigns forecasted future volumes to a Synchro network with added intersection and roadway improvements planned in local or regional transportation improvement programs (TIP). The Potential Strategies condition will be analyzed in the next phase of the project and will include recommended further system improvements that are necessary to keep the roadway network operating at an acceptable level.

3. Forecasting/ Modeling Assumptions

The Lewis County EMME travel demand model, provided by the Thurston Regional Planning Council, will be used to develop forecasts for the future analysis year. This model is updated to reflect 2045 conditions assuming Centralia's current land use projections on the anticipated future roadway network.

Forecasts will be developed from model data using a post-processing spreadsheet tool. This spreadsheet tool adjusts the macro-level modeling forecasts into intersection turning movement volumes using the National Cooperative Highway Research Program (NCHRP) 765 – Analytical Travel Forecasting. Approaches for Project – Level Planning and Design methodology, which is suitable for planning and operational studies.

This post-processing methodology compares the predicted change in traffic between the existing and future model years and distributes that difference amongst intersection turning movements. The existing 2024 intersection turning movement volumes will serve as the basis for future turning movement distribution. Where the model indicates negative growth, future traffic volumes will be kept constant unless justified. After this process is completed for each intersection, the turning movement volumes will be balanced between adjacent intersections, when applicable, and will be rounded to the nearest five vehicles for each intersection movement value.

The current version of the future Lewis County EMME model reflects the No Build (2045) condition and includes the regional planned and programmed roadway improvement projects listed in Table 2.

Post-processed volumes for the No Build (2045) condition will be used in the intersection operations analysis software to identify any future roadway deficiencies.

4. Background Projects

The future Lewis County EMME travel demand forecasting model reflects 2045 conditions assuming current land use projections and the planned/programmed future roadway network. The projects listed in Table 2 are assumed to be constructed by year 2045 and are included as part of the No Build (2045) condition. The WSDOT and Lewis County projects are listed in the Lewis County model documentation and have been confirmed to be in the regional model.

Table 2 Assumed Future Baseline Transportation Improvements

Improvement Project	Description	Reference[1,2]
Gallagher Road Extension	Construct new urban roadway to Harrison Avenue from the intersection of Gallagher Road and Ives Road.	Lewis County Six-Year TIP
Kresky Ave/Summa St Signal	Installation of a new traffic signal system, ADA ramps, asphalt paving, sidewalk, and striping	City of Centralia Six-Year TIP
Alder Street Improvements	Widening and reconstruction of Alder Street from the I-5 collector distributor lane to the intersection of Alder Street and Mellen Street. It also includes curb, gutter, sidewalks, and illumination along the length of the project.	City of Centralia Six-Year TIP
Harrison Avenue Improvements	Widening of the roadway, sidewalks, streetlights, stormwater, and utilities	City of Centralia Six-Year TIP
Westside Connector Phase 1 (Future Bridge and Connection)	New bridge and roadways to provide a westside connection over the Chehalis River	City of Centralia Six-Year TIP
Westside Connector Phase 1 (N Scheuber Rd Improvements)	Reconstruction of N. Scheuber Road to include roadway widening, utility improvements, addition of sidewalk and bicycle lanes, street lighting, intersection improvements, roadway delineation and permanent signs	City of Centralia Six-Year TIP
Harrison Avenue – I-5 to Johnson Rd	Add capacity for EB turn onto SB CD Lane, safety improvements eliminating left turn movements between signals, grind and pave asphalt roadway, ADA improvements, striping, signage, and other related work	City of Centralia Six-Year TIP

[1] Lewis County Six-Year Transportation Improvement Program (2024-2029) report date 11/21/2023

[2] City of Centralia Six-Year Transportation Improvement Program (2025-2030) report date 6/25/2024

5. Potential Strategies

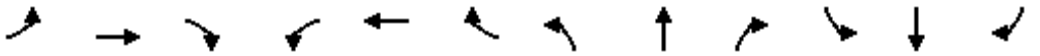
Based on any deficiencies identified in the No Build conditions analysis, potential improvement strategies will be developed to address congestion, connectivity, and safety within the study area. One set of potential project strategies will be incorporated into the Lewis County EMME travel demand model, and model forecasts will be post-processed to attain turning movement volumes reflecting the Potential Strategies (2045) condition. These volumes will be analyzed in the intersection operations analysis software to assess the effectiveness of each potential network improvement.

The study intersections will be evaluated against established jurisdictional transportation levels of service standards. From the results of the intersection evaluation (among other evaluation criteria developed), specific projects will be prioritized and documented in the City of Centralia Comprehensive Plan Transportation Element update.

Appendix F – Synchro Output Reports (Future Conditions)

HCM Signalized Intersection Capacity Analysis
101: Harrison Ave & Reynolds Ave

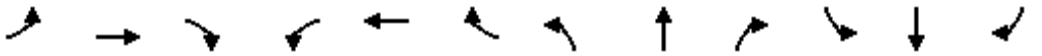
05/30/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	105	195	35	115	160	135	365	35	155	445	55
Future Volume (vph)	80	105	195	35	115	160	135	365	35	155	445	55
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		3.7	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1660	1748	1451	1710	1800	1497	1644	1704		1676	1730	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1660	1748	1451	1710	1800	1497	1644	1704		1676	1730	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	82	107	199	36	117	163	138	372	36	158	454	56
RTOR Reduction (vph)	0	0	165	0	0	138	0	3	0	0	4	0
Lane Group Flow (vph)	82	107	34	36	117	25	138	405	0	158	506	0
Confl. Peds. (#/hr)	1		2	2		1	7		2	2		7
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	4%	4%	4%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	6.0	13.7	13.7	4.4	12.1	12.1	11.3	29.4		12.3	28.6	
Effective Green, g (s)	6.0	13.7	13.7	4.4	12.1	12.1	11.3	29.4		12.3	28.6	
Actuated g/C Ratio	0.08	0.17	0.17	0.06	0.15	0.15	0.14	0.37		0.15	0.36	
Clearance Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		3.7	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	124	299	248	94	272	226	232	626		257	618	
v/s Ratio Prot	c0.05	0.06		0.02	c0.07		0.08	0.24		c0.09	c0.29	
v/s Ratio Perm			0.02			0.02						
v/c Ratio	0.66	0.36	0.14	0.38	0.43	0.11	0.59	0.65		0.61	0.82	
Uniform Delay, d1	36.0	29.3	28.1	36.5	30.8	29.3	32.2	21.0		31.6	23.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.5	0.7	0.3	2.6	1.1	0.2	4.1	2.3		4.3	8.3	
Delay (s)	48.5	30.0	28.4	39.1	31.9	29.5	36.3	23.3		36.0	31.6	
Level of Service	D	C	C	D	C	C	D	C		D	C	
Approach Delay (s)		33.1			31.5			26.6			32.6	
Approach LOS		C			C			C			C	

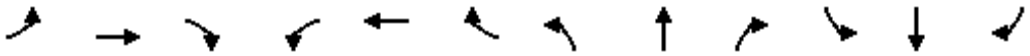
Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	345	15	250	10	15	0	200	385	15	10	370	240
Future Volume (vph)	345	15	250	10	15	0	200	385	15	10	370	240
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0	5.0		5.0		4.5	5.0		4.5	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.98		1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.99		1.00	0.94	
Flt Protected		0.95	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1718	1497		1763		1710	1790		1693	1662	
Flt Permitted		0.72	1.00		0.85		0.15	1.00		0.52	1.00	
Satd. Flow (perm)		1288	1497		1535		263	1790		920	1662	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	363	16	263	11	16	0	211	405	16	11	389	253
RTOR Reduction (vph)	0	0	181	0	0	0	0	1	0	0	25	0
Lane Group Flow (vph)	0	379	82	0	27	0	211	420	0	11	617	0
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		28.9	28.9		28.9		53.8	48.4		40.6	39.7	
Effective Green, g (s)		28.9	28.9		28.9		53.8	48.4		40.6	39.7	
Actuated g/C Ratio		0.31	0.31		0.31		0.58	0.52		0.44	0.43	
Clearance Time (s)		5.0	5.0		5.0		4.5	5.0		4.5	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		401	466		478		302	934		410	711	
v/s Ratio Prot							c0.07	0.23		0.00	c0.37	
v/s Ratio Perm		c0.29	0.05		0.02		0.33			0.01		
v/c Ratio		0.95	0.18		0.06		0.70	0.45		0.03	0.87	
Uniform Delay, d1		31.1	23.2		22.3		15.5	13.8		14.7	24.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		31.0	0.2		0.0		6.9	0.3		0.0	10.9	
Delay (s)		62.1	23.4		22.4		22.4	14.2		14.8	35.1	
Level of Service		E	C		C		C	B		B	D	
Approach Delay (s)		46.3			22.4			16.9			34.7	
Approach LOS		D			C			B			C	

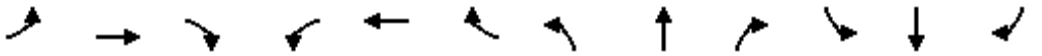
Intersection Summary				
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	92.7	Sum of lost time (s)	14.5	
Intersection Capacity Utilization	87.5%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	675	35	290	580	110	90	75	245	140	80	30
Future Volume (vph)	20	675	35	290	580	110	90	75	245	140	80	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.5		4.0	4.5			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.98			0.92			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.97	
Satd. Flow (prot)	1644	3260		1676	3259			1621			1705	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.97	
Satd. Flow (perm)	1644	3260		1676	3259			1621			1705	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	21	696	36	299	598	113	93	77	253	144	82	31
RTOR Reduction (vph)	0	3	0	0	13	0	0	45	0	0	4	0
Lane Group Flow (vph)	21	729	0	299	698	0	0	378	0	0	253	0
Confl. Peds. (#/hr)	3		2	2		3			3	3		
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	2.4	25.1		23.4	46.1			29.1			20.9	
Effective Green, g (s)	2.4	25.1		23.4	46.1			29.1			20.9	
Actuated g/C Ratio	0.02	0.22		0.20	0.40			0.25			0.18	
Clearance Time (s)	4.0	4.5		4.0	4.5			4.0			4.0	
Vehicle Extension (s)	3.0	3.5		3.0	3.5			3.0			3.0	
Lane Grp Cap (vph)	34	711		341	1306			410			309	
v/s Ratio Prot	0.01	c0.22		c0.18	0.21			c0.23			c0.15	
v/s Ratio Perm												
v/c Ratio	0.62	1.03		0.88	0.53			0.92			0.82	
Uniform Delay, d1	55.8	45.0		44.4	26.3			41.8			45.2	
Progression Factor	1.00	1.00		0.54	0.28			1.00			1.00	
Incremental Delay, d2	29.0	40.3		12.8	0.8			26.1			15.4	
Delay (s)	84.8	85.2		36.8	8.1			67.9			60.6	
Level of Service	F	F		D	A			E			E	
Approach Delay (s)		85.2			16.6			67.9			60.6	
Approach LOS		F			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	51.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

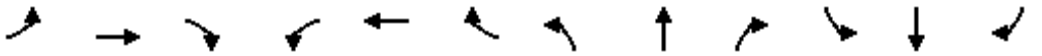
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	970	35	130	945	380	25	55	135	340	70	35
Future Volume (vph)	60	970	35	130	945	380	25	55	135	340	70	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	5.0		5.0	5.0		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.96		1.00	0.89		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.97	
Satd. Flow (prot)	1676	3333		1676	3209		1710	1608		1624	1623	
Flt Permitted	0.95	1.00		0.17	1.00		0.95	1.00		0.95	0.97	
Satd. Flow (perm)	1676	3333		302	3209		1710	1608		1624	1623	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	1021	37	137	995	400	26	58	142	358	74	37
RTOR Reduction (vph)	0	2	0	0	30	0	0	87	0	0	7	0
Lane Group Flow (vph)	63	1056	0	137	1365	0	26	113	0	236	226	0
Confl. Peds. (#/hr)			2	2			3					3
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		pm+pt	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases				2								
Actuated Green, G (s)	5.0	56.8		62.3	57.3		13.1	13.1		21.1	21.1	
Effective Green, g (s)	5.0	56.8		62.3	57.3		13.1	13.1		21.1	21.1	
Actuated g/C Ratio	0.04	0.49		0.54	0.50		0.11	0.11		0.18	0.18	
Clearance Time (s)	4.5	5.0		5.0	5.0		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.5		3.0	3.5		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	72	1646		223	1598		194	183		297	297	
v/s Ratio Prot	c0.04	0.32		0.03	c0.43		0.02	c0.07		c0.15	0.14	
v/s Ratio Perm				0.31								
v/c Ratio	0.88	0.64		0.61	0.85		0.13	0.62		0.79	0.76	
Uniform Delay, d1	54.7	21.6		33.2	25.2		45.8	48.6		44.9	44.6	
Progression Factor	0.71	0.22		0.62	0.59		1.00	1.00		1.00	1.00	
Incremental Delay, d2	37.3	0.9		3.8	4.7		0.3	6.1		13.6	11.0	
Delay (s)	76.0	5.6		24.2	19.5		46.2	54.7		58.5	55.6	
Level of Service	E	A		C	B		D	D		E	E	
Approach Delay (s)		9.6			19.9			53.7			57.0	
Approach LOS		A			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



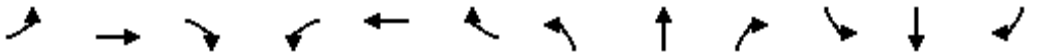
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	865	790	210	1420	0	0	0	0	505	135	445
Future Volume (vph)	0	865	790	210	1420	0	0	0	0	505	135	445
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0	5.0	4.5	5.0					4.5	4.5	4.5
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	0.88
Frpb, ped/bikes		1.00	0.97	1.00	1.00					1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3353	1453	3285	3386					1608	1645	2609
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3353	1453	3285	3386					1608	1645	2609
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	911	832	221	1495	0	0	0	0	532	142	468
RTOR Reduction (vph)	0	0	235	0	0	0	0	0	0	0	0	49
Lane Group Flow (vph)	0	911	597	221	1495	0	0	0	0	335	339	419
Confl. Peds. (#/hr)	3		16	16		3	1					1
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		58.4	58.4	11.1	74.0					31.5	31.5	31.5
Effective Green, g (s)		58.4	58.4	11.1	74.0					31.5	31.5	31.5
Actuated g/C Ratio		0.51	0.51	0.10	0.64					0.27	0.27	0.27
Clearance Time (s)		5.0	5.0	4.5	5.0					4.5	4.5	4.5
Vehicle Extension (s)		3.5	3.5	3.0	3.5					3.5	3.5	3.5
Lane Grp Cap (vph)		1702	737	317	2178					440	450	714
v/s Ratio Prot		0.27		0.07	c0.44					c0.21	0.21	
v/s Ratio Perm			c0.41									0.16
v/c Ratio		0.54	0.81	0.70	0.69					0.76	0.75	0.59
Uniform Delay, d1		19.1	23.7	50.3	13.1					38.3	38.2	36.1
Progression Factor		0.70	0.61	1.00	0.41					1.00	1.00	1.00
Incremental Delay, d2		1.0	8.0	4.5	1.2					7.8	7.2	1.3
Delay (s)		14.4	22.4	54.8	6.6					46.1	45.4	37.5
Level of Service		B	C	D	A					D	D	D
Approach Delay (s)		18.2			12.8			0.0			42.4	
Approach LOS		B			B			A			D	

Intersection Summary					
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.79				
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0		
Intersection Capacity Utilization	90.1%	ICU Level of Service	E		
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	1040	0	0	880	375	750	240	170	0	0	0
Future Volume (vph)	350	1040	0	0	880	375	750	240	170	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	0.97	0.95			0.95	1.00	0.97	1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.98	1.00	1.00	0.99			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3285	3386			3420	1500	3252	1765	1480			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3285	3386			3420	1500	3252	1765	1480			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	368	1095	0	0	926	395	789	253	179	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	168	0	0	62	0	0	0
Lane Group Flow (vph)	368	1095	0	0	926	227	789	253	117	0	0	0
Confl. Peds. (#/hr)	6		10	10		6			1	1		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	2%	2%	2%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	20.5	70.6			45.6	45.6	34.4	34.4	34.4			
Effective Green, g (s)	20.5	70.6			45.6	45.6	34.4	34.4	34.4			
Actuated g/C Ratio	0.18	0.61			0.40	0.40	0.30	0.30	0.30			
Clearance Time (s)	4.5	5.0			5.0	5.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.5			3.5	3.5	3.0	3.0	3.0			
Lane Grp Cap (vph)	585	2078			1356	594	972	527	442			
v/s Ratio Prot	c0.11	0.32			c0.27		c0.24	0.14				
v/s Ratio Perm						0.15			0.08			
v/c Ratio	0.63	0.53			0.68	0.38	0.81	0.48	0.26			
Uniform Delay, d1	43.7	12.7			28.7	24.7	37.3	33.0	30.7			
Progression Factor	0.99	0.96			0.45	0.17	1.00	1.00	1.00			
Incremental Delay, d2	1.8	0.8			2.4	1.6	5.2	0.7	0.3			
Delay (s)	45.2	12.9			15.2	5.8	42.5	33.7	31.0			
Level of Service	D	B			B	A	D	C	C			
Approach Delay (s)		21.1			12.4			39.0			0.0	
Approach LOS		C			B			D			A	

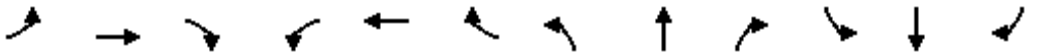
Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	1070	85	40	1095	40	120	5	35	35	5	40
Future Volume (vph)	80	1070	85	40	1095	40	120	5	35	35	5	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	5.0		4.5	5.0			4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.99		1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.98	
Satd. Flow (prot)	1710	3382		1710	3398			1684	1480		1642	
Flt Permitted	0.95	1.00		0.95	1.00			0.66	1.00		0.79	
Satd. Flow (perm)	1710	3382		1710	3398			1170	1480		1322	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	1126	89	42	1153	42	126	5	37	37	5	42
RTOR Reduction (vph)	0	4	0	0	2	0	0	0	31	0	35	0
Lane Group Flow (vph)	84	1211	0	42	1193	0	0	131	6	0	49	0
Confl. Peds. (#/hr)	5					5			1	1		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	10.8	76.2		7.0	72.4			17.8	17.8		17.8	
Effective Green, g (s)	10.8	76.2		7.0	72.4			17.8	17.8		17.8	
Actuated g/C Ratio	0.09	0.66		0.06	0.63			0.15	0.15		0.15	
Clearance Time (s)	4.5	5.0		4.5	5.0			4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.5		3.0	3.5			3.0	3.0		3.0	
Lane Grp Cap (vph)	160	2240		104	2139			181	229		204	
v/s Ratio Prot	0.05	c0.36		0.02	c0.35							
v/s Ratio Perm								c0.11	0.00		0.04	
v/c Ratio	0.53	0.54		0.40	0.56			0.72	0.03		0.24	
Uniform Delay, d1	49.7	10.2		52.0	12.2			46.3	41.2		42.7	
Progression Factor	0.83	0.58		0.84	0.86			1.00	1.00		1.00	
Incremental Delay, d2	2.7	0.8		2.3	0.9			13.4	0.0		0.6	
Delay (s)	43.9	6.7		46.1	11.4			59.6	41.3		43.3	
Level of Service	D	A		D	B			E	D		D	
Approach Delay (s)		9.1			12.5			55.6			43.3	
Approach LOS		A			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



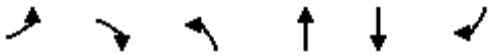
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	990	55	75	965	40	95	5	75	35	5	30
Future Volume (vph)	35	990	55	75	965	40	95	5	75	35	5	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	5.0		4.5	5.0			4.5			4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.94			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1710	3388		1710	3396			1634			1621	
Flt Permitted	0.95	1.00		0.95	1.00			0.81			0.82	
Satd. Flow (perm)	1710	3388		1710	3396			1351			1361	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	37	1042	58	79	1016	42	100	5	79	37	5	32
RTOR Reduction (vph)	0	3	0	0	2	0	0	23	0	0	24	0
Lane Group Flow (vph)	37	1097	0	79	1056	0	0	161	0	0	50	0
Confl. Peds. (#/hr)	2		2	2		2	3		3	3		3
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	5.0	60.0		12.5	67.5			28.5			28.5	
Effective Green, g (s)	5.0	60.0		12.5	67.5			28.5			28.5	
Actuated g/C Ratio	0.04	0.52		0.11	0.59			0.25			0.25	
Clearance Time (s)	4.5	5.0		4.5	5.0			4.5			4.5	
Vehicle Extension (s)	3.0	3.5		3.0	3.5			3.0			3.0	
Lane Grp Cap (vph)	74	1767		185	1993			334			337	
v/s Ratio Prot	0.02	c0.32		0.05	c0.31							
v/s Ratio Perm								c0.12			0.04	
v/c Ratio	0.50	0.62		0.43	0.53			0.48			0.15	
Uniform Delay, d1	53.8	19.5		47.9	14.2			36.9			33.8	
Progression Factor	1.30	0.29		1.00	1.00			1.00			1.00	
Incremental Delay, d2	4.6	1.4		1.6	1.0			4.9			0.9	
Delay (s)	74.4	7.0		49.5	15.2			41.8			34.7	
Level of Service	E	A		D	B			D			C	
Approach Delay (s)		9.2			17.6			41.8			34.7	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	405	695	15	390	710
Future Volume (Veh/h)	0	405	695	15	390	710
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	426	732	16	411	747
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			1267			499
pX, platoon unblocked	0.82	0.84			0.84	
vC, conflicting volume	2310	741			733	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2059	601			592	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	0			51	
cM capacity (veh/h)	26	425			839	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	426	748	411	747
Volume Left	0	0	411	0
Volume Right	426	16	0	0
cSH	425	1700	839	1700
Volume to Capacity	1.00	0.44	0.49	0.44
Queue Length 95th (ft)	317	0	69	0
Control Delay (s)	75.7	0.0	13.3	0.0
Lane LOS	F		B	
Approach Delay (s)	75.7	0.0	4.7	
Approach LOS	F			

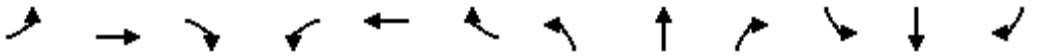
Intersection Summary			
Average Delay	16.2		
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	55	20	20	625	700	55
Future Volume (vph)	55	20	20	625	700	55
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	0.98	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1680	1530	1710	1800	1760	
Flt Permitted	0.95	1.00	0.11	1.00	1.00	
Satd. Flow (perm)	1680	1530	202	1800	1760	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	21	21	658	737	58
RTOR Reduction (vph)	0	17	0	0	3	0
Lane Group Flow (vph)	58	4	21	658	792	0
Confl. Peds. (#/hr)	6		5			5
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Turn Type	Perm	Prot	custom	NA	NA	
Protected Phases		10	4 8	4 6 8	2	
Permitted Phases	10		6			
Actuated Green, G (s)	16.7	16.7	64.3	68.3	46.9	
Effective Green, g (s)	16.7	16.7	64.3	68.3	46.9	
Actuated g/C Ratio	0.18	0.18	0.69	0.73	0.50	
Clearance Time (s)	4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	301	274	421	1321	887	
v/s Ratio Prot		0.00	0.01	c0.37	c0.45	
v/s Ratio Perm	c0.03		0.03			
v/c Ratio	0.19	0.01	0.05	0.50	0.89	
Uniform Delay, d1	32.4	31.4	20.8	5.2	20.8	
Progression Factor	1.00	1.00	0.21	0.12	1.00	
Incremental Delay, d2	0.3	0.0	0.0	0.2	11.3	
Delay (s)	32.7	31.4	4.3	0.9	32.1	
Level of Service	C	C	A	A	C	
Approach Delay (s)	32.4			1.0	32.1	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

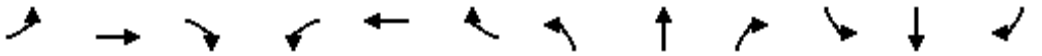
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	520	195	65	455	15	185	10	105	10	10	5
Future Volume (vph)	5	520	195	65	455	15	185	10	105	10	10	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00			1.00	
Frt		0.96		1.00	1.00		1.00	0.86			0.97	
Flt Protected		1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)		1716		1710	1788		1710	1554			1720	
Flt Permitted		1.00		0.34	1.00		0.74	1.00			0.90	
Satd. Flow (perm)		1717		613	1788		1331	1554			1573	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	547	205	68	479	16	195	11	111	11	11	5
RTOR Reduction (vph)	0	16	0	0	1	0	0	90	0	0	4	0
Lane Group Flow (vph)	0	741	0	68	494	0	195	32	0	0	23	0
Confl. Peds. (#/hr)	15					15						
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	custom	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	10	2 10			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		63.6		46.9	46.9		17.4	17.4			17.4	
Effective Green, g (s)		63.6		46.9	46.9		17.4	17.4			17.4	
Actuated g/C Ratio		0.68		0.50	0.50		0.19	0.19			0.19	
Clearance Time (s)				4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		1174		309	901		249	290			294	
v/s Ratio Prot		c0.11			0.28			0.02				
v/s Ratio Perm		c0.32		0.11			c0.15				0.01	
v/c Ratio		0.63		0.22	0.55		0.78	0.11			0.08	
Uniform Delay, d1		8.2		12.9	15.8		36.0	31.4			31.2	
Progression Factor		0.28		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		0.6		0.4	0.7		14.8	0.2			0.1	
Delay (s)		2.9		13.2	16.5		50.8	31.5			31.3	
Level of Service		A		B	B		D	C			C	
Approach Delay (s)		2.9			16.1			43.4			31.3	
Approach LOS		A			B			D			C	

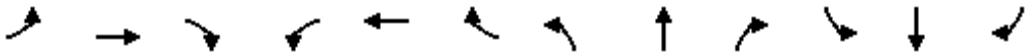
Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



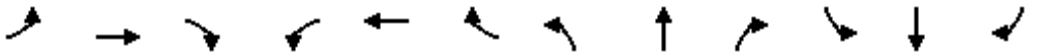
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	130	400	95	325	0	0	0	0	85	630	155
Future Volume (vph)	0	130	400	95	325	0	0	0	0	85	630	155
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.5	4.5		4.5						4.5	4.5
Lane Util. Factor		1.00	1.00		1.00						0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00						1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Frt		1.00	0.85		1.00						1.00	0.85
Flt Protected		1.00	1.00		0.99						0.99	1.00
Satd. Flow (prot)		1800	1311		1555						3359	1243
Flt Permitted		1.00	1.00		0.90						0.99	1.00
Satd. Flow (perm)		1800	1311		1408						3359	1243
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	137	421	100	342	0	0	0	0	89	663	163
RTOR Reduction (vph)	0	0	58	0	0	0	0	0	0	0	0	93
Lane Group Flow (vph)	0	137	363	0	442	0	0	0	0	0	752	70
Confl. Peds. (#/hr)	16		10	10		16	10		12	12		10
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Parking (#/hr)			5		5					10		10
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases			8	4						2		2
Actuated Green, G (s)		19.4	19.4		19.4						21.6	21.6
Effective Green, g (s)		19.4	19.4		19.4						21.6	21.6
Actuated g/C Ratio		0.39	0.39		0.39						0.43	0.43
Clearance Time (s)		4.5	4.5		4.5						4.5	4.5
Vehicle Extension (s)		3.0	3.0		3.0						3.0	3.0
Lane Grp Cap (vph)		698	508		546						1451	536
v/s Ratio Prot		0.08										
v/s Ratio Perm			0.28		c0.31						0.22	0.06
v/c Ratio		0.20	0.72		0.81						0.52	0.13
Uniform Delay, d1		10.1	13.0		13.7						10.4	8.6
Progression Factor		1.00	1.00		0.75						1.00	1.00
Incremental Delay, d2		0.1	4.8		7.5						1.3	0.5
Delay (s)		10.3	17.7		17.8						11.7	9.1
Level of Service		B	B		B						B	A
Approach Delay (s)		15.9			17.8			0.0			11.2	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



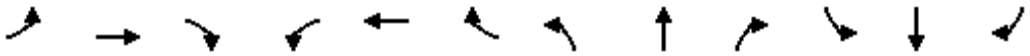
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	90	0	0	90	20	325	735	25	0	0	0
Future Volume (vph)	120	90	0	0	90	20	325	735	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.5			4.5			4.5				
Lane Util. Factor		1.00			1.00			0.95				
Frpb, ped/bikes		1.00			1.00			1.00				
Flpb, ped/bikes		1.00			1.00			0.99				
Frt		1.00			0.98			1.00				
Flt Protected		0.97			1.00			0.99				
Satd. Flow (prot)		1525			1750			3311				
Flt Permitted		0.76			1.00			0.99				
Satd. Flow (perm)		1191			1750			3311				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	126	95	0	0	95	21	342	774	26	0	0	0
RTOR Reduction (vph)	0	0	0	0	15	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	221	0	0	101	0	0	1139	0	0	0	0
Confl. Peds. (#/hr)	9		25	25		9	28		40	40		28
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Parking (#/hr)		5				5	10		10			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)		13.6			13.6			27.4				
Effective Green, g (s)		13.6			13.6			27.4				
Actuated g/C Ratio		0.27			0.27			0.55				
Clearance Time (s)		4.5			4.5			4.5				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		323			476			1814				
v/s Ratio Prot					0.06							
v/s Ratio Perm		c0.19						0.34				
v/c Ratio		0.68			0.21			0.63				
Uniform Delay, d1		16.3			14.1			7.8				
Progression Factor		0.94			1.00			0.47				
Incremental Delay, d2		5.7			0.2			1.1				
Delay (s)		21.0			14.3			4.8				
Level of Service		C			B			A				
Approach Delay (s)		21.0			14.3			4.8			0.0	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



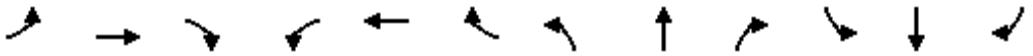
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	555	520	310	0	0	0	0	0	320	335
Future Volume (vph)	0	0	555	520	310	0	0	0	0	0	320	335
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)			5.0	5.0	5.0						5.5	5.5
Lane Util. Factor			1.00	1.00	1.00						1.00	1.00
Frpb, ped/bikes			0.99	1.00	1.00						1.00	0.98
Flpb, ped/bikes			1.00	1.00	1.00						1.00	1.00
Frt			0.86	1.00	1.00						1.00	0.85
Flt Protected			1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)			1521	1710	1800						1800	1492
Flt Permitted			1.00	0.95	1.00						1.00	1.00
Satd. Flow (perm)			1521	1710	1800						1800	1492
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	584	547	326	0	0	0	0	0	337	353
RTOR Reduction (vph)	0	0	89	168	0	0	0	0	0	0	0	268
Lane Group Flow (vph)	0	0	495	379	326	0	0	0	0	0	337	85
Confl. Peds. (#/hr)			3	3								
Confl. Bikes (#/hr)						4						3
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type			Perm	Prot	NA						NA	Perm
Protected Phases				1	6						4	
Permitted Phases			1 2									4
Actuated Green, G (s)			50.3	27.8	50.3						19.2	19.2
Effective Green, g (s)			46.3	27.8	50.3						19.2	19.2
Actuated g/C Ratio			0.58	0.35	0.63						0.24	0.24
Clearance Time (s)				5.0	5.0						5.5	5.5
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)			880	594	1131						432	358
v/s Ratio Prot				c0.22	0.18						c0.19	
v/s Ratio Perm			c0.33									0.06
v/c Ratio			0.56	0.64	0.29						0.78	0.24
Uniform Delay, d1			10.5	21.9	6.7						28.4	24.5
Progression Factor			1.00	0.55	0.68						1.00	1.00
Incremental Delay, d2			0.8	2.0	0.6						8.8	0.3
Delay (s)			11.4	14.1	5.2						37.3	24.8
Level of Service			B	B	A						D	C
Approach Delay (s)		11.4			10.8			0.0			30.9	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	110.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	575	185	255	490	275	0	0	0
Future Volume (vph)	0	0	0	0	575	185	255	490	275	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)					5.0			5.0	5.0			
Lane Util. Factor					0.95			0.95	1.00			
Frpb, ped/bikes					1.00			1.00	0.98			
Flpb, ped/bikes					1.00			1.00	1.00			
Frt					0.96			1.00	0.85			
Flt Protected					1.00			0.98	1.00			
Satd. Flow (prot)					3262			3329	1483			
Flt Permitted					1.00			0.98	1.00			
Satd. Flow (perm)					3262			3329	1483			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	605	195	268	516	289	0	0	0
RTOR Reduction (vph)	0	0	0	0	32	0	0	96	200	0	0	0
Lane Group Flow (vph)	0	0	0	0	768	0	0	688	89	0	0	0
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type					NA		Perm	NA	Perm			
Protected Phases					6			8				
Permitted Phases							8		8			
Actuated Green, G (s)					45.4			24.6	24.6			
Effective Green, g (s)					45.4			24.6	24.6			
Actuated g/C Ratio					0.57			0.31	0.31			
Clearance Time (s)					5.0			5.0	5.0			
Vehicle Extension (s)					3.0			3.0	3.0			
Lane Grp Cap (vph)					1851			1023	456			
v/s Ratio Prot					c0.24							
v/s Ratio Perm								0.21	0.06			
v/c Ratio					0.41			0.67	0.19			
Uniform Delay, d1					9.8			24.2	20.4			
Progression Factor					1.00			1.00	1.00			
Incremental Delay, d2					0.7			1.8	0.2			
Delay (s)					10.5			25.9	20.6			
Level of Service					B			C	C			
Approach Delay (s)		0.0			10.5			24.5			0.0	
Approach LOS		A			B			C			A	

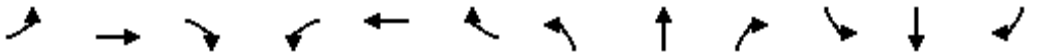
Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	110.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	170	10	15	550	40	10	125	100	45	30	190
Future Volume (vph)	90	170	10	15	550	40	10	125	100	45	30	190
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1676	1749		1693	1762		1710	1680		1693	1552	
Flt Permitted	0.20	1.00		0.64	1.00		0.53	1.00		0.38	1.00	
Satd. Flow (perm)	352	1749		1137	1762		951	1680		672	1552	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	95	179	11	16	579	42	11	132	105	47	32	200
RTOR Reduction (vph)	0	2	0	0	3	0	0	25	0	0	154	0
Lane Group Flow (vph)	95	188	0	16	618	0	11	212	0	47	78	0
Confl. Peds. (#/hr)	1					1						
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	40.7	36.2		33.1	32.4		15.4	14.7		18.5	16.1	
Effective Green, g (s)	40.7	36.2		33.1	32.4		15.4	14.7		18.5	16.1	
Actuated g/C Ratio	0.58	0.51		0.47	0.46		0.22	0.21		0.26	0.23	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.3	
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	287	898		539	809		215	350		211	354	
v/s Ratio Prot	c0.02	0.11		0.00	c0.35		0.00	c0.13		c0.01	0.05	
v/s Ratio Perm	0.17			0.01			0.01			0.05		
v/c Ratio	0.33	0.21		0.03	0.76		0.05	0.60		0.22	0.22	
Uniform Delay, d1	9.7	9.3		10.0	15.9		21.7	25.3		20.0	22.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.0		0.0	3.9		0.0	2.0		0.2	0.1	
Delay (s)	10.0	9.4		10.0	19.8		21.7	27.3		20.2	22.2	
Level of Service	A	A		B	B		C	C		C	C	
Approach Delay (s)		9.6			19.5			27.0			21.9	
Approach LOS		A			B			C			C	

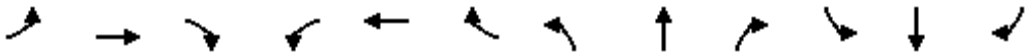
Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	16.8
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	210	155	85	195	0	0	0	0	100	825	315
Future Volume (vph)	0	210	155	85	195	0	0	0	0	100	825	315
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.3	4.3		4.3						4.3	4.3
Lane Util. Factor		1.00	1.00		1.00						0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Frt		1.00	0.85		1.00						1.00	0.85
Flt Protected		1.00	1.00		0.99						0.99	1.00
Satd. Flow (prot)		1782	1325		1552						3368	1288
Flt Permitted		1.00	1.00		0.83						0.99	1.00
Satd. Flow (perm)		1782	1325		1314						3368	1288
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	221	163	89	205	0	0	0	0	105	868	332
RTOR Reduction (vph)	0	0	53	0	0	0	0	0	0	0	0	158
Lane Group Flow (vph)	0	221	110	0	294	0	0	0	0	0	973	174
Confl. Peds. (#/hr)	3					3						
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Parking (#/hr)			5		5					10		10
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases			8	4						2		2
Actuated Green, G (s)		15.2	15.2		15.2						26.2	26.2
Effective Green, g (s)		15.2	15.2		15.2						26.2	26.2
Actuated g/C Ratio		0.30	0.30		0.30						0.52	0.52
Clearance Time (s)		4.3	4.3		4.3						4.3	4.3
Vehicle Extension (s)		2.5	2.5		2.5						2.5	2.5
Lane Grp Cap (vph)		541	402		399						1764	674
v/s Ratio Prot		0.12										
v/s Ratio Perm			0.08		c0.22						0.29	0.14
v/c Ratio		0.41	0.27		0.74						0.55	0.26
Uniform Delay, d1		13.8	13.2		15.6						8.0	6.6
Progression Factor		1.00	1.00		0.40						0.68	0.55
Incremental Delay, d2		0.4	0.3		5.2						1.1	0.8
Delay (s)		14.2	13.5		11.5						6.5	4.4
Level of Service		B	B		B						A	A
Approach Delay (s)		13.9			11.5			0.0			6.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.6
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



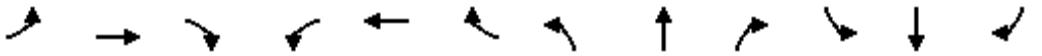
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	5	0	0	20	0	245	805	10	0	0	0
Future Volume (vph)	305	5	0	0	20	0	245	805	10	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.5			4.5			4.5				
Lane Util. Factor		1.00			1.00			0.95				
Frpb, ped/bikes		1.00			1.00			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			1.00			1.00				
Flt Protected		0.95			1.00			0.99				
Satd. Flow (prot)		1498			1800			3362				
Flt Permitted		0.71			1.00			0.99				
Satd. Flow (perm)		1122			1800			3362				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	321	5	0	0	21	0	258	847	11	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	326	0	0	21	0	0	1115	0	0	0	0
Confl. Peds. (#/hr)	3					3	13		4	4		13
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Parking (#/hr)		5				5	10		10			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)		17.7			17.7			23.3				
Effective Green, g (s)		17.7			17.7			23.3				
Actuated g/C Ratio		0.35			0.35			0.47				
Clearance Time (s)		4.5			4.5			4.5				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		397			637			1566				
v/s Ratio Prot					0.01							
v/s Ratio Perm		c0.29						0.33				
v/c Ratio		0.82			0.03			0.71				
Uniform Delay, d1		14.7			10.6			10.7				
Progression Factor		0.94			1.00			1.00				
Incremental Delay, d2		12.1			0.0			2.8				
Delay (s)		25.9			10.6			13.4				
Level of Service		C			B			B				
Approach Delay (s)		25.9			10.6			13.4			0.0	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection has too many lanes per leg.

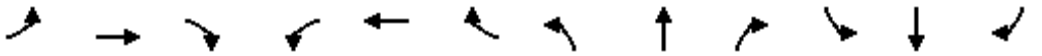
HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	25	105	5	25	25	50	30	5	25	30	10
Future Volume (vph)	235	25	105	5	25	25	50	30	5	25	30	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1710	1765	1530	1676	1632		1710	1759		1676	1800	1530
Flt Permitted	0.49	1.00	1.00	0.74	1.00		0.74	1.00		0.77	1.00	1.00
Satd. Flow (perm)	887	1765	1530	1306	1632		1325	1759		1357	1800	1530
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	247	26	111	5	26	26	53	32	5	26	32	11
RTOR Reduction (vph)	0	0	66	0	20	0	0	4	0	0	0	10
Lane Group Flow (vph)	247	26	45	5	32	0	53	33	0	26	32	1
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	0%	0%	2%	2%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8			4		4
Actuated Green, G (s)	24.7	19.1	19.1	11.3	10.7		9.4	6.9		6.0	5.2	5.2
Effective Green, g (s)	24.7	19.1	19.1	11.3	10.7		9.4	6.9		6.0	5.2	5.2
Actuated g/C Ratio	0.52	0.40	0.40	0.24	0.23		0.20	0.15		0.13	0.11	0.11
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	2.0	1.0	1.0	3.0	3.0		1.0	1.0		3.0	1.0	1.0
Lane Grp Cap (vph)	618	711	616	316	368		283	256		177	197	167
v/s Ratio Prot	c0.08	0.01		0.00	0.02		c0.01	0.02		0.00	0.02	
v/s Ratio Perm	c0.13		0.03	0.00			c0.03			0.02		0.00
v/c Ratio	0.40	0.04	0.07	0.02	0.09		0.19	0.13		0.15	0.16	0.01
Uniform Delay, d1	6.7	8.6	8.7	13.8	14.5		15.9	17.6		18.4	19.1	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.0	0.0	0.1		0.1	0.1		0.4	0.1	0.0
Delay (s)	6.8	8.6	8.7	13.8	14.6		16.0	17.7		18.8	19.3	18.8
Level of Service	A	A	A	B	B		B	B		B	B	B
Approach Delay (s)		7.5			14.5			16.7			19.0	
Approach LOS		A			B			B			B	

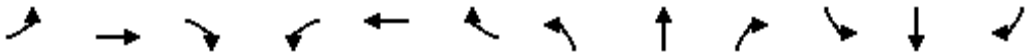
Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	47.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	20	65	200	70	0	0	0	0	275	795	25
Future Volume (Veh/h)	0	20	65	200	70	0	0	0	0	275	795	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	21	68	211	74	0	0	0	0	289	837	26
Pedestrians					8			5				
Lane Width (ft)					12.0			0.0				
Walking Speed (ft/s)					4.0			4.0				
Percent Blockage					1			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1452	1423	424	1088	1423	8	837			8		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1452	1423	424	1088	1423	8	837			8		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	81	88	0	34	100	100			82		
cM capacity (veh/h)	38	112	585	112	112	1071	806			1615		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	89	285	289	418	418	26
Volume Left	0	211	289	0	0	0
Volume Right	68	0	0	0	0	26
cSH	293	112	1615	1700	1700	1700
Volume to Capacity	0.30	2.55	0.18	0.25	0.25	0.02
Queue Length 95th (ft)	31	644	16	0	0	0
Control Delay (s)	22.6	782.4	7.7	0.0	0.0	0.0
Lane LOS	C	F	A			
Approach Delay (s)	22.6	782.4	1.9			
Approach LOS	C	F				

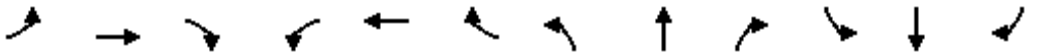
Intersection Summary				
Average Delay	148.9			
Intersection Capacity Utilization	52.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	225	0	0	100	125	160	880	100	0	0	0
Future Volume (Veh/h)	70	225	0	0	100	125	160	880	100	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	74	237	0	0	105	132	168	926	105	0	0	0
Pedestrians		1			2			6				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		0			0			1				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	984	1370	7	1441	1318	518	1			1033		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	984	1370	7	1441	1318	518	1			1033		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	0	100	0	26	74	90			100		
cM capacity (veh/h)	56	132	1074	0	142	507	1634			679		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	311	237	631	568
Volume Left	74	0	168	0
Volume Right	0	132	0	105
cSH	100	237	1634	1700
Volume to Capacity	3.11	1.00	0.10	0.33
Queue Length 95th (ft)	Err	235	9	0
Control Delay (s)	Err	102.5	2.8	0.0
Lane LOS	F	F	A	
Approach Delay (s)	Err	102.5	1.5	
Approach LOS	F	F		

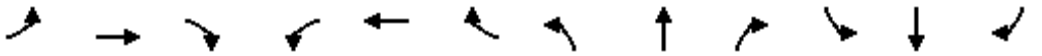
Intersection Summary				
Average Delay	1794.9			
Intersection Capacity Utilization	77.5%	ICU Level of Service	D	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	105	195	35	115	160	135	365	35	155	445	55
Future Volume (vph)	80	105	195	35	115	160	135	365	35	155	445	55
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		3.7	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1660	1748	1451	1710	1800	1497	1644	1704		1676	1730	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1660	1748	1451	1710	1800	1497	1644	1704		1676	1730	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	82	107	199	36	117	163	138	372	36	158	454	56
RTOR Reduction (vph)	0	0	165	0	0	138	0	3	0	0	4	0
Lane Group Flow (vph)	82	107	34	36	117	25	138	405	0	158	506	0
Confl. Peds. (#/hr)	1		2	2		1	7		2	2		7
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	4%	4%	4%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	6.0	13.7	13.7	4.4	12.1	12.1	11.3	29.4		12.3	28.6	
Effective Green, g (s)	6.0	13.7	13.7	4.4	12.1	12.1	11.3	29.4		12.3	28.6	
Actuated g/C Ratio	0.08	0.17	0.17	0.06	0.15	0.15	0.14	0.37		0.15	0.36	
Clearance Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		3.7	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	124	299	248	94	272	226	232	626		257	618	
v/s Ratio Prot	c0.05	0.06		0.02	c0.07		0.08	0.24		c0.09	c0.29	
v/s Ratio Perm			0.02			0.02						
v/c Ratio	0.66	0.36	0.14	0.38	0.43	0.11	0.59	0.65		0.61	0.82	
Uniform Delay, d1	36.0	29.3	28.1	36.5	30.8	29.3	32.2	21.0		31.6	23.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.5	0.7	0.3	2.6	1.1	0.2	4.1	2.3		4.3	8.3	
Delay (s)	48.5	30.0	28.4	39.1	31.9	29.5	36.3	23.3		36.0	31.6	
Level of Service	D	C	C	D	C	C	D	C		D	C	
Approach Delay (s)		33.1			31.5			26.6			32.6	
Approach LOS		C			C			C			C	

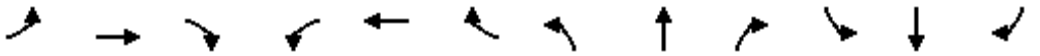
Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	345	15	250	10	15	0	200	385	15	10	370	240
Future Volume (vph)	345	15	250	10	15	0	200	385	15	10	370	240
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0	5.0		5.0		4.5	5.0		4.5	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.98		1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.99		1.00	0.94	
Flt Protected		0.95	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1718	1497		1763		1710	1790		1693	1662	
Flt Permitted		0.72	1.00		0.85		0.15	1.00		0.52	1.00	
Satd. Flow (perm)		1288	1497		1535		263	1790		920	1662	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	363	16	263	11	16	0	211	405	16	11	389	253
RTOR Reduction (vph)	0	0	181	0	0	0	0	1	0	0	25	0
Lane Group Flow (vph)	0	379	82	0	27	0	211	420	0	11	617	0
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		28.9	28.9		28.9		53.8	48.4		40.6	39.7	
Effective Green, g (s)		28.9	28.9		28.9		53.8	48.4		40.6	39.7	
Actuated g/C Ratio		0.31	0.31		0.31		0.58	0.52		0.44	0.43	
Clearance Time (s)		5.0	5.0		5.0		4.5	5.0		4.5	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		401	466		478		302	934		410	711	
v/s Ratio Prot							c0.07	0.23		0.00	c0.37	
v/s Ratio Perm		c0.29	0.05		0.02		0.33			0.01		
v/c Ratio		0.95	0.18		0.06		0.70	0.45		0.03	0.87	
Uniform Delay, d1		31.1	23.2		22.3		15.5	13.8		14.7	24.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		31.0	0.2		0.0		6.9	0.3		0.0	10.9	
Delay (s)		62.1	23.4		22.4		22.4	14.2		14.8	35.1	
Level of Service		E	C		C		C	B		B	D	
Approach Delay (s)		46.3			22.4			16.9			34.7	
Approach LOS		D			C			B			C	

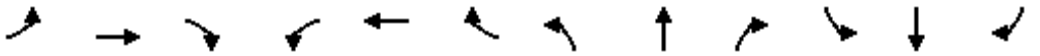
Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	92.7	Sum of lost time (s)	14.5
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	675	35	305	580	110	90	75	245	150	80	30
Future Volume (vph)	20	675	35	305	580	110	90	75	245	150	80	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.5		4.0	4.5			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.98			0.92			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.97	
Satd. Flow (prot)	1644	3260		1676	3259			1621			1705	
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.97	
Satd. Flow (perm)	1644	3260		1676	3259			1621			1705	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	21	696	36	314	598	113	93	77	253	155	82	31
RTOR Reduction (vph)	0	3	0	0	13	0	0	45	0	0	4	0
Lane Group Flow (vph)	21	729	0	314	698	0	0	378	0	0	264	0
Confl. Peds. (#/hr)	3		2	2		3			3	3		
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	2.4	25.1		23.4	46.1			28.6			21.4	
Effective Green, g (s)	2.4	25.1		23.4	46.1			28.6			21.4	
Actuated g/C Ratio	0.02	0.22		0.20	0.40			0.25			0.19	
Clearance Time (s)	4.0	4.5		4.0	4.5			4.0			4.0	
Vehicle Extension (s)	3.0	3.5		3.0	3.5			3.0			3.0	
Lane Grp Cap (vph)	34	711		341	1306			403			317	
v/s Ratio Prot	0.01	c0.22		c0.19	0.21			c0.23			c0.15	
v/s Ratio Perm												
v/c Ratio	0.62	1.03		0.92	0.53			0.94			0.83	
Uniform Delay, d1	55.8	45.0		44.9	26.3			42.3			45.1	
Progression Factor	1.00	1.00		0.46	0.18			1.00			1.00	
Incremental Delay, d2	29.0	40.3		15.0	0.6			29.2			16.8	
Delay (s)	84.8	85.2		35.6	5.4			71.6			61.9	
Level of Service	F	F		D	A			E			E	
Approach Delay (s)		85.2			14.6			71.6			61.9	
Approach LOS		F			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	51.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

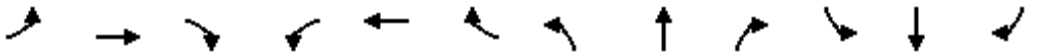
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	920	30	130	945	380	25	55	135	390	75	35
Future Volume (vph)	110	920	30	130	945	380	25	55	135	390	75	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	5.0		5.0	5.0		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.96		1.00	0.89		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.97	
Satd. Flow (prot)	1676	3334		1676	3209		1710	1608		1624	1625	
Flt Permitted	0.95	1.00		0.17	1.00		0.95	1.00		0.95	0.97	
Satd. Flow (perm)	1676	3334		307	3209		1710	1608		1624	1625	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	968	32	137	995	400	26	58	142	411	79	37
RTOR Reduction (vph)	0	2	0	0	29	0	0	88	0	0	6	0
Lane Group Flow (vph)	116	998	0	137	1366	0	26	112	0	263	258	0
Confl. Peds. (#/hr)			2	2			3					3
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		pm+pt	NA		Split	NA		Split	NA	
Protected Phases	1	6		5	2		8	8		4	4	
Permitted Phases				2								
Actuated Green, G (s)	8.5	53.2		59.2	52.2		13.0	13.0		22.8	22.8	
Effective Green, g (s)	8.5	53.2		59.2	52.2		13.0	13.0		22.8	22.8	
Actuated g/C Ratio	0.07	0.46		0.51	0.45		0.11	0.11		0.20	0.20	
Clearance Time (s)	4.5	5.0		5.0	5.0		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.5		3.0	3.5		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	123	1542		241	1456		193	181		321	322	
v/s Ratio Prot	c0.07	0.30		0.03	c0.43		0.02	c0.07		c0.16	0.16	
v/s Ratio Perm				0.26								
v/c Ratio	0.94	0.65		0.57	0.94		0.13	0.62		0.82	0.80	
Uniform Delay, d1	53.0	23.7		34.8	29.9		45.9	48.6		44.1	44.0	
Progression Factor	0.73	0.23		0.63	0.65		1.00	1.00		1.00	1.00	
Incremental Delay, d2	37.1	0.9		2.3	10.3		0.3	6.2		14.9	13.4	
Delay (s)	75.8	6.4		24.1	29.6		46.3	54.8		59.1	57.4	
Level of Service	E	A		C	C		D	D		E	E	
Approach Delay (s)		13.6			29.1			53.9			58.2	
Approach LOS		B			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

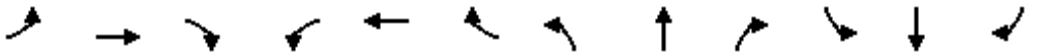
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	865	790	210	1420	0	0	0	0	505	135	445
Future Volume (vph)	0	865	790	210	1420	0	0	0	0	505	135	445
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0	5.0	4.5	5.0					4.5	4.5	4.5
Lane Util. Factor		0.95	0.88	0.97	0.95					0.95	0.95	0.88
Frpb, ped/bikes		1.00	0.95	1.00	1.00					1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		3353	2502	3285	3386					1608	1645	2609
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		3353	2502	3285	3386					1608	1645	2609
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	911	832	221	1495	0	0	0	0	532	142	468
RTOR Reduction (vph)	0	0	425	0	0	0	0	0	0	0	0	44
Lane Group Flow (vph)	0	911	407	221	1495	0	0	0	0	335	339	424
Confl. Peds. (#/hr)	3		16	16		3	1					1
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		56.3	56.3	12.2	73.0					32.5	32.5	32.5
Effective Green, g (s)		56.3	56.3	12.2	73.0					32.5	32.5	32.5
Actuated g/C Ratio		0.49	0.49	0.11	0.63					0.28	0.28	0.28
Clearance Time (s)		5.0	5.0	4.5	5.0					4.5	4.5	4.5
Vehicle Extension (s)		3.5	3.5	3.0	3.5					3.5	3.5	3.5
Lane Grp Cap (vph)		1641	1224	348	2149					454	464	737
v/s Ratio Prot		0.27		0.07	c0.44					c0.21	0.21	
v/s Ratio Perm			0.16									0.16
v/c Ratio		0.56	0.33	0.64	0.70					0.74	0.73	0.57
Uniform Delay, d1		20.6	17.9	49.3	13.7					37.4	37.3	35.3
Progression Factor		0.71	1.30	1.00	0.44					1.00	1.00	1.00
Incremental Delay, d2		1.1	0.6	2.6	1.3					6.4	6.0	1.2
Delay (s)		15.7	23.9	51.9	7.4					43.8	43.3	36.5
Level of Service		B	C	D	A					D	D	D
Approach Delay (s)		19.6			13.1			0.0			40.7	
Approach LOS		B			B			A			D	

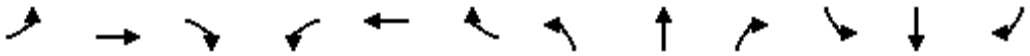
Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	1040	0	0	880	375	750	240	170	0	0	0
Future Volume (vph)	350	1040	0	0	880	375	750	240	170	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	5.0			5.0	5.0	5.0	5.0	5.0			
Lane Util. Factor	0.97	0.95			0.95	1.00	0.97	1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.98	1.00	1.00	0.99			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3285	3386			3420	1500	3252	1765	1480			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3285	3386			3420	1500	3252	1765	1480			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	368	1095	0	0	926	395	789	253	179	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	168	0	0	62	0	0	0
Lane Group Flow (vph)	368	1095	0	0	926	227	789	253	117	0	0	0
Confl. Peds. (#/hr)	6		10	10		6			1	1		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	2%	2%	2%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	20.5	70.6			45.6	45.6	34.4	34.4	34.4			
Effective Green, g (s)	20.5	70.6			45.6	45.6	34.4	34.4	34.4			
Actuated g/C Ratio	0.18	0.61			0.40	0.40	0.30	0.30	0.30			
Clearance Time (s)	4.5	5.0			5.0	5.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.5			3.5	3.5	3.0	3.0	3.0			
Lane Grp Cap (vph)	585	2078			1356	594	972	527	442			
v/s Ratio Prot	c0.11	0.32			c0.27		c0.24	0.14				
v/s Ratio Perm						0.15			0.08			
v/c Ratio	0.63	0.53			0.68	0.38	0.81	0.48	0.26			
Uniform Delay, d1	43.7	12.7			28.7	24.7	37.3	33.0	30.7			
Progression Factor	0.98	0.95			0.45	0.17	1.00	1.00	1.00			
Incremental Delay, d2	1.8	0.8			2.4	1.6	5.2	0.7	0.3			
Delay (s)	44.5	12.8			15.2	5.8	42.5	33.7	31.0			
Level of Service	D	B			B	A	D	C	C			
Approach Delay (s)		20.8			12.4			39.0			0.0	
Approach LOS		C			B			D			A	

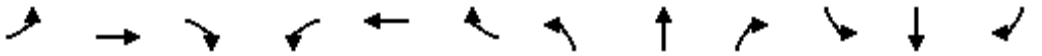
Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	1070	85	40	1095	40	120	5	35	35	5	40
Future Volume (vph)	80	1070	85	40	1095	40	120	5	35	35	5	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	5.0		4.5	5.0			4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.99		1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.98	
Satd. Flow (prot)	1710	3382		1710	3398			1684	1480		1642	
Flt Permitted	0.95	1.00		0.95	1.00			0.66	1.00		0.79	
Satd. Flow (perm)	1710	3382		1710	3398			1170	1480		1322	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	1126	89	42	1153	42	126	5	37	37	5	42
RTOR Reduction (vph)	0	4	0	0	2	0	0	0	31	0	35	0
Lane Group Flow (vph)	84	1211	0	42	1193	0	0	131	6	0	49	0
Confl. Peds. (#/hr)	5					5			1	1		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Actuated Green, G (s)	10.8	76.2		7.0	72.4			17.8	17.8		17.8	
Effective Green, g (s)	10.8	76.2		7.0	72.4			17.8	17.8		17.8	
Actuated g/C Ratio	0.09	0.66		0.06	0.63			0.15	0.15		0.15	
Clearance Time (s)	4.5	5.0		4.5	5.0			4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.5		3.0	3.5			3.0	3.0		3.0	
Lane Grp Cap (vph)	160	2240		104	2139			181	229		204	
v/s Ratio Prot	0.05	c0.36		0.02	c0.35							
v/s Ratio Perm								c0.11	0.00		0.04	
v/c Ratio	0.53	0.54		0.40	0.56			0.72	0.03		0.24	
Uniform Delay, d1	49.7	10.2		52.0	12.2			46.3	41.2		42.7	
Progression Factor	0.80	0.57		0.84	0.86			1.00	1.00		1.00	
Incremental Delay, d2	2.7	0.8		2.3	0.9			13.4	0.0		0.6	
Delay (s)	42.7	6.6		46.1	11.4			59.6	41.3		43.3	
Level of Service	D	A		D	B			E	D		D	
Approach Delay (s)		8.9			12.5			55.6			43.3	
Approach LOS		A			B			E			D	

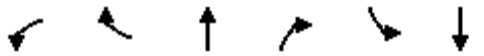
Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	990	55	75	965	40	95	5	75	35	5	30
Future Volume (vph)	35	990	55	75	965	40	95	5	75	35	5	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.5	5.0		4.5	5.0			4.5			4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.94			0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1710	3388		1710	3396			1634			1621	
Flt Permitted	0.95	1.00		0.95	1.00			0.81			0.82	
Satd. Flow (perm)	1710	3388		1710	3396			1351			1361	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	37	1042	58	79	1016	42	100	5	79	37	5	32
RTOR Reduction (vph)	0	3	0	0	2	0	0	23	0	0	24	0
Lane Group Flow (vph)	37	1097	0	79	1056	0	0	161	0	0	50	0
Confl. Peds. (#/hr)	2		2	2		2	3		3	3		3
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	5.0	60.0		12.5	67.5			28.5			28.5	
Effective Green, g (s)	5.0	60.0		12.5	67.5			28.5			28.5	
Actuated g/C Ratio	0.04	0.52		0.11	0.59			0.25			0.25	
Clearance Time (s)	4.5	5.0		4.5	5.0			4.5			4.5	
Vehicle Extension (s)	3.0	3.5		3.0	3.5			3.0			3.0	
Lane Grp Cap (vph)	74	1767		185	1993			334			337	
v/s Ratio Prot	0.02	c0.32		0.05	c0.31							
v/s Ratio Perm								c0.12			0.04	
v/c Ratio	0.50	0.62		0.43	0.53			0.48			0.15	
Uniform Delay, d1	53.8	19.5		47.9	14.2			36.9			33.8	
Progression Factor	1.27	0.28		1.00	1.00			1.00			1.00	
Incremental Delay, d2	4.6	1.4		1.6	1.0			4.9			0.9	
Delay (s)	72.7	6.9		49.5	15.2			41.8			34.7	
Level of Service	E	A		D	B			D			C	
Approach Delay (s)		9.0			17.6			41.8			34.7	
Approach LOS		A			B			D			C	

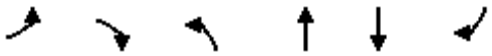
Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	405	695	15	390	710
Future Volume (Veh/h)	0	405	695	15	390	710
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	426	732	16	411	747
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			1267			499
pX, platoon unblocked	0.82	0.84			0.84	
vC, conflicting volume	2310	741			733	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2059	601			592	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	0			51	
cM capacity (veh/h)	26	425			839	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	426	748	411	747
Volume Left	0	0	411	0
Volume Right	426	16	0	0
cSH	425	1700	839	1700
Volume to Capacity	1.00	0.44	0.49	0.44
Queue Length 95th (ft)	317	0	69	0
Control Delay (s)	75.7	0.0	13.3	0.0
Lane LOS	F		B	
Approach Delay (s)	75.7	0.0	4.7	
Approach LOS	F			

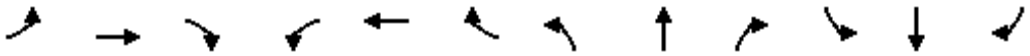
Intersection Summary			
Average Delay	16.2		
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	55	20	20	625	700	55
Future Volume (vph)	55	20	20	625	700	55
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	0.98	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1680	1530	1710	1800	1760	
Flt Permitted	0.95	1.00	0.11	1.00	1.00	
Satd. Flow (perm)	1680	1530	202	1800	1760	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	21	21	658	737	58
RTOR Reduction (vph)	0	17	0	0	3	0
Lane Group Flow (vph)	58	4	21	658	792	0
Confl. Peds. (#/hr)	6		5			5
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%
Turn Type	Perm	Prot	custom	NA	NA	
Protected Phases		10	4 8	4 6 8	2	
Permitted Phases	10		6			
Actuated Green, G (s)	16.7	16.7	64.3	68.3	46.9	
Effective Green, g (s)	16.7	16.7	64.3	68.3	46.9	
Actuated g/C Ratio	0.18	0.18	0.69	0.73	0.50	
Clearance Time (s)	4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	301	274	421	1321	887	
v/s Ratio Prot		0.00	0.01	c0.37	c0.45	
v/s Ratio Perm	c0.03		0.03			
v/c Ratio	0.19	0.01	0.05	0.50	0.89	
Uniform Delay, d1	32.4	31.4	20.8	5.2	20.8	
Progression Factor	1.00	1.00	0.21	0.12	1.00	
Incremental Delay, d2	0.3	0.0	0.0	0.2	11.3	
Delay (s)	32.7	31.4	4.3	0.9	32.1	
Level of Service	C	C	A	A	C	
Approach Delay (s)	32.4			1.0	32.1	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

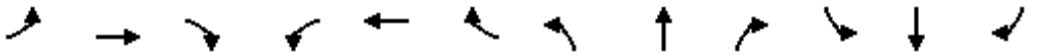
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	520	195	65	455	15	185	10	105	10	10	5
Future Volume (vph)	5	520	195	65	455	15	185	10	105	10	10	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00			1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00			1.00	
Frt		0.96		1.00	1.00		1.00	0.86			0.97	
Flt Protected		1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)		1716		1710	1788		1710	1554			1720	
Flt Permitted		1.00		0.34	1.00		0.74	1.00			0.90	
Satd. Flow (perm)		1717		613	1788		1331	1554			1573	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	547	205	68	479	16	195	11	111	11	11	5
RTOR Reduction (vph)	0	16	0	0	1	0	0	90	0	0	4	0
Lane Group Flow (vph)	0	741	0	68	494	0	195	32	0	0	23	0
Confl. Peds. (#/hr)	15					15						
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	custom	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	10	2 10			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		63.6		46.9	46.9		17.4	17.4			17.4	
Effective Green, g (s)		63.6		46.9	46.9		17.4	17.4			17.4	
Actuated g/C Ratio		0.68		0.50	0.50		0.19	0.19			0.19	
Clearance Time (s)				4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		1174		309	901		249	290			294	
v/s Ratio Prot		c0.11			0.28			0.02				
v/s Ratio Perm		c0.32		0.11			c0.15				0.01	
v/c Ratio		0.63		0.22	0.55		0.78	0.11			0.08	
Uniform Delay, d1		8.2		12.9	15.8		36.0	31.4			31.2	
Progression Factor		0.28		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		0.6		0.4	0.7		14.8	0.2			0.1	
Delay (s)		2.9		13.2	16.5		50.8	31.5			31.3	
Level of Service		A		B	B		D	C			C	
Approach Delay (s)		2.9			16.1			43.4			31.3	
Approach LOS		A			B			D			C	

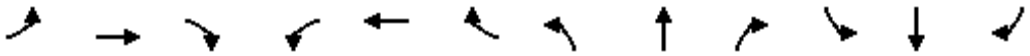
Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



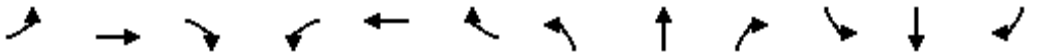
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	130	400	95	325	0	0	0	0	85	630	155
Future Volume (vph)	0	130	400	95	325	0	0	0	0	85	630	155
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.5	4.5		4.5						4.5	4.5
Lane Util. Factor		1.00	1.00		1.00						0.95	1.00
Frpb, ped/bikes		1.00	0.98		1.00						1.00	0.97
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Frt		1.00	0.85		1.00						1.00	0.85
Flt Protected		1.00	1.00		0.99						0.99	1.00
Satd. Flow (prot)		1800	1311		1555						3359	1243
Flt Permitted		1.00	1.00		0.90						0.99	1.00
Satd. Flow (perm)		1800	1311		1408						3359	1243
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	137	421	100	342	0	0	0	0	89	663	163
RTOR Reduction (vph)	0	0	58	0	0	0	0	0	0	0	0	93
Lane Group Flow (vph)	0	137	363	0	442	0	0	0	0	0	752	70
Confl. Peds. (#/hr)	16		10	10		16	10		12	12		10
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Parking (#/hr)			5		5					10		10
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases			8	4						2		2
Actuated Green, G (s)		19.4	19.4		19.4						21.6	21.6
Effective Green, g (s)		19.4	19.4		19.4						21.6	21.6
Actuated g/C Ratio		0.39	0.39		0.39						0.43	0.43
Clearance Time (s)		4.5	4.5		4.5						4.5	4.5
Vehicle Extension (s)		3.0	3.0		3.0						3.0	3.0
Lane Grp Cap (vph)		698	508		546						1451	536
v/s Ratio Prot		0.08										
v/s Ratio Perm			0.28		c0.31						0.22	0.06
v/c Ratio		0.20	0.72		0.81						0.52	0.13
Uniform Delay, d1		10.1	13.0		13.7						10.4	8.6
Progression Factor		1.00	1.00		0.75						1.00	1.00
Incremental Delay, d2		0.1	4.8		7.5						1.3	0.5
Delay (s)		10.3	17.7		17.8						11.7	9.1
Level of Service		B	B		B						B	A
Approach Delay (s)		15.9			17.8			0.0			11.2	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



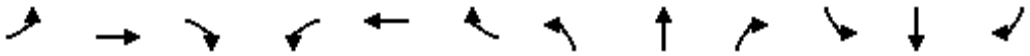
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	90	0	0	90	20	325	735	25	0	0	0
Future Volume (vph)	120	90	0	0	90	20	325	735	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.5			4.5			4.5				
Lane Util. Factor		1.00			1.00			0.95				
Frpb, ped/bikes		1.00			1.00			1.00				
Flpb, ped/bikes		1.00			1.00			0.99				
Frt		1.00			0.98			1.00				
Flt Protected		0.97			1.00			0.99				
Satd. Flow (prot)		1525			1750			3311				
Flt Permitted		0.76			1.00			0.99				
Satd. Flow (perm)		1191			1750			3311				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	126	95	0	0	95	21	342	774	26	0	0	0
RTOR Reduction (vph)	0	0	0	0	15	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	221	0	0	101	0	0	1139	0	0	0	0
Confl. Peds. (#/hr)	9		25	25		9	28		40	40		28
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Parking (#/hr)		5				5	10		10			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)		13.6			13.6			27.4				
Effective Green, g (s)		13.6			13.6			27.4				
Actuated g/C Ratio		0.27			0.27			0.55				
Clearance Time (s)		4.5			4.5			4.5				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		323			476			1814				
v/s Ratio Prot					0.06							
v/s Ratio Perm		c0.19						0.34				
v/c Ratio		0.68			0.21			0.63				
Uniform Delay, d1		16.3			14.1			7.8				
Progression Factor		0.94			1.00			0.47				
Incremental Delay, d2		5.7			0.2			1.1				
Delay (s)		21.0			14.3			4.8				
Level of Service		C			B			A				
Approach Delay (s)		21.0			14.3			4.8			0.0	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



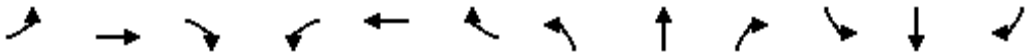
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	555	520	310	0	0	0	0	0	320	335
Future Volume (vph)	0	0	555	520	310	0	0	0	0	0	320	335
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)			5.0	5.0	5.0						5.5	5.5
Lane Util. Factor			1.00	1.00	1.00						1.00	1.00
Frpb, ped/bikes			0.99	1.00	1.00						1.00	0.98
Flpb, ped/bikes			1.00	1.00	1.00						1.00	1.00
Frt			0.86	1.00	1.00						1.00	0.85
Flt Protected			1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)			1521	1710	1800						1800	1492
Flt Permitted			1.00	0.95	1.00						1.00	1.00
Satd. Flow (perm)			1521	1710	1800						1800	1492
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	584	547	326	0	0	0	0	0	337	353
RTOR Reduction (vph)	0	0	89	168	0	0	0	0	0	0	0	268
Lane Group Flow (vph)	0	0	495	379	326	0	0	0	0	0	337	85
Confl. Peds. (#/hr)			3	3								
Confl. Bikes (#/hr)						4						3
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type			Perm	Prot	NA						NA	Perm
Protected Phases				1	6						4	
Permitted Phases			1 2									4
Actuated Green, G (s)			50.3	27.8	50.3						19.2	19.2
Effective Green, g (s)			46.3	27.8	50.3						19.2	19.2
Actuated g/C Ratio			0.58	0.35	0.63						0.24	0.24
Clearance Time (s)				5.0	5.0						5.5	5.5
Vehicle Extension (s)				3.0	3.0						3.0	3.0
Lane Grp Cap (vph)			880	594	1131						432	358
v/s Ratio Prot				c0.22	0.18						c0.19	
v/s Ratio Perm			c0.33									0.06
v/c Ratio			0.56	0.64	0.29						0.78	0.24
Uniform Delay, d1			10.5	21.9	6.7						28.4	24.5
Progression Factor			1.00	0.55	0.68						1.00	1.00
Incremental Delay, d2			0.8	2.0	0.6						8.8	0.3
Delay (s)			11.4	14.1	5.2						37.3	24.8
Level of Service			B	B	A						D	C
Approach Delay (s)		11.4			10.8			0.0			30.9	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	110.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	575	185	255	490	275	0	0	0
Future Volume (vph)	0	0	0	0	575	185	255	490	275	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)					5.0			5.0	5.0			
Lane Util. Factor					0.95			0.95	1.00			
Frpb, ped/bikes					1.00			1.00	0.98			
Flpb, ped/bikes					1.00			1.00	1.00			
Frt					0.96			1.00	0.85			
Flt Protected					1.00			0.98	1.00			
Satd. Flow (prot)					3262			3329	1483			
Flt Permitted					1.00			0.98	1.00			
Satd. Flow (perm)					3262			3329	1483			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	605	195	268	516	289	0	0	0
RTOR Reduction (vph)	0	0	0	0	32	0	0	96	200	0	0	0
Lane Group Flow (vph)	0	0	0	0	768	0	0	688	89	0	0	0
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type					NA		Perm	NA	Perm			
Protected Phases					6			8				
Permitted Phases							8		8			
Actuated Green, G (s)					45.4			24.6	24.6			
Effective Green, g (s)					45.4			24.6	24.6			
Actuated g/C Ratio					0.57			0.31	0.31			
Clearance Time (s)					5.0			5.0	5.0			
Vehicle Extension (s)					3.0			3.0	3.0			
Lane Grp Cap (vph)					1851			1023	456			
v/s Ratio Prot					c0.24							
v/s Ratio Perm								0.21	0.06			
v/c Ratio					0.41			0.67	0.19			
Uniform Delay, d1					9.8			24.2	20.4			
Progression Factor					1.00			1.00	1.00			
Incremental Delay, d2					0.7			1.8	0.2			
Delay (s)					10.5			25.9	20.6			
Level of Service					B			C	C			
Approach Delay (s)		0.0			10.5			24.5			0.0	
Approach LOS		A			B			C			A	

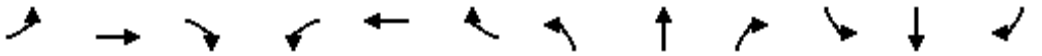
Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	110.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	170	10	15	550	40	10	125	100	45	30	190
Future Volume (vph)	90	170	10	15	550	40	10	125	100	45	30	190
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1676	1749		1693	1762		1710	1680		1693	1552	
Flt Permitted	0.20	1.00		0.64	1.00		0.53	1.00		0.38	1.00	
Satd. Flow (perm)	352	1749		1137	1762		951	1680		672	1552	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	95	179	11	16	579	42	11	132	105	47	32	200
RTOR Reduction (vph)	0	2	0	0	3	0	0	25	0	0	154	0
Lane Group Flow (vph)	95	188	0	16	618	0	11	212	0	47	78	0
Confl. Peds. (#/hr)	1					1						
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	40.7	36.2		33.1	32.4		15.4	14.7		18.5	16.1	
Effective Green, g (s)	40.7	36.2		33.1	32.4		15.4	14.7		18.5	16.1	
Actuated g/C Ratio	0.58	0.51		0.47	0.46		0.22	0.21		0.26	0.23	
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.0	4.3	
Vehicle Extension (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	287	898		539	809		215	350		211	354	
v/s Ratio Prot	c0.02	0.11		0.00	c0.35		0.00	c0.13		c0.01	0.05	
v/s Ratio Perm	0.17			0.01			0.01			0.05		
v/c Ratio	0.33	0.21		0.03	0.76		0.05	0.60		0.22	0.22	
Uniform Delay, d1	9.7	9.3		10.0	15.9		21.7	25.3		20.0	22.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.0		0.0	3.9		0.0	2.0		0.2	0.1	
Delay (s)	10.0	9.4		10.0	19.8		21.7	27.3		20.2	22.2	
Level of Service	A	A		B	B		C	C		C	C	
Approach Delay (s)		9.6			19.5			27.0			21.9	
Approach LOS		A			B			C			C	

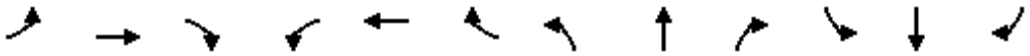
Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	16.8
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	210	155	85	195	0	0	0	0	100	825	315
Future Volume (vph)	0	210	155	85	195	0	0	0	0	100	825	315
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.3	4.3		4.3						4.3	4.3
Lane Util. Factor		1.00	1.00		1.00						0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00
Frt		1.00	0.85		1.00						1.00	0.85
Flt Protected		1.00	1.00		0.99						0.99	1.00
Satd. Flow (prot)		1782	1325		1552						3368	1288
Flt Permitted		1.00	1.00		0.83						0.99	1.00
Satd. Flow (perm)		1782	1325		1314						3368	1288
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	221	163	89	205	0	0	0	0	105	868	332
RTOR Reduction (vph)	0	0	53	0	0	0	0	0	0	0	0	158
Lane Group Flow (vph)	0	221	110	0	294	0	0	0	0	0	973	174
Confl. Peds. (#/hr)	3					3						
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	0%	0%	0%	1%	1%	1%
Parking (#/hr)			5		5					10		10
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases			8	4						2		2
Actuated Green, G (s)		15.2	15.2		15.2						26.2	26.2
Effective Green, g (s)		15.2	15.2		15.2						26.2	26.2
Actuated g/C Ratio		0.30	0.30		0.30						0.52	0.52
Clearance Time (s)		4.3	4.3		4.3						4.3	4.3
Vehicle Extension (s)		2.5	2.5		2.5						2.5	2.5
Lane Grp Cap (vph)		541	402		399						1764	674
v/s Ratio Prot		0.12										
v/s Ratio Perm			0.08		c0.22						0.29	0.14
v/c Ratio		0.41	0.27		0.74						0.55	0.26
Uniform Delay, d1		13.8	13.2		15.6						8.0	6.6
Progression Factor		1.00	1.00		0.40						0.68	0.55
Incremental Delay, d2		0.4	0.3		5.2						1.1	0.8
Delay (s)		14.2	13.5		11.5						6.5	4.4
Level of Service		B	B		B						A	A
Approach Delay (s)		13.9			11.5			0.0			6.0	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.62			
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.6	
Intersection Capacity Utilization	65.3%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				



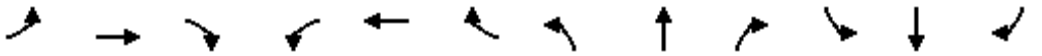
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	5	0	0	20	0	245	805	10	0	0	0
Future Volume (vph)	305	5	0	0	20	0	245	805	10	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.5			4.5			4.5				
Lane Util. Factor		1.00			1.00			0.95				
Frpb, ped/bikes		1.00			1.00			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			1.00			1.00				
Flt Protected		0.95			1.00			0.99				
Satd. Flow (prot)		1498			1800			3362				
Flt Permitted		0.71			1.00			0.99				
Satd. Flow (perm)		1122			1800			3362				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	321	5	0	0	21	0	258	847	11	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	326	0	0	21	0	0	1115	0	0	0	0
Confl. Peds. (#/hr)	3					3	13		4	4		13
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Parking (#/hr)		5				5	10		10			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)		17.7			17.7			23.3				
Effective Green, g (s)		17.7			17.7			23.3				
Actuated g/C Ratio		0.35			0.35			0.47				
Clearance Time (s)		4.5			4.5			4.5				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		397			637			1566				
v/s Ratio Prot					0.01							
v/s Ratio Perm		c0.29						0.33				
v/c Ratio		0.82			0.03			0.71				
Uniform Delay, d1		14.7			10.6			10.7				
Progression Factor		0.94			1.00			1.00				
Incremental Delay, d2		12.1			0.0			2.8				
Delay (s)		25.9			10.6			13.4				
Level of Service		C			B			B				
Approach Delay (s)		25.9			10.6			13.4			0.0	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection has too many lanes per leg.

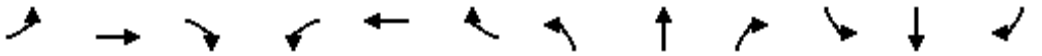
HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	25	105	5	25	25	50	30	5	25	30	10
Future Volume (vph)	235	25	105	5	25	25	50	30	5	25	30	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1710	1765	1530	1676	1632		1710	1759		1676	1800	1530
Flt Permitted	0.49	1.00	1.00	0.74	1.00		0.62	1.00		0.73	1.00	1.00
Satd. Flow (perm)	887	1765	1530	1306	1632		1120	1759		1293	1800	1530
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	247	26	111	5	26	26	53	32	5	26	32	11
RTOR Reduction (vph)	0	0	66	0	20	0	0	4	0	0	0	10
Lane Group Flow (vph)	247	26	45	5	32	0	53	33	0	26	32	1
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	0%	0%	2%	2%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8			4		4
Actuated Green, G (s)	24.7	19.1	19.1	11.3	10.7		8.8	7.1		6.6	6.0	6.0
Effective Green, g (s)	24.7	19.1	19.1	11.3	10.7		8.8	7.1		6.6	6.0	6.0
Actuated g/C Ratio	0.52	0.40	0.40	0.24	0.23		0.19	0.15		0.14	0.13	0.13
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	2.0	1.0	1.0	3.0	3.0		1.0	1.0		3.0	1.0	1.0
Lane Grp Cap (vph)	618	711	616	316	368		229	263		184	227	193
v/s Ratio Prot	c0.08	0.01		0.00	0.02		c0.01	0.02		0.00	0.02	
v/s Ratio Perm	c0.13		0.03	0.00			c0.03			0.02		0.00
v/c Ratio	0.40	0.04	0.07	0.02	0.09		0.23	0.12		0.14	0.14	0.01
Uniform Delay, d1	6.7	8.6	8.7	13.8	14.5		16.2	17.5		17.8	18.4	18.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.0	0.0	0.1		0.2	0.1		0.4	0.1	0.0
Delay (s)	6.8	8.6	8.7	13.8	14.6		16.4	17.5		18.2	18.5	18.1
Level of Service	A	A	A	B	B		B	B		B	B	B
Approach Delay (s)		7.5			14.5			16.9			18.3	
Approach LOS		A			B			B			B	

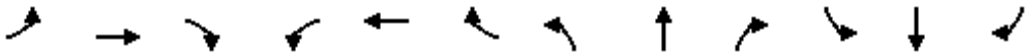
Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	47.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	20	65	200	70	0	0	0	0	275	795	25
Future Volume (Veh/h)	0	20	65	200	70	0	0	0	0	275	795	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	21	68	211	74	0	0	0	0	289	837	26
Pedestrians					8			5				
Lane Width (ft)					12.0			0.0				
Walking Speed (ft/s)					4.0			4.0				
Percent Blockage					1			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1452	1423	424	1088	1423	8	837			8		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1452	1423	424	1088	1423	8	837			8		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	81	88	0	34	100	100			82		
cM capacity (veh/h)	38	112	585	112	112	1071	806			1615		

Direction, Lane #	EB 1	WB 1	SB 1	SB 2	SB 3	SB 4
Volume Total	89	285	289	418	418	26
Volume Left	0	211	289	0	0	0
Volume Right	68	0	0	0	0	26
cSH	293	112	1615	1700	1700	1700
Volume to Capacity	0.30	2.55	0.18	0.25	0.25	0.02
Queue Length 95th (ft)	31	644	16	0	0	0
Control Delay (s)	22.6	782.4	7.7	0.0	0.0	0.0
Lane LOS	C	F	A			
Approach Delay (s)	22.6	782.4	1.9			
Approach LOS	C	F				

Intersection Summary				
Average Delay	148.9			
Intersection Capacity Utilization	52.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	225	0	0	100	125	160	880	100	0	0	0
Future Volume (vph)	70	225	0	0	100	125	160	880	100	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		5.0			5.0			5.0				
Lane Util. Factor		1.00			1.00			0.95				
Frpb, ped/bikes		1.00			1.00			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.92			0.99				
Flt Protected		0.99			1.00			0.99				
Satd. Flow (prot)		1779			1665			3344				
Flt Permitted		0.86			1.00			0.99				
Satd. Flow (perm)		1540			1665			3344				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	237	0	0	105	132	168	926	105	0	0	0
RTOR Reduction (vph)	0	0	0	0	40	0	0	15	0	0	0	0
Lane Group Flow (vph)	0	311	0	0	197	0	0	1184	0	0	0	0
Confl. Peds. (#/hr)			6	6			1		2	2		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		12.6			12.6			18.9				
Effective Green, g (s)		12.6			12.6			18.9				
Actuated g/C Ratio		0.30			0.30			0.46				
Clearance Time (s)		5.0			5.0			5.0				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		467			505			1522				
v/s Ratio Prot					0.12							
v/s Ratio Perm		c0.20						0.35				
v/c Ratio		0.67			0.39			0.78				
Uniform Delay, d1		12.6			11.4			9.5				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		3.6			0.5			2.6				
Delay (s)		16.2			11.9			12.1				
Level of Service		B			B			B				
Approach Delay (s)		16.2			11.9			12.1			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	41.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group