Millennium Bulk Terminals—Longview NEPA Environmental Impact Statement

NEPA Vehicle Transportation Technical Report

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Acronyms and Abbreviations

AADT	annual average daily traffic
ADT	average daily traffic
AMR	American Medical Response
Applicant	Millennium Bulk Terminals—Longview, LLC
BNSF	BNSF Railway Company
CFR	Code of Federal Regulations
Corps	U.S. Army Corps of Engineers
County	Cowlitz County
EMS	emergency medical services
EMT	emergency medical technician
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
LOS	level of service
LVSW	Longview Switching Company
mph	miles per hour
NEPA	National Environmental Policy Act
NORPAC	North Pacific Paper Corporation
RCW	Revised Code of Washington
Reynolds facility	Reynolds Metal Company facility
SEPA	Washington State Environmental Policy Act
SR	State Route
UP	Union Pacific Railroad
USC	United States Code
USDOT	U.S. Department of Transportation
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation
WUTC	Washington Utilities and Transportation Commission

Chapter 1
Introduction

This technical report assesses the potential vehicle transportation impacts of the proposed Millennium Bulk Terminals—Longview project (On-Site Alternative), Off-Site Alternative, and No-Action Alternative. This report describes the regulatory setting, establishes the method for assessing potential vehicle transportation impacts, presents the historical and current vehicle transportation conditions in the study area, and assesses potential impacts.

1.1 Project Description

Millennium Bulk Terminals—Longview, LLC (Applicant) proposes to construct and operate an export terminal in Cowlitz County, Washington, along the Columbia River (Figure 1). The export terminal would receive coal from the Powder River Basin in Montana and Wyoming and the Uinta Basin in Utah and Colorado via rail shipment, then load and transport the coal by ocean-going ships via the Columbia River and Pacific Ocean to overseas markets in Asia. The export terminal would be capable of receiving, stockpiling, blending, and loading coal by conveyor onto ships for export. Construction of the export terminal would begin in 2018. For the purpose of this analysis, it is assumed the export terminal would operate at full capacity by 2028. The following subsections present a summary of the On-Site Alternative, Off-Site Alternative, and No-Action Alternative.

1.1.1 On-Site Alternative

Under the On-Site Alternative, the Applicant would develop an export terminal on 190 acres (project area). The project area is located within an existing 540-acre area currently leased by the Applicant at the former Reynolds Metals Company facility (Reynolds facility), and land currently owned by Bonneville Power Administration. The project area is adjacent to the Columbia River in unincorporated Cowlitz County, Washington near Longview city limits (Figure 2).

The Applicant currently and separately operates at the Reynolds facility, and would continue to separately operate a bulk product terminal on land leased by the Applicant. Industrial Way (State Route 432) provides vehicular access to the Applicant's leased land. The Reynolds Lead and the BNSF Spur rail lines, both operated by Longview Switching Company (LVSW),[1] provide rail access to the Applicant's leased area from the BNSF Railway Company (BNSF) main line (Longview Junction) located to the east in Kelso, Washington. Ships access the Applicant's leased area including the bulk product terminal via the Columbia River and berth at an existing dock (Dock 1) operated by the Applicant in the Columbia River.

[1] LVSW is jointly owned by BNSF Railway Company (BNSF) and Union Pacific Railroad (UP).

Figure 1. Project Vicinity

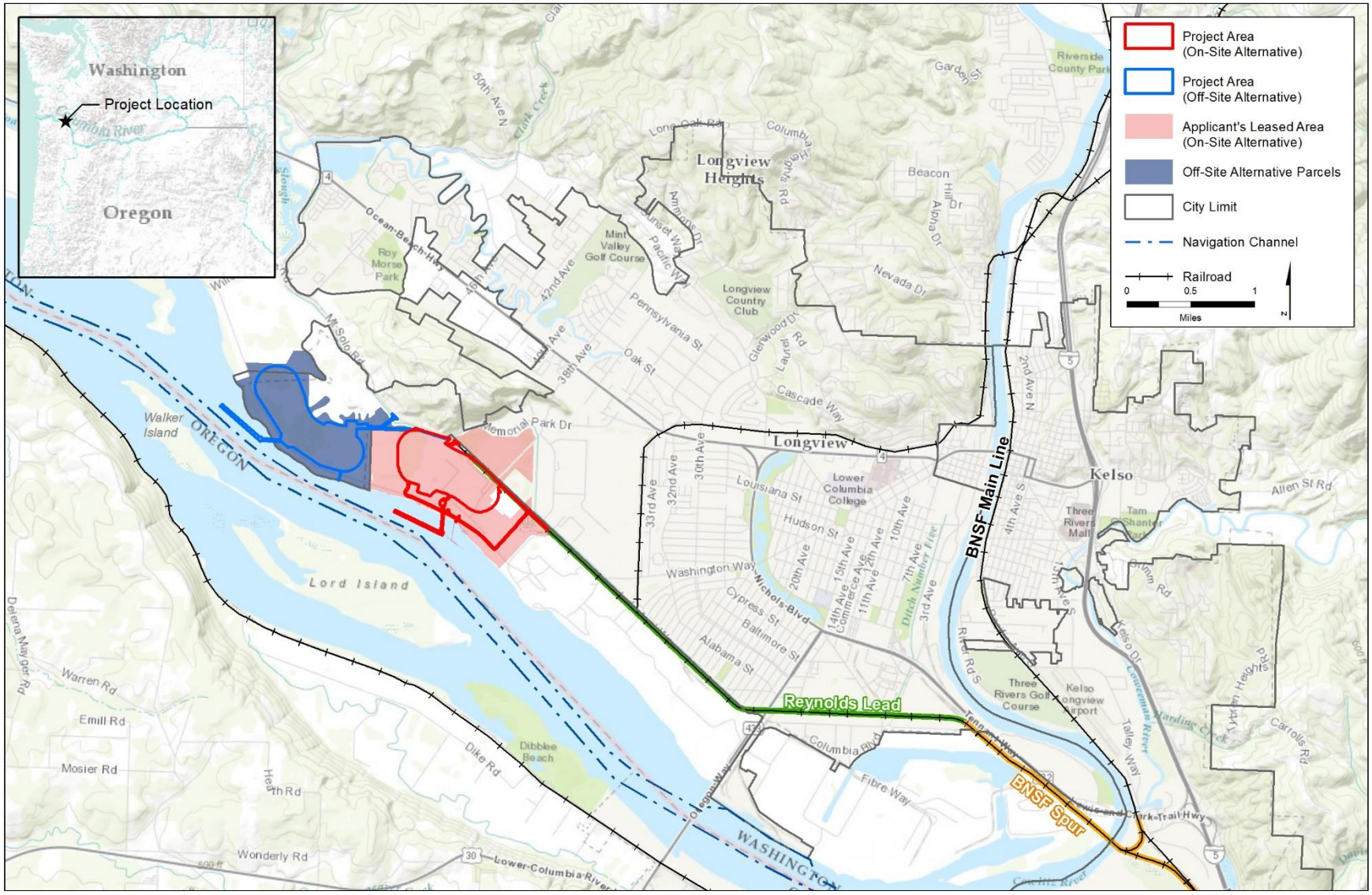
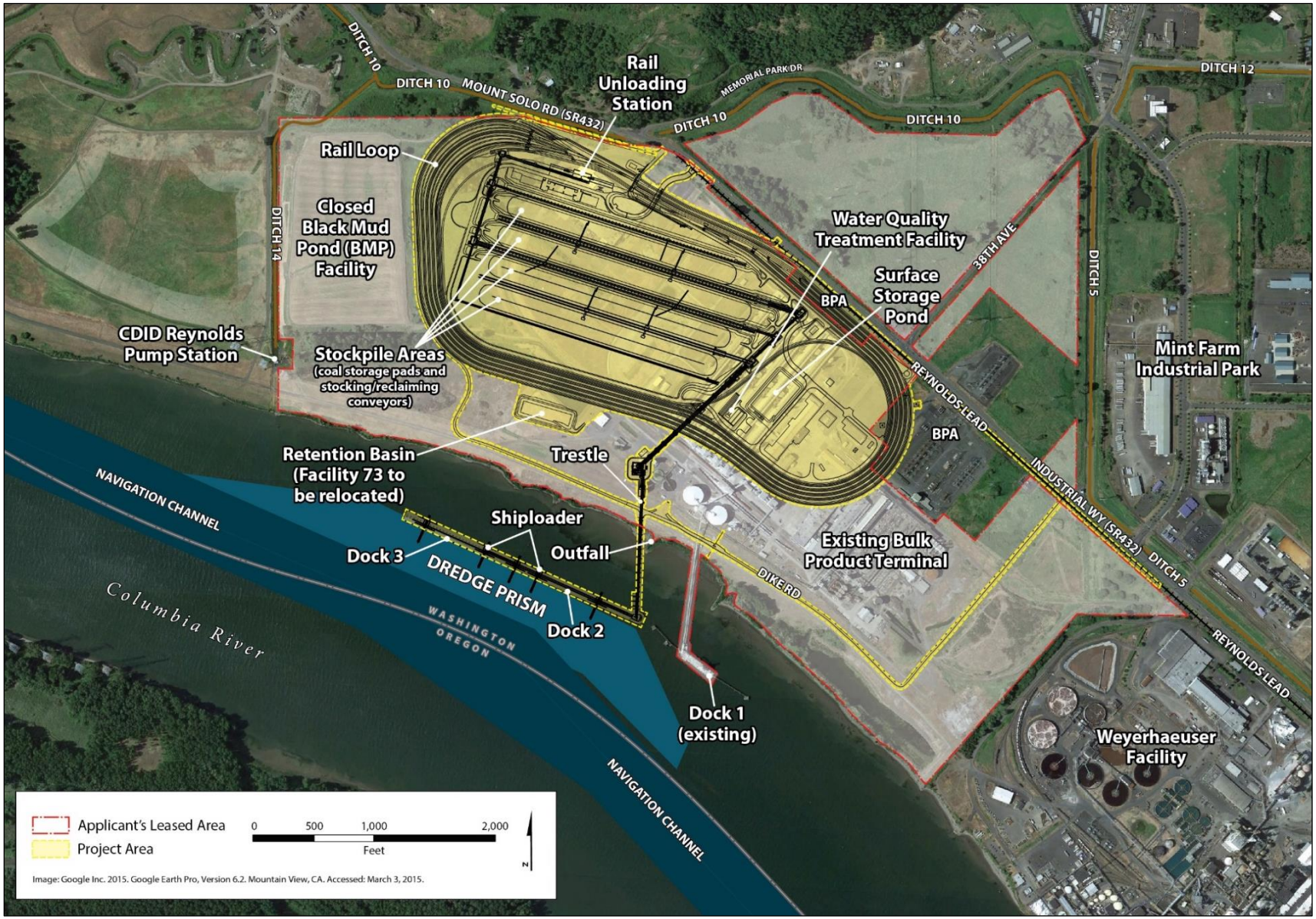


Figure 2. On-Site Alternative



Under the On-Site Alternative, BNSF or Union Pacific Railroad (UP) trains would transport coal in rail cars from the BNSF main line at Longview Junction to the project area via the BNSF Spur and Reynolds Lead. Coal would be unloaded from rail cars, stockpiled and blended, and loaded by conveyor onto ocean-going ships at two new docks (Docks 2 and 3) on the Columbia River for export to Asia.

Once construction is complete, the export terminal would have an annual throughput capacity of up to 44 million metric tons of coal.[2] The export terminal would consist of one operating rail track, eight rail tracks for the storage of rail cars, rail car unloading facilities, stockpile areas for coal storage, conveyor and reclaiming facilities, two new docks in the Columbia River (Docks 2 and 3), and ship-loading facilities on the two docks. Dredging of the Columbia River would be required to provide access to and from the Columbia River navigation channel and for berthing at the two new docks.

Vehicles would access the project area from Industrial Way (State Route 432). Ships would access the project area via the Columbia River and berth at one of the two new docks. Trains would access the export terminal via the BNSF Spur and the Reynolds Lead. Terminal operations would occur 24 hours per day, 7 days per week. The export terminal would be designed for a minimum 30-year period of operation.

1.1.2 Off-Site Alternative

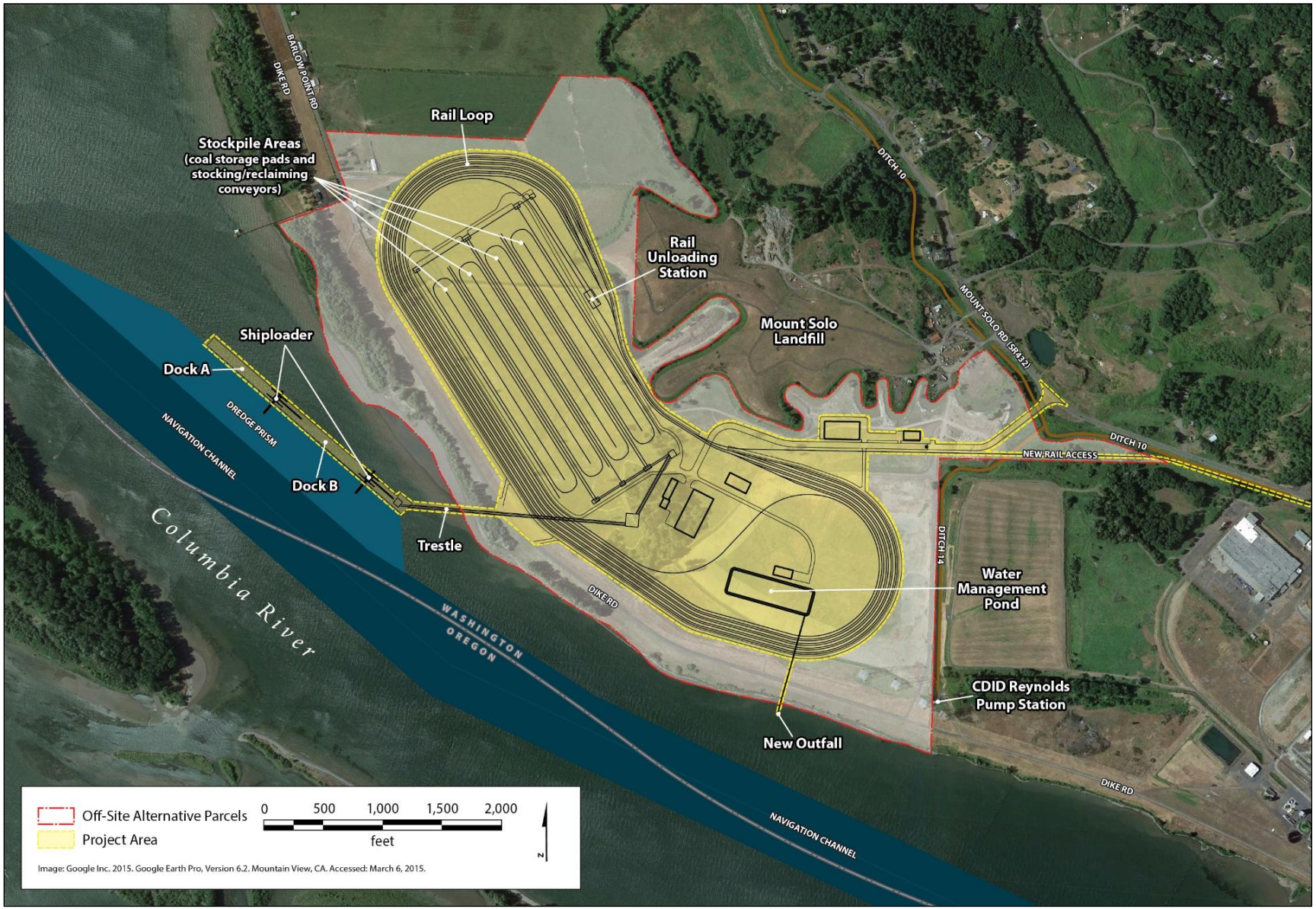
Under the Off-Site Alternative, the export terminal would be developed on an approximately 220-acre site adjacent to the Columbia River, located in both Longview, Washington, and unincorporated Cowlitz County, Washington, in an area commonly referred to as Barlow Point (Figure 3). The project area for the Off-Site Alternative is west and downstream of the project area for the On-Site Alternative. Most of the project area for the Off-Site Alternative is located within Longview city limits and owned by the Port of Longview. The remainder of the project area is within unincorporated Cowlitz County and privately owned.

Under the Off-Site Alternative, BNSF or UP trains would transport coal from the BNSF main line at Longview Junction over the BNSF Spur and the Reynolds Lead, which would be extended approximately 2,500 feet to the west. Coal would be unloaded from rail cars, stockpiled and blended, and loaded by conveyor onto ocean-going ships at two new docks (Docks A and B) on the Columbia River. The Off-Site Alternative would serve the same purpose as the On-Site Alternative.

Once construction is complete, the Off-Site Alternative would have an annual throughput capacity of up to 44 million metric tons of coal. The export terminal would consist of the same elements as the On-Site Alternative: one operating rail track, eight rail tracks for the storage of rail cars, rail car unloading facilities, stockpile areas for coal storage, conveyor and reclaiming facilities, two new docks in the Columbia River (Docks A and B), and ship-loading facilities on the two docks. Dredging of the Columbia River would be required to provide access to and from the Columbia River navigation channel and for berthing at the two new docks.

[2] A metric ton is the U.S. equivalent to a tonne per the International System of Units, or 1,000 kilograms or approximately 2,204.6 pounds.

Figure 3. Off-Site Alternative



Vehicles would access the project area via a new access road extending from Mount Solo Road (State Route 432) to the project area. Trains would access the terminal via the BNSF Spur and the extended Reynolds Lead. Ships would access the project area via the Columbia River and berth at one of the two new docks. Terminal operations would occur 24 hours per day, 7 days per week. The export terminal would be designed for a minimum 30-year period of operation.

1.1.3 No-Action Alternative

Under the No-Action Alternative, the U.S. Army Corps of Engineers would not issue the requested Department of the Army permit under the Clean Water Act Section 404 and the Rivers and Harbors Act Section 10. This permit is necessary to allow the Applicant to construct and operate the proposed export terminal.

The Applicant plans to continue operating its existing bulk product terminal located adjacent to the On-Site Alternative project area, as well as expand this business whether or not a Department of the Army permit is issued. Ongoing operations would include storing and transporting alumina and small quantities of coal, and continued use of Dock 1. Maintenance of the existing bulk product terminal would continue, including maintenance dredging at the existing dock every 2 to 3 years. Under the terms of an existing lease, expanded operations could include increased storage and upland transfer of bulk products utilizing new and existing buildings. The Applicant would likely undertake demolition, construction, and other related activities to develop expanded bulk product terminal facilities.

In addition to the current and planned activities, if the requested permit is not issued, the Applicant would intend to expand its bulk product terminal business onto areas that would have been subject to construction and operation of the proposed export terminal. In 2014, the Applicant described a future expansion scenario under No-Action Alternative that would involve handling bulk materials already permitted for off-loading at Dock 1. Additional bulk product transfer activities could involve products such as a calcine pet coke, coal tar pitch, cement, fly ash, and sand or gravel. While future expansion of the Applicant's bulk product terminal business might not be limited to this scenario, it was analyzed to help provide context to a No-Action Alternative evaluation and because it is a reasonably foreseeable consequence of a Department of the Army denial.

1.2 Regulatory Setting

Different jurisdictions are responsible for the regulation of highway/rail grade crossings. These jurisdictions and their regulations, statutes, and guidance that apply to grade crossings are summarized in Table 1.

Table 1. Regulations, Statutes, and Guidelines for Highway/Rail Grade Crossings

Regulation, Statute, Guideline	Description
Federal	
National Environmental Policy Act (42 USC 4321 *et seq*.)	Requires the consideration of potential environmental effects. NEPA implementation procedures are set forth in the President's Council on Environmental Quality's Regulations for Implementing NEPA (49 CFR 1105).
U.S. Army Corps of Engineers NEPA Environmental Regulations (33 CFR 230)	Provides guidance for implementing the procedural provisions of NEPA for the Corps. It supplements CEQ regulations 40 CFR 1500–1508.
Federal Railroad Safety Act of 1970	Gives FRA rulemaking authority over all areas of rail line safety. FRA has designated that state and local law enforcement agencies have jurisdiction over most aspects of highway/rail grade crossings, including warning devices and traffic law enforcement.
Highway Safety Act and the Federal Railroad Safety Act	Gives FHWA and FRA regulatory jurisdiction over safety at federal highway/rail grade crossings. USDOT has promulgated rules addressing grade-crossing safety and provides funding for installation and improvement of warning devices. All traffic control devices installed at railroad facilities involving federal aid projects must comply with 23 CFR 655F. On certain projects where federal funds are used for the installation of warning devices, those devices must include automatic gates and flashing light signals. FRA has issued rules that impose minimum maintenance, inspection, and testing standards for at-grade crossing warning devices for highway/rail grade crossings on federal highways and state and local roads (49 CFR 234–236).
Railroad-Highway Grade Crossing Handbook (Federal Highway Administration 2007); *Manual on Uniform Traffic Control Devices* (23 USC 109(d))	Guidance document on grade-crossing safety issues, including the selection and placement of warning devices and enforcement of traffic laws. Provides guidelines for traffic control devices that consider delay, roadway classification, average daily traffic, number of trains per day, and train speed at grade crossings.
State	
Washington State Environmental Policy Act (WAC 197-11, RCW 43.21C)	Requires state and local agencies in Washington to identify potential environmental impacts that could result from governmental decisions.
Washington State Department of Transportation, Design Manual M 22.01.10, November 2015, Chapter 1350, Railroad Grade Crossings	Sets forth requirements and guidance on the design and treatment of state highway-rail grade crossings.
Motor Vehicles, Rules of the Road (RCW 46.61.340)	Sets forth that train traffic has the right-of-way at grade crossings.
Washington Utilities and Transportation Commission	Inspects and issues violations for hazardous materials shipments; track, signal, and train control; and rail operations. WUTC also regulates the construction, closure, or modification of public railroad crossings. In addition, WUTC inspects and issues defect notices if a crossing does not meet minimum standards. However, WUTC has no jurisdiction over public crossings in first-class cities.[a]

Regulation, Statute, Guideline	Description
Local	
Cowlitz County SEPA Regulations (CCC Code 19.11)	Provide for the implementation of SEPA in Cowlitz County.
Railroad Trains Not to Block Streets (LMC 11.40.080)	Prohibits trains from using any street or highway for a period longer than 5 minutes, except trains or cars in motion other than those engaged in switching activities.

Notes:

[a] Per RCW 35.01.01, a first-class city is a city with a population of 10,000 or more at the time of organization or reorganization that has adopted a charter.

USC = United States Code; NEPA = National Environmental Policy Act; CFR = Code of Federal Regulations; Corps = U.S. Army Corps of Engineers; FRA = Federal Railroad Administration; FHWA = Federal Highway Administration; USDOT = U.S. Department of Transportation; WAC = Washington Administrative Code; RCW = Revised Code of Washington; WUTC = Washington Utilities and Transportation Commission; CCC = Cowlitz County Code; SEPA = Washington State Environmental Policy Act; LMC = Longview Municipal Code

1.3 Study Area

The study areas are the same for both the On-Site Alternative and Off-Site Alternative. The study area for direct impacts is the project area. The study area for indirect impacts is defined as the project areas and the arterials and secondary roads in the vicinity of the Longview industrial area along the Columbia River between the project area and Interstate 5. This includes the following active public and private at-grade crossings of the Reynolds Lead and BNSF Spur.

- Project area access at 38th Avenue, south of Industrial Way (State Route [SR] 432)
- Weyerhaeuser access at Washington Way, south of Industrial Way
- Weyerhaeuser North Pacific Paper Corporation (NORPAC) access, south of Industrial Way
- Industrial Way, west of Oregon Way (SR 433)
- Oregon Way, north of the Industrial Way/Oregon Way intersection
- California Way, north of Industrial Way
- 3rd Avenue (SR 432), north of the 3rd Avenue/Industrial Way intersection
- Dike Road, south of Tennant Way

Chapter 2
Affected Environment

This chapter describes the methods for assessing the affected environment and determining impacts, and the affected environment in the study area, as they pertain to vehicle transportation.

2.1 Methods

This section describes the sources of information and methods used to characterize the affected environment and assess the potential impacts of the On-Site Alternative, Off-Site Alternative, and No-Action Alternative on vehicle transportation.

2.1.1 Data Sources

The following sources of information were used to evaluate the vehicle transportation characteristics of the study area.

- U.S. Department of Transportation (USDOT) Grade Crossing Inventory, Federal Railroad Administration (FRA)
- Data provided by the Washington Utilities and Transportation Commission (WUTC)
- *SR 432 Highway Improvements and Rail Realignment Study* (Cowlitz-Wahkiakum Council of Governments 2014)
- *Traffic and Transportation Resource Report* (URS Corporation 2014) provided by the Applicant
- Data and information provided by the Applicant

2.1.2 Impact Analysis

The following methods were used to evaluate the potential impacts of the On-Site Alternative, Off-Site Alternative, and No-Action Alternative on vehicle transportation. For the purposes of this analysis, construction impacts are based on the peak construction year and operations impacts are based on maximum throughput capacity (44 million metric tons of coal per year).

2.1.2.1 No-Action Alternative Analysis

Regardless of whether the export terminal is built, the Applicant has indicated operations of the existing bulk product terminal would continue. Commodity storage and shipment would increase as described in Section 1.1.3, *No-Action Alternative*. The Applicant could expand the existing bulk product terminal onto the 190-acre project area, developing storage and shipment facilities to increase existing coal and alumina operations under current permits.

By 2018, the planned bulk product terminal activities would increase the average length of trains up to 575 feet along the Reynolds Lead and the BNSF Spur. By 2028, potential bulk product terminal activities would add 1.71 daily train trips to the Reynolds Lead (each trip approximately 2,068 feet long).

2.1.2.2 Construction Impact Analysis

The Applicant has identified three construction scenarios.

- **Truck.** If material is delivered by truck, it is assumed that approximately 88,000 truck trips would be required over the construction period. Approximately 56,000 loaded trucks would be needed during the peak construction year.
- **Rail.** If material is delivered by rail, it is assumed that approximately 35,000 loaded rail cars would be required over the construction period. Approximately two-thirds of the rail trips would occur during the peak construction year.
- **Barge.** If material is delivered by barge, it is assumed that approximately 1,130 barge trips would be required over the construction period. Approximately two-thirds of the barge trips would occur during the peak construction year. Because the project area does not have an existing barge dock, the material would be off-loaded at an existing dock elsewhere on the Columbia River and transported to the project area by truck.

The analysis analyzed all three scenarios.[3] Potential impacts on vehicle transportation during construction could occur because of construction-worker vehicle traffic and additional trucks or trains bringing preload materials to the project area. This analysis of potential impacts assumes the following, based primarily on information provided by the Applicant.

- Approximately 1.4 million cubic yards of material would be imported to the project area during the first year of construction.[4] No exporting of material would occur during the first year of construction.
- Approximately 200 construction workers would be on site daily in 2018, with the work shift ending at 5:00 p.m., and approximately 90% of the construction workers traveling in a single-occupancy vehicle. This would result in 180 outbound trips during the PM peak hour (AECOM 2015).
- If construction materials are delivered by truck (truck or barge construction scenario), approximately 56,000 trucks, or a maximum of 330 per day, would be required to deliver the preload material to the site during the first year of construction, which is assumed to be 2018. This estimate is based on a combination of the amount of space likely available on site for unloading material and the anticipated number of trucks available in the area capable of hauling preload material. Given that 56,000 trucks would be required to deliver the preload material in 2018, it would take approximately 170 working days for delivery. This would result in 42 inbound and 42 outbound trucks per hour (assuming deliveries occur evenly over an 8-hour workday) (AECOM 2015).
- If construction material is delivered by rail (rail construction scenario), approximately 23,333 loaded rail cars would be required to deliver the preload material to the site in 2018. Assuming 100-car rail trains, this would result in approximately 233 inbound and 233 outbound trains or an average of 1.3 trains per day (each approximately 6,219 feet long), in 2018 (URS Corporation 2014).

[3] The barge scenario includes the same assumptions as the truck scenario because materials would be transferred from barge to truck and delivered to the project area.

[4] A total of 2.1 million cubic yards of rock is expected to be imported over the duration of the construction period. For the purposes of the vehicle transportation analysis, the first year of construction was used because two-thirds of the volume is expected to be transported during the first year and represents the peak year.

2.1.2.3 Operations Impact Analysis

It is assumed that the export terminal would be operating in 2028 at the planned capacity of 44 million metric tons per year of coal throughput. Full operations of the export terminal would add 16 new daily train trips (8 loaded and 8 empty), each an average of 6,844 feet (approximately 1.3 miles) long. Based primarily on estimates provided by the Applicant, approximately 135 employees would be needed to operate the export terminal. Operations would occur 24 hours per day, 7 days per week, and 50% of the employees would exit and 30% would enter the site during the PM peak hour. This would result in 41 inbound and 68 outbound trips during the PM peak hour (URS Corporation 2014).

Reynolds Lead and BNSF Spur

The types and number of trains from Longview Junction to the project area for existing year and 2028 were developed from meetings with LVSW and the Port of Longview.

As described in the NEPA Rail Transportation Technical Report (ICF International and Hellerworx 2016), LVSW plans to upgrade the Reynolds Lead and part of the BNSF Spur as a separate action should it be warranted by increased rail traffic resulting from existing and future customers. Upgrades to the track would include adding ballast, replacing ties, and upgrading rail. These improvements would provide for safer operations and increased speed over the BNSF Spur and Reynolds Lead. LVSW would also install signals and upgrade the traffic control system to Centralized Traffic Control and add an electric, remotely operated switch from the BNSF Spur to the Reynolds Lead. Construction of these improvements would take approximately 6 months. Because these improvements are not certain, the vehicle transportation impact analysis analyzes current track infrastructure and with these planned track improvements. However, without planned track improvements to increase capacity, neither of the BNSF Spur or Reynolds Lead would have the capacity to handle all project-related trains and the growth in baseline traffic. Project-related trains would add 16 trains per day on the Reynolds Lead and BNSF Spur for a total of approximately 23 trains on the BNSF Spur and 20 trains on the Reynolds Lead. Figure 4 illustrates the Reynolds Lead and BNSF Spur, and the study crossings along the Reynolds Lead and BNSF Spur.

The vehicle transportation analysis does not include the improvements identified in the *SR 432 Highway Improvements and Rail Realignment Study* completed in September 2014 (Cowlitz-Wahkiakum Council of Governments 2014). This study identified various design concepts to address safety, traffic congestion, system mobility and freight capacity issues where the rail and roadway systems overlap along the SR 432 industrial corridor. Various design concepts were developed and evaluated for rail and highway improvements to improve safety, mobility, congestion, and freight capacity. The top concept that emerged from this study was a grade-separated intersection at SR 432/SR 433. This project, called the Industrial Way/Oregon Way Intersection Project and led by Cowlitz County Public Works, is currently in the preliminary design and National Environmental Policy Act (NEPA) and Washington State Environmental Policy Act (SEPA) environmental compliance phase to address traffic congestion, freight mobility and safety issues at this intersection. The 2015 transportation package passed by the Washington State Senate includes $85 million to construct the preferred alternative identified after the conclusion of the NEPA and SEPA processes. This project was not included in the vehicle transportation analysis because a preferred alternative for the intersection has not been identified. The other concepts identified in the *Highway Improvements and Rail Realignment Study* were not included in the vehicle transportation analysis because funding for implementation has not been secured.

Figure 4a. Reynolds Lead and BNSF Spur Study Crossings

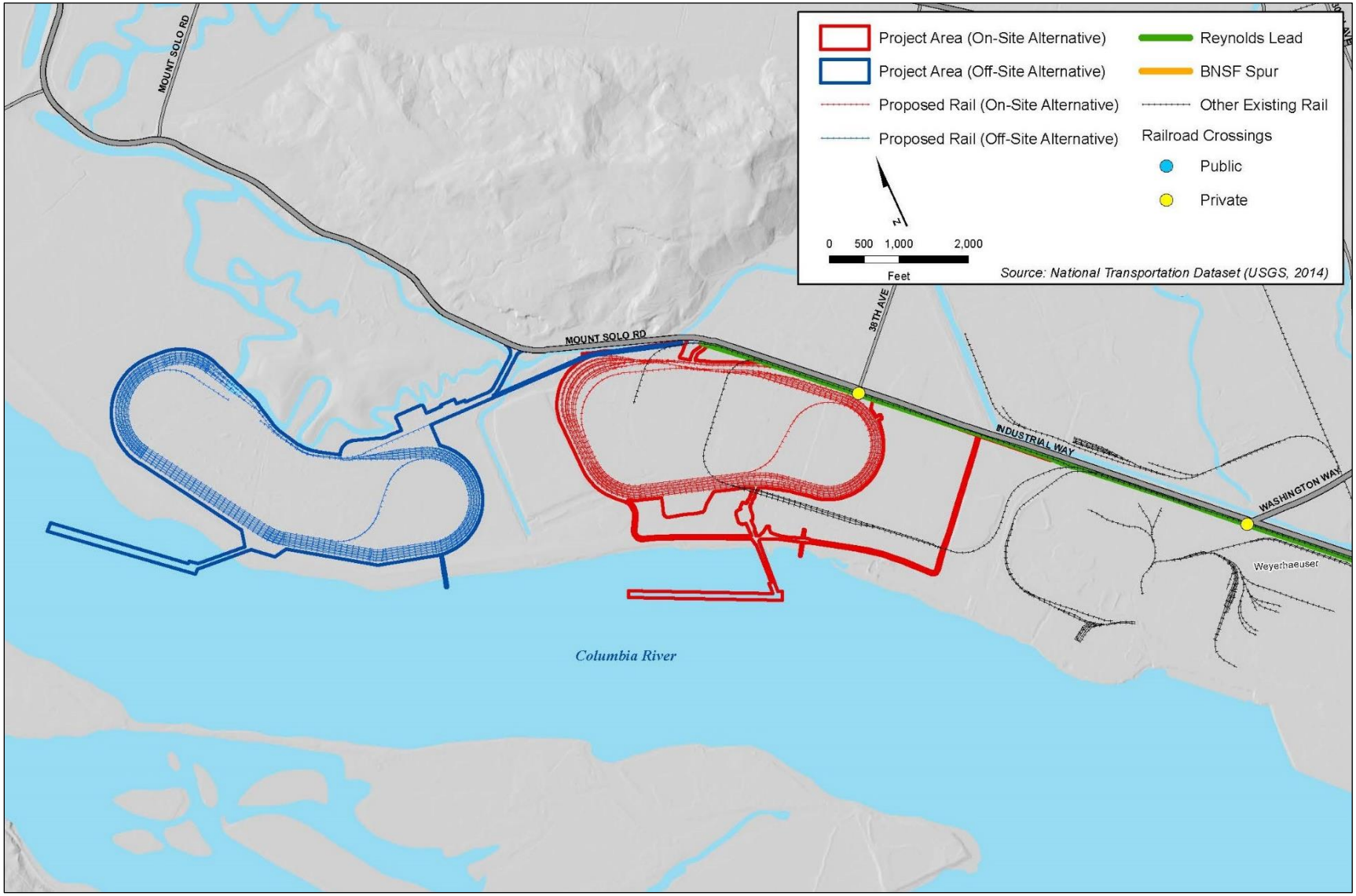


Figure 4b. Reynolds Lead and BNSF Spur Study Crossings

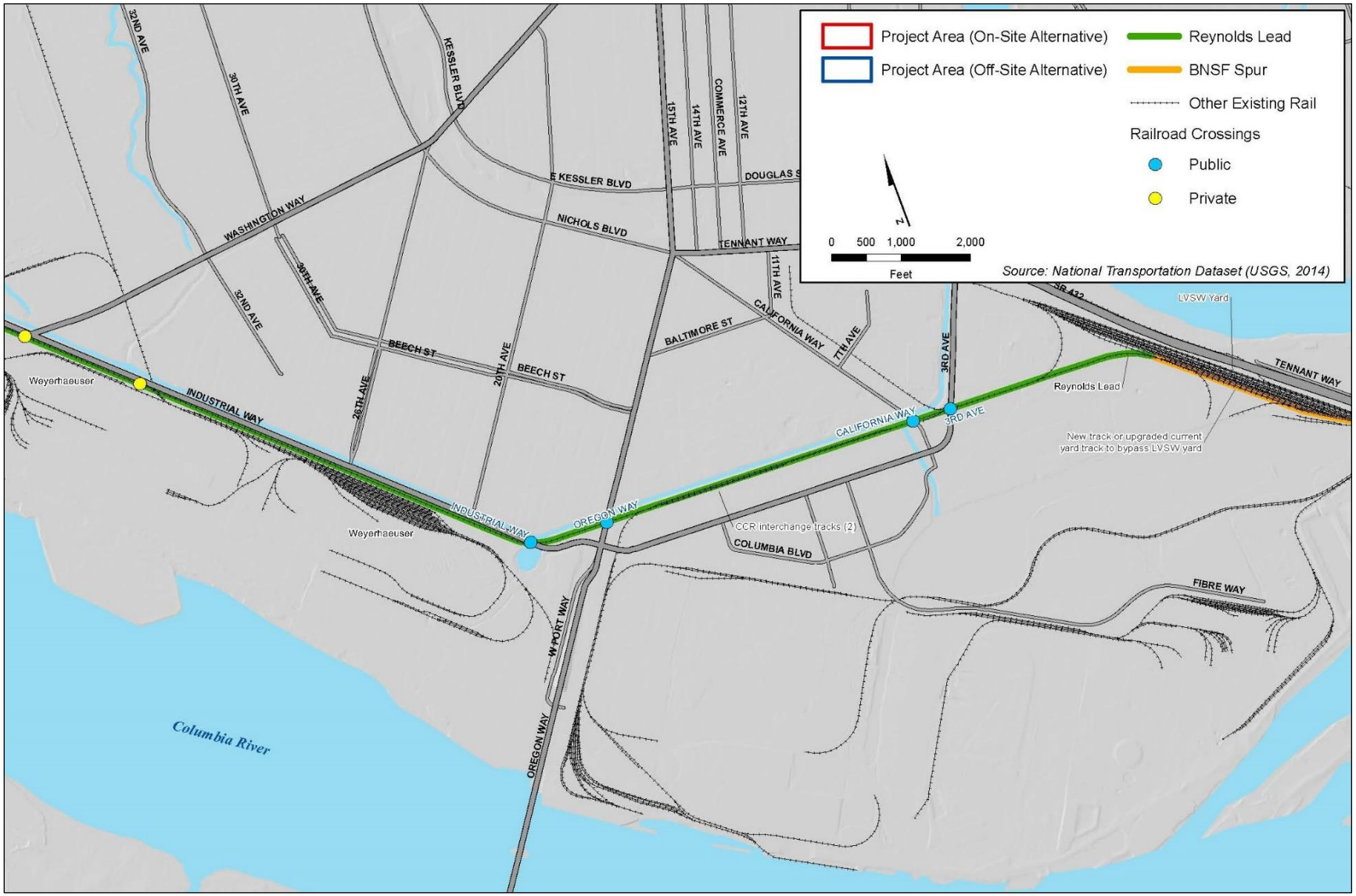
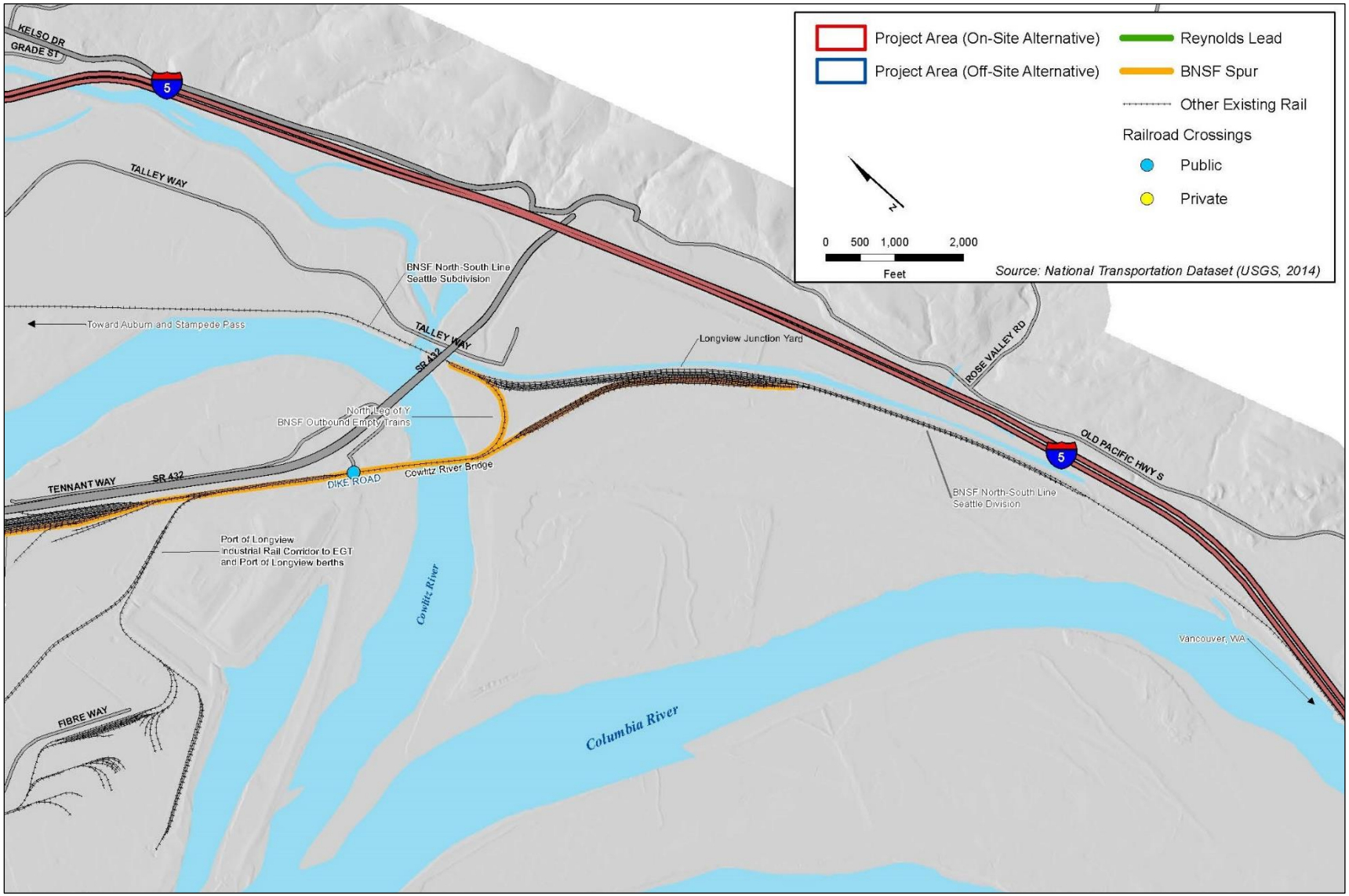


Figure 4c. Reynolds Lead and BNSF Spur Study Crossings



2.1.2.4 Years and Scenarios

The years selected for analysis are 2018 and 2028, which allows the identification of potential impacts at rail crossings associated with construction and operation of the proposed project, and helps determine if improvements would be necessary at study crossings. The following scenarios were analyzed.

- **2018 No-Action.** Assumes that the export terminal would not be constructed and that activities currently ongoing and planned for the existing bulk materials terminal within the Applicant's leased area would occur (summarized in Section 2.1.2.1, *No-Action Alternative Analysis*). It includes the motor vehicle and train volumes in Table 2.

  2018 Proposed Project (Construction). Represents conditions during the construction of the export terminal at either project area. It assumes the motor vehicle and train volumes from the 2018 No-Action scenario, but with the added traffic and rail growth related to construction of the On-Site Alternative discussed in Section 2.1.2.2, *Construction Impact Analysis*. It also assumes the planned project area activities included in the 2018 No-Action scenario. As discussed in Section 2.1.2.2, *Construction Impact Analysis*, this analysis includes two scenarios: construction materials would be delivered by truck, and construction materials would be delivered by rail. It also assumes the planned project area activities included in the 2018 No-Action scenario. As discussed in Section 2.1.2.2, *Construction Impact Analysis*, this analysis includes two scenarios: construction materials would be delivered by truck, and construction materials would be delivered by rail.

- **2028 No-Action.** Assumes that the export terminal would not be constructed, and includes the motor vehicle and train volumes from the 2018 No-Action scenario, but with 10 years of added vehicle traffic growth. It also assumes the planned bulk product terminal activities included in the 2018 No-Action scenario, and the potential future activities for the existing bulk product terminal discussed in Section 2.1.2.1, *No-Action Alternative Analysis*.

- **2028 Proposed Project.** Represents conditions during full operation of the proposed project. It includes the motor vehicle and train volumes from the 2028 No-Action scenario, but with the added traffic and train growth related to full operation of the export terminal discussed in Section 2.1.2.3, *Operations Impact Analysis.* It also assumes the planned and potential bulk product terminal activities included in the 2028 No-Action scenario. This analysis includes two scenarios: 1) current track infrastructure improvements along the Reynolds Lead, and 2) planned track infrastructure improvements along the Reynolds Lead that would increase the average train speed from 8 miles per hour (mph) to 10 mph at the Weyerhaeuser access crossing—opposite Washington Way, from 10 mph to 15 mph at the Weyerhaeuser NORPAC access crossing, from 10 mph to 20 mph at the Industrial Way and Oregon Way crossings, and from 8 mph to 15 mph at the California Way and 3rd Avenue crossings. No changes in train speed would be expected at the existing site access—opposite 38th Avenue, and at the Dike Road crossings.

2.1.2.5 Trip Distribution Analysis

The construction- and employee-related traffic was distributed onto the transportation network based on current traffic patterns in the immediate project area.

For the construction workers and full operation employees (Section 2.1.2.2, *Construction Impact Analysis,* and 2.1.2.3, *Operations Impact Analysis*), it is assumed that 60% of the traffic would arrive from the north using Washington Way (35%) and Oregon Way (25%), 15% from the south along Oregon Way, 20% from the east along 3rd Avenue, and 5% from the west along Industrial Way. For the construction materials delivered to the project area by truck (Section 2.1.2.2, *Construction Impact Analysis*) it is assumed that 75% of the trucks would arrive from the east using 3rd Avenue, and 25% from the south along Oregon Way.

2.1.2.6 Analysis of Baseline and Future Volumes at Railroad Crossings

Motor Vehicles

Table 2 includes the average daily traffic (ADT) and PM peak hour count data for all study crossings. Hourly traffic volumes over the course of 3 days were compared at select locations[5] to identify a peak hour. The analysis identified a peak hour between 4:00 and 5:00 p.m., with evening peak period traffic volumes more than 25% higher than those in the morning and afternoon. The data also indicated that the PM peak hour represents approximately 10% of the daily traffic volumes at these locations. This factor was used to covert count data from peak hour to ADT or vice versa.

For the at-grade crossing analysis, PM peak hour vehicle traffic count data was obtained from recent studies for seven of the eight study crossings (Cowlitz-Wahkiakum Council of Governments 2014; URS Corporation 2014; Washington State Department of Transportation 2014; DKS Associates 2013). Because recent traffic count data were unavailable for the Dike Road crossing, ADT volumes were obtained from the FRA or WUTC databases (as a conservative approach, the database with the higher volume was used for each study crossing), and converted to PM peak hour with the 10% factor.

Future traffic volumes for the analysis years included a combination of background traffic, as well as growth associated with the On-Site Alternative or Off-Site Alternative as discussed in Section 2.1.2.2, *Construction Impact Analysis,* and 2.1.2.3, *Operations Impact Analysis*. Background traffic was estimated by developing a linear growth rate between existing and forecast traffic volumes in the immediate area (Cowlitz-Wahkiakum Council of Governments 2014). These data suggest that traffic volumes are forecast to increase at a rate of 2% annually. For comparison purposes, a 2% annual growth rate was applied to expand older count data to reflect baseline traffic conditions in the *SR 432 Highway Improvements and Rail Realignment Study* (Cowlitz-Wahkiakum Council of Governments 2014). Therefore, the 2% annual growth rate was applied to the collected count data to develop 2018 No-Action scenario traffic volumes, and to the 2018 No-Action scenario traffic volumes for 10 years to develop year 2028 No-Action scenario traffic volumes.

[5] The hourly traffic volumes were based on volumes collected between March 5, 2013 and March 7, 2013, at the following locations: 1) Industrial Way, west of Oregon Way; 2) Industrial Way, between Oregon Way and California Way; 3) 3rd Avenue, north of Industrial Way; and 4) Oregon Way, north of Industrial Way.

Table 2. Motor Vehicle and Train Volumes at Study Crossings

Crossing Name (USDOT Crossing ID)	Time Period	2018 No-Action Scenario		2018 Proposed Action (Construction - Truck Delivery) Scenario		2018 Proposed Action (Construction - Rail Delivery) Scenario		2028 No-Action Scenario		2028 Proposed Action (Operations) Scenario	
		Vehicle	Train	Vehicle	Train	Vehicle	Train	Vehicle	Train	Vehicle	Train
Project area at 38th Avenue	Per Day	200	2.3	2,850	2.3	2,000	3.6	250	4.0	1,340	20.0
	PM Peak	20	1	285	1	200	1	25	1	134	1 or 2
Weyerhaeuser access at Washington Way	Per Day	3,300	2.3	3,300	2.3	3,300	3.6	3,900	4.0	3,900	20.0
	PM Peak	330	1	330	1	330	1	390	1	390	1 or 2
Weyerhaeuser NORPAC access	Per Day	650	2.3	650	2.3	650	3.6	800	4.0	800	20.0
	PM Peak	65	1	65	1	65	1	80	1	80	1 or 2
Industrial Way-SR 432 (101806G)	Per Day	10,100	2.3	12,000	2.3	11,200	3.6	11,450	4.0	12,100	20.0
	PM Peak	1,010	1	1,200	1	1,120	1	1,145	1	1,210	1 or 2
Oregon Way-SR 433 (101805A)	Per Day	15,200	2.3	15,650	2.3	15,650	3.6	18,500	4.0	18,770	20.0
	PM Peak	1,520	1	1,565	1	1,565	1	1,850	1	1,877	1 or 2
California Way (101821J)	Per Day	4,050	2.3	4,050	2.3	4,050	3.6	4,800	4.0	4,800	20.0
	PM Peak	405	1	405	1	405	1	480	1	480	1 or 2
3rd Avenue-SR 432 (101826T)	Per Day	16,850	2.3	17,850	2.3	17,200	3.6	20,500	4.0	20,720	20.0
	PM Peak	1,685	1	1,785	1	1,720	1	2,050	1	2,072	1 or 2
Dike Road (101791U)	Per Day	950	7.1	950	7.1	950	8.4	1,100	7.1	1,100	23.1
	PM Peak	95	1	95	1	95	1	110	1	110	1 or 2

Trains

Estimated freight train volume and operational information for the No-Action Alternative along the Reynolds Lead and BNSF Spur was provided by LVSW (Wolter pers. comm.).

An average of 2 non-project-related trains per day would be expected over study crossings on the Reynolds Lead and 7 trains at the Dike Road study crossing (along the BNSF Spur) under the 2018 No-Action and 2018 Construction (truck delivery) scenarios. One non-project-related train could travel along the BNSF Spur and Reynolds Lead during the PM peak hour.

The 2018 Construction (rail delivery) scenario would add an average of 1.3 train trips per day, as documented in Section 2.1.2.2, *Construction Impact Analysis*. It was assumed that this train could travel during the PM peak hour.

The 2028 No-Action scenario would include approximately 2 additional non-project-related trains per day on the Reynolds Lead, as documented in Section 2.1.2.1, *No-Action Alternative Analysis.* Overall, 4 trains per day would be expected along the Reynolds Lead and 7 trains at the Dike Road study crossing (along the BNSF Spur) in the 2028 No-Action scenario. One non-project-related train could travel along the BNSF Spur and Reynolds Lead during the PM peak hour.

The proposed project would add approximately 16 additional trains per day, as documented in Section 2.1.2.3, *Operations Impact Analysis*. Up to 2 project-related trains could travel along the Reynolds Lead and BNSF Spur during the PM peak hour. Table 2 includes the daily and PM peak train crossings for 2018 and 2028.

2.1.2.7 Railroad Crossing Performance Measures

The following performance measures were used to identify impacts at the railroad crossings.

Level of Service

A vehicle level of service (LOS) adverse impact was defined as a study crossing that operates below LOS D under the On-Site Alternative or Off-Site Alternative that would not otherwise operate below LOS D under the No-Action Alternative for the same year. LOS represents a “report card” rating based on the delay experienced by vehicles at an intersection, or in this case, a railroad crossing, as shown in Table 3. LOS A, B, and C indicate conditions where traffic moves without substantial delays. LOS D and E represent progressively worse operating conditions. LOS F represents conditions where average vehicle delay has become excessive and demand has exceeded capacity.

Table 3. Grade Crossing Level of Service

Level of Service (LOS)	Average Total Delay (seconds/vehicle)
A	<= 10
B	> 10 and <= 20
C	> 20 and <= 35
D	> 35 and <= 55
E	> 55 and <= 80
F	> 80

Source: Transportation Resource Board 2000

According to WSDOT LOS standards (2010), level of service D or better is acceptable for urban highways. The transportation element of the *City of Longview Comprehensive Plan* (December 2006) defines a capacity deficiency on arterial segments as a volume-to-capacity ratio of 0.85 or higher (representing a generalized LOS D or worse). As a conservative approach, the LOS D standard was applied to all of the at-grade railroad crossings, regardless of the street functional classification or jurisdiction.

For the PM peak hour analysis, the traffic operating conditions at the study crossings were determined based on the *2000 Highway Capacity Manual* (Transportation Research Board 2000) method for signalized intersections (the railroad crossings were assumed to be pretimed traffic signals). The conditions reported include the estimated average vehicle delay and LOS of the study crossings. Available signal timing information for the intersections adjacent to the rail crossings were incorporated into this analysis. For the 24-hour analysis, similar delay thresholds, based on the LOS definitions found in the *2000 Highway Capacity Manual* methodology for signalized intersections, were used to assess the average delay experienced per vehicle at each rail crossing. The average delay per vehicle in a 24-hour period (in seconds) for a rail crossing was determined based on the average number of daily trains, average train length, train speed, and average daily traffic volumes in both directions.

Queue

An adverse vehicle queuing impact was defined as a queue extending from a study crossing that exceeds available storage length (to an adjacent intersection) under the proposed project that would not otherwise exceed the available storage under the No-Action alternative from the same year. The available storage along the roadways approaching the study crossings and at nearby intersections is shown in Table 4.

Queuing analysis was conducted using SimTraffic 8, which estimates the 95th percentile vehicle queue lengths, or the queue length that would not be exceeded in 95% of the queues formed during the PM peak hour. Note that SimTraffic 8 was unable to be fully calibrated and verified based on field conditions because no trains were observed crossing during the PM peak hour. However, estimated queues were verified based on the relationship between observed queues during nonpeak conditions, and traffic volumes at that time. This relationship was compared to PM peak hour traffic volumes to help verify the estimated baseline queue lengths.

Accident Probability

The accident prediction analysis was conducted using the FRA GradeDec.Net web-based software, which estimates the predicted annual accident probability at a crossing in a year. The software uses the USDOT's Accident Prediction and Severity model. This module estimates accident probability-based grade-crossing features available in FRA's nationwide inventory of at-grade crossings, including the type of crossing protection in place, historical accident data at the crossing, vehicle traffic volumes, the number of roadway lanes and train tracks, the number of trains per day, and train speed.

Table 4. Estimated Vehicle Storage Lengths

Crossing Name (USDOT Crossing ID)	Roadway Movement	Available Storage before Impacting nearby Intersection (feet)	Intersection Affected by Queue from Crossing	Intersection Movement	Available Storage (feet)
Project area access at 38th Avenue	NB	>1,000 (private driveway)	Industrial Way/ 38th Avenue	WBL	180
	SB	<20		EBR	180
Weyerhaeuser access at Washington Way	NB	>1,000 (private driveway)	Industrial Way/ Washington Way	WBL	180
				EBR	20
	SB	<20		SBT	150
Weyerhaeuser NORPAC access	NB	>1,000 (private driveway)	Industrial Way/ NORPAC access	WBL	80
	SB	<20		EBR	200
Industrial Way-SR 432 (101806G)	NB	120	Industrial Way/ Weyerhaeuser	EBL	>1,000 (private driveway)
	SB	>1,000		NBT	730
Oregon Way-SR 433 (101805A)	NB	220	Industrial Way/ Oregon Way	NBT	>1,000
				EBL	85
				WBR	0
	SB	700	Oregon Way/ Alabama Street	EBR	N/A
				WBL	
				SBT	
California Way (101821J)	NB	400	Industrial Way/ California Way	N/A	N/A
	SB	>1,000			
3rd Avenue-SR 432 (101826T)	NB	400	3rd Avenue/ Industrial Way	WBR	170
				NBT	240
	SB	>1,000	Industrial Way/ California Way	SBL	130
				NBR	100
				EBT	>1,000
Dike Road (101791U)	NB	>1,000	None	N/A	N/A

Other physical factors that affect the frequency of collisions at a crossing, such as available sight distance, or vehicle storage between adjacent intersections, are not direct inputs in this module. However, the accident history at these crossings would likely reflect these characteristics. Such characteristics would not be affected by proposed project, which would only alter the number of trains per day and vehicle traffic volumes (at some grade crossings). This analysis provides a frame of reference for crossings by estimating accident probability, but does not identify these crossings as unsafe. An adverse vehicle safety impact was defined as a study crossing that would have a predicted accident probability above 0.04 accident per year under the On-Site Alternative or Off-Site Alternative that would be at or below 0.04 accident per year under the No-Action scenario.

2.2 Affected Environment

The affected environment related to vehicle transportation in the study area is described below.

2.2.1 On-Site Alternative

Table 5 provides vehicle and train traffic information at the five public at-grade crossings on the Reynolds Lead and BNSF Spur and three private crossings on the Reynolds Lead, including the entrance to the project area and the traffic associated with these crossings. Relevant roadway characteristics also are listed, including roadway functional classifications and number of lanes at the crossing. Information on at-grade crossing and roadway performance is presented in Chapter 3, *Impacts*.

Ten years of collision records (2003 to 2013) for the at-grade railroad crossings along the Reynolds Lead and BNSF Spur were obtained from FRA and WSDOT databases. The data identified one collision involving a train near the project area, at the Washington Way crossing, just south of the Industrial Way intersection. The crossing is ungated, and located less than 50 feet from Industrial Way. The collision involved a vehicle stopped at the traffic signal, beyond the stop bar and on the track, getting struck by a train. The collision resulted in property damage only.

2.2.1.1 Emergency Services

The Cowlitz 2 Fire & Rescue District, the Longview Fire Department, and American Medical Response (AMR) provide emergency medical services (EMS) and fire protection for the project area. Figure 5 illustrates the location of fire stations near the project area.

The Cowlitz 2 Fire & Rescue District, Longview Fire Department, and American Medical Response (AMR) provide emergency medical services and fire protection for the project areas. A brief description of each service provider is below; additional information on the stations, facilities, and apparatus of each is provided in the NEPA Social and Community Resources Technical Report (ICF International 2016).

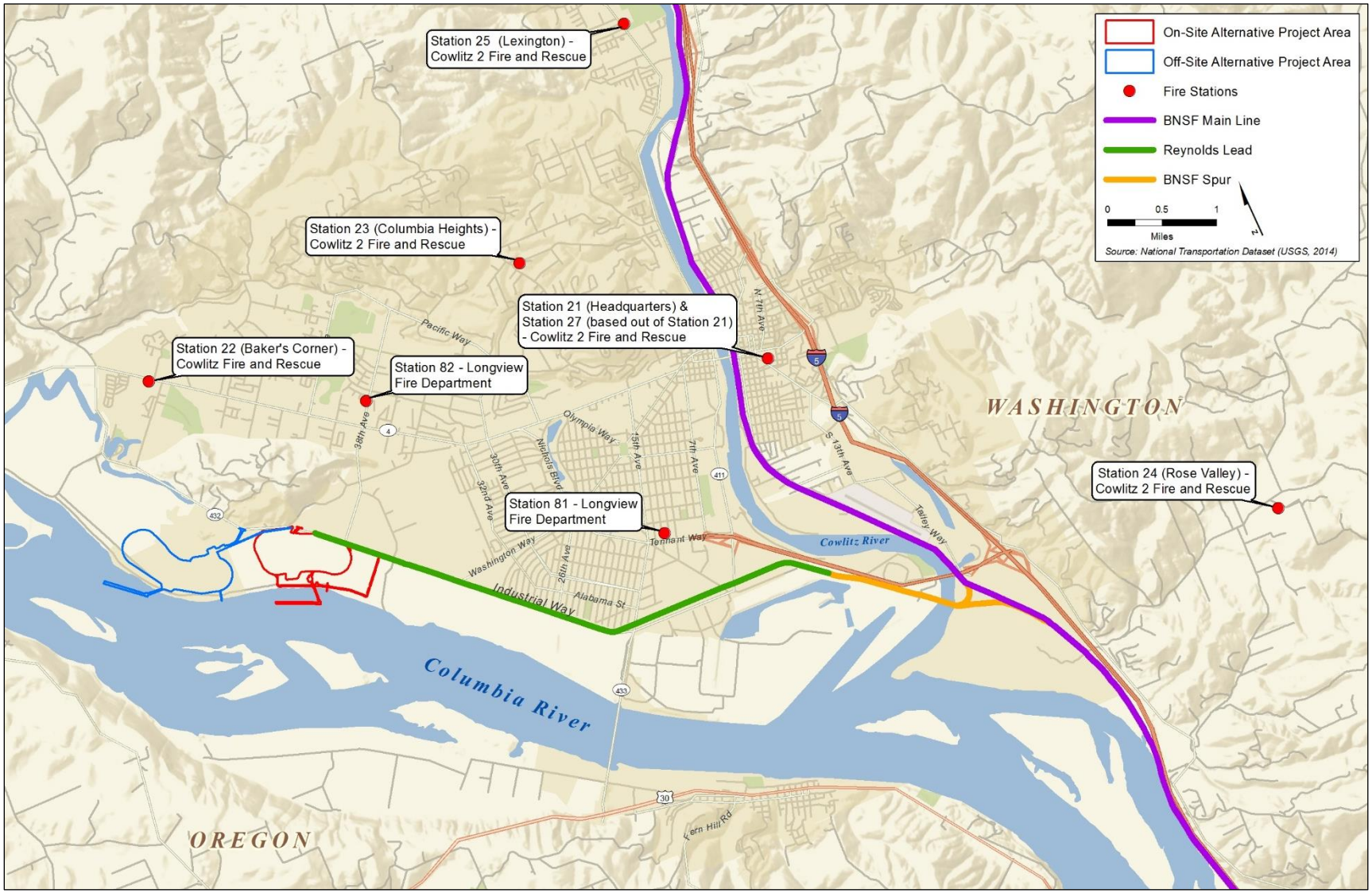
Cowlitz 2 Fire & Rescue provides fire protection services, and serves approximately 34,000 citizens in the City of Kelso and unincorporated Cowlitz County, responding to approximately 4,100 calls per year (Cowlitz 2 Fire & Rescue 2015). The district is staffed by approximately 120 full-time and volunteer members in five active fire stations, two of which are staffed with full-time EMT and paramedic firefighters. Volunteer firefighter EMTs also respond on an on-call basis. Figure 5 illustrates the fire stations in the Longview-Kelso area.

Table 5. At-Grade Crossing and Roadway Characteristics

	Roadway			Railroad (Trains)		
Crossing Name (USDOT Crossing ID)	**2018 ADT**	**Functional Classification[a]**	**Lanes**	**Protection[b]**	**2018 Crossings per day**	**Average Speed (mph)[c]**
Project area access at 38th Avenue	200	Private	2	None	2.3	5 (freight)
Weyerhaeuser access at Washington Way	3,300	Private	4	None	2.3	8 (freight)
Weyerhaeuser NORPAC access	650	Private	2	None	2.3	10 (freight)
Industrial Way- SR 432 (101806G)	10,100	Principal Arterial	2	Overhead Lights	2.3	10 (freight)
Oregon Way- SR 433 (101805A)	15,200	Principal Arterial	4	Gates/ Overhead Lights	2.3	10 (freight)
California Way (101821J)	4,050	Minor Arterial	2	Overhead Lights	2.3	8 (freight)
3rd Avenue- SR 432 (101826T)	16,850	Principal Arterial	4	Gates/ Overhead Lights	2.3	8 (freight)
Dike Road (101791U)	950	Local	2	Overhead Lights	7.1	10 (freight)

Notes:
[a] Source: City of Longview 2015
[b] Source: Field observations
[c] Source: Washington Utilities and Transportation Commission 2015.
ADT = average daily traffic; mph = miles per hour

Figure 5. Fire Stations in the Kelso-Longview Area



The Longview Fire Department serves approximately 36,000 citizens spread over 14.7 square miles of urban and suburban development. The department is staffed with 39 full-time EMT/firefighters, and 4 paramedic/firefighters. Paramedic transport service is provided within the city by AMR, a private provider. The Longview Fire Department responds to approximately 4,500 calls per year from two fire stations (City of Longview 2015).

AMR is a private ambulance company providing emergency and nonemergency medical transport service. AMR includes approximately 35 paramedics and EMTs and handles an average of 7,500 calls annually (American Medical Response 2015). The medical transport vehicles are based out of the facility near the Cowlitz Way intersection with Long Avenue.

2.2.2 Off-Site Alternative

The existing road and rail characteristics and emergency service providers for the Off-Site Alternative are the same as those discussed for the On-Site Alternative.

Chapter 3
Impacts

This chapter describes the impacts on vehicle transportation that would result from construction and operation of the On-Site Alternative, Off-Site Alternative, and No-Action Alternative.

3.1 On-Site Alternative

Potential impacts on vehicle transportation from the On-Site Alternative are described below.

3.1.1 Construction: Direct and Indirect Impacts

An estimated 1,800 daily and 180 PM peak hour motor vehicle trips per day are estimated as a result of peak construction activities with the rail construction scenario, or an estimated 2,650 daily and 260 PM peak hour motor vehicle trips per day with the truck or barge construction scenario. These vehicles would access the project area via the private driveway opposite 38th Avenue or a new driveway on Industrial Way. Parking would be provided for construction workers in the Applicant's leased area. All vehicle transportation impacts during construction would occur outside the project area and, therefore, are considered indirect impacts. Construction of the On-Site Alternative would result in the following indirect impacts.

Cause Vehicle Delays from Rail Construction Traffic

An average of 2 non-project-related trains per day would be expected over study crossings on the Reynolds Lead, and 7 at the Dike Road study crossing (along the BNSF Spur) in the 2018 No-Action and 2018 Construction (truck delivery) scenarios. One non-project-related train could pass during the PM peak hour. The weighted average length of these trains would be approximately 2,000 feet along the Reynolds Lead, and 5,000 feet along the BNSF Spur. Table 6 shows the anticipated weighted average train lengths and total gate downtime at the study crossings for 2018.

Table 6. Study Crossing Characteristics—2018 Construction Scenario

Crossing Name (USDOT Crossing ID)	Time Period	2018 No-Action		2018 Proposed Action (Truck Delivery)		2018 Proposed Action (Rail Delivery)	
		Weighted Average Train Length (feet)	Total Gate Downtime (minutes)	Weighted Average Train Length (feet)	Total Gate Downtime (minutes)	Weighted Average Train Length (feet)	Total Gate Downtime (minutes)
Project area access at 38th Avenue	Per Day	2,024	11.6	2,024	11.6	3,530	30.3
	PM Peak		5.10		5.1	6,219	14.6
Weyerhaeuser access at Washington Way	Per Day	2,024	7.7	2,024	7.7	3,530	19.6
	PM Peak		3.4		3.4	6,219	9.3
Weyerhaeuser NORPAC access	Per Day	2,024	6.4	2,024	6.4	3,530	16.0
	PM Peak		2.8		2.8	6,219	7.6
Industrial Way-SR 432 (101806G)	Per Day	2,024	6.4	2,024	6.4	3,530	16.0
	PM Peak		2.8		2.8	6,219	7.6
Oregon Way-SR 433 (101805A)	Per Day	2,024	6.4	2,024	6.4	3,530	16.0
	PM Peak		2.8		2.8	6,219	7.6
California Way (101821J)	Per Day	2,041	7.8	2,041	7.8	3,541	19.7
	PM Peak		3.4		3.4	6,219	9.3
3rd Avenue-SR 432 (101826T)	Per Day	2,041	7.8	2,041	7.8	3,541	19.7
	PM Peak		3.4		3.4	6,219	9.3
Dike Road (101791U)	Per Day	4,919	43.4	4,919	43.4	5,116	53.0
	PM Peak		6.1		6.1	6,219	7.6

Total gate downtime would be up to 8 minutes per day (3 minutes during the PM peak hour) at public crossings along the Reynolds Lead, 12 minutes per day (5 minutes during the PM peak hour) at private crossings along the Reynolds Lead, 43 minutes per day (6 minutes during the PM peak hour) at the Dike Road crossing along the BNSF Spur in the 2018 No-Action and 2018 Construction (truck delivery) scenarios.

The 2018 Construction (rail delivery) scenario would add approximately 1 additional train per day, as documented in Section 2.1.2.2, *Construction Impact Analysis*. This train could pass during the PM peak hour. The additional train would take between 8 and 9 minutes to pass through the public street study crossings along the Reynolds Lead and BNSF Spur. This would increase the total gate downtime up to 12 minutes during an average day for the public study crossings along the Reynolds Lead and up to 19 minutes during an average day for the private study crossings along the Reynolds Lead.

Table 7 shows the estimated average delay per vehicle and LOS that would be experienced during the PM peak hour at each of the study crossings for the 2018 Construction scenario for preload material delivery by truck or by rail, with the estimated 2018 No-Action scenario conditions provided for reference.

As shown, construction activities would not result in any material change in vehicle delay at at-grade crossings on the Reynolds Lead and BNSF Spur if preload material is delivered by truck. Should delivery of preload material by rail occur during the PM peak hour, the average delay per vehicle would increase, with forecast LOS dropping below LOS D at three of the study crossings on the Reynolds Lead. The length of the construction preload material train, estimated at 6,419 feet, and the slow track speeds at the California Way, 3rd Avenue (SR 432) and project area access (opposite 38th Avenue) study crossings (between 5 and 8 mph), would contribute to the vehicle LOS impacts.

Table 8 shows the estimated average delay per vehicle and LOS that would be experienced during a 24-hour period at each of the study crossings in 2018. As shown, the average delay per vehicle expected over a 24-hour period is very low under each of the 2018 scenarios, illustrating that most drivers over the course of a day would not be delayed by a train at the study crossings. However, if a train crosses during the PM peak hour, it could cause substantial delay to drivers, as indicated in Table 7.

Table 7. Estimated Vehicle Delay and LOS—2018 Construction Scenario (PM Peak Hour)

USDOT Crossing ID	Crossing Name	2018 No-Action		2018 Proposed Action (Truck Delivery)		2018 Proposed Action (Rail Delivery)	
		Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS[a]
Private	Project area access at 38th Avenue	14.9	B	15.7	B	126.6	**F**
Private	Weyerhaeuser access at Washington Way	6.9	A	6.9	A	51.9	D
Private	Weyerhaeuser NORPAC access	4.8	A	4.8	A	33.7	C
101806G	Industrial Way (SR 432)	7.6	A	8.3	A	52.8	D
101805A	Oregon Way (SR 433)	6.3	A	6.5	A	45.2	D
101821J	California Way	7.6	A	7.6	A	56.4	**E**
101826T	3rd Avenue (SR 432)	10.6	B	11.2	B	79.7	**E**
101791U	Dike Road	22.3	C	22.3	C	33.6	C

Notes:
[a] **Bolded**, **shaded gray** values indicate a vehicle LOS impact (a study crossing that operates below LOS D under the On-Site and Off-Site alternative that would not otherwise operate below LOS D under the No-Action Alternative from the same year).
Delay = average delay per vehicle at worst roadway approach to the crossing; LOS = level of service of worst roadway approach to the crossing

Table 8. Estimated Vehicle Delay and LOS—2018 Construction Scenario (24-Hour Average)

USDOT Crossing ID	Crossing Name	2018 No-Action		2018 Proposed Action (Truck Delivery)		2018 Proposed Action (Rail Delivery)	
		Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS
Private	Project area access at 38th Avenue	1.2	A	1.3	A	5.7	A
Private	Weyerhaeuser access at Washington Way	0.6	A	0.6	A	2.4	A
Private	Weyerhaeuser NORPAC access	0.4	A	0.4	A	1.5	A
101806G	Industrial Way (SR 432)	0.4	A	0.5	A	1.8	A
101805A	Oregon Way (SR 433)	0.4	A	0.4	A	1.7	A
101821J	California Way	0.6	A	0.6	A	2.5	A
101826T	3rd Avenue (SR 432)	0.6	A	0.6	A	2.6	A
101791U	Dike Road	5.7	A	5.7	A	7.2	A

Notes:
Delay = average delay per vehicle over 24-hour period, in seconds; LOS = level of service of railroad crossing

Table 9 shows the estimated vehicle queue lengths that would be experienced during the PM peak hour at each of the study crossings during construction in 2018 for preload material delivery by truck or by rail, with the estimated 2018 No-Action scenario conditions provided for reference.

As shown, vehicle queues extending from six study crossings (all along the Reynolds Lead) could affect seven nearby intersections with 2018 No-Action scenario trains during the PM peak hour. The affected intersections include Industrial Way/38th Avenue, Industrial Way/Washington Way, Industrial Way/NORPAC access, Industrial Way/Weyerhaeuser Access, Industrial Way/Oregon Way, 3rd Avenue/Industrial Way, and Industrial Way/California Way. Vehicle queues at these intersections could exceed available storage at four approaches, including the eastbound right turn from Industrial Way to the Weyerhaeuser Access (opposite Washington Way), the eastbound left turn and westbound right turn from Industrial Way to Oregon Way, and the northbound through movement at the 3rd Avenue/Industrial Way intersection. These queues could potentially block other movements at these intersections that would otherwise not be affected by train crossing events.

Construction activities would not result in any material change in vehicle queue lengths if preload material is delivered by truck. Should delivery of preload material by rail occur during the PM peak hour, the estimated vehicle queue lengths would increase at rail crossings along high volume roadways, with queues extending nearly 1,000 feet beyond those expected with 2018 No-Action and 2018 Construction (via truck) scenario trains at the Industrial Way (SR 432), Oregon Way (SR 433), and 3rd Avenue (SR 432) study crossings. The length of the construction preload material train, estimated at 6,419 feet, and the slow track speeds at the Industrial Way (SR 432), Oregon Way (SR 433), 3rd Avenue (SR 432) study crossings (between 8 and 10 mph), would contribute to the increased vehicle queue lengths.

Two additional intersections would be affected by vehicle queues extending from rail crossings with 2018 Construction (via rail) scenario trains during the PM peak hour (beyond those affected by 2018 No-Action scenario trains), including Oregon Way/Alabama Street, and Pacific Avenue/S River Road. However, vehicle queues at the nine affected upstream intersections would exceed available storage at only one additional approach beyond those affected by 2018 No-Action scenario trains, the southbound through movement at Industrial Way/Washington Way. This queue could block the southbound left turn from Washington Way to Industrial Way, a movement that would otherwise not be affected by train-crossing events.

Table 9. Estimated Vehicle Queue Lengths—2018 Construction Scenario (PM Peak Hour)[a]

Crossing Name (USDOT Crossing ID)	Road MVMT[b]	2018 No-Action	2018 Truck	2018 Rail	Intersection Affected by Queue from Crossing	Intersection MVMT[c]	2018 No-Action	2018 Truck	2018 Rail
		Estimated Crossing Queue Length (feet)					Estimated Intersection Queue Length (feet)		
Project area access- opposite 38th Avenue	NB	40	1,960	2,480	Industrial Way/ 38th Avenue	WBL	20	20	20
	SB	20	20	20		EBR	20	20	20
Weyerhaeuser access- opposite Washington Way	NB	140	160	460	Industrial Way/ Washington Way	WBL	120	120	140
						EBR	40	40	40
	SB	120	120	160		SBT	60	60	160
Weyerhaeuser NORPAC access	NB	60	60	140	Industrial Way/ NORPAC access	WBL	20	20	20
	SB	20	20	20		EBR	20	20	20
Industrial Way- SR 432 (101806G)	NB	360	360	420	Industrial Way/ Weyerhaeuser	EBL	140	140	240
	SB	280	360	1,220		NBT	240	240	300
Oregon Way- SR 433 (101805A)	NB	660	640	2,460	Industrial Way/ Oregon Way	NBT	440	420	2,240
						EBL	180	240	240
						WBR	100	100	100
	SB	200	220	960	Oregon Way/ Alabama Street	EBR	N/A	N/A	120
						WBL			100
						SBT			260
California Way (101821J)	NB	100	100	260	Industrial Way/ California Way	N/A	N/A	N/A	N/A
	SB	120	140	600					
3rd Avenue- SR 432 (101826T)	NB	1,040	1,060	1,640	3rd Avenue/ Industrial Way	WBR	60	60	80
						NBT	640	660	1,240
					Industrial Way/ California Way	SBL	120	120	140
	SB	240	280	1,240		NBR	60	60	60
						EBT	400	420	1,000

Crossing Name (USDOT Crossing ID)	Road MVMT[b]	2018 No-Action Estimated Crossing Queue Length (feet)	2018 Truck Estimated Crossing Queue Length (feet)	2018 Rail Estimated Crossing Queue Length (feet)	Intersection Affected by Queue from Crossing	Intersection MVMT[c]	2018 No-Action Estimated Intersection Queue Length (feet)	2018 Truck Estimated Intersection Queue Length (feet)	2018 Rail Estimated Intersection Queue Length (feet)
Dike Road (101791U)	NB	60	60	100	None	N/A	N/A	N/A	N/A
	SB	100	100	120					
	WB	60	60	60					

Notes:

[a] Shaded gray values indicate a study crossing or intersection queue that exceeds available storage. Shaded black values indicate an adverse queue impact.

[b] MVMT = roadway movement approaching the rail crossing; NB = northbound; SB = southbound; EB = eastbound; WB = westbound

[c] MVMT = movement at nearby intersection affected by queue from rail crossing; NBL = northbound left; NBR = northbound right; NBT = northbound through; SBL = southbound left; SBR = southbound right; SBT = southbound through; EBL= eastbound left; EBR= eastbound right; EBT= eastbound through; WBL= westbound left; WBR= westbound right; WBT= westbound through

3.1.2 Operations: Direct Impacts

Approximately 109 PM peak hour motor vehicle trips are estimated as a result of operation of the On-Site Alternative. These vehicles would access the project area via the private driveway opposite 38th Avenue or at the existing driveway on Industrial Way approximately 0.5 mile west of the 38th Avenue driveway. Access roads in the project area would be designed to allow two-way traffic for standard vehicles. All roadways and parking areas would be designed and constructed to the standards appropriate for loading and capacity requirements. All regularly used roads accessing the buildings and facilities in the project area would be sealed with asphalt pavement. Paving would be designed to accommodate mobile equipment loadings. Surfacing of unpaved areas would control soil erosion by wind and water.

3.1.3 Operations: Indirect Impacts

All vehicle transportation impacts during operations would occur outside the project area and, therefore, are considered indirect impacts for this analysis. Full operation of the On-Site Alternative would result in the following indirect impacts.

Cause Vehicle Delays from Rail Traffic

The proposed project would add approximately 16 additional trains per day (up to 2 during the PM peak hour) in 2028, as documented in Section 2.1.2.3, *Operations Impact Analysis.* Analysis of the study crossing in 2028 was estimated both with and without planned track infrastructure along the Reynolds Lead. Planned track improvements would increase the average train speed from 8 mph to 10 mph at the Weyerhaeuser access crossing opposite Washington Way, from 10 mph to 15 mph at the Weyerhaeuser NORPAC access crossing, from 10 mph to 20 mph at the Industrial Way and Oregon Way crossings, and from 8 mph to 15 mph at the California Way and 3rd Avenue crossings. No changes in train speed would occur at the existing site access opposite 38th Avenue and Dike Road crossings. Table 10 shows study crossing characteristics in 2028.

Table 10. Study Crossing Characteristics—2028 Operations

Crossing Name (USDOT Crossing ID)	Time Period	2028 No-Action		2028 Operations (with Current Track Infrastructure)		2028 Operations (with Planned Track Infrastructure)	
		Weighted Average Train Length (feet)	Total Gate Downtime (minutes)	Weighted Average Train Length (feet)	Total Gate Downtime (minutes)	Weighted Average Train Length (feet)	Total Gate Downtime (minutes)
Project area access at 38th Avenue	Per Day	2,043	20.5	5,886	277.4	5,886	277.4
	PM Peak		5.1	6,844	16.0	6,844	16.0
Weyerhaeuser access at Washington Way	Per Day	2,043	13.6	5,886	177.1	5,886	143.7
	PM Peak		3.4	6,844	10.2	6,844	8.3
Weyerhaeuser NORPAC access	Per Day	2,043	11.2	5,886	143.7	5,886	99.1
	PM Peak		2.8	6,844	8.3	6,844	5.7
Industrial Way- SR 432 (101806G)	Per Day	2,043	11.2	5,886	143.7	5,886	76.8
	PM Peak		2.8	6,844	8.3	6,844	4.4
Oregon Way- SR 433 (101805A)	Per Day	2,043	11.2	5,886	143.7	5,886	76.8
	PM Peak		2.8	6,844	8.3	6,844	4.4
California Way (101821J)	Per Day	2,053	13.6	5,888	177.2	5,888	99.2
	PM Peak		3.4	6,844	10.2	6,844	5.7
3rd Avenue- SR 432 (101826T)	Per Day	2,053	13.6	5,888	177.2	5,888	99.2
	PM Peak		3.4	6,844	10.22	6,844	5.7
Dike Road (101791U)	Per Day	4,919	43.4	6,251	175.8	6,251	175.8
	PM Peak		6.1	6,844	8.3	6,844	8.3

A project-related train would take between 8 and 10 minutes to pass through the public study crossings along the Reynolds Lead with current track infrastructure, and between 4 and 6 minutes with planned track infrastructure. Trains under full operation of the On-Site Alternative would take about 8 minutes to cross Dike Road along the BNSF Spur. Overall, the 16 additional project-related trains would increase the total gate downtime more than 130 minutes during an average day for the public study crossings along the Reynolds Lead and BNSF Spur and up to 250 minutes during an average day for the private study crossings along the Reynolds Lead. The planned track infrastructure along the Reynolds Lead would reduce the total gate downtime at the Weyerhaeuser NORPAC access, Industrial Way-SR 432 (101806G), Oregon Way- SR 433 (101805A), California Way (101821J), and 3rd Avenue-SR 432 (101826T) study crossings.

Table 11 shows the estimated average delay per vehicle and LOS that would be experienced during the PM peak hour at each of the study crossings in 2028 with the On-Site Alternative, with the estimated 2028 No-Action scenario conditions provided for reference.

As shown, the increased rail activity associated with the proposed project would increase average delay per vehicle during the PM peak hour, with forecasted LOS dropping below D at six of the study crossings on the Reynolds Lead with existing track infrastructure. The length of the project-related trains, estimated at 6,844 feet, and the slow track speeds (between 5 and 10 mph), would contribute to the vehicle LOS impacts.

The planned track infrastructure along the Reynolds Lead would address all of the vehicle LOS impacts at the public study crossings, assuming 1 project-related train on the Reynolds Lead during the PM peak hour. Only the project area access (opposite 38th Avenue) study crossing would operate below LOS D. Vehicle LOS impacts are still forecasted at this study crossing since track speeds would not increase with the planned track infrastructure along the Reynolds Lead.

However, four of the study crossings would have vehicle LOS impacts with 2 project-related trains on the Reynolds Lead during the PM peak hour, with planned track infrastructure. It should be noted that track speeds at two of these study crossings (project area access- opposite 38th Avenue, and Dike Road) would not be increased with the planned track infrastructure along the Reynolds Lead.

Table 12 shows the estimated average delay per vehicle and LOS that would be experienced during a 24-hour period at each of the study crossings in 2028. As shown, the average delay per vehicle expected over a 24-hour period is very low under the 2028 No-Action scenario and 2028 Proposed Project (with planned track infrastructure) scenario. However, the average delay per vehicle expected over a 24-hour period is higher under the 2028 Proposed Project (with existing track infrastructure) scenario, corresponding with the PM peak hour results.

Table 11. Estimated Vehicle Delay and LO—2028 Operations (PM Peak Hour)[a]

Crossing Name (USDOT Crossing ID)	2028 No-Action		2028 Operations (Current Track Infrastructure and 1 Peak Hour Proposed Action-Related Train)		2028 Operations (Planned Track Infrastructure[b] and 1 Peak Hour Proposed Action-Related Train)		2028 Operations (Planned Track Infrastructure[b] and 2 Peak Hour Proposed Action-Related Trains)	
	Delay	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS
Project area access at 38th Ave	14.9	B	149.2	**F**	149.2	**F**	265.3	**F**
Weyerhaeuser access at Washington Way	6.9	A	62.7	**E**	41.3	D	73.4	**E**
Weyerhaeuser NORPAC access	4.9	A	40.7	**D**	19.3	B	34.2	C
Industrial Way- SR 432 (101806G)	8.3	A	67.8	**E**	19.7	B	34.6	C
Oregon Way- SR 433 (101805A)	6.9	A	58.0	**E**	16.6	B	29.3	C
California Way (101821J)	7.8	A	69.4	**E**	21.7	C	38.5	D
3rd Avenue- SR 432 (101826T)	12.2	B	107.8	**F**	33.9	C	59.9	**E**
Dike Road (101791U)	22.4	C	40.5	D	40.5	D	72.0	**E**

Notes:

[a] **Bolded**, **shaded gray** values indicate an adverse vehicle LOS impact (a study crossing that operates below LOS D under the Proposed Action that would not otherwise operate below LOS D under the No-Action Alternative from the same year).

[b] Planned track infrastructure along the Reynolds Lead would increase the average train speed from 8 mph to 10 mph at the Weyerhaeuser access crossing—opposite Washington Way, from 10 mph to 15 mph at the Weyerhaeuser NORPAC access crossing, from 10 mph to 20 mph at the Industrial Way and Oregon Way crossings, and from 8 mph to 15 mph at the California Way and 3rd Avenue crossings. No changes in train speed would occur at the existing site access—opposite 38th Avenue and Dike Road crossings.

Delay = average delay per vehicle at worst approach; LOS = level of service of worst approach

Table 12. Estimated Vehicle Delay and LOS—2028 Operations (24-Hour Average)[a]

		2028 No-Action		2028 Operations (with Current Track Infrastructure)		2028 Operations (with Planned Track Infrastructure[b])	
USDOT Crossing ID	**Crossing Name**	**Delay**	**LOS**	**Delay (seconds)**	**LOS**	**Delay (seconds)**	**LOS**
Private	Project area access at 38th Ave	2.2	A	83.5	**F**	83.5	**F**
Private	Weyerhaeuser access at Washington Way	1.0	A	34.7	C	22.8	C
Private	Weyerhaeuser NORPAC access	0.7	A	22.0	C	10.5	B
101806G	Industrial Way (SR 432)	0.8	A	26.2	C	7.5	A
101805A	Oregon Way (SR 433)	0.8	A	25.0	C	7.2	A
101821J	California Way	1.1	A	36.8	D	11.5	B
101826T	3rd Avenue (SR 432)	1.1	A	38.7	D	12.1	B
101791U	Dike Road	5.7	A	28.8	C	28.8	C

Notes:

[a] **Bolded**, **shaded gray** values indicate an adverse vehicle LOS impact (a study crossing that operates below LOS D under the Proposed Action that would not otherwise operate below LOS D under the No-Action Alternative from the same year).

[b] Planned track infrastructure along the Reynolds Lead would increase the average train speed from 8 mph to 10 mph at the Weyerhaeuser access crossing—opposite Washington Way, from 10 mph to 15 mph at the Weyerhaeuser NORPAC access crossing, from 10 mph to 20 mph at the Industrial Way and Oregon Way crossings, and from 8 mph to 15 mph at the California Way and 3rd Avenue crossings. No changes in train speed would occur at the existing site access—opposite 38th Avenue and Dike Road crossings.

Delay = Average delay per vehicle over 24-hour period, in seconds; LOS = level of service of railroad crossing

Table 13 shows the estimated vehicle queue lengths that would be experienced during the PM peak hour at each of the study crossings in 2028. The increased rail activity associated with the proposed project (existing track infrastructure) would increase vehicle queues at rail crossings along high volume roadways, with queues similar to those estimated with 2018 Construction (via rail) scenario trains, extending nearly 1,000 feet beyond those expected with 2028 No-Action scenario trains at the Industrial Way (SR 432), Oregon Way (SR 433), and 3rd Avenue (SR 432) study crossings. The length of the project-related trains, estimated at 6,844 feet, and the slow track speeds (between 8 and 10 mph), would contribute to the increased vehicle queue lengths.

One additional intersection would be affected by vehicle queues extending from rail crossings with project-related trains (existing track infrastructure) during the PM peak hour (beyond those affected by 2028 No-Action scenario trains), Oregon Way/Alabama Street. Vehicle queues at the nine affected upstream intersections (all previously identified as being affected with 2018 trains) would exceed available storage at one additional approach beyond those affected by 2028 No-Action scenario trains, the southbound through movement at Industrial Way/Washington Way. This queue could potentially block the southbound left turn from Washington Way to Industrial Way, a movement that would otherwise not be affected by train crossing events.

The planned track infrastructure along the Reynolds Lead would reduce vehicle queues at the study crossings between the Weyerhaeuser access (opposite Washington Way) and 3rd Avenue (SR 432), assuming 1 project-related train on the Reynolds Lead during the PM peak hour. Vehicle queues would be between 700 and 1,000 feet shorter than those estimated with the existing track infrastructure along the Reynolds Lead. However, vehicle queues would still exceed available storage at the four of the five approaches identified with the existing track infrastructure. Note that Table 13 shows estimated vehicle queue lengths with the planned track infrastructure and 1 project-related train on the Reynolds Lead during the PM peak hour. With 2 project-related trains on the Reynolds Lead during the PM peak hour, vehicle queues extending from study crossings would be similar to those estimated with the existing track infrastructure, despite the track improvements.

Cause Delay to Emergency Vehicle Response from Rail Traffic

EMS and fire protection response times would be affected by increased delay at at-grade crossings as a result of the On-Site Alternative.

2018 Construction Scenario

During construction, should delivery of preload material by rail occur during the PM peak hour, the average delay per stopped vehicle would be estimated at less than 80 seconds at public at-grade crossings along the Reynolds Lead, and generally less than 20 seconds at public at-grade crossings along the BNSF Spur. This corresponds to an increase by approximately 60 seconds or less at public at-grade crossings along the Reynolds Lead and less than 30 seconds along the BNSF Spur compared to the 2018 No-Action scenario. Construction activities would not result in any material change in vehicle delay at at-grade crossings on the Reynolds Lead and BNSF Spur if preload material is delivered by truck.

Table 13. Estimated Vehicle Queue Lengths—2028 Operations (PM Peak Hour)[a]

Crossing Name (USDOT Crossing ID)	Road MVMT[b]	2028 No-Action	2028 Exist. Infras.	2028 Plan. Infras.	Intersection Affected by Queue from Crossing	Interse-ction MVMT[c]	2028 No-Action	2028 Exist. Infras.	2028 Plan. Infras.
		Estimated Crossing Queue Length (feet)					Estimated Intersection Queue Length (feet)		
Project area access at 38th Avenue	NB	40	1,120	1,240	Industrial Way/ 38th Avenue	WBL	20	160	180
	SB	20	160	200		EBR	20	20	20
Weyerhaeuser access-opposite Washington Way	NB	280	760	480	Industrial Way/ Washington Way	WBL	120	180	140
						EBR	40	40	40
	SB	120	240	200		SBT	60	240	180
Weyerhaeuser NORPAC access	NB	60	160	100	Industrial Way/ NORPAC access	WBL	20	20	20
	SB	20	20	20		EBR	20	20	20
Industrial Way- SR 432 (101806G)	NB	380	500	420	Industrial Way/ Weyerhaeuser	EBL	140	200	120
	SB	340	1,200	520		NBT	260	380	300
Oregon Way- SR 433 (101805A)	NB	880	2,140	1,460	Industrial Way/ Oregon Way	NBT	660	1,920	1,220
						EBL	180	240	200
						WBR	100	100	100
	SB	440	1,580	800	Oregon Way/ Alabama Street	EBR	N/A	280	120
						WBL		560	100
						SBT		880	100
California Way (101821J)	NB	100	240	180	Industrial Way/ California Way	N/A	N/A	N/A	N/A
	SB	160	660	380					
3rd Avenue- SR 432 (101826T)	NB	1,400	1,720	600	3rd Avenue/ Industrial Way	WBR	60	120	80
						NBT	1,000	1,320	200
					Industrial Way/ California Way	SBL	120	120	N/A
	SB	340	1,740	820		NBR	80	80	
						EBT	760	1,080	

Crossing Name (USDOT Crossing ID)	Road MVMT[b]	2028 No-Action	2028 Exist. Infras.	2028 Plan. Infras.	Intersection Affected by Queue from Crossing	Interse-ction MVMT[c]	2028 No-Action	2028 Exist. Infras.	2028 Plan. Infras.
		Estimated Crossing Queue Length (feet)					Estimated Intersection Queue Length (feet)		
Dike Road (101791U)	NB	60	80	100	None	N/A	N/A	N/A	N/A
	SB	100	120	140					

Notes:

[a] Shaded gray values indicate a study crossing or intersection with a queue that exceeds available storage. Shaded black values indicate an adverse queue impact.

[b] MVMT= Roadway movement approaching the rail crossing; NB = northbound; SB = southbound; EB = eastbound; WB = westbound

[c] MVMT= Movement at nearby intersection affected by queue from rail crossing; NBL = northbound left; NBR = northbound right; NBT = northbound through; SBL = southbound left; SBR = southbound right; SBT = southbound through; EBL = eastbound left; EBR = eastbound right; EBT = eastbound through; WBL = westbound left; WBR = westbound right; WBT = westbound through; N/A = not available

Total gate downtime would be up to 8 minutes per day at public crossings along the Reynolds Lead and 43 minutes per day at the Dike Road crossing along the BNSF Spur under the 2018 No-Action and 2018 Construction (truck delivery) scenarios. If preload material is delivered by rail, total gate downtime would be up to 12 minutes longer per day at public crossings along the Reynolds Lead and BNSF Spur compared to the 2018 No-Action scenario. Over the course of a day, a 1% increase in probability of EMS and fire protection response vehicles being delayed at study crossings along the Reynolds Lead and BNSF Spur is anticipated with 2018 Construction (via rail) scenario trains.

2028 Operations

The average delay during the PM peak hour per stopped vehicle during operations in 2028 would be estimated at less than 110 seconds at public at-grade crossings along the Reynolds Lead, and generally less than 60 seconds at public at-grade crossings along the BNSF Spur. This corresponds to an increase by approximately 90 seconds or less at public at-grade crossings along the Reynolds Lead and less than 40 seconds along the BNSF Spur compared to the 2028 No Action scenario. With the planned track infrastructure, the average delay during the PM peak hour per stopped vehicle would be estimated to increase by less than 50 seconds at public at-grade crossings along the Reynolds Lead.

Total gate downtime would be up to 14 minutes per day at public crossings along the Reynolds Lead and 43 minutes per day at the Dike Road crossing along the BNSF Spur in the 2028 No-Action scenario. Under full operations, trains would increase total gate downtime more than 130 minutes during an average day for the public study crossings along the Reynolds Lead and BNSF Spur compared to the 2028 No-Action scenario. The planned track infrastructure along the Reynolds Lead would reduce the total gate downtime at the Industrial Way (SR 432), Oregon Way (SR 433), California Way, and 3rd Avenue (SR 432) study crossings.

Over the course of a day, a 10% increase in probability of EMS and fire protection response vehicles being delayed at study crossings along the Reynolds Lead and BNSF Spur is anticipated with the proposed project (with existing track infrastructure) trains. The planned track infrastructure along the Reynolds Lead would reduce the probability of EMS and fire protection response vehicles of being delayed at the Industrial Way (SR 432), Oregon Way (SR 433), California Way, and 3rd Avenue (SR 432) study crossings by around 5%. Overall, the On-Site Alternative could have an adverse impact on emergency vehicle response time, especially without planned track improvements, depending on the location of the origin and destination of the response incident in relation to the at-grade crossings that would be anticipated to experience increased gate downtime.

Increase Predicted Accident Probability

For this analysis, a predicted accident probability of 0.04 accident per year, or one every 25 years, was used as a performance measure for when grade-separation should be considered at study crossings for safety reasons. This was based on a peer review of similar applications of the FRA GradeDec.Net module. The predicted accident probability based on current safety protection for each at-grade study is summarized in Table 14 for both construction and operations of the On-Site Alternative, with No-Action Alternative conditions shown for reference. As shown, the predicted accident probability was found to be above 0.04 accident per year with existing crossing safety protection at the 3rd Avenue (SR 432) study crossing along the Reynolds Lead. At full operation of the On-Site Alternative, trains would increase the predicted accident probability above 0.04 accident per year at this study crossing.

Table 14. At-Grade Crossing Safety Assessment

Crossing Name (USDOT Crossing ID)	Predicted Accidents (accidents/year)				
	2018 No-Action	2018 Proposed Action (Truck Delivery)	2018 Proposed Action (Rail Delivery)	2028 No-Action	2028 Operations
Project area access at 38th Avenue	0.008	0.019	0.020	0.011	0.035
Weyerhaeuser access at Washington Way	0.014	0.014	0.017	0.018	0.027
Weyerhaeuser NORPAC access	0.012	0.012	0.015	0.016	0.031
Industrial Way- SR 432 (101806G)	0.013	0.014	0.016	0.016	0.025
Oregon Way- SR 433 (101805A)	0.018	0.018	0.021	0.022	0.038
California Way (101821J)	0.010	0.010	0.012	0.012	0.020
3rd Avenue- SR 432 (101826T)	0.021	0.021	0.025	0.026	**0.042**
Dike Road (101791U)	0.014	0.014	0.014	0.014	0.020

Notes:
Bolded, shaded gray values indicate an adverse vehicle safety impact (a study crossing that would have a predicted accident probability above 0.04 under the Proposed Action that would be at or below 0.04 under the No-Action Alternative from the same year).

3.2 Off-Site Alternative

Potential impacts on vehicle transportation from the Off-Site Alternative are described below.

3.2.1 Construction: Direct and Indirect Impacts

The Off-Site Alternative would generate the same number of vehicle trips as the On-Site Alternative during construction. Direct impacts during construction would be the same as described for the On-Site Alternative, except construction vehicles would access the project area for the Off-Site Alternative via a new private driveway on Mount Solo Road.

Construction of the Off-Site Alternative would result in the following indirect impacts.

Cause Vehicle Delays from Rail Construction Traffic

Average vehicle delay, peak hour vehicle delay, and queuing at study crossings would be the same as the On-Site Alternative at all study crossings, except at the crossing of the Reynolds Lead at 38th Avenue. Average vehicle delay, peak hour vehicle delay, and queuing at this study crossing and queue lengths at the Industrial Way/38th Avenue intersection would be less than the On-Site Alternative because construction vehicles associated with the export terminal would not use this crossing under the Off-Site Alternative.

Under the Off-Site Alternative, it is anticipated the driveway on Mt. Solo Road that provides access to the Off-Site Alternative project area would be controlled with a stop sign. Mt. Solo Road would continue to be free-flow and would not introduce a new stop sign or intersection signal at the project area access driveway that would substantially slow operations on Mt. Solo Road. Under the truck delivery scenario, trucks entering and exiting the project area access driveway could slow traffic on Mt. Solo Road but would not be expected to substantially change vehicle operations on Mt. Solo Road. The turning movements of trucks to and from Mt. Solo Road would decrease vehicle safety conditions and increase the potential for a crash compared to the No-Action Alternative because a new access point with truck turning movements would be introduced on Mt. Solo Road without a stop sign or signal.

The driveway would cross the rail loop in the project area more than 3,000 feet from Mt. Solo Road. Therefore, vehicle queueing at this at-grade crossing in the project area would not affect vehicle operations on Mt. Solo Road.

Cause Delay to Emergency Vehicle Response

This impact would be the same as described for the On-Site Alternative.

Increase the Predicted Accident Probability at Study Crossings

This impact would be the same as described for the On-Site Alternative.

3.2.2 Operations: Direct and Indirect Impacts

The Off-Site Alternative would generate the same number of vehicle trips as the On-Site Alternative during operations. Direct impacts during operations would be the same as the On-Site Alternative,

except vehicles would access the project area for the Off-Site Alternative via a new private driveway on Mount Solo Road.

Construction of the Off-Site Alternative would result in the following indirect impacts on vehicle transportation.

Cause Vehicle Delays from Rail Traffic

Average vehicle delay, peak hour vehicle delay, and queuing at study crossings would be the same as the On-Site Alternative at all study crossings, except at the crossing of the Reynolds Lead at 38th Avenue. Average vehicle delay, peak hour vehicle delay, and queuing at this study crossing and queue lengths at the Industrial Way/38th Avenue intersection would be less than the On-Site Alternative because vehicles associated with the export terminal operations would not use this crossing under the Off-Site Alternative.

Under the Off-Site Alternative, it is anticipated the driveway on Mt. Solo Road that provides access to the Off-Site Alternative project area would be controlled with a stop sign. Mt. Solo Road would continue to be free-flow (not controlled by a stop sign or intersection signal). Therefore, vehicle trips to and from the project area would not substantially change vehicle operations on Mt. Solo Road. Vehicle turning movements to and from Mt. Solo Road would decrease vehicle safety conditions and increase the potential for a crash compared to the No-Action Alternative because a new access point with turning movements would be introduced on Mt. Solo Road without a stop sign or signal.

The private driveway would cross the rail loop in the project area more than 3,000 feet from Mt. Solo Road. Therefore, vehicle queueing at this crossing in the project area would not affect vehicle operations on Mt. Solo Road.

Cause Delay to Emergency Vehicle Response from Rail Traffic

This impact would be the same as described for the On-Site Alternative.

Increase the Predicted Accident Probability at Study Crossings

This impact would be the same as described for the On-Site Alternative.

3.3 No-Action Alternative

The Applicant's planned growth and future expansion scenario would require approximately two trains per day on the Reynolds Lead. Anticipated No-Action Alternative conditions for vehicle LOS for 2018 are shown in Tables 7 and 8. As shown, all study crossings would operate with an LOS B or better along the Reynolds Lead, LOS C at the Dike Road crossing along the BNSF Spur during the PM peak hour. All study crossings would operate with an LOS A over a 24-hour period.

Table 9 shows the estimated vehicle queue lengths for the 2018 No-Action scenario. Vehicle queues extending from six study crossings (all along the Reynolds Lead) would affect seven nearby intersections with 2018 No-Action scenario trains during the PM peak hour. The affected intersections include Industrial Way/38th Avenue, Industrial Way/Washington Way, Industrial Way/ NORPAC access, Industrial Way/Weyerhaeuser Access, Industrial Way/Oregon Way, 3rd Avenue/Industrial Way, and Industrial Way/California Way. Vehicle queues at these intersections

would exceed available storage at four approaches, including the eastbound right turn from Industrial Way to the Weyerhaeuser Access (opposite Washington Way), the eastbound left turn and westbound right turn from Industrial Way to Oregon Way, and the northbound through movement at the 3rd Avenue/Industrial Way intersection. These queues could potentially block other movements at these intersections that would otherwise not be affected by train crossing events.

Table 10 shows the weighted average train lengths and total gate downtime at the study crossings for 2028. The 2028 No-Action scenario would include approximately 2 additional non-project-related trains per day on the Reynolds Lead, as documented in Section 2.1.2.1, *No-Action Alternative Analysis.* Overall, 4 trains per day are expected along the Reynolds Lead (1 during the PM peak hour), and 7 (1 during the PM peak hour) at the Dike Road study crossing (along the BNSF Spur) under the 2028 No-Action scenario. The weighted average length of these trains would be around 2,000 feet along the Reynolds Lead, and 5,000 feet along the BNSF Spur.

Total gate downtime would be up to 14 minutes per day (3 minutes during the PM peak hour) at public crossings along the Reynolds Lead, 20 minutes per day (5 minutes during the PM peak hour) at private crossings along the Reynolds Lead and 43 minutes per day (6 minutes during the PM peak hour) at the Dike Road crossing along the BNSF Spur under the 2028 No-Action scenario.

The predicted accident probability under 2018 No-Action scenario conditions are shown in Table 14. The predicted accident probability for the No-Action Alternative was found to be below 0.04 accident per year with existing crossing safety protection at the study crossings.

The 2028 No-Action scenario would include approximately 2 additional non-project-related trains per day on the Reynolds Lead, as documented in Section 2.1.2.1, *No-Action Alternative Analysis.* The estimated conditions for vehicle LOS for 2028 No-Action scenario are shown in Tables 11 and 12. As shown, all study crossings would operate with an LOS B or better along the Reynolds Lead, and LOS C or better along the BNSF Spur during the PM peak hour. All study crossings would operate with an LOS A over a 24-hour period.

Table 13 shows the estimated vehicle queue lengths for the 2028 No-Action scenario. Vehicle queues would be up to 400 feet longer beyond those identified with the 2018 No-Action scenario trains. Vehicle queues extending from six study crossings would affect eight nearby intersections with 2028 No-Action scenario trains during the PM peak hour. All of the affected intersections were previously identified as being affected with 2018 trains, including Industrial Way/38th Avenue, Industrial Way/Washington Way, Industrial Way/NORPAC access, Industrial Way/Weyerhaeuser Access, Industrial Way/Oregon Way, 3rd Avenue/Industrial Way, and Industrial Way/California Way. Vehicle queues at these intersections would exceed available storage at the four approaches identified with the 2018 No-Action scenario trains, including the westbound right turn from Industrial Way to the Weyerhaeuser Access (opposite Washington Way), the eastbound left turn and westbound right turn from Industrial Way to Oregon Way, and the northbound through movement at the 3rd Avenue/Industrial Way intersection. These queues could potentially block other movements at these intersections that would otherwise not be affected by train crossing events.

The predicted accident probability for the 2028 No-Action scenario conditions are shown in Table 14. The predicted accident probability for the No-Action Alternative was found to be below 0.04 accidents per year with existing crossing safety protection at the study crossings.

Chapter 4
Required Permits

No permits related to vehicle transportation would be required for construction and operation of the On-Site Alternative or Off-Site Alternative.

Chapter 5
References

5.1 Written References

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5.2 Personal Communications

Wolter, Dave. General Manager. Longview Switching Company. December 3, 2014—In person meeting with ICF International.

Appendix A

Vehicle Transportation Technical Data

Weighted Average Train Length

		2018 No-Action Alternative	2018 Construction (Truck)	2018 Construction (Rail)	2028 No-Action Alternative (current infra)	2028 On-Site Alternative (current infra)	2028 On-Site Alternative (planned infra)
Spur Line							
Project site access (opposite 38th Avenue)	Daily	2,024	2,024	3,530	2,043	5,886	5,886
	P.M. Peak	2,024	2,024	6,219	2,043	6,844	6,844
Weyerhaeuser access (opposite Washington Way)	Daily	2,024	2,024	3,530	2,043	5,886	5,886
	P.M. Peak	2,024	2,024	6,219	2,043	6,844	6,844
Weyerhaeuser Norpac Access	Daily	2,024	2,024	3,530	2,043	5,886	5,886
	P.M. Peak	2,024	2,024	6,219	2,043	6,844	6,844
Industrial Way (SR 432)	Daily	2,024	2,024	3,530	2,043	5,886	5,886
	P.M. Peak	2,024	2,024	6,219	2,043	6,844	6,844
Oregon Way (SR 433)	Daily	2,024	2,024	3,530	2,043	5,886	5,886
	P.M. Peak	2,024	2,024	6,219	2,043	6,844	6,844
California Way	Daily	2,041	2,041	3,541	2,053	5,888	5,888
	P.M. Peak	2,041	2,041	6,219	2,053	6,844	6,844
3rd Avenue (SR 432)	Daily	2,041	2,041	3,541	2,053	5,888	5,888
	P.M. Peak	2,041	2,041	6,219	2,053	6,844	6,844
Dike Road	Daily	4,919	4,919	5,116	4,919	6,251	6,251
	P.M. Peak	4,919	4,919	6,219	4,919	6,844	6,844

Weighted Average Speed

Spur Line	2018 No-Action Alternative	2018 Construction (Truck Delivery)	2018 Construction (Rail Delivery)	2028 No-Action Alternative (with current track infrastructure)	2028 On-Site Alternative (with current track infrastructure)	2028 On-Site Alternative (with planned track infrastructure)	2028 On-Site Alternative (with planned track infrastructure)
Spur Line	Daily	Daily	Daily	Daily	Daily	Daily	Daily
Project site access (opposite 38th Avenue)	5	5	5	5	5	5	5
Weyerhaeuser access (opposite Washington Way)	8	8	8	8	8	10	10
Weyerhaeuser Norpac Access	10	10	10	10	10	15	15
Industrial Way (SR 432)	10	10	10	10	10	20	20
Oregon Way (SR 433)	10	10	10	10	10	20	20
California Way	8	8	8	8	8	15	15
3rd Avenue (SR 432)	8	8	8	8	8	15	15
Dike Road	10	10	10	10	10	10	10

Weighted Average Speed

Spur Line	2018 No-Action Alternative	2018 Construction (Truck Delivery)	2018 Construction (Rail Delivery)	2028 No-Action Alternative (with current track infrastructure)	2028 On-Site Alternative (with current track infrastructure)	2028 On-Site Alternative (with planned track infrastructure)	2028 On-Site Alternative (with planned track infrastructure)
Spur Line	P.M. Peak	P.M. Peak	P.M. Peak	P.M. Peak	P.M. Peak	P.M. Peak	P.M. Peak
Project site access (opposite 38th Avenue)	5	5	5	5	5	5	5
Weyerhaeuser access (opposite Washington Way)	8	8	8	8	8	10	10
Weyerhaeuser Norpac Access	10	10	10	10	10	15	15
Industrial Way (SR 432)	10	10	10	10	10	20	20
Oregon Way (SR 433)	10	10	10	10	10	20	20
California Way	8	8	8	8	8	15	15
3rd Avenue (SR 432)	8	8	8	8	8	15	15
Dike Road	10	10	10	10	10	10	10

2018 No-Action Alternative Daily

Crossing ID	Street	Number of Daily Trains	Average Train Length (feet)	Train Speed (mph)	Gate Down-Time per Day (min)	Average daily traffic in both directions (veh/day)	Average delay per vehicle in a 24-hour period (sec/veh)	Level of service
	Spur Line							
	Project site access (opposite 38th Avenue)	2.28	2,024	5	11.62	200	1.2	A
	Weyerhaeuser access (opposite Washington Way)	2.28	2,024	8	7.69	3300	0.6	A
	Weyerhaeuser Norpac Access	2.28	2,024	10	6.38	650	0.4	A
101806G	Industrial Way (SR 432)	2.28	2,024	10	6.38	10100	0.4	A
101805A	Oregon Way (SR 433)	2.28	2,024	10	6.38	15200	0.4	A
101821J	California Way	2.28	2,041	8	7.75	4050	0.6	A
101826T	3rd Avenue (SR 432)	2.28	2,041	8	7.75	16850	0.6	A
101791U	Dike Road	7.12	4,919	10	43.38	950	5.7	A

2018 Construction (Truck Delivery)

Crossing ID	Street	Number of Daily Trains	Average Train Length (feet)	Train Speed (mph)	Gate Down-Time per Day (min)	Average daily traffic in both directions (veh/day)	Average delay per vehicle in a 24-hour period (sec/veh)	Level of service
	Spur Line							
	Project site access (opposite 38th Avenue)	2.28	2,024	5	11.62	2850	1.3	A
	Weyerhaeuser access (opposite Washington Way)	2.28	2,024	8	7.69	3300	0.6	A
	Weyerhaeuser Norpac Access	2.28	2,024	10	6.38	650	0.4	A
101806G	Industrial Way (SR 432)	2.28	2,024	10	6.38	12000	0.5	A
101805A	Oregon Way (SR 433)	2.28	2,024	10	6.38	15650	0.4	A
101821J	California Way	2.28	2,041	8	7.75	4050	0.6	A
101826T	3rd Avenue (SR 432)	2.28	2,041	8	7.75	17850	0.6	A
101791U	Dike Road	7.12	4,919	10	43.38	950	5.7	A

2018 Construction (Rail Delivery)

Crossing ID	Street	Number of Daily Trains	Average Train Length (feet)	Train Speed (mph)	Gate Down-Time per Day (min)	Average daily traffic in both directions (veh/day)	Average delay per vehicle in a 24-hour period (sec/veh)	Level of service
	Spur Line							
	Project site access (opposite 38th Avenue)	3.56	3,530	5	30.31	2000	5.7	A
	Weyerhaeuser access (opposite Washington Way)	3.56	3,530	8	19.61	3300	2.4	A
	Weyerhaeuser Norpac Access	3.56	3,530	10	16.04	650	1.5	A
101806G	Industrial Way (SR 432)	3.56	3,530	10	16.04	11200	1.8	A
101805A	Oregon Way (SR 433)	3.56	3,530	10	16.04	15650	1.7	A
101821J	California Way	3.56	3,541	8	19.67	4050	2.5	A
101826T	3rd Avenue (SR 432)	3.56	3,541	8	19.67	17200	2.6	A
101791U	Dike Road	8.40	5,116	10	53.04	950	7.2	A

2028 No-Action Alternative (with current track infrastructure)

Crossing ID	Street	Number of Daily Trains	Average Train Length (feet)	Train Speed (mph)	Gate Down-Time per Day (min)	Average daily traffic in both directions (veh/day)	Average delay per vehicle in a 24-hour period (sec/veh)	Level of service
	Spur Line							
	Project site access (opposite 38th Avenue)	3.99	2,043	5	20.51	250	2.2	A
	Weyerhaeuser access (opposite Washington Way)	3.99	2,043	8	13.57	3900	1.0	A
	Weyerhaeuser Norpac Access	3.99	2,043	10	11.25	800	0.7	A
101806G	Industrial Way (SR 432)	3.99	2,043	10	11.25	11450	0.8	A
101805A	Oregon Way (SR 433)	3.99	2,043	10	11.25	18500	0.8	A
101821J	California Way	3.99	2,053	8	13.63	4800	1.1	A
101826T	3rd Avenue (SR 432)	3.99	2,053	8	13.63	20500	1.1	A
101791U	Dike Road	7.12	4,919	10	43.38	1100	5.7	A

2028 On-Site Alternative (with current track infrastructure)

Crossing ID	Street	Number of Daily Trains	Average Train Length (feet)	Train Speed (mph)	Gate Down-Time per Day (min)	Average daily traffic in both directions (veh/day)	Average delay per vehicle in a 24-hour period (sec/veh)	Level of service
	Spur Line							
	Project site access (opposite 38th Avenue)	19.99	5,886	5	277.39	1340	83.5	F
	Weyerhaeuser access (opposite Washington Way)	19.99	5,886	8	177.11	3900	34.7	C
	Weyerhaeuser Norpac Access	19.99	5,886	10	143.69	800	22.0	C
101806G	Industrial Way (SR 432)	19.99	5,886	10	143.69	12100	26.2	C
101805A	Oregon Way (SR 433)	19.99	5,886	10	143.69	18770	25.0	C
101821J	California Way	19.99	5,888	8	177.17	4800	36.8	D
101826T	3rd Avenue (SR 432)	19.99	5,888	8	177.17	20720	38.7	D
101791U	Dike Road	23.12	6,251	10	175.81	1100	28.8	C

2028 On-Site Alternative (with planned track infrastructure)

Crossing ID	Street	Number of Daily Trains	Average Train Length (feet)	Train Speed (mph)	Gate Down-Time per Day (min)	Average daily traffic in both directions (veh/day)	Average delay per vehicle in a 24-hour period (sec/veh)	Level of service
	Spur Line							
	Project site access (opposite 38th Avenue)	19.99	5,886	5	277.39	1340	83.5	F
	Weyerhaeuser access (opposite Washington Way)	19.99	5,886	10	143.69	3900	22.8	C
	Weyerhaeuser Norpac Access	19.99	5,886	15	99.13	800	10.5	B
101806G	Industrial Way (SR 432)	19.99	5,886	20	76.84	12100	7.5	A
101805A	Oregon Way (SR 433)	19.99	5,886	20	76.84	18770	7.2	A
101821J	California Way	19.99	5,888	15	99.16	4800	11.5	B
101826T	3rd Avenue (SR 432)	19.99	5,888	15	99.16	20720	12.1	B
101791U	Dike Road	23.12	6,251	10	175.81	1100	28.8	C

2018 No-Action Alternative PM Peak Hour

Crossing ID	Street	Number of PM Peak Hour Trains					Total Number of PM Peak Hour Trains	Gate Down-Time PM Peak (min)
	Spur Line	Existing	MBTL	BNSF	Cascades	Coast Starlight		
	Project site access (opposite 38th Avenue)	1	0	0	0	0	1.00	5.10
	Weyerhaeuser access (opposite Washington Way)	1	0	0	0	0	1.00	3.37
	Weyerhaeuser Norpac Access	1	0	0	0	0	1.00	2.80
101806G	Industrial Way (SR 432)	1	0	0	0	0	1.00	2.80
101805A	Oregon Way (SR 433)	1	0	0	0	0	1.00	2.80
101821J	California Way	1	0	0	0	0	1.00	3.40
101826T	3rd Avenue (SR 432)	1	0	0	0	0	1.00	3.40
101791U	Dike Road	1	0	0	0	0	1.00	6.09

2018 Construction PM Peak Hour (Truck Delivery)

Crossing ID	Street	Number of PM Peak Hour Trains					Total Number of PM Peak Hour Trains	Gate Down-Time PM Peak (min)
	Spur Line	Existing	MBTL	BNSF	Cascades	Coast Starlight		
	Project site access (opposite 38th Avenue)	1	0	0	0	0	1.00	5.10
	Weyerhaeuser access (opposite Washington Way)	1	0	0	0	0	1.00	3.37
	Weyerhaeuser Norpac Access	1	0	0	0	0	1.00	2.80
101806G	Industrial Way (SR 432)	1	0	0	0	0	1.00	2.80
101805A	Oregon Way (SR 433)	1	0	0	0	0	1.00	2.80
101821J	California Way	1	0	0	0	0	1.00	3.40
101826T	3rd Avenue (SR 432)	1	0	0	0	0	1.00	3.40
101791U	Dike Road	1	0	0	0	0	1.00	6.09

2018 Construction PM Peak Hour (Rail Delivery)

Crossing ID	Street	Number of PM Peak Hour Trains					Total Number of PM Peak Hour Trains	Gate Down-Time PM Peak (min)
	Spur Line	Existing	MBTL Const.	BNSF	Cascades	Coast Starlight		
	Project site access (opposite 38th Avenue)	0	1.00	0	0	0	1.00	14.63
	Weyerhaeuser access (opposite Washington Way)	0	1.00	0	0	0	1.00	9.33
	Weyerhaeuser Norpac Access	0	1.00	0	0	0	1.00	7.57
101806G	Industrial Way (SR 432)	0	1.00	0	0	0	1.00	7.57
101805A	Oregon Way (SR 433)	0	1.00	0	0	0	1.00	7.57
101821J	California Way	0	1.00	0	0	0	1.00	9.33
101826T	3rd Avenue (SR 432)	0	1.00	0	0	0	1.00	9.33
101791U	Dike Road	0	1.00	0	0	0	1.00	7.57

2028 No-Action Alternative PM Peak Hour (with current track infrastructure)

Crossing ID	Street	Number of PM Peak Hour Trains					Total Number of PM Peak Hour Trains	Gate Down-Time PM Peak (min)
	Spur Line	Existing	MBTL	BNSF	Cascades	Coast Starlight		
	Project site access (opposite 38th Avenue)	1	0	0	0	0	1.00	5.14
	Weyerhaeuser access (opposite Washington Way)	1	0	0	0	0	1.00	3.40
	Weyerhaeuser Norpac Access	1	0	0	0	0	1.00	2.82
101806G	Industrial Way (SR 432)	1	0	0	0	0	1.00	2.82
101805A	Oregon Way (SR 433)	1	0	0	0	0	1.00	2.82
101821J	California Way	1	0	0	0	0	1.00	3.42
101826T	3rd Avenue (SR 432)	1	0	0	0	0	1.00	3.42
101791U	Dike Road	1	0	0	0	0	1.00	6.09

2028 On-Site Alternative PM Peak Hour (with current track infrastructure)

Crossing ID	Street	Number of PM Peak Hour Trains					Total Number of PM Peak Hour Trains	Gate Down-Time PM Peak (min)
	Spur Line	Existing	MBTL	BNSF	Cascades	Coast Starlight		
	Project site access (opposite 38th Avenue)	0	1	0	0	0	1.00	16.05
	Weyerhaeuser access (opposite Washington Way)	0	1	0	0	0	1.00	10.22
	Weyerhaeuser Norpac Access	0	1	0	0	0	1.00	8.28
101806G	Industrial Way (SR 432)	0	1	0	0	0	1.00	8.28
101805A	Oregon Way (SR 433)	0	1	0	0	0	1.00	8.28
101821J	California Way	0	1	0	0	0	1.00	10.22
101826T	3rd Avenue (SR 432)	0	1	0	0	0	1.00	10.22
101791U	Dike Road	0	1	0	0	0	1.00	8.28

2028 On-Site Alternative PM Peak Hour (with planned track infrastructure)- 1 MBTL Train

Crossing ID	Street	Number of PM Peak Hour Trains					Total Number of PM Peak Hour Trains	Gate Down-Time PM Peak (min)
	Spur Line	Existing	MBTL	BNSF	Cascades	Coast Starlight		
	Project site access (opposite 38th Avenue)	0	1	0	0	0	1.00	16.05
	Weyerhaeuser access (opposite Washington Way)	0	1	0	0	0	1.00	8.28
	Weyerhaeuser Norpac Access	0	1	0	0	0	1.00	5.68
101806G	Industrial Way (SR 432)	0	1	0	0	0	1.00	4.39
101805A	Oregon Way (SR 433)	0	1	0	0	0	1.00	4.39
101821J	California Way	0	1	0	0	0	1.00	5.68
101826T	3rd Avenue (SR 432)	0	1	0	0	0	1.00	5.68
101791U	Dike Road	0	1	0	0	0	1.00	8.28

2028 On-Site Alternative PM Peak Hour (with planned track infrastructure)- 2 MBTL Trains

Crossing ID	Street	Number of PM Peak Hour Trains					Total Number of PM Peak Hour Trains	Gate Down-Time PM Peak (min)
	Spur Line	Existing	MBTL	BNSF	Cascades	Coast Starlight		
	Project site access (opposite 38th Avenue)	0	2	0	0	0	2.00	32.11
	Weyerhaeuser access (opposite Washington Way)	0	2	0	0	0	2.00	16.55
	Weyerhaeuser Norpac Access	0	2	0	0	0	2.00	11.37
101806G	Industrial Way (SR 432)	0	2	0	0	0	2.00	8.78
101805A	Oregon Way (SR 433)	0	2	0	0	0	2.00	8.78
101821J	California Way	0	2	0	0	0	2.00	11.37
101826T	3rd Avenue (SR 432)	0	2	0	0	0	2.00	11.37
101791U	Dike Road	0	2	0	0	0	2.00	16.55

Traffic Volumes- PM Peak

Study Crossing	2018 No Action	2018 Construction, via truck	2018 Construction, via rail	2028 No Action	2028 Proposed Action
38th Avenue	20	285	200	25	134
Washington Way	330	330	330	390	390
Weyerhaeuser Norpac Entrance	65	65	65	80	80
Industrial Way/SR432	1,010	1,200	1,120	1,145	1,210
SR433-Oregon Way	1,520	1,565	1,565	1,850	1,877
California Way	405	405	405	480	480
3rd Ave-SR 432	1,685	1,785	1,720	2,050	2,072
Dike Rd	95	95	95	110	110

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	17	0	0	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.91			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			4590			1863	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			4590			1863	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	0	20	0	0	17	0	0	3	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	17	0	0	3	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	13%	13%	13%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					304.0			2892.0			2892.0	
Effective Green, g (s)					304.0			2892.0			2892.0	
Actuated g/C Ratio					0.10			0.90			0.90	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					180			4148			1683	
v/s Ratio Prot					c0.01			c0.00			0.00	
v/s Ratio Perm												
v/c Ratio					0.11			0.00			0.00	
Uniform Delay, d1					1324.4			14.9			14.8	
Progression Factor					0.16			1.00			1.00	
Incremental Delay, d2					1.2			0.0			0.0	
Delay (s)					207.6			14.9			14.8	
Level of Service					F			B			B	
Approach Delay (s)		0.0			207.6			14.9			14.8	
Approach LOS		A			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	111.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.01		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑↑			↑↑			↑			↑	
Volume (vph)	0	217	0	0	113	0	0	0	0	0	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.0			2.0						2.0	
Lane Util. Factor		0.91			0.95						1.00	
Frt		1.00			1.00						1.00	
Flt Protected		1.00			1.00						1.00	
Satd. Flow (prot)		4988			3539						1900	
Flt Permitted		1.00			1.00						1.00	
Satd. Flow (perm)		4988			3539						1900	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	241	0	0	126	0	0	0	0	0	20	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	241	0	0	126	0	0	0	0	0	20	0
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type		NA			NA						NA	
Protected Phases		1 3			1 3			2			2	
Permitted Phases												
Actuated Green, G (s)		2996.0			2996.0						200.0	
Effective Green, g (s)		2996.0			2996.0						200.0	
Actuated g/C Ratio		0.94			0.94						0.06	
Clearance Time (s)											2.0	
Lane Grp Cap (vph)		4670			3313						118	
v/s Ratio Prot		c0.05			0.04						c0.01	
v/s Ratio Perm												
v/c Ratio		0.05			0.04						0.17	
Uniform Delay, d1		6.8			6.7						1421.3	
Progression Factor		1.00			1.00						0.00	
Incremental Delay, d2		0.0			0.0						3.1	
Delay (s)		6.9			6.8						3.2	
Level of Service		A			A						A	
Approach Delay (s)		6.9			6.8			0.0			3.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	14.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	57	0	0	8	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1863			1863	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1863			1863	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	0	20	0	0	64	0	0	9	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	64	0	0	9	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					166.0			3030.0			3030.0	
Effective Green, g (s)					166.0			3030.0			3030.0	
Actuated g/C Ratio					0.05			0.95			0.95	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					98			1764			1764	
v/s Ratio Prot					c0.01			c0.03			0.00	
v/s Ratio Perm												
v/c Ratio					0.20			0.04			0.01	
Uniform Delay, d1					1453.7			4.7			4.5	
Progression Factor					0.01			1.00			1.05	
Incremental Delay, d2					4.6			0.0			0.0	
Delay (s)					23.2			4.7			4.8	
Level of Service					C			A			A	
Approach Delay (s)		0.0			23.2			4.7			4.8	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.04		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	443	0	0	567	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1810			1743	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1810			1743	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	20	0	0	482	0	0	616	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	482	0	0	616	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	5%	5%	5%	9%	9%	9%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					166.0			3030.0			3030.0	
Effective Green, g (s)					166.0			3030.0			3030.0	
Actuated g/C Ratio					0.05			0.95			0.95	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					98			1713			1650	
v/s Ratio Prot					c0.01			0.27			c0.35	
v/s Ratio Perm												
v/c Ratio					0.20			0.28			0.37	
Uniform Delay, d1					1453.7			6.2			7.0	
Progression Factor					0.00			1.00			1.00	
Incremental Delay, d2					4.6			0.4			0.6	
Delay (s)					4.8			6.6			7.6	
Level of Service					A			A			A	
Approach Delay (s)		0.0			4.8			6.6			7.6	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	39.8%	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												
Volume (vph)	0	0	0	0	20	0	0	856	0	0	664	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.95			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					1.00			1.00			1.00	
Satd. Flow (prot)					1900			3539			3539	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			3539			3539	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	20	0	0	930	0	0	722	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	930	0	0	722	0
Confl. Bikes (#/hr)									766			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					166.0			3030.0			3030.0	
Effective Green, g (s)					166.0			3030.0			3030.0	
Actuated g/C Ratio					0.05			0.95			0.95	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					98			3350			3350	
v/s Ratio Prot					c0.01			c0.26			0.20	
v/s Ratio Perm												
v/c Ratio					0.20			0.28			0.22	
Uniform Delay, d1					1453.7			6.1			5.7	
Progression Factor					0.02			1.00			1.00	
Incremental Delay, d2					4.6			0.2			0.1	
Delay (s)					39.4			6.3			5.8	
Level of Service					D			A			A	
Approach Delay (s)		0.0			39.4			6.3			5.8	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	196	0	0	209	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1743			1845	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1743			1845	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	0	20	0	0	211	0	0	225	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	211	0	0	225	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	9%	9%	9%	3%	3%	3%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					200.0			2996.0			2996.0	
Effective Green, g (s)					200.0			2996.0			2996.0	
Actuated g/C Ratio					0.06			0.94			0.94	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					118			1631			1727	
v/s Ratio Prot					c0.01			0.12			c0.12	
v/s Ratio Perm												
v/c Ratio					0.17			0.13			0.13	
Uniform Delay, d1					1421.3			7.4			7.4	
Progression Factor					0.01			1.00			1.00	
Incremental Delay, d2					3.1			0.2			0.2	
Delay (s)					12.4			7.6			7.6	
Level of Service					B			A			A	
Approach Delay (s)		0.0			12.4			7.6			7.6	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	21.0%	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												
Volume (vph)	0	0	0	0	20	0	0	1033	0	0	652	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.95			0.95	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			3195			3112	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			3195			3112	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	0	20	0	0	1161	0	0	733	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	1161	0	0	733	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	13%	13%	13%	16%	16%	16%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					200.0			2996.0			2996.0	
Effective Green, g (s)					200.0			2996.0			2996.0	
Actuated g/C Ratio					0.06			0.94			0.94	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					118			2991			2913	
v/s Ratio Prot					c0.01			c0.36			0.24	
v/s Ratio Perm												
v/c Ratio					0.17			0.39			0.25	
Uniform Delay, d1					1421.3			10.2			8.5	
Progression Factor					1.00			1.00			1.00	
Incremental Delay, d2					3.1			0.4			0.2	
Delay (s)					1424.4			10.6			8.7	
Level of Service					F			B			A	
Approach Delay (s)		0.0			1424.4			10.6			8.7	
Approach LOS		A			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	20	0	0	20	0	0	38	0	0	57	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.0			2.0			2.0			2.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			1.00			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		950			950			1727			1727	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		950			950			1727			1727	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	20	0	0	20	0	0	38	0	0	57	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	20	0	0	20	0	0	38	0	0	57	0
Heavy Vehicles (%)	100%	100%	100%	100%	100%	100%	10%	10%	10%	10%	10%	10%
Turn Type		NA			NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)		367.0			367.0			2829.0			2829.0	
Effective Green, g (s)		367.0			367.0			2829.0			2829.0	
Actuated g/C Ratio		0.11			0.11			0.88			0.88	
Clearance Time (s)		2.0			2.0							
Lane Grp Cap (vph)		108			108			1526			1526	
v/s Ratio Prot		0.02			c0.02			0.02			c0.03	
v/s Ratio Perm												
v/c Ratio		0.19			0.19			0.02			0.04	
Uniform Delay, d1		1281.3			1281.3			22.0			22.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		3.7			3.7			0.0			0.0	
Delay (s)		1285.0			1285.0			22.0			22.3	
Level of Service		F			F			C			C	
Approach Delay (s)		1285.0			1285.0			22.0			22.3	
Approach LOS		F			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	396.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.05		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	239	0	0	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.91			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			4396			1863	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			4396			1863	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	0	20	0	0	244	0	0	3	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	244	0	0	3	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	18%	18%	18%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					304.0			2892.0			2892.0	
Effective Green, g (s)					304.0			2892.0			2892.0	
Actuated g/C Ratio					0.10			0.90			0.90	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					180			3972			1683	
v/s Ratio Prot					c0.01			c0.06			0.00	
v/s Ratio Perm												
v/c Ratio					0.11			0.06			0.00	
Uniform Delay, d1					1324.4			15.7			14.8	
Progression Factor					0.16			1.00			1.00	
Incremental Delay, d2					1.2			0.0			0.0	
Delay (s)					207.6			15.7			14.8	
Level of Service					F			B			B	
Approach Delay (s)		0.0			207.6			15.7			14.8	
Approach LOS		A			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	30.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.07		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	14.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑↑			↑↑			↑			↑	
Volume (vph)	0	217	0	0	113	0	0	0	0	0	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.0			2.0						2.0	
Lane Util. Factor		0.91			0.95						1.00	
Frt		1.00			1.00						1.00	
Flt Protected		1.00			1.00						1.00	
Satd. Flow (prot)		4988			3539						1900	
Flt Permitted		1.00			1.00						1.00	
Satd. Flow (perm)		4988			3539						1900	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	241	0	0	126	0	0	0	0	0	20	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	241	0	0	126	0	0	0	0	0	20	0
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type		NA			NA						NA	
Protected Phases		1 3			1 3			2			2	
Permitted Phases												
Actuated Green, G (s)		2996.0			2996.0						200.0	
Effective Green, g (s)		2996.0			2996.0						200.0	
Actuated g/C Ratio		0.94			0.94						0.06	
Clearance Time (s)											2.0	
Lane Grp Cap (vph)		4670			3313						118	
v/s Ratio Prot		c0.05			0.04						c0.01	
v/s Ratio Perm												
v/c Ratio		0.05			0.04						0.17	
Uniform Delay, d1		6.8			6.7						1421.3	
Progression Factor		1.00			1.00						0.00	
Incremental Delay, d2		0.0			0.0						3.1	
Delay (s)		6.9			6.8						3.2	
Level of Service		A			A						A	
Approach Delay (s)		6.9			6.8			0.0			3.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	14.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	57	0	0	8	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1863			1863	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1863			1863	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	0	20	0	0	64	0	0	9	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	64	0	0	9	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					166.0			3030.0			3030.0	
Effective Green, g (s)					166.0			3030.0			3030.0	
Actuated g/C Ratio					0.05			0.95			0.95	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					98			1764			1764	
v/s Ratio Prot					c0.01			c0.03			0.00	
v/s Ratio Perm												
v/c Ratio					0.20			0.04			0.01	
Uniform Delay, d1					1453.7			4.7			4.5	
Progression Factor					0.01			1.00			1.05	
Incremental Delay, d2					4.6			0.0			0.0	
Delay (s)					23.2			4.7			4.8	
Level of Service					C			A			A	
Approach Delay (s)		0.0			23.2			4.7			4.8	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.04		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	593	0	0	567	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1638			1652	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1638			1652	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	20	0	0	645	0	0	616	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	645	0	0	616	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	16%	16%	16%	15%	15%	15%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					166.0			3030.0			3030.0	
Effective Green, g (s)					166.0			3030.0			3030.0	
Actuated g/C Ratio					0.05			0.95			0.95	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					98			1550			1564	
v/s Ratio Prot					c0.01			c0.39			0.37	
v/s Ratio Perm												
v/c Ratio					0.20			0.42			0.39	
Uniform Delay, d1					1453.7			7.5			7.2	
Progression Factor					0.00			1.00			1.00	
Incremental Delay, d2					4.6			0.8			0.7	
Delay (s)					4.8			8.3			7.9	
Level of Service					A			A			A	
Approach Delay (s)		0.0			4.8			8.3			7.9	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	41.2%	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												
Volume (vph)	0	0	0	0	20	0	0	901	0	0	664	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.95			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					1.00			1.00			1.00	
Satd. Flow (prot)					1900			3539			3539	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			3539			3539	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	20	0	0	979	0	0	722	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	979	0	0	722	0
Confl. Bikes (#/hr)									766			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					166.0			3030.0			3030.0	
Effective Green, g (s)					166.0			3030.0			3030.0	
Actuated g/C Ratio					0.05			0.95			0.95	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					98			3350			3350	
v/s Ratio Prot					c0.01			c0.28			0.20	
v/s Ratio Perm												
v/c Ratio					0.20			0.29			0.22	
Uniform Delay, d1					1453.7			6.2			5.7	
Progression Factor					0.02			1.00			1.00	
Incremental Delay, d2					4.6			0.2			0.1	
Delay (s)					39.4			6.5			5.8	
Level of Service					D			A			A	
Approach Delay (s)		0.0			39.4			6.5			5.8	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	196	0	0	209	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1743			1845	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1743			1845	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	0	20	0	0	211	0	0	225	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	211	0	0	225	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	9%	9%	9%	3%	3%	3%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					200.0			2996.0			2996.0	
Effective Green, g (s)					200.0			2996.0			2996.0	
Actuated g/C Ratio					0.06			0.94			0.94	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					118			1631			1727	
v/s Ratio Prot					c0.01			0.12			c0.12	
v/s Ratio Perm												
v/c Ratio					0.17			0.13			0.13	
Uniform Delay, d1					1421.3			7.4			7.4	
Progression Factor					0.01			1.00			1.00	
Incremental Delay, d2					3.1			0.2			0.2	
Delay (s)					12.4			7.6			7.6	
Level of Service					B			A			A	
Approach Delay (s)		0.0			12.4			7.6			7.6	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	21.0%	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												
Volume (vph)	0	0	0	0	20	0	0	1100	0	0	652	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.95			0.95	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			3139			3112	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			3139			3112	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	0	20	0	0	1236	0	0	733	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	1236	0	0	733	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	15%	15%	15%	16%	16%	16%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					200.0			2996.0			2996.0	
Effective Green, g (s)					200.0			2996.0			2996.0	
Actuated g/C Ratio					0.06			0.94			0.94	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					118			2938			2913	
v/s Ratio Prot					c0.01			c0.39			0.24	
v/s Ratio Perm												
v/c Ratio					0.17			0.42			0.25	
Uniform Delay, d1					1421.3			10.7			8.5	
Progression Factor					1.00			1.00			1.00	
Incremental Delay, d2					3.1			0.4			0.2	
Delay (s)					1424.4			11.2			8.7	
Level of Service					F			B			A	
Approach Delay (s)		0.0			1424.4			11.2			8.7	
Approach LOS		A			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	20	0	0	20	0	0	38	0	0	57	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.0			2.0			2.0			2.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			1.00			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		950			950			1727			1727	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		950			950			1727			1727	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	20	0	0	20	0	0	38	0	0	57	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	20	0	0	20	0	0	38	0	0	57	0
Heavy Vehicles (%)	100%	100%	100%	100%	100%	100%	10%	10%	10%	10%	10%	10%
Turn Type		NA			NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)		367.0			367.0			2829.0			2829.0	
Effective Green, g (s)		367.0			367.0			2829.0			2829.0	
Actuated g/C Ratio		0.11			0.11			0.88			0.88	
Clearance Time (s)		2.0			2.0							
Lane Grp Cap (vph)		108			108			1526			1526	
v/s Ratio Prot		0.02			c0.02			0.02			c0.03	
v/s Ratio Perm												
v/c Ratio		0.19			0.19			0.02			0.04	
Uniform Delay, d1		1281.3			1281.3			22.0			22.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		3.7			3.7			0.0			0.0	
Delay (s)		1285.0			1285.0			22.0			22.3	
Level of Service		F			F			C			C	
Approach Delay (s)		1285.0			1285.0			22.0			22.3	
Approach LOS		F			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	396.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.05		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	197	0	0	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.91			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			4590			1863	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			4590			1863	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	0	20	0	0	201	0	0	3	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	201	0	0	3	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	13%	13%	13%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					961.0			2235.0			2235.0	
Effective Green, g (s)					961.0			2235.0			2235.0	
Actuated g/C Ratio					0.30			0.70			0.70	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					570			3205			1301	
v/s Ratio Prot					c0.01			c0.04			0.00	
v/s Ratio Perm												
v/c Ratio					0.04			0.06			0.00	
Uniform Delay, d1					791.6			152.2			145.7	
Progression Factor					0.24			1.00			1.00	
Incremental Delay, d2					0.1			0.0			0.0	
Delay (s)					187.9			152.2			145.7	
Level of Service					F			F			F	
Approach Delay (s)		0.0			187.9			152.2			145.7	
Approach LOS		A			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	155.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.05		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑↑			↑↑			↑			↑	
Volume (vph)	0	217	0	0	113	0	0	0	0	0	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.0			2.0						2.0	
Lane Util. Factor		0.91			0.95						1.00	
Frt		1.00			1.00						1.00	
Flt Protected		1.00			1.00						1.00	
Satd. Flow (prot)		4988			3539						1900	
Flt Permitted		1.00			1.00						1.00	
Satd. Flow (perm)		4988			3539						1900	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	241	0	0	126	0	0	0	0	0	20	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	241	0	0	126	0	0	0	0	0	20	0
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type		NA			NA						NA	
Protected Phases		1 3			1 3			2			2	
Permitted Phases												
Actuated Green, G (s)		2585.0			2585.0						611.0	
Effective Green, g (s)		2585.0			2585.0						611.0	
Actuated g/C Ratio		0.81			0.81						0.19	
Clearance Time (s)											2.0	
Lane Grp Cap (vph)		4029			2858						362	
v/s Ratio Prot		c0.05			0.04						c0.01	
v/s Ratio Perm												
v/c Ratio		0.06			0.04						0.06	
Uniform Delay, d1		62.1			61.3						1058.5	
Progression Factor		1.00			1.00						0.00	
Incremental Delay, d2		0.0			0.0						0.3	
Delay (s)		62.1			61.3						0.4	
Level of Service		E			E						A	
Approach Delay (s)		62.1			61.3			0.0			0.4	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	58.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	14.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	57	0	0	8	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1863			1863	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1863			1863	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	0	20	0	0	64	0	0	9	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	64	0	0	9	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					495.0			2701.0			2701.0	
Effective Green, g (s)					495.0			2701.0			2701.0	
Actuated g/C Ratio					0.15			0.84			0.84	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					293			1572			1572	
v/s Ratio Prot					c0.01			c0.03			0.00	
v/s Ratio Perm												
v/c Ratio					0.07			0.04			0.01	
Uniform Delay, d1					1155.5			40.3			39.1	
Progression Factor					0.02			1.00			1.04	
Incremental Delay, d2					0.4			0.0			0.0	
Delay (s)					25.7			40.3			40.9	
Level of Service					C			D			D	
Approach Delay (s)		0.0			25.7			40.3			40.9	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.04		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	551	0	0	567	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1727			1652	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1727			1652	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	20	0	0	599	0	0	616	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	599	0	0	616	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	10%	10%	15%	15%	15%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					495.0			2701.0			2701.0	
Effective Green, g (s)					495.0			2701.0			2701.0	
Actuated g/C Ratio					0.15			0.84			0.84	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					293			1457			1394	
v/s Ratio Prot					c0.01			0.35			c0.37	
v/s Ratio Perm												
v/c Ratio					0.07			0.41			0.44	
Uniform Delay, d1					1155.5			59.6			62.1	
Progression Factor					0.00			1.00			1.00	
Incremental Delay, d2					0.4			0.9			1.0	
Delay (s)					0.6			60.4			63.1	
Level of Service					A			E			E	
Approach Delay (s)		0.0			0.6			60.4			63.1	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	60.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	39.8%	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												
Volume (vph)	0	0	0	0	20	0	0	901	0	0	664	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.95			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					1.00			1.00			1.00	
Satd. Flow (prot)					1900			3539			3539	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			3539			3539	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	20	0	0	979	0	0	722	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	979	0	0	722	0
Confl. Bikes (#/hr)									766			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					495.0			2701.0			2701.0	
Effective Green, g (s)					495.0			2701.0			2701.0	
Actuated g/C Ratio					0.15			0.84			0.84	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					293			2987			2987	
v/s Ratio Prot					c0.01			c0.28			0.20	
v/s Ratio Perm												
v/c Ratio					0.07			0.33			0.24	
Uniform Delay, d1					1155.5			53.8			48.9	
Progression Factor					0.08			1.00			1.00	
Incremental Delay, d2					0.4			0.3			0.2	
Delay (s)					93.6			54.1			49.1	
Level of Service					F			D			D	
Approach Delay (s)		0.0			93.6			54.1			49.1	
Approach LOS		A			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	52.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	196	0	0	209	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1743			1845	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1743			1845	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	0	20	0	0	211	0	0	225	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	211	0	0	225	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	9%	9%	9%	3%	3%	3%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					611.0			2585.0			2585.0	
Effective Green, g (s)					611.0			2585.0			2585.0	
Actuated g/C Ratio					0.19			0.81			0.81	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					362			1408			1490	
v/s Ratio Prot					c0.01			0.12			c0.12	
v/s Ratio Perm												
v/c Ratio					0.06			0.15			0.15	
Uniform Delay, d1					1058.5			67.2			67.3	
Progression Factor					0.01			1.00			1.00	
Incremental Delay, d2					0.3			0.2			0.2	
Delay (s)					8.2			67.5			67.5	
Level of Service					A			E			E	
Approach Delay (s)		0.0			8.2			67.5			67.5	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	64.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	21.0%	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												
Volume (vph)	0	0	0	0	20	0	0	1069	0	0	652	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.95			0.95	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			3195			3112	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			3195			3112	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	0	20	0	0	1201	0	0	733	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	1201	0	0	733	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	13%	13%	13%	16%	16%	16%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					611.0			2585.0			2585.0	
Effective Green, g (s)					611.0			2585.0			2585.0	
Actuated g/C Ratio					0.19			0.81			0.81	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					362			2580			2513	
v/s Ratio Prot					c0.01			c0.38			0.24	
v/s Ratio Perm												
v/c Ratio					0.06			0.47			0.29	
Uniform Delay, d1					1058.5			94.7			77.3	
Progression Factor					1.00			1.00			1.00	
Incremental Delay, d2					0.3			0.6			0.3	
Delay (s)					1058.8			95.3			77.6	
Level of Service					F			F			E	
Approach Delay (s)		0.0			1058.8			95.3			77.6	
Approach LOS		A			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	98.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	20	0	0	20	0	0	38	0	0	57	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.0			2.0			2.0			2.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			1.00			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		950			950			1727			1727	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		950			950			1727			1727	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	20	0	0	20	0	0	38	0	0	57	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	20	0	0	20	0	0	38	0	0	57	0
Heavy Vehicles (%)	100%	100%	100%	100%	100%	100%	10%	10%	10%	10%	10%	10%
Turn Type		NA			NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)		495.0			495.0			2701.0			2701.0	
Effective Green, g (s)		495.0			495.0			2701.0			2701.0	
Actuated g/C Ratio		0.15			0.15			0.84			0.84	
Clearance Time (s)		2.0			2.0							
Lane Grp Cap (vph)		146			146			1457			1457	
v/s Ratio Prot		0.02			c0.02			0.02			c0.03	
v/s Ratio Perm												
v/c Ratio		0.14			0.14			0.03			0.04	
Uniform Delay, d1		1168.0			1168.0			39.8			40.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.9			1.9			0.0			0.1	
Delay (s)		1170.0			1170.0			39.8			40.3	
Level of Service		F			F			D			D	
Approach Delay (s)		1170.0			1170.0			39.8			40.3	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	374.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.05		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	21	0	0	4	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.91			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			4590			1863	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			4590			1863	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	0	20	0	0	21	0	0	4	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	21	0	0	4	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	13%	13%	13%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					304.0			2892.0			2892.0	
Effective Green, g (s)					304.0			2892.0			2892.0	
Actuated g/C Ratio					0.10			0.90			0.90	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					180			4148			1683	
v/s Ratio Prot					c0.01			c0.00			0.00	
v/s Ratio Perm												
v/c Ratio					0.11			0.01			0.00	
Uniform Delay, d1					1324.4			14.9			14.9	
Progression Factor					0.16			1.00			1.00	
Incremental Delay, d2					1.2			0.0			0.0	
Delay (s)					207.6			14.9			14.9	
Level of Service					F			B			B	
Approach Delay (s)		0.0			207.6			14.9			14.9	
Approach LOS		A			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	100.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.02		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑↑			↑↑			↑			↑	
Volume (vph)	0	256	0	0	134	0	0	0	0	0	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.0			2.0						2.0	
Lane Util. Factor		0.91			0.95						1.00	
Frt		1.00			1.00						1.00	
Flt Protected		1.00			1.00						1.00	
Satd. Flow (prot)		4988			3539						1900	
Flt Permitted		1.00			1.00						1.00	
Satd. Flow (perm)		4988			3539						1900	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	284	0	0	149	0	0	0	0	0	20	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	284	0	0	149	0	0	0	0	0	20	0
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type		NA			NA						NA	
Protected Phases		1 3			1 3			2			2	
Permitted Phases												
Actuated Green, G (s)		2996.0			2996.0						200.0	
Effective Green, g (s)		2996.0			2996.0						200.0	
Actuated g/C Ratio		0.94			0.94						0.06	
Clearance Time (s)											2.0	
Lane Grp Cap (vph)		4670			3313						118	
v/s Ratio Prot		c0.06			0.04						c0.01	
v/s Ratio Perm												
v/c Ratio		0.06			0.04						0.17	
Uniform Delay, d1		6.9			6.8						1421.3	
Progression Factor		1.00			1.00						0.00	
Incremental Delay, d2		0.0			0.0						3.1	
Delay (s)		6.9			6.8						3.2	
Level of Service		A			A						A	
Approach Delay (s)		6.9			6.8			0.0			3.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.07		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	14.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	70	0	0	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1863			1863	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1863			1863	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	0	20	0	0	79	0	0	11	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	79	0	0	11	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					166.0			3030.0			3030.0	
Effective Green, g (s)					166.0			3030.0			3030.0	
Actuated g/C Ratio					0.05			0.95			0.95	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					98			1764			1764	
v/s Ratio Prot					c0.01			c0.04			0.01	
v/s Ratio Perm												
v/c Ratio					0.20			0.04			0.01	
Uniform Delay, d1					1453.7			4.7			4.5	
Progression Factor					0.01			1.00			1.08	
Incremental Delay, d2					4.6			0.0			0.0	
Delay (s)					23.2			4.8			4.9	
Level of Service					C			A			A	
Approach Delay (s)		0.0			23.2			4.8			4.9	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.05		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	502	0	0	643	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1810			1743	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1810			1743	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	20	0	0	546	0	0	699	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	546	0	0	699	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	5%	5%	5%	9%	9%	9%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					166.0			3030.0			3030.0	
Effective Green, g (s)					166.0			3030.0			3030.0	
Actuated g/C Ratio					0.05			0.95			0.95	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					98			1713			1650	
v/s Ratio Prot					c0.01			0.30			c0.40	
v/s Ratio Perm												
v/c Ratio					0.20			0.32			0.42	
Uniform Delay, d1					1453.7			6.5			7.5	
Progression Factor					0.00			1.00			1.00	
Incremental Delay, d2					4.6			0.5			0.8	
Delay (s)					4.8			7.0			8.3	
Level of Service					A			A			A	
Approach Delay (s)		0.0			4.8			7.0			8.3	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	43.8%	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												
Volume (vph)	0	0	0	0	20	0	0	1042	0	0	808	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.95			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					1.00			1.00			1.00	
Satd. Flow (prot)					1900			3539			3539	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			3539			3539	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	20	0	0	1133	0	0	878	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	1133	0	0	878	0
Confl. Bikes (#/hr)									766			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					166.0			3030.0			3030.0	
Effective Green, g (s)					166.0			3030.0			3030.0	
Actuated g/C Ratio					0.05			0.95			0.95	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					98			3350			3350	
v/s Ratio Prot					c0.01			c0.32			0.25	
v/s Ratio Perm												
v/c Ratio					0.20			0.34			0.26	
Uniform Delay, d1					1453.7			6.6			6.0	
Progression Factor					0.02			1.00			1.00	
Incremental Delay, d2					4.6			0.3			0.2	
Delay (s)					39.4			6.9			6.2	
Level of Service					D			A			A	
Approach Delay (s)		0.0			39.4			6.9			6.2	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	232	0	0	248	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1743			1845	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1743			1845	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	0	20	0	0	249	0	0	267	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	249	0	0	267	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	9%	9%	9%	3%	3%	3%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					200.0			2996.0			2996.0	
Effective Green, g (s)					200.0			2996.0			2996.0	
Actuated g/C Ratio					0.06			0.94			0.94	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					118			1631			1727	
v/s Ratio Prot					c0.01			0.14			c0.14	
v/s Ratio Perm												
v/c Ratio					0.17			0.15			0.15	
Uniform Delay, d1					1421.3			7.6			7.6	
Progression Factor					0.01			1.00			1.00	
Incremental Delay, d2					3.1			0.2			0.2	
Delay (s)					12.4			7.8			7.8	
Level of Service					B			A			A	
Approach Delay (s)		0.0			12.4			7.8			7.8	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	23.1%	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												
Volume (vph)	0	0	0	0	20	0	0	1257	0	0	793	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.95			0.95	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			3195			3112	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			3195			3112	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	0	20	0	0	1412	0	0	891	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	1412	0	0	891	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	13%	13%	13%	16%	16%	16%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					200.0			2996.0			2996.0	
Effective Green, g (s)					200.0			2996.0			2996.0	
Actuated g/C Ratio					0.06			0.94			0.94	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					118			2991			2913	
v/s Ratio Prot					c0.01			c0.44			0.29	
v/s Ratio Perm												
v/c Ratio					0.17			0.47			0.31	
Uniform Delay, d1					1421.3			11.7			9.1	
Progression Factor					1.00			1.00			1.00	
Incremental Delay, d2					3.1			0.5			0.3	
Delay (s)					1424.4			12.2			9.4	
Level of Service					F			B			A	
Approach Delay (s)		0.0			1424.4			12.2			9.4	
Approach LOS		A			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	20	0	0	20	0	0	44	0	0	66	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.0			2.0			2.0			2.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			1.00			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		950			950			1727			1727	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		950			950			1727			1727	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	20	0	0	20	0	0	44	0	0	66	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	20	0	0	20	0	0	44	0	0	66	0
Heavy Vehicles (%)	100%	100%	100%	100%	100%	100%	10%	10%	10%	10%	10%	10%
Turn Type		NA			NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)		367.0			367.0			2829.0			2829.0	
Effective Green, g (s)		367.0			367.0			2829.0			2829.0	
Actuated g/C Ratio		0.11			0.11			0.88			0.88	
Clearance Time (s)		2.0			2.0							
Lane Grp Cap (vph)		108			108			1526			1526	
v/s Ratio Prot		0.02			c0.02			0.03			c0.04	
v/s Ratio Perm												
v/c Ratio		0.19			0.19			0.03			0.04	
Uniform Delay, d1		1281.3			1281.3			22.1			22.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		3.7			3.7			0.0			0.1	
Delay (s)		1285.0			1285.0			22.1			22.4	
Level of Service		F			F			C			C	
Approach Delay (s)		1285.0			1285.0			22.1			22.4	
Approach LOS		F			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	359.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	89	0	0	45	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.91			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			4590			1863	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			4590			1863	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	0	20	0	0	91	0	0	46	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	91	0	0	46	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	13%	13%	13%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					961.0			2235.0			2235.0	
Effective Green, g (s)					961.0			2235.0			2235.0	
Actuated g/C Ratio					0.30			0.70			0.70	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					570			3205			1301	
v/s Ratio Prot					c0.01			0.02			c0.02	
v/s Ratio Perm												
v/c Ratio					0.04			0.03			0.04	
Uniform Delay, d1					791.6			148.4			149.2	
Progression Factor					0.24			1.00			1.00	
Incremental Delay, d2					0.1			0.0			0.1	
Delay (s)					187.9			148.5			149.2	
Level of Service					F			F			F	
Approach Delay (s)		0.0			187.9			148.5			149.2	
Approach LOS		A			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	153.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.04		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	256	0	0	134	0	0	0	0	0	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.0			2.0						2.0	
Lane Util. Factor		0.91			0.95						1.00	
Frt		1.00			1.00						1.00	
Flt Protected		1.00			1.00						1.00	
Satd. Flow (prot)		4988			3539						1900	
Flt Permitted		1.00			1.00						1.00	
Satd. Flow (perm)		4988			3539						1900	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	284	0	0	149	0	0	0	0	0	20	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	284	0	0	149	0	0	0	0	0	20	0
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type		NA			NA						NA	
Protected Phases		1 3			1 3			2			2	
Permitted Phases												
Actuated Green, G (s)		2585.0			2585.0						611.0	
Effective Green, g (s)		2585.0			2585.0						611.0	
Actuated g/C Ratio		0.81			0.81						0.19	
Clearance Time (s)											2.0	
Lane Grp Cap (vph)		4029			2858						362	
v/s Ratio Prot		c0.06			0.04						c0.01	
v/s Ratio Perm												
v/c Ratio		0.07			0.05						0.06	
Uniform Delay, d1		62.7			61.7						1058.5	
Progression Factor		1.00			1.00						0.00	
Incremental Delay, d2		0.0			0.0						0.3	
Delay (s)		62.7			61.7						0.4	
Level of Service		E			E						A	
Approach Delay (s)		62.7			61.7			0.0			0.4	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	59.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.07		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	14.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	70	0	0	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1863			1863	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1863			1863	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	0	20	0	0	79	0	0	11	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	79	0	0	11	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					495.0			2701.0			2701.0	
Effective Green, g (s)					495.0			2701.0			2701.0	
Actuated g/C Ratio					0.15			0.84			0.84	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					293			1572			1572	
v/s Ratio Prot					c0.01			c0.04			0.01	
v/s Ratio Perm												
v/c Ratio					0.07			0.05			0.01	
Uniform Delay, d1					1155.5			40.6			39.1	
Progression Factor					0.02			1.00			1.00	
Incremental Delay, d2					0.4			0.1			0.0	
Delay (s)					25.7			40.7			39.1	
Level of Service					C			D			D	
Approach Delay (s)		0.0			25.7			40.7			39.1	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.05		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	543	0	0	667	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1810			1743	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1810			1743	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	20	0	0	590	0	0	725	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	590	0	0	725	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	5%	5%	5%	9%	9%	9%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					495.0			2701.0			2701.0	
Effective Green, g (s)					495.0			2701.0			2701.0	
Actuated g/C Ratio					0.15			0.84			0.84	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					293			1527			1471	
v/s Ratio Prot					c0.01			0.33			c0.42	
v/s Ratio Perm												
v/c Ratio					0.07			0.39			0.49	
Uniform Delay, d1					1155.5			57.7			66.6	
Progression Factor					0.00			1.00			1.00	
Incremental Delay, d2					0.4			0.7			1.2	
Delay (s)					0.6			58.5			67.8	
Level of Service					A			E			E	
Approach Delay (s)		0.0			0.6			58.5			67.8	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	62.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	45.1%	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												
Volume (vph)	0	0	0	0	20	0	0	1059	0	0	818	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.95			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					1.00			1.00			1.00	
Satd. Flow (prot)					1900			3539			3539	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			3539			3539	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	20	0	0	1151	0	0	889	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	1151	0	0	889	0
Confl. Bikes (#/hr)									766			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					495.0			2701.0			2701.0	
Effective Green, g (s)					495.0			2701.0			2701.0	
Actuated g/C Ratio					0.15			0.84			0.84	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					293			2987			2987	
v/s Ratio Prot					c0.01			c0.33			0.25	
v/s Ratio Perm												
v/c Ratio					0.07			0.39			0.30	
Uniform Delay, d1					1155.5			57.7			52.0	
Progression Factor					0.08			1.00			1.00	
Incremental Delay, d2					0.4			0.4			0.3	
Delay (s)					93.6			58.0			52.2	
Level of Service					F			E			D	
Approach Delay (s)		0.0			93.6			58.0			52.2	
Approach LOS		A			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	55.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	232	0	0	248	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1743			1845	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1743			1845	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	0	20	0	0	249	0	0	267	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	249	0	0	267	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	9%	9%	9%	3%	3%	3%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					611.0			2585.0			2585.0	
Effective Green, g (s)					611.0			2585.0			2585.0	
Actuated g/C Ratio					0.19			0.81			0.81	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					362			1408			1490	
v/s Ratio Prot					c0.01			0.14			c0.14	
v/s Ratio Perm												
v/c Ratio					0.06			0.18			0.18	
Uniform Delay, d1					1058.5			68.9			69.1	
Progression Factor					0.01			1.00			1.00	
Incremental Delay, d2					0.3			0.3			0.3	
Delay (s)					8.2			69.2			69.4	
Level of Service					A			E			E	
Approach Delay (s)		0.0			8.2			69.2			69.4	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	67.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	23.1%	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												
Volume (vph)	0	0	0	0	20	0	0	1271	0	0	801	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.95			0.95	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			3195			3112	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			3195			3112	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	0	20	0	0	1428	0	0	900	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	1428	0	0	900	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	13%	13%	13%	16%	16%	16%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					611.0			2585.0			2585.0	
Effective Green, g (s)					611.0			2585.0			2585.0	
Actuated g/C Ratio					0.19			0.81			0.81	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					362			2580			2513	
v/s Ratio Prot					c0.01			c0.45			0.29	
v/s Ratio Perm												
v/c Ratio					0.06			0.55			0.36	
Uniform Delay, d1					1058.5			106.9			83.2	
Progression Factor					1.00			1.00			1.00	
Incremental Delay, d2					0.3			0.9			0.4	
Delay (s)					1058.8			107.8			83.6	
Level of Service					F			F			F	
Approach Delay (s)		0.0			1058.8			107.8			83.6	
Approach LOS		A			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	106.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	20	0	0	20	0	0	44	0	0	66	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.0			2.0			2.0			2.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			1.00			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		950			950			1727			1727	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		950			950			1727			1727	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	20	0	0	20	0	0	44	0	0	66	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	20	0	0	20	0	0	44	0	0	66	0
Heavy Vehicles (%)	100%	100%	100%	100%	100%	100%	10%	10%	10%	10%	10%	10%
Turn Type		NA			NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)		495.0			495.0			2701.0			2701.0	
Effective Green, g (s)		495.0			495.0			2701.0			2701.0	
Actuated g/C Ratio		0.15			0.15			0.84			0.84	
Clearance Time (s)		2.0			2.0							
Lane Grp Cap (vph)		146			146			1457			1457	
v/s Ratio Prot		0.02			c0.02			0.03			c0.04	
v/s Ratio Perm												
v/c Ratio		0.14			0.14			0.03			0.05	
Uniform Delay, d1		1168.0			1168.0			39.9			40.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.9			1.9			0.0			0.1	
Delay (s)		1170.0			1170.0			40.0			40.5	
Level of Service		F			F			D			D	
Approach Delay (s)		1170.0			1170.0			40.0			40.5	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	341.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	89	0	0	45	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.91			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			4590			1863	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			4590			1863	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	0	20	0	0	91	0	0	46	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	91	0	0	46	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	13%	13%	13%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					961.0			2235.0			2235.0	
Effective Green, g (s)					961.0			2235.0			2235.0	
Actuated g/C Ratio					0.30			0.70			0.70	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					570			3205			1301	
v/s Ratio Prot					c0.01			0.02			c0.02	
v/s Ratio Perm												
v/c Ratio					0.04			0.03			0.04	
Uniform Delay, d1					791.6			148.4			149.2	
Progression Factor					0.01			1.00			1.00	
Incremental Delay, d2					0.1			0.0			0.1	
Delay (s)					4.1			148.5			149.2	
Level of Service					A			F			F	
Approach Delay (s)		0.0			4.1			148.5			149.2	
Approach LOS		A			A			F			F	

Intersection Summary			
HCM 2000 Control Delay	130.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.04		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	256	0	0	134	0	0	0	0	0	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.0			2.0						2.0	
Lane Util. Factor		0.91			0.95						1.00	
Frt		1.00			1.00						1.00	
Flt Protected		1.00			1.00						1.00	
Satd. Flow (prot)		4988			3539						1900	
Flt Permitted		1.00			1.00						1.00	
Satd. Flow (perm)		4988			3539						1900	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	284	0	0	149	0	0	0	0	0	20	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	284	0	0	149	0	0	0	0	0	20	0
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type		NA			NA						NA	
Protected Phases		1 3			1 3			2			2	
Permitted Phases												
Actuated Green, G (s)		2701.0			2701.0						495.0	
Effective Green, g (s)		2701.0			2701.0						495.0	
Actuated g/C Ratio		0.84			0.84						0.15	
Clearance Time (s)											2.0	
Lane Grp Cap (vph)		4210			2987						293	
v/s Ratio Prot		c0.06			0.04						c0.01	
v/s Ratio Perm												
v/c Ratio		0.07			0.05						0.07	
Uniform Delay, d1		41.3			40.6						1155.5	
Progression Factor		1.00			1.00						0.00	
Incremental Delay, d2		0.0			0.0						0.4	
Delay (s)		41.3			40.6						0.4	
Level of Service		D			D						A	
Approach Delay (s)		41.3			40.6			0.0			0.4	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.07		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	14.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	70	0	0	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1863			1863	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1863			1863	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	0	20	0	0	79	0	0	11	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	79	0	0	11	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					339.0			2857.0			2857.0	
Effective Green, g (s)					339.0			2857.0			2857.0	
Actuated g/C Ratio					0.11			0.89			0.89	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					201			1663			1663	
v/s Ratio Prot					c0.01			c0.04			0.01	
v/s Ratio Perm												
v/c Ratio					0.10			0.05			0.01	
Uniform Delay, d1					1292.6			19.2			18.5	
Progression Factor					2.10			1.00			1.02	
Incremental Delay, d2					1.0			0.1			0.0	
Delay (s)					2721.3			19.3			18.9	
Level of Service					F			B			B	
Approach Delay (s)		0.0			2721.3			19.3			18.9	
Approach LOS		A			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	510.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.05		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	543	0	0	667	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1810			1743	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1810			1743	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	20	0	0	590	0	0	725	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	590	0	0	725	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	5%	5%	5%	9%	9%	9%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					261.0			2935.0			2935.0	
Effective Green, g (s)					261.0			2935.0			2935.0	
Actuated g/C Ratio					0.08			0.92			0.92	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					154			1660			1598	
v/s Ratio Prot					c0.01			0.33			c0.42	
v/s Ratio Perm												
v/c Ratio					0.13			0.36			0.45	
Uniform Delay, d1					1364.1			16.3			18.8	
Progression Factor					0.03			1.00			1.00	
Incremental Delay, d2					1.7			0.6			0.9	
Delay (s)					38.3			16.9			19.7	
Level of Service					D			B			B	
Approach Delay (s)		0.0			38.3			16.9			19.7	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	45.1%	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												
Volume (vph)	0	0	0	0	20	0	0	1059	0	0	818	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.95			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					1.00			1.00			1.00	
Satd. Flow (prot)					1900			3539			3539	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			3539			3539	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	20	0	0	1151	0	0	889	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	1151	0	0	889	0
Confl. Bikes (#/hr)									766			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					261.0			2935.0			2935.0	
Effective Green, g (s)					261.0			2935.0			2935.0	
Actuated g/C Ratio					0.08			0.92			0.92	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					154			3245			3245	
v/s Ratio Prot					c0.01			c0.33			0.25	
v/s Ratio Perm												
v/c Ratio					0.13			0.35			0.27	
Uniform Delay, d1					1364.1			16.3			14.7	
Progression Factor					0.15			1.00			1.00	
Incremental Delay, d2					1.7			0.3			0.2	
Delay (s)					201.2			16.6			14.9	
Level of Service					F			B			B	
Approach Delay (s)		0.0			201.2			16.6			14.9	
Approach LOS		A			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	232	0	0	248	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1743			1845	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1743			1845	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	0	20	0	0	249	0	0	267	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	249	0	0	267	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	9%	9%	9%	3%	3%	3%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					339.0			2857.0			2857.0	
Effective Green, g (s)					339.0			2857.0			2857.0	
Actuated g/C Ratio					0.11			0.89			0.89	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					201			1556			1647	
v/s Ratio Prot					c0.01			0.14			c0.14	
v/s Ratio Perm												
v/c Ratio					0.10			0.16			0.16	
Uniform Delay, d1					1292.6			21.4			21.5	
Progression Factor					0.01			1.00			1.00	
Incremental Delay, d2					1.0			0.2			0.2	
Delay (s)					12.6			21.7			21.7	
Level of Service					B			C			C	
Approach Delay (s)		0.0			12.6			21.7			21.7	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	23.1%	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												
Volume (vph)	0	0	0	0	20	0	0	1271	0	0	801	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.95			0.95	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			3195			3112	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			3195			3112	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	0	20	0	0	1428	0	0	900	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	1428	0	0	900	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	13%	13%	13%	16%	16%	16%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					339.0			2857.0			2857.0	
Effective Green, g (s)					339.0			2857.0			2857.0	
Actuated g/C Ratio					0.11			0.89			0.89	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					201			2852			2778	
v/s Ratio Prot					c0.01			c0.45			0.29	
v/s Ratio Perm												
v/c Ratio					0.10			0.50			0.32	
Uniform Delay, d1					1292.6			33.2			25.9	
Progression Factor					1.00			1.00			1.00	
Incremental Delay, d2					1.0			0.6			0.3	
Delay (s)					1293.6			33.9			26.2	
Level of Service					F			C			C	
Approach Delay (s)		0.0			1293.6			33.9			26.2	
Approach LOS		A			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	20	0	0	20	0	0	44	0	0	66	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.0			2.0			2.0			2.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			1.00			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		950			950			1727			1727	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		950			950			1727			1727	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	20	0	0	20	0	0	44	0	0	66	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	20	0	0	20	0	0	44	0	0	66	0
Heavy Vehicles (%)	100%	100%	100%	100%	100%	100%	10%	10%	10%	10%	10%	10%
Turn Type		NA			NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)		495.0			495.0			2701.0			2701.0	
Effective Green, g (s)		495.0			495.0			2701.0			2701.0	
Actuated g/C Ratio		0.15			0.15			0.84			0.84	
Clearance Time (s)		2.0			2.0							
Lane Grp Cap (vph)		146			146			1457			1457	
v/s Ratio Prot		0.02			c0.02			0.03			c0.04	
v/s Ratio Perm												
v/c Ratio		0.14			0.14			0.03			0.05	
Uniform Delay, d1		1168.0			1168.0			39.9			40.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.9			1.9			0.0			0.1	
Delay (s)		1170.0			1170.0			40.0			40.5	
Level of Service		F			F			D			D	
Approach Delay (s)		1170.0			1170.0			40.0			40.5	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	341.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	3200.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	21	187	2	43	333	118	4	16	69	44	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.9	4.0		4.0
Lane Util. Factor	1.00	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	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	1641	1727	1468	1752	1845	1568	1597	1681	1429	1805		1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (perm)	1641	1727	1468	1752	1845	1568	1597	1681	1429	1805		1615
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)	21	191	2	44	340	120	4	16	70	45	0	29
RTOR Reduction (vph)	0	0	1	0	0	0	0	0	65	0	0	26
Lane Group Flow (vph)	21	191	1	44	340	120	4	16	5	45	0	3
Heavy Vehicles (%)	10%	10%	10%	3%	3%	3%	13%	13%	13%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm	Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			Free			4			8
Actuated Green, G (s)	0.5	18.2	18.2	1.2	18.9	39.8	0.5	2.9	2.9	1.5		3.9
Effective Green, g (s)	0.5	18.2	18.2	1.2	18.9	39.8	0.5	2.9	3.0	1.5		3.9
Actuated g/C Ratio	0.01	0.46	0.46	0.03	0.47	1.00	0.01	0.07	0.08	0.04		0.10
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	0.2	2.1	2.1	0.2	1.9		0.2	0.2	0.2	0.2		0.2
Lane Grp Cap (vph)	20	789	671	52	876	1568	20	122	107	68		158
v/s Ratio Prot	0.01	0.11		c0.03	c0.18		0.00	0.01		c0.02		
v/s Ratio Perm			0.00			c0.08			0.00			0.00
v/c Ratio	1.05	0.24	0.00	0.85	0.39	0.08	0.20	0.13	0.05	0.66		0.02
Uniform Delay, d1	19.6	6.6	5.9	19.2	6.7	0.0	19.5	17.3	17.1	18.9		16.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	217.8	0.1	0.0	68.3	0.1	0.1	1.8	0.2	0.1	17.1		0.0
Delay (s)	237.4	6.7	5.9	87.5	6.8	0.1	21.2	17.4	17.1	36.0		16.2
Level of Service	F	A	A	F	A	A	C	B	B	D		B
Approach Delay (s)		29.3			12.3			17.4			28.3	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	39.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑↑			↑↑			↑			↑	
Volume (vph)	0	256	0	0	134	0	0	0	0	0	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.0			2.0						2.0	
Lane Util. Factor		0.91			0.95						1.00	
Frt		1.00			1.00						1.00	
Flt Protected		1.00			1.00						1.00	
Satd. Flow (prot)		4988			3539						1900	
Flt Permitted		1.00			1.00						1.00	
Satd. Flow (perm)		4988			3539						1900	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	284	0	0	149	0	0	0	0	0	20	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	284	0	0	149	0	0	0	0	0	20	0
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Turn Type		NA			NA						NA	
Protected Phases		1 3			1 3			2			2	
Permitted Phases												
Actuated Green, G (s)		1301.0			1301.0						495.0	
Effective Green, g (s)		1301.0			1301.0						495.0	
Actuated g/C Ratio		0.72			0.72						0.28	
Clearance Time (s)											2.0	
Lane Grp Cap (vph)		3605			2557						522	
v/s Ratio Prot		c0.06			0.04						c0.01	
v/s Ratio Perm												
v/c Ratio		0.08			0.06						0.04	
Uniform Delay, d1		73.3			72.2						478.1	
Progression Factor		1.00			1.00						0.00	
Incremental Delay, d2		0.0			0.0						0.1	
Delay (s)		73.4			72.3						0.1	
Level of Service		E			E						A	
Approach Delay (s)		73.4			72.3			0.0			0.1	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	69.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.07		
Actuated Cycle Length (s)	1800.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	14.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	70	0	0	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1863			1863	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1863			1863	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	0	20	0	0	79	0	0	11	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	79	0	0	11	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					339.0			1457.0			1457.0	
Effective Green, g (s)					339.0			1457.0			1457.0	
Actuated g/C Ratio					0.19			0.81			0.81	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					357			1507			1507	
v/s Ratio Prot					c0.01			c0.04			0.01	
v/s Ratio Perm												
v/c Ratio					0.06			0.05			0.01	
Uniform Delay, d1					599.2			34.1			32.9	
Progression Factor					2.12			1.00			1.01	
Incremental Delay, d2					0.3			0.1			0.0	
Delay (s)					1271.3			34.2			33.3	
Level of Service					F			C			C	
Approach Delay (s)		0.0			1271.3			34.2			33.3	
Approach LOS		A			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	259.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.05		
Actuated Cycle Length (s)	1800.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	543	0	0	667	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1810			1743	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1810			1743	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	20	0	0	590	0	0	725	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	590	0	0	725	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	5%	5%	5%	9%	9%	9%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					261.0			1535.0			1535.0	
Effective Green, g (s)					261.0			1535.0			1535.0	
Actuated g/C Ratio					0.14			0.85			0.85	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					275			1543			1486	
v/s Ratio Prot					c0.01			0.33			c0.42	
v/s Ratio Perm												
v/c Ratio					0.07			0.38			0.49	
Uniform Delay, d1					664.9			28.9			33.4	
Progression Factor					0.05			1.00			1.00	
Incremental Delay, d2					0.5			0.7			1.1	
Delay (s)					34.4			29.7			34.6	
Level of Service					C			C			C	
Approach Delay (s)		0.0			34.4			29.7			34.6	
Approach LOS		A			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	1800.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	45.1%	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												
Volume (vph)	0	0	0	0	20	0	0	1059	0	0	818	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.95			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					1.00			1.00			1.00	
Satd. Flow (prot)					1900			3539			3539	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			3539			3539	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	20	0	0	1151	0	0	889	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	1151	0	0	889	0
Confl. Bikes (#/hr)									766			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					261.0			1535.0			1535.0	
Effective Green, g (s)					261.0			1535.0			1535.0	
Actuated g/C Ratio					0.14			0.85			0.85	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					275			3017			3017	
v/s Ratio Prot					c0.01			c0.33			0.25	
v/s Ratio Perm												
v/c Ratio					0.07			0.38			0.29	
Uniform Delay, d1					664.9			28.9			26.1	
Progression Factor					0.27			1.00			1.00	
Incremental Delay, d2					0.5			0.4			0.2	
Delay (s)					179.8			29.3			26.3	
Level of Service					F			C			C	
Approach Delay (s)		0.0			179.8			29.3			26.3	
Approach LOS		A			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	1800.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	20	0	0	232	0	0	248	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			1.00			1.00	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			1743			1845	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			1743			1845	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	0	20	0	0	249	0	0	267	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	249	0	0	267	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	9%	9%	9%	3%	3%	3%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					339.0			1457.0			1457.0	
Effective Green, g (s)					339.0			1457.0			1457.0	
Actuated g/C Ratio					0.19			0.81			0.81	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					357			1410			1493	
v/s Ratio Prot					c0.01			0.14			c0.14	
v/s Ratio Perm												
v/c Ratio					0.06			0.18			0.18	
Uniform Delay, d1					599.2			38.1			38.2	
Progression Factor					0.02			1.00			1.00	
Incremental Delay, d2					0.3			0.3			0.3	
Delay (s)					10.8			38.4			38.5	
Level of Service					B			D			D	
Approach Delay (s)		0.0			10.8			38.4			38.5	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	1800.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	23.1%	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												
Volume (vph)	0	0	0	0	20	0	0	1271	0	0	801	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					2.0			2.0			2.0	
Lane Util. Factor					1.00			0.95			0.95	
Frt					1.00			1.00			1.00	
Flt Protected					1.00			1.00			1.00	
Satd. Flow (prot)					1900			3195			3112	
Flt Permitted					1.00			1.00			1.00	
Satd. Flow (perm)					1900			3195			3112	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	0	20	0	0	1428	0	0	900	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	20	0	0	1428	0	0	900	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	13%	13%	13%	16%	16%	16%
Turn Type					NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)					339.0			1457.0			1457.0	
Effective Green, g (s)					339.0			1457.0			1457.0	
Actuated g/C Ratio					0.19			0.81			0.81	
Clearance Time (s)					2.0							
Lane Grp Cap (vph)					357			2586			2518	
v/s Ratio Prot					c0.01			c0.45			0.29	
v/s Ratio Perm												
v/c Ratio					0.06			0.55			0.36	
Uniform Delay, d1					599.2			59.1			46.0	
Progression Factor					1.00			1.00			1.00	
Incremental Delay, d2					0.3			0.9			0.4	
Delay (s)					599.5			59.9			46.4	
Level of Service					F			E			D	
Approach Delay (s)		0.0			599.5			59.9			46.4	
Approach LOS		A			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	59.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	1800.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	20	0	0	20	0	0	44	0	0	66	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		2.0			2.0			2.0			2.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			1.00			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		950			950			1727			1727	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		950			950			1727			1727	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	20	0	0	20	0	0	44	0	0	66	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	20	0	0	20	0	0	44	0	0	66	0
Heavy Vehicles (%)	100%	100%	100%	100%	100%	100%	10%	10%	10%	10%	10%	10%
Turn Type		NA			NA			NA			NA	
Protected Phases		2			2			1 3			1 3	
Permitted Phases												
Actuated Green, G (s)		495.0			495.0			1301.0			1301.0	
Effective Green, g (s)		495.0			495.0			1301.0			1301.0	
Actuated g/C Ratio		0.28			0.28			0.72			0.72	
Clearance Time (s)		2.0			2.0							
Lane Grp Cap (vph)		261			261			1248			1248	
v/s Ratio Prot		0.02			c0.02			0.03			c0.04	
v/s Ratio Perm												
v/c Ratio		0.08			0.08			0.04			0.05	
Uniform Delay, d1		483.2			483.2			71.0			71.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.6			0.6			0.1			0.1	
Delay (s)		483.8			483.8			71.0			72.0	
Level of Service		F			F			E			E	
Approach Delay (s)		483.8			483.8			71.0			72.0	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	181.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	1800.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	13.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 1: Weyerhaeuser & Industrial Way

Movement	SE	NW	NW	NE
Directions Served	TR	L	T	LR
Maximum Queue (ft)	3	54	516	150
Average Queue (ft)	0	10	35	67
95th Queue (ft)	3	37	255	122
Link Distance (ft)	116	745	745	484
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Oregon Way & Industrial Way

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	R	L	T	T	R
Maximum Queue (ft)	222	253	265	97	297	683	952	78	278	391	616	250
Average Queue (ft)	94	117	115	4	154	201	473	49	140	177	196	137
95th Queue (ft)	179	208	215	51	254	449	894	99	234	306	431	254
Link Distance (ft)		745				1239	1239				2473	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	140		400	400	310			25	235	235		120
Storage Blk Time (%)	6	5			0	0	59	14	1	3	23	6
Queuing Penalty (veh)	23	20			0	1	95	47	4	23	197	50

Intersection: 2: Oregon Way & Industrial Way

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	206	259	257
Average Queue (ft)	64	180	181
95th Queue (ft)	153	274	276
Link Distance (ft)		236	236
Upstream Blk Time (%)	0	5	6
Queuing Penalty (veh)	0	16	18
Storage Bay Dist (ft)	170		
Storage Blk Time (%)	0	16	
Queuing Penalty (veh)	1	9	

Intersection: 4: Oregon Way & Spur Line

Movement	WB	NB	NB	SB	SB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	179	247	246	397	399
Average Queue (ft)	8	17	17	37	36
95th Queue (ft)	71	118	118	195	191
Link Distance (ft)	4581	236	236	702	702
Upstream Blk Time (%)		3	3		
Queuing Penalty (veh)		11	11		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Oregon Way & Alabama Street

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	114	116	77	4	50	17
Average Queue (ft)	47	43	25	0	14	1
95th Queue (ft)	93	85	60	3	41	7
Link Distance (ft)	233	852		702		887
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			175		165	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: California Way & Spur Line

Movement	WB	SE	NW
Directions Served	T	T	T
Maximum Queue (ft)	137	276	240
Average Queue (ft)	5	16	13
95th Queue (ft)	48	117	102
Link Distance (ft)	464	2581	404
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Industrial Way & Spur Line

Movement	WB	SE	NW
Directions Served	T	T	T
Maximum Queue (ft)	154	554	124
Average Queue (ft)	7	41	11
95th Queue (ft)	64	269	68
Link Distance (ft)	993	2678	116
Upstream Blk Time (%)			3
Queuing Penalty (veh)			19
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: Industrial Way & Washington Way

Movement	EB	EB	EB	WB	WB	SE	SE	SE	NW	NW
Directions Served	L	T	R	L	T	L	T	R	L	TR
Maximum Queue (ft)	25	59	42	68	90	90	139	52	198	475
Average Queue (ft)	12	30	10	19	18	26	47	8	31	181
95th Queue (ft)	27	53	29	49	66	68	108	32	110	354
Link Distance (ft)	7	7	7		1347		1220			1630
Upstream Blk Time (%)	16	42	10							
Queuing Penalty (veh)	11	31	7							
Storage Bay Dist (ft)				90		210		25	160	
Storage Blk Time (%)				0	1		9	1		8
Queuing Penalty (veh)				0	1		10	3		3

Intersection: 16: Columbia Ave & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	188	226	74	204	184	120	105
Average Queue (ft)	78	96	13	74	78	55	37
95th Queue (ft)	153	177	48	158	159	100	79
Link Distance (ft)	420	420		379	379	398	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			105				130
Storage Blk Time (%)			0	2		0	0
Queuing Penalty (veh)			0	0		0	0

Intersection: 20: California Way & Industrial Way

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	269	505	492	79	78	73	55	20	67	164	62	163
Average Queue (ft)	136	174	185	16	20	13	9	1	15	60	3	47
95th Queue (ft)	254	393	385	51	56	46	37	10	49	125	33	104
Link Distance (ft)		843	843		237	237		684			404	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150			150			60		60	165		300
Storage Blk Time (%)	11	9					1		1	0		
Queuing Penalty (veh)	53	16					0		0	0		

Intersection: 22: 3rd Avenue & Spur Line

Movement	WB	NB	NB	SB	SB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	324	385	376	502	476
Average Queue (ft)	155	31	30	40	38
95th Queue (ft)	309	195	192	239	227
Link Distance (ft)	2590	370	370	1726	1726
Upstream Blk Time (%)		3	3		
Queuing Penalty (veh)		15	16		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 24: Industrial Way & Douglas Street

Movement	SE	SW
Directions Served	L	LR
Maximum Queue (ft)	32	45
Average Queue (ft)	3	19
95th Queue (ft)	18	48
Link Distance (ft)		100
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	195	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 25: Douglas Street & Alder Street

Movement	NW	NE
Directions Served	LT	LR
Maximum Queue (ft)	7	44
Average Queue (ft)	0	22
95th Queue (ft)	6	50
Link Distance (ft)	681	100
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 29: Spur Line & Washington Way

Movement	EB	EB	EB	WB	WB	NW
Directions Served	T	T	T	T	T	T
Maximum Queue (ft)	114	195	112	21	30	81
Average Queue (ft)	13	38	9	1	2	3
95th Queue (ft)	66	131	50	8	14	32
Link Distance (ft)		674	674	7	7	1681
Upstream Blk Time (%)				4	5	
Queuing Penalty (veh)				2	3	
Storage Bay Dist (ft)	140					
Storage Blk Time (%)	0	4				
Queuing Penalty (veh)	0	3				

Intersection: 31: Weyerhaeuser Access & Spur Line

Movement	NW	NE	SW
Directions Served	T	T	T
Maximum Queue (ft)	126	76	9
Average Queue (ft)	19	9	0
95th Queue (ft)	105	45	6
Link Distance (ft)	5597	313	10
Upstream Blk Time (%)			1
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 33: Weyerhaeuser Access & Industrial Way

Movement	NW	NE
Directions Served	L	LR
Maximum Queue (ft)	22	24
Average Queue (ft)	1	19
95th Queue (ft)	12	33
Link Distance (ft)		10
Upstream Blk Time (%)		9
Queuing Penalty (veh)		5
Storage Bay Dist (ft)	80	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 37: Weyerhaeuser Access 2 & Industrial Way

Movement	NE
Directions Served	R
Maximum Queue (ft)	33
Average Queue (ft)	11
95th Queue (ft)	35
Link Distance (ft)	26
Upstream Blk Time (%)	1
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 39: Industrial Way & Prudential Blvd

Movement	SE	SE	NW	NW	SW
Directions Served	L	T	T	T	L
Maximum Queue (ft)	14	90	84	64	111
Average Queue (ft)	1	23	28	19	48
95th Queue (ft)	8	64	69	54	87
Link Distance (ft)		2438	513	513	1261
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	170				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 41: Hoehne Avenue & Industrial Way

Movement	NE
Directions Served	R
Maximum Queue (ft)	32
Average Queue (ft)	10
95th Queue (ft)	35
Link Distance (ft)	26
Upstream Blk Time (%)	1
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 45: International Way & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	213	237	73	225	207	59	122
Average Queue (ft)	85	97	20	74	81	21	52
95th Queue (ft)	175	187	57	167	173	51	96
Link Distance (ft)	746	746		304	304	973	
Upstream Blk Time (%)				0			
Queuing Penalty (veh)				0			
Storage Bay Dist (ft)			150				150
Storage Blk Time (%)				1			0
Queuing Penalty (veh)				0			0

Intersection: 47: Fiber Way & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	236	240	114	238	240	110	195
Average Queue (ft)	142	155	43	85	106	42	99
95th Queue (ft)	237	245	89	189	210	86	166
Link Distance (ft)	208	208		295	295	975	975
Upstream Blk Time (%)	2	3		0	0		
Queuing Penalty (veh)	11	16		0	0		
Storage Bay Dist (ft)			150				
Storage Blk Time (%)			0	1			
Queuing Penalty (veh)			0	1			

Intersection: 48: Industrial Way

Movement	EB	WB	NB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	4	4	123	73
Average Queue (ft)	0	0	48	22
95th Queue (ft)	0	4	93	58
Link Distance (ft)	1239	420	236	90
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 49: 38th Avenue & Industrial Way

Movement	SE	SE	NW	NW	NE	NE	NE	SW	SW
Directions Served	L	T	L	T	L	T	R	L	R
Maximum Queue (ft)	48	57	23	86	13	58	28	59	45
Average Queue (ft)	12	9	2	21	1	12	2	24	16
95th Queue (ft)	36	33	11	61	7	41	16	52	42
Link Distance (ft)		1112		2438	3	3	3		
Upstream Blk Time (%)					0	3	0		
Queuing Penalty (veh)					0	0	0		
Storage Bay Dist (ft)	115		155					150	200
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 50: Aluminum Access 1/38th Avenue & Spur Line

Movement	NW	NE	NE	NE	SW
Directions Served	T	T	T	T	T
Maximum Queue (ft)	240	9	49	16	10
Average Queue (ft)	14	0	3	1	0
95th Queue (ft)	101	6	25	12	6
Link Distance (ft)	5784		335		3
Upstream Blk Time (%)					1
Queuing Penalty (veh)					0
Storage Bay Dist (ft)		35		25	
Storage Blk Time (%)		1	4	2	
Queuing Penalty (veh)		0	0	0	

Intersection: 55: Industrial Way

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	48	60
Average Queue (ft)	7	22
95th Queue (ft)	32	53
Link Distance (ft)	99	87
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 56: Industrial Way & 3rd Avenue

Movement	NW	NW	NE	NE	SW	SW	SW
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	85	64	233	231	116	376	360
Average Queue (ft)	24	18	55	68	13	158	156
95th Queue (ft)	65	49	157	163	69	306	299
Link Distance (ft)		2710	237	237		370	370
Upstream Blk Time (%)			1	1		2	2
Queuing Penalty (veh)			6	7		6	5
Storage Bay Dist (ft)	175				250		
Storage Blk Time (%)						4	
Queuing Penalty (veh)						0	

Intersection: 59: Industrial Way

Movement	EB	EB	WB	WB	NB
Directions Served	T	T	T	TR	R
Maximum Queue (ft)	138	135	15	13	128
Average Queue (ft)	15	16	1	0	52
95th Queue (ft)	77	76	15	13	99
Link Distance (ft)	304	304	208	208	118
Upstream Blk Time (%)					1
Queuing Penalty (veh)					0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 61: Industrial Way

Movement	SB	SE
Directions Served	LR	L
Maximum Queue (ft)	104	30
Average Queue (ft)	40	2
95th Queue (ft)	75	15
Link Distance (ft)	1001	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 64: Industrial Way

Movement	EB	WB	WB	SB
Directions Served	T	T	T	R
Maximum Queue (ft)	14	9	98	37
Average Queue (ft)	0	0	3	13
95th Queue (ft)	10	7	92	39
Link Distance (ft)	295	843	843	88
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 69: Dike Road & Spur Line

Movement	SE	NW	NE	SW
Directions Served	T	T	T	T
Maximum Queue (ft)	559	668	115	198
Average Queue (ft)	268	294	9	18
95th Queue (ft)	563	676	59	111
Link Distance (ft)	2166	1050	476	433
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 777

Intersection: 1: Weyerhaeuser & Industrial Way

Movement	SE	NW	NW	NE
Directions Served	TR	L	T	LR
Maximum Queue (ft)	44	59	512	194
Average Queue (ft)	3	12	33	66
95th Queue (ft)	23	43	235	141
Link Distance (ft)	116	745	745	484
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Oregon Way & Industrial Way

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	R	L	T	T	R
Maximum Queue (ft)	237	352	309	108	314	580	827	76	289	401	549	250
Average Queue (ft)	133	159	143	4	160	209	420	51	140	179	197	138
95th Queue (ft)	232	287	258	62	259	488	833	99	237	304	403	251
Link Distance (ft)		745				1239	1239				2473	
Upstream Blk Time (%)						0	0					
Queuing Penalty (veh)						0	1					
Storage Bay Dist (ft)	140		400	400	310			25	235	235		120
Storage Blk Time (%)	15	10	0		0	1	59	15	1	3	25	8
Queuing Penalty (veh)	80	50	0		1	1	95	50	7	20	208	62

Intersection: 2: Oregon Way & Industrial Way

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	217	255	272
Average Queue (ft)	59	177	190
95th Queue (ft)	144	270	284
Link Distance (ft)		236	236
Upstream Blk Time (%)	0	4	6
Queuing Penalty (veh)	0	14	20
Storage Bay Dist (ft)	170		
Storage Blk Time (%)	0	13	
Queuing Penalty (veh)	0	8	

Intersection: 4: Oregon Way & Spur Line

Movement	WB	NB	NB	SB	SB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	170	242	243	394	403
Average Queue (ft)	9	17	17	35	39
95th Queue (ft)	68	117	117	200	210
Link Distance (ft)	4581	236	236	702	702
Upstream Blk Time (%)		3	2		
Queuing Penalty (veh)		11	11		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Oregon Way & Alabama Street

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	122	100	74	4	4	49	4	13
Average Queue (ft)	47	41	23	0	0	13	0	1
95th Queue (ft)	89	79	57	4	3	40	5	6
Link Distance (ft)	233	852		702	702		3090	3090
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			175			165		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 9: California Way & Spur Line

Movement	WB	SE	NW
Directions Served	T	T	T
Maximum Queue (ft)	164	314	221
Average Queue (ft)	6	16	12
95th Queue (ft)	58	125	94
Link Distance (ft)	464	2581	404
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Industrial Way & Spur Line

Movement	WB	SE	NW
Directions Served	T	T	T
Maximum Queue (ft)	149	734	121
Average Queue (ft)	8	53	11
95th Queue (ft)	68	356	65
Link Distance (ft)	993	2678	116
Upstream Blk Time (%)			4
Queuing Penalty (veh)			19
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: Industrial Way & Washington Way

Movement	EB	EB	EB	WB	WB	WB	SE	SE	SE	NW	NW
Directions Served	L	T	R	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	48	64	39	72	75	5	199	255	54	211	516
Average Queue (ft)	12	32	10	21	15	0	61	81	9	31	196
95th Queue (ft)	32	55	29	53	49	5	147	186	37	105	379
Link Distance (ft)	7	7	7		1347	1347		1220			1630
Upstream Blk Time (%)	15	52	11								
Queuing Penalty (veh)	11	38	8								
Storage Bay Dist (ft)				90			210		25	160	
Storage Blk Time (%)				0	0		0	15	1		10
Queuing Penalty (veh)				0	0		2	24	4		3

Intersection: 16: Columbia Ave & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	208	240	86	189	196	130	98
Average Queue (ft)	83	101	16	73	80	55	38
95th Queue (ft)	163	186	58	155	160	101	80
Link Distance (ft)	420	420		379	379	398	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			105				130
Storage Blk Time (%)			0	2		0	0
Queuing Penalty (veh)			1	0		0	0

Intersection: 20: California Way & Industrial Way

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	267	554	569	96	88	87	67	17	61	162	25	155
Average Queue (ft)	127	202	213	18	21	13	12	1	15	56	2	48
95th Queue (ft)	239	422	428	59	62	52	48	10	48	121	15	104
Link Distance (ft)		843	843		237	237		684			404	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150			150			60		60	165		300
Storage Blk Time (%)	9	12		0	0		1		0	0		
Queuing Penalty (veh)	43	21		0	0		0		0	0		

Intersection: 22: 3rd Avenue & Spur Line

Movement	WB	NB	NB	SB	SB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	312	377	376	545	562
Average Queue (ft)	149	31	31	46	48
95th Queue (ft)	313	192	192	266	278
Link Distance (ft)	2590	370	370	3244	3244
Upstream Blk Time (%)		3	3		
Queuing Penalty (veh)		18	18		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 24: Industrial Way & Douglas Street

Movement	SE	SW
Directions Served	L	LR
Maximum Queue (ft)	32	56
Average Queue (ft)	4	21
95th Queue (ft)	21	51
Link Distance (ft)		100
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	195	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 25: Douglas Street & Alder Street

Movement	NW	NE
Directions Served	LT	LR
Maximum Queue (ft)	3	44
Average Queue (ft)	0	23
95th Queue (ft)	3	50
Link Distance (ft)	681	100
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 29: Spur Line & Washington Way

Movement	EB	EB	EB	WB	WB	NW
Directions Served	T	T	T	T	T	T
Maximum Queue (ft)	119	216	89	22	32	96
Average Queue (ft)	13	50	9	1	2	6
95th Queue (ft)	71	167	45	9	16	53
Link Distance (ft)		1874	1874	7	7	1681
Upstream Blk Time (%)				5	4	
Queuing Penalty (veh)				3	2	
Storage Bay Dist (ft)	140					
Storage Blk Time (%)	0	6				
Queuing Penalty (veh)	0	4				

Intersection: 31: Weyerhaeuser Access & Spur Line

Movement	NW	NE	SW
Directions Served	T	T	T
Maximum Queue (ft)	146	94	8
Average Queue (ft)	21	11	0
95th Queue (ft)	109	52	5
Link Distance (ft)	5597	313	10
Upstream Blk Time (%)			1
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 33: Weyerhaeuser Access & Industrial Way

Movement	NW	NE
Directions Served	L	LR
Maximum Queue (ft)	30	26
Average Queue (ft)	1	19
95th Queue (ft)	13	33
Link Distance (ft)		10
Upstream Blk Time (%)		11
Queuing Penalty (veh)		7
Storage Bay Dist (ft)	80	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 37: Weyerhaeuser Access 2 & Industrial Way

Movement	NE
Directions Served	R
Maximum Queue (ft)	35
Average Queue (ft)	12
95th Queue (ft)	37
Link Distance (ft)	26
Upstream Blk Time (%)	1
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 39: Industrial Way & Prudential Blvd

Movement	SE	SE	NW	NW	SW
Directions Served	L	T	T	T	L
Maximum Queue (ft)	12	112	102	79	114
Average Queue (ft)	1	38	32	22	50
95th Queue (ft)	7	89	75	61	89
Link Distance (ft)		2438	513	513	1261
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	170				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 41: Hoehne Avenue & Industrial Way

Movement	NE
Directions Served	R
Maximum Queue (ft)	35
Average Queue (ft)	10
95th Queue (ft)	35
Link Distance (ft)	26
Upstream Blk Time (%)	1
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 45: International Way & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	224	229	98	214	208	69	113
Average Queue (ft)	89	102	22	78	84	21	51
95th Queue (ft)	188	199	70	174	176	56	91
Link Distance (ft)	746	746		304	304	973	
Upstream Blk Time (%)				0	0		
Queuing Penalty (veh)				0	0		
Storage Bay Dist (ft)			150				150
Storage Blk Time (%)			0	1			0
Queuing Penalty (veh)			0	0			0

Intersection: 47: Fiber Way & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	232	238	148	237	272	124	219
Average Queue (ft)	151	166	50	92	112	41	104
95th Queue (ft)	245	253	110	205	226	94	180
Link Distance (ft)	208	208		295	295	975	975
Upstream Blk Time (%)	3	4		0	0		
Queuing Penalty (veh)	16	22		0	0		
Storage Bay Dist (ft)			150				
Storage Blk Time (%)			0	2			
Queuing Penalty (veh)			1	1			

Intersection: 48: Industrial Way

Movement	WB	WB	NB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	7	7	126	65
Average Queue (ft)	1	1	49	24
95th Queue (ft)	9	11	95	60
Link Distance (ft)	420	420	236	90
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 49: 38th Avenue & Industrial Way

Movement	SE	SE	NW	NW	NE	NE	NE	SW	SW
Directions Served	L	T	L	T	L	T	R	L	R
Maximum Queue (ft)	46	75	23	93	39	35	85	59	49
Average Queue (ft)	12	14	2	28	5	4	21	25	18
95th Queue (ft)	36	48	12	75	24	20	67	53	45
Link Distance (ft)		2312		2438	3	3	3		
Upstream Blk Time (%)					1	1	9		
Queuing Penalty (veh)					1	1	7		
Storage Bay Dist (ft)	115		155					150	200
Storage Blk Time (%)		0		0					
Queuing Penalty (veh)		0		0					

Intersection: 50: Aluminum Access 1/38th Avenue & Spur Line

Movement	NW	NE	NE	NE	SW
Directions Served	T	T	T	T	T
Maximum Queue (ft)	261	17	1487	83	13
Average Queue (ft)	17	1	845	44	1
95th Queue (ft)	117	12	1947	82	8
Link Distance (ft)	5784		1565		3
Upstream Blk Time (%)			36		1
Queuing Penalty (veh)			0		0
Storage Bay Dist (ft)		35		25	
Storage Blk Time (%)			12	72	
Queuing Penalty (veh)			19	114	

Intersection: 55: Industrial Way

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	45	61
Average Queue (ft)	8	22
95th Queue (ft)	32	52
Link Distance (ft)	99	87
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 56: Industrial Way & 3rd Avenue

Movement	NW	NW	NE	NE	SW	SW	SW
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	88	71	245	245	126	368	366
Average Queue (ft)	24	17	67	73	16	154	162
95th Queue (ft)	65	49	170	173	74	301	307
Link Distance (ft)		2710	237	237		370	370
Upstream Blk Time (%)			2	2		2	2
Queuing Penalty (veh)			9	10		6	6
Storage Bay Dist (ft)	175				250		
Storage Blk Time (%)						4	
Queuing Penalty (veh)						0	

Intersection: 59: Industrial Way

Movement	EB	EB	WB	WB	NB
Directions Served	T	T	T	TR	R
Maximum Queue (ft)	174	170	4	6	144
Average Queue (ft)	20	25	0	0	55
95th Queue (ft)	98	103	4	8	115
Link Distance (ft)	304	304	208	208	118
Upstream Blk Time (%)	0				4
Queuing Penalty (veh)	0				0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 61: Industrial Way

Movement	SB	SE
Directions Served	LR	L
Maximum Queue (ft)	108	30
Average Queue (ft)	44	2
95th Queue (ft)	88	15
Link Distance (ft)	1001	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 64: Industrial Way

Movement	WB	SB
Directions Served	T	R
Maximum Queue (ft)	8	39
Average Queue (ft)	0	11
95th Queue (ft)	10	36
Link Distance (ft)	843	88
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 69: Dike Road & Spur Line

Movement	SE	NW	NE	SW
Directions Served	T	T	T	T
Maximum Queue (ft)	560	527	101	147
Average Queue (ft)	257	215	8	12
95th Queue (ft)	540	476	51	81
Link Distance (ft)	2167	1049	673	625
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 1081

Intersection: 1: Weyerhaeuser & Industrial Way

Movement	SE	NW	NW	NE
Directions Served	TR	L	T	LR
Maximum Queue (ft)	29	104	534	293
Average Queue (ft)	2	15	56	92
95th Queue (ft)	14	67	302	247
Link Distance (ft)	116	745	745	484
Upstream Blk Time (%)			0	2
Queuing Penalty (veh)			1	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Oregon Way & Industrial Way

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	R	L	T	T	R
Maximum Queue (ft)	239	450	370	203	365	1275	1284	78	384	535	3436	250
Average Queue (ft)	136	152	128	13	166	570	809	53	162	240	606	148
95th Queue (ft)	244	338	279	103	310	1369	1526	98	320	450	2236	289
Link Distance (ft)		745				1239	1239				3651	
Upstream Blk Time (%)						6	15				2	
Queuing Penalty (veh)						24	64				0	
Storage Bay Dist (ft)	140		400	400	310			25	235	235		120
Storage Blk Time (%)	23	7	0		1	3	57	22	4	15	35	10
Queuing Penalty (veh)	105	31	0		2	5	92	73	26	95	294	79

Intersection: 2: Oregon Way & Industrial Way

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	224	263	265
Average Queue (ft)	65	180	186
95th Queue (ft)	163	316	322
Link Distance (ft)		236	236
Upstream Blk Time (%)	0	17	19
Queuing Penalty (veh)	0	56	64
Storage Bay Dist (ft)	170		
Storage Blk Time (%)	0	27	
Queuing Penalty (veh)	1	15	

Intersection: 4: Oregon Way & Spur Line

Movement	WB	NB	NB	SB	SB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	112	246	246	717	718
Average Queue (ft)	7	41	41	210	216
95th Queue (ft)	48	189	190	662	670
Link Distance (ft)	4581	236	236	702	702
Upstream Blk Time (%)		11	11	7	7
Queuing Penalty (veh)		48	50	22	24
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Oregon Way & Alabama Street

Movement	EB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	TR	L	T	TR
Maximum Queue (ft)	150	126	92	13	127	492	509
Average Queue (ft)	53	45	24	0	15	40	44
95th Queue (ft)	120	95	66	8	69	235	250
Link Distance (ft)	233	852		702		3149	3149
Upstream Blk Time (%)	1						
Queuing Penalty (veh)	0						
Storage Bay Dist (ft)			175		165		
Storage Blk Time (%)						4	
Queuing Penalty (veh)						1	

Intersection: 9: California Way & Spur Line

Movement	WB	SE	NW
Directions Served	T	T	T
Maximum Queue (ft)	156	939	315
Average Queue (ft)	6	129	56
95th Queue (ft)	56	600	247
Link Distance (ft)	464	2581	404
Upstream Blk Time (%)			1
Queuing Penalty (veh)			2
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Industrial Way & Spur Line

Movement	WB	SE	NW
Directions Served	T	T	T
Maximum Queue (ft)	103	1950	120
Average Queue (ft)	6	251	19
95th Queue (ft)	50	1216	88
Link Distance (ft)	993	2678	116
Upstream Blk Time (%)			12
Queuing Penalty (veh)			68
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: Industrial Way & Washington Way

Movement	EB	EB	EB	WB	WB	SE	SE	SE	NW	NW
Directions Served	L	T	R	L	T	L	T	R	L	TR
Maximum Queue (ft)	34	60	50	137	236	271	416	50	212	574
Average Queue (ft)	11	27	10	25	38	80	96	10	42	214
95th Queue (ft)	29	55	31	78	157	217	319	37	144	562
Link Distance (ft)	7	7	7		1347		1220			1630
Upstream Blk Time (%)	17	47	12							0
Queuing Penalty (veh)	12	34	9							1
Storage Bay Dist (ft)				90		210		25	160	
Storage Blk Time (%)				1	8	4	13	6	3	12
Queuing Penalty (veh)				0	4	15	22	29	15	4

Intersection: 16: Columbia Ave & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	211	240	98	252	264	130	107
Average Queue (ft)	78	100	16	92	99	57	42
95th Queue (ft)	163	196	73	240	247	108	88
Link Distance (ft)	420	420		379	379	398	
Upstream Blk Time (%)				2	2		
Queuing Penalty (veh)				7	7		
Storage Bay Dist (ft)			105				130
Storage Blk Time (%)				6		0	0
Queuing Penalty (veh)				1		0	0

Intersection: 20: California Way & Industrial Way

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	275	862	877	77	102	94	74	46	83	201	343	334
Average Queue (ft)	177	490	498	15	17	12	11	2	18	55	18	54
95th Queue (ft)	343	1018	1022	52	62	54	46	25	58	136	148	168
Link Distance (ft)		843	843		237	237		684			404	
Upstream Blk Time (%)		14	15								0	0
Queuing Penalty (veh)		78	81								0	0
Storage Bay Dist (ft)	150			150			60		60	165		300
Storage Blk Time (%)	38	30			0		0	0	3	1		1
Queuing Penalty (veh)	181	51			0		0	0	0	2		0

Intersection: 22: 3rd Avenue & Spur Line

Movement	WB	NB	NB	SB	SB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	265	374	379	1575	1569
Average Queue (ft)	102	69	70	362	363
95th Queue (ft)	241	303	306	1224	1228
Link Distance (ft)	2590	370	370	3309	3309
Upstream Blk Time (%)		14	14		
Queuing Penalty (veh)		70	74		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 24: Industrial Way & Douglas Street

Movement	SE	NW	SW
Directions Served	L	TR	LR
Maximum Queue (ft)	33	14	54
Average Queue (ft)	4	0	20
95th Queue (ft)	20	14	50
Link Distance (ft)		2660	100
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	195		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 25: Douglas Street & Alder Street

Movement	NW	NE
Directions Served	LT	LR
Maximum Queue (ft)	12	52
Average Queue (ft)	1	23
95th Queue (ft)	8	51
Link Distance (ft)	681	100
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 29: Spur Line & Washington Way

Movement	EB	EB	EB	WB	WB	NW
Directions Served	T	T	T	T	T	T
Maximum Queue (ft)	190	548	282	26	47	101
Average Queue (ft)	37	142	41	3	5	5
95th Queue (ft)	144	453	186	15	28	51
Link Distance (ft)		2483	2483	7	7	1681
Upstream Blk Time (%)				15	14	
Queuing Penalty (veh)				8	8	
Storage Bay Dist (ft)	140					
Storage Blk Time (%)	2	28				
Queuing Penalty (veh)	1	19				

Intersection: 31: Weyerhaeuser Access & Spur Line

Movement	NW	NE	SW
Directions Served	T	T	T
Maximum Queue (ft)	93	195	26
Average Queue (ft)	6	30	2
95th Queue (ft)	45	131	13
Link Distance (ft)	5597	313	10
Upstream Blk Time (%)		0	7
Queuing Penalty (veh)		0	1
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 33: Weyerhaeuser Access & Industrial Way

Movement	NW	NW	NE
Directions Served	L	T	LR
Maximum Queue (ft)	18	30	24
Average Queue (ft)	1	2	17
95th Queue (ft)	8	40	33
Link Distance (ft)		466	10
Upstream Blk Time (%)			11
Queuing Penalty (veh)			6
Storage Bay Dist (ft)	80		
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 37: Weyerhaeuser Access 2 & Industrial Way

Movement	NE
Directions Served	R
Maximum Queue (ft)	34
Average Queue (ft)	12
95th Queue (ft)	38
Link Distance (ft)	26
Upstream Blk Time (%)	2
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 39: Industrial Way & Prudential Blvd

Movement	SE	NW	NW	SW
Directions Served	T	T	T	L
Maximum Queue (ft)	104	84	75	111
Average Queue (ft)	33	26	20	51
95th Queue (ft)	81	65	57	89
Link Distance (ft)	2438	513	513	1261
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 41: Hoehne Avenue & Industrial Way

Movement	NE
Directions Served	R
Maximum Queue (ft)	33
Average Queue (ft)	10
95th Queue (ft)	34
Link Distance (ft)	26
Upstream Blk Time (%)	1
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 45: International Way & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	597	608	81	254	274	214	192
Average Queue (ft)	148	158	20	81	88	36	61
95th Queue (ft)	426	439	59	192	205	138	130
Link Distance (ft)	746	746		304	304	973	
Upstream Blk Time (%)	1	1		0	0		
Queuing Penalty (veh)	5	5		0	1		
Storage Bay Dist (ft)			150				150
Storage Blk Time (%)				2		2	1
Queuing Penalty (veh)				0		2	0

Intersection: 47: Fiber Way & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	239	245	139	294	303	114	603
Average Queue (ft)	171	180	46	97	117	43	165
95th Queue (ft)	263	267	112	234	260	89	412
Link Distance (ft)	208	208		295	295	975	975
Upstream Blk Time (%)	17	19		0	0		
Queuing Penalty (veh)	83	92		1	1		
Storage Bay Dist (ft)			150				
Storage Blk Time (%)			1	3			
Queuing Penalty (veh)			2	1			

Intersection: 48: Industrial Way

Movement	WB	WB	NB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	345	363	123	111
Average Queue (ft)	77	88	50	35
95th Queue (ft)	312	333	97	90
Link Distance (ft)	420	420	236	90
Upstream Blk Time (%)	2	2		9
Queuing Penalty (veh)	9	9		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 49: 38th Avenue & Industrial Way

Movement	SE	SE	NW	NW	NE	NE	NE	SW	SW
Directions Served	L	T	L	T	L	T	R	L	R
Maximum Queue (ft)	57	85	30	115	33	39	84	57	42
Average Queue (ft)	13	16	3	27	5	6	19	25	15
95th Queue (ft)	40	56	17	77	24	27	65	53	41
Link Distance (ft)		2262		2438	3	3	3		
Upstream Blk Time (%)					2	2	10		
Queuing Penalty (veh)					1	1	7		
Storage Bay Dist (ft)	115		155					150	200
Storage Blk Time (%)		0		0					
Queuing Penalty (veh)		0		0					

Intersection: 50: Aluminum Access 1/38th Avenue & Spur Line

Movement	NW	NE	NE	NE	SW
Directions Served	T	T	T	T	T
Maximum Queue (ft)	267	39	2030	82	20
Average Queue (ft)	17	2	1073	42	2
95th Queue (ft)	117	22	2479	79	12
Link Distance (ft)	5784		2279		3
Upstream Blk Time (%)			18		9
Queuing Penalty (veh)			0		0
Storage Bay Dist (ft)		35		25	
Storage Blk Time (%)		1	9	74	
Queuing Penalty (veh)		2	12	97	

Intersection: 55: Industrial Way

Movement	EB	EB	WB	WB	NB	SB
Directions Served	T	T	T	T	R	R
Maximum Queue (ft)	48	39	53	52	49	69
Average Queue (ft)	3	3	9	9	7	25
95th Queue (ft)	40	34	99	102	33	60
Link Distance (ft)	379	379	746	746	99	87
Upstream Blk Time (%)					0	2
Queuing Penalty (veh)					0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 56: Industrial Way & 3rd Avenue

Movement	NW	NW	NE	NE	SW	SW	SW
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	94	118	246	244	214	399	395
Average Queue (ft)	25	27	102	110	26	186	188
95th Queue (ft)	69	85	232	231	130	405	406
Link Distance (ft)		2710	237	237		370	370
Upstream Blk Time (%)			13	12		11	12
Queuing Penalty (veh)			65	63		36	37
Storage Bay Dist (ft)	175				250		
Storage Blk Time (%)	0	1				16	
Queuing Penalty (veh)	0	0				2	

Intersection: 59: Industrial Way

Movement	EB	EB	WB	WB	NB
Directions Served	T	T	T	TR	R
Maximum Queue (ft)	319	322	21	23	174
Average Queue (ft)	89	95	1	1	75
95th Queue (ft)	293	297	16	20	151
Link Distance (ft)	304	304	208	208	118
Upstream Blk Time (%)	8	9			21
Queuing Penalty (veh)	36	41			0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 61: Industrial Way

Movement	SB	SE	NW
Directions Served	LR	L	TR
Maximum Queue (ft)	87	30	6
Average Queue (ft)	41	2	0
95th Queue (ft)	73	14	6
Link Distance (ft)	1001		2678
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 64: Industrial Way

Movement	EB	EB	WB	WB	SB
Directions Served	T	TR	T	T	R
Maximum Queue (ft)	303	316	26	130	40
Average Queue (ft)	84	89	1	6	11
95th Queue (ft)	289	301	12	96	36
Link Distance (ft)	295	295	843	843	88
Upstream Blk Time (%)	9	10			
Queuing Penalty (veh)	51	54			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 69: Dike Road & Spur Line

Movement	SE	NW	NE	SW
Directions Served	T	T	T	T
Maximum Queue (ft)	602	597	188	232
Average Queue (ft)	242	254	17	23
95th Queue (ft)	584	576	98	128
Link Distance (ft)	2167	1049	673	625
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 2702

Intersection: 1: Weyerhaeuser & Industrial Way

Movement	SE	NW	NW	NE
Directions Served	TR	L	T	LR
Maximum Queue (ft)	11	42	547	174
Average Queue (ft)	0	10	38	66
95th Queue (ft)	7	34	269	132
Link Distance (ft)	116	745	745	484
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			1	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Oregon Way & Industrial Way

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	R	L	T	T	R
Maximum Queue (ft)	204	229	234	245	337	1285	1283	80	366	514	975	250
Average Queue (ft)	101	114	109	16	185	1044	1206	56	199	240	274	177
95th Queue (ft)	176	202	201	110	302	1604	1440	102	344	408	644	294
Link Distance (ft)		745				1239	1239				2473	
Upstream Blk Time (%)						16	42					
Queuing Penalty (veh)						81	217					
Storage Bay Dist (ft)	140		400	400	310			25	235	235		120
Storage Blk Time (%)	5	6			0	1	64	19	9	8	32	12
Queuing Penalty (veh)	24	28			1	3	145	76	77	67	331	114

Intersection: 2: Oregon Way & Industrial Way

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	236	273	278
Average Queue (ft)	77	232	233
95th Queue (ft)	195	293	297
Link Distance (ft)		236	236
Upstream Blk Time (%)	0	27	29
Queuing Penalty (veh)	0	108	119
Storage Bay Dist (ft)	170		
Storage Blk Time (%)	0	43	
Queuing Penalty (veh)	2	25	

Intersection: 4: Oregon Way & Spur Line

Movement	WB	NB	NB	SB	SB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	155	247	243	528	557
Average Queue (ft)	9	17	17	137	148
95th Queue (ft)	71	118	117	414	432
Link Distance (ft)	4581	236	236	702	702
Upstream Blk Time (%)		3	3		0
Queuing Penalty (veh)		14	15		0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Oregon Way & Alabama Street

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	167	137	84	3	8	54	6	16
Average Queue (ft)	58	51	30	0	0	16	0	1
95th Queue (ft)	128	103	64	3	4	45	6	7
Link Distance (ft)	233	852		702	702		3034	3034
Upstream Blk Time (%)	0							
Queuing Penalty (veh)	0							
Storage Bay Dist (ft)			175			165		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 9: California Way & Spur Line

Movement	WB	SE	NW
Directions Served	T	T	T
Maximum Queue (ft)	170	377	219
Average Queue (ft)	7	20	12
95th Queue (ft)	62	154	94
Link Distance (ft)	464	2581	404
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Industrial Way & Spur Line

Movement	WB	SE	NW
Directions Served	T	T	T
Maximum Queue (ft)	135	704	123
Average Queue (ft)	7	52	11
95th Queue (ft)	56	346	69
Link Distance (ft)	993	2678	116
Upstream Blk Time (%)			4
Queuing Penalty (veh)			24
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: Industrial Way & Washington Way

Movement	EB	EB	EB	WB	WB	SE	SE	SE	NW	NW
Directions Served	L	T	R	L	T	L	T	R	L	TR
Maximum Queue (ft)	36	68	41	70	75	115	194	48	177	568
Average Queue (ft)	13	36	11	21	18	35	58	12	32	203
95th Queue (ft)	31	57	30	53	55	90	144	42	110	455
Link Distance (ft)	7	7	7		1347		1220			1630
Upstream Blk Time (%)	21	56	11							
Queuing Penalty (veh)	19	48	10							
Storage Bay Dist (ft)				90		210		25	160	
Storage Blk Time (%)				0	0	0	12	1		11
Queuing Penalty (veh)				0	0	0	14	4		4

Intersection: 16: Columbia Ave & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	270	286	144	391	392	185	150
Average Queue (ft)	109	121	18	180	192	74	55
95th Queue (ft)	209	217	88	394	403	145	113
Link Distance (ft)	420	420		379	379	398	
Upstream Blk Time (%)				8	9		
Queuing Penalty (veh)				34	39		
Storage Bay Dist (ft)			105				130
Storage Blk Time (%)			0	24		3	0
Queuing Penalty (veh)			0	3		3	1

Intersection: 20: California Way & Industrial Way

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	275	837	844	82	131	115	72	60	94	144	76	239
Average Queue (ft)	185	366	387	12	18	14	13	7	28	45	13	62
95th Queue (ft)	319	737	753	49	70	59	53	36	74	104	51	146
Link Distance (ft)		843	843		237	237		684			404	
Upstream Blk Time (%)		2	2									
Queuing Penalty (veh)		11	13									
Storage Bay Dist (ft)	150			150			60		60	165		300
Storage Blk Time (%)	24	28		0	0		1	0	2	0		0
Queuing Penalty (veh)	137	47		0	0		0	0	0	0		0

Intersection: 22: 3rd Avenue & Spur Line

Movement	WB	NB	NB	SB	SB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	330	371	381	646	651
Average Queue (ft)	150	32	33	64	68
95th Queue (ft)	305	197	201	329	341
Link Distance (ft)	2590	370	370	2875	2875
Upstream Blk Time (%)		3	4		
Queuing Penalty (veh)		20	24		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 24: Industrial Way & Douglas Street

Movement	SE	SW
Directions Served	L	LR
Maximum Queue (ft)	35	65
Average Queue (ft)	4	29
95th Queue (ft)	22	58
Link Distance (ft)		100
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	195	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 25: Douglas Street & Alder Street

Movement	NW	NE
Directions Served	LT	LR
Maximum Queue (ft)	16	66
Average Queue (ft)	1	30
95th Queue (ft)	10	55
Link Distance (ft)	681	100
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 29: Spur Line & Washington Way

Movement	EB	EB	EB	WB	WB	NW
Directions Served	T	T	T	T	T	T
Maximum Queue (ft)	169	316	120	34	27	73
Average Queue (ft)	26	87	11	2	1	4
95th Queue (ft)	116	261	56	15	14	31
Link Distance (ft)		1764	1764	7	7	1681
Upstream Blk Time (%)				4	4	
Queuing Penalty (veh)				3	2	
Storage Bay Dist (ft)	140					
Storage Blk Time (%)		16				
Queuing Penalty (veh)		14				

Intersection: 31: Weyerhaeuser Access & Spur Line

Movement	NW	NE	SW
Directions Served	T	T	T
Maximum Queue (ft)	77	73	10
Average Queue (ft)	10	14	1
95th Queue (ft)	62	50	7
Link Distance (ft)	5597	313	10
Upstream Blk Time (%)			1
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 33: Weyerhaeuser Access & Industrial Way

Movement	NW	NE
Directions Served	L	LR
Maximum Queue (ft)	30	30
Average Queue (ft)	2	21
95th Queue (ft)	16	33
Link Distance (ft)		10
Upstream Blk Time (%)		12
Queuing Penalty (veh)		9
Storage Bay Dist (ft)	80	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 37: Weyerhaeuser Access 2 & Industrial Way

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 39: Industrial Way & Prudential Blvd

Movement	SE	SE	NW	NW	SW
Directions Served	L	T	T	T	L
Maximum Queue (ft)	12	97	86	74	107
Average Queue (ft)	0	30	29	19	50
95th Queue (ft)	6	76	70	55	89
Link Distance (ft)		2438	513	513	1261
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	170				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 41: Hoehne Avenue & Industrial Way

Movement	NE
Directions Served	R
Maximum Queue (ft)	35
Average Queue (ft)	10
95th Queue (ft)	34
Link Distance (ft)	26
Upstream Blk Time (%)	1
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 45: International Way & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	345	351	112	278	284	92	138
Average Queue (ft)	131	139	22	120	130	27	70
95th Queue (ft)	264	273	76	245	259	69	118
Link Distance (ft)	746	746		304	304	973	
Upstream Blk Time (%)				1	1		
Queuing Penalty (veh)				6	6		
Storage Bay Dist (ft)			150				150
Storage Blk Time (%)				5		0	0
Queuing Penalty (veh)				1		0	0

Intersection: 47: Fiber Way & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	245	248	134	287	294	123	238
Average Queue (ft)	177	186	43	116	140	48	123
95th Queue (ft)	265	268	96	244	267	99	204
Link Distance (ft)	208	208		295	295	975	975
Upstream Blk Time (%)	10	11		0	0		
Queuing Penalty (veh)	58	67		0	1		
Storage Bay Dist (ft)			150				
Storage Blk Time (%)			0	4			
Queuing Penalty (veh)			1	2			

Intersection: 48: Industrial Way

Movement	EB	WB	WB	NB	SB
Directions Served	T	T	T	R	R
Maximum Queue (ft)	8	464	444	168	60
Average Queue (ft)	0	248	270	65	9
95th Queue (ft)	2	557	554	125	47
Link Distance (ft)	1239	420	420	236	90
Upstream Blk Time (%)		11	12	0	3
Queuing Penalty (veh)		55	59	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 49: 38th Avenue & Industrial Way

Movement	SE	SE	NW	NW	NW	NE	NE	NE	SW	SW
Directions Served	L	T	L	T	R	L	T	R	L	R
Maximum Queue (ft)	56	64	23	102	3	3	52	48	66	48
Average Queue (ft)	13	10	2	26	0	0	13	4	28	19
95th Queue (ft)	39	38	13	72	3	3	41	23	56	44
Link Distance (ft)		2365		2438	2438	3	3	3		
Upstream Blk Time (%)						0	3	0		
Queuing Penalty (veh)						0	0	0		
Storage Bay Dist (ft)	115		155						150	200
Storage Blk Time (%)		0		0						
Queuing Penalty (veh)		0		0						

Intersection: 50: Aluminum Access 1/38th Avenue & Spur Line

Movement	NW	NE	NE	SW
Directions Served	T	T	T	T
Maximum Queue (ft)	289	60	22	22
Average Queue (ft)	19	5	1	1
95th Queue (ft)	129	30	14	10
Link Distance (ft)	5784	1935		3
Upstream Blk Time (%)				3
Queuing Penalty (veh)				0
Storage Bay Dist (ft)			25	
Storage Blk Time (%)		8	2	
Queuing Penalty (veh)		1	0	

Intersection: 55: Industrial Way

Movement	WB	WB	NB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	256	271	78	46
Average Queue (ft)	59	63	22	10
95th Queue (ft)	332	339	57	37
Link Distance (ft)	746	746	99	87
Upstream Blk Time (%)	1	1	0	0
Queuing Penalty (veh)	5	6	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 56: Industrial Way & 3rd Avenue

Movement	NW	NW	NE	NE	SW	SW	SW
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	84	73	247	250	188	394	394
Average Queue (ft)	27	20	101	112	21	225	234
95th Queue (ft)	71	53	205	212	97	390	392
Link Distance (ft)		2710	237	237		370	370
Upstream Blk Time (%)			3	3		4	5
Queuing Penalty (veh)			18	16		15	18
Storage Bay Dist (ft)	175				250		
Storage Blk Time (%)						10	
Queuing Penalty (veh)						1	

Intersection: 59: Industrial Way

Movement	EB	EB	WB	WB	NB
Directions Served	T	T	T	TR	R
Maximum Queue (ft)	273	285	31	39	106
Average Queue (ft)	60	70	7	7	28
95th Queue (ft)	196	215	64	64	81
Link Distance (ft)	304	304	208	208	118
Upstream Blk Time (%)	0	0	0	0	1
Queuing Penalty (veh)	1	2	1	1	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 61: Industrial Way

Movement	SB	SE
Directions Served	LR	L
Maximum Queue (ft)	115	31
Average Queue (ft)	47	3
95th Queue (ft)	90	16
Link Distance (ft)	1001	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 64: Industrial Way

Movement	EB	EB	WB	WB	SB
Directions Served	T	TR	T	T	R
Maximum Queue (ft)	195	197	29	81	29
Average Queue (ft)	17	18	1	4	3
95th Queue (ft)	118	124	17	36	17
Link Distance (ft)	295	295	843	843	88
Upstream Blk Time (%)	0	0			
Queuing Penalty (veh)	2	2			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 69: Dike Road & Spur Line

Movement	SE	NW	NE	SW
Directions Served	T	T	T	T
Maximum Queue (ft)	596	582	103	176
Average Queue (ft)	268	273	8	14
95th Queue (ft)	583	633	51	89
Link Distance (ft)	2167	1051	566	491
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 2279

Intersection: 1: Weyerhaeuser & Industrial Way

Movement	SE	NW	NW	NE
Directions Served	TR	L	T	LR
Maximum Queue (ft)	15	146	631	272
Average Queue (ft)	2	18	78	80
95th Queue (ft)	24	80	385	203
Link Distance (ft)	116	745	745	484
Upstream Blk Time (%)	0		0	
Queuing Penalty (veh)	1		1	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Oregon Way & Industrial Way

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	R	L	T	T	R
Maximum Queue (ft)	239	400	374	298	360	1289	1276	76	371	523	2511	250
Average Queue (ft)	133	146	131	31	181	1016	1163	55	212	303	633	194
95th Queue (ft)	239	352	302	161	333	1679	1519	101	387	489	1909	331
Link Distance (ft)		745				1239	1239				2473	
Upstream Blk Time (%)		0				23	46				9	
Queuing Penalty (veh)		2				119	238				0	
Storage Bay Dist (ft)	140		400	400	310			25	235	235		120
Storage Blk Time (%)	21	6	0		1	2	58	25	15	19	43	18
Queuing Penalty (veh)	100	29	0		2	4	132	98	126	153	440	169

Intersection: 2: Oregon Way & Industrial Way

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	236	275	273
Average Queue (ft)	75	220	219
95th Queue (ft)	204	351	349
Link Distance (ft)		236	236
Upstream Blk Time (%)	0	46	47
Queuing Penalty (veh)	0	187	193
Storage Bay Dist (ft)	170		
Storage Blk Time (%)	1	57	
Queuing Penalty (veh)	2	33	

Intersection: 4: Oregon Way & Spur Line

Movement	WB	NB	NB	SB	SB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	108	244	245	725	731
Average Queue (ft)	9	41	41	482	489
95th Queue (ft)	62	189	190	937	937
Link Distance (ft)	4581	236	236	702	702
Upstream Blk Time (%)		12	12	29	30
Queuing Penalty (veh)		63	63	115	119
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Oregon Way & Alabama Street

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	251	579	111	2	5	290	1018	1037
Average Queue (ft)	131	173	35	0	0	49	293	308
95th Queue (ft)	270	557	87	2	2	208	853	881
Link Distance (ft)	233	852		702	702		3073	3073
Upstream Blk Time (%)	25	2						
Queuing Penalty (veh)	0	0						
Storage Bay Dist (ft)			175			165		
Storage Blk Time (%)			0				32	
Queuing Penalty (veh)			0				10	

Intersection: 9: California Way & Spur Line

Movement	WB	SE	NW
Directions Served	T	T	T
Maximum Queue (ft)	126	1046	297
Average Queue (ft)	5	148	53
95th Queue (ft)	47	666	232
Link Distance (ft)	464	2581	404
Upstream Blk Time (%)			1
Queuing Penalty (veh)			2
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Industrial Way & Spur Line

Movement	WB	SE	NW
Directions Served	T	T	T
Maximum Queue (ft)	80	1938	124
Average Queue (ft)	4	255	20
95th Queue (ft)	34	1203	94
Link Distance (ft)	993	2678	116
Upstream Blk Time (%)			13
Queuing Penalty (veh)			85
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: Industrial Way & Washington Way

Movement	EB	EB	EB	WB	WB	WB	SE	SE	SE	NW	NW
Directions Served	L	T	R	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	41	74	44	142	337	2	214	457	49	218	481
Average Queue (ft)	12	31	11	28	59	0	52	105	12	57	210
95th Queue (ft)	31	62	31	94	233	2	153	416	39	178	471
Link Distance (ft)	7	7	7		1347	1347		1220			1630
Upstream Blk Time (%)	20	55	11					0			
Queuing Penalty (veh)	17	47	10					0			
Storage Bay Dist (ft)				90			210		25	160	
Storage Blk Time (%)				1	12		0	14	8	5	11
Queuing Penalty (veh)				0	7		0	18	34	26	4

Intersection: 16: Columbia Ave & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	330	352	204	432	421	267	198
Average Queue (ft)	140	155	24	257	261	99	57
95th Queue (ft)	284	306	112	514	510	209	129
Link Distance (ft)	420	420		379	379	398	
Upstream Blk Time (%)	1	1		26	27	0	
Queuing Penalty (veh)	4	5		116	122	0	
Storage Bay Dist (ft)			105				130
Storage Blk Time (%)			0	41		9	1
Queuing Penalty (veh)			0	5		8	1

Intersection: 20: California Way & Industrial Way

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	275	872	884	74	156	156	87	87	97	159	425	373
Average Queue (ft)	188	673	685	9	30	25	16	10	27	42	36	82
95th Queue (ft)	352	1080	1086	41	125	119	56	63	74	111	209	239
Link Distance (ft)		843	843		237	237		684			404	
Upstream Blk Time (%)		20	22		1	1					1	0
Queuing Penalty (veh)		132	144		2	3					2	0
Storage Bay Dist (ft)	150			150			60		60	165		300
Storage Blk Time (%)	30	51		0	3		2	0	8	0	0	2
Queuing Penalty (veh)	171	87		0	0		1	0	2	1	0	1

Intersection: 22: 3rd Avenue & Spur Line

Movement	WB	NB	NB	SB	SB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	290	379	384	1915	1910
Average Queue (ft)	106	71	72	665	676
95th Queue (ft)	269	306	310	1739	1741
Link Distance (ft)	2590	370	370	3200	3200
Upstream Blk Time (%)		15	15		
Queuing Penalty (veh)		89	92		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 24: Industrial Way & Douglas Street

Movement	SE	SW
Directions Served	L	LR
Maximum Queue (ft)	34	70
Average Queue (ft)	4	27
95th Queue (ft)	22	59
Link Distance (ft)		100
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)	195	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 25: Douglas Street & Alder Street

Movement	NW	NE
Directions Served	LT	LR
Maximum Queue (ft)	10	61
Average Queue (ft)	1	29
95th Queue (ft)	8	56
Link Distance (ft)	681	100
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 29: Spur Line & Washington Way

Movement	EB	EB	EB	WB	WB	NW
Directions Served	T	T	T	T	T	T
Maximum Queue (ft)	190	818	504	27	42	47
Average Queue (ft)	44	258	66	3	5	2
95th Queue (ft)	163	752	318	17	27	20
Link Distance (ft)		1752	1752	7	7	1681
Upstream Blk Time (%)				16	15	
Queuing Penalty (veh)				10	10	
Storage Bay Dist (ft)	140					
Storage Blk Time (%)	0	39				
Queuing Penalty (veh)	0	32				

Intersection: 31: Weyerhaeuser Access & Spur Line

Movement	NW	NE	SW
Directions Served	T	T	T
Maximum Queue (ft)	56	217	20
Average Queue (ft)	5	38	2
95th Queue (ft)	31	158	11
Link Distance (ft)	5597	313	10
Upstream Blk Time (%)		2	4
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 33: Weyerhaeuser Access & Industrial Way

Movement	SE	NW	NE
Directions Served	R	L	LR
Maximum Queue (ft)	3	28	26
Average Queue (ft)	0	2	18
95th Queue (ft)	4	15	34
Link Distance (ft)			10
Upstream Blk Time (%)			12
Queuing Penalty (veh)			9
Storage Bay Dist (ft)	210	80	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 37: Weyerhaeuser Access 2 & Industrial Way

Movement	SE
Directions Served	T
Maximum Queue (ft)	20
Average Queue (ft)	1
95th Queue (ft)	18
Link Distance (ft)	1480
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 39: Industrial Way & Prudential Blvd

Movement	SE	SE	NW	NW	SW
Directions Served	L	T	T	T	L
Maximum Queue (ft)	3	104	107	85	116
Average Queue (ft)	0	35	36	25	51
95th Queue (ft)	3	80	84	63	91
Link Distance (ft)		2438	513	513	1261
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	170				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 41: Hoehne Avenue & Industrial Way

Movement	NE
Directions Served	R
Maximum Queue (ft)	35
Average Queue (ft)	11
95th Queue (ft)	36
Link Distance (ft)	26
Upstream Blk Time (%)	1
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 45: International Way & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	780	780	225	335	346	494	263
Average Queue (ft)	442	448	28	176	180	88	105
95th Queue (ft)	934	935	124	365	371	350	220
Link Distance (ft)	746	746		304	304	973	
Upstream Blk Time (%)	15	17		13	14		
Queuing Penalty (veh)	70	80		57	63		
Storage Bay Dist (ft)			150				150
Storage Blk Time (%)			0	26		4	11
Queuing Penalty (veh)			0	4		6	3

Intersection: 47: Fiber Way & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	254	252	205	316	325	555	842
Average Queue (ft)	210	212	54	162	176	82	246
95th Queue (ft)	260	256	155	341	353	358	651
Link Distance (ft)	208	208		295	295	975	975
Upstream Blk Time (%)	38	40		10	11	1	2
Queuing Penalty (veh)	213	226		43	47	0	0
Storage Bay Dist (ft)			150				
Storage Blk Time (%)			0	19			
Queuing Penalty (veh)			0	9			

Intersection: 48: Industrial Way

Movement	EB	EB	WB	WB	NB	SB
Directions Served	T	T	T	T	R	R
Maximum Queue (ft)	27	38	470	457	167	48
Average Queue (ft)	2	3	294	303	66	6
95th Queue (ft)	36	43	608	600	126	29
Link Distance (ft)	1239	1239	420	420	236	90
Upstream Blk Time (%)			19	22	0	
Queuing Penalty (veh)			95	110	0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 49: 38th Avenue & Industrial Way

Movement	SE	SE	SE	NW	NW	NE	NE	NE	SW	SW
Directions Served	L	T	R	L	T	L	T	R	L	R
Maximum Queue (ft)	49	97	15	200	219	38	45	81	68	45
Average Queue (ft)	13	24	1	55	37	2	9	20	27	17
95th Queue (ft)	37	71	8	156	129	18	34	58	59	43
Link Distance (ft)		2250			2438	3	3	3		
Upstream Blk Time (%)						0	4	5		
Queuing Penalty (veh)						0	1	1		
Storage Bay Dist (ft)	115		225	155					150	200
Storage Blk Time (%)		0		9	0					
Queuing Penalty (veh)		0		30	0					

Intersection: 50: Aluminum Access 1/38th Avenue & Spur Line

Movement	NW	NE	NE	NE	SW
Directions Served	T	T	T	T	T
Maximum Queue (ft)	181	25	948	76	52
Average Queue (ft)	14	2	333	29	9
95th Queue (ft)	94	15	1118	71	31
Link Distance (ft)	5783		2106		3
Upstream Blk Time (%)			2		34
Queuing Penalty (veh)			0		16
Storage Bay Dist (ft)		35		25	
Storage Blk Time (%)		4	17	49	
Queuing Penalty (veh)		2	10	29	

Intersection: 55: Industrial Way

Movement	EB	EB	WB	WB	NB	SB
Directions Served	T	T	T	T	R	R
Maximum Queue (ft)	358	369	768	777	98	55
Average Queue (ft)	95	100	294	298	25	14
95th Queue (ft)	336	346	855	862	75	45
Link Distance (ft)	379	379	746	746	99	87
Upstream Blk Time (%)	3	4	8	9	2	0
Queuing Penalty (veh)	13	21	36	38	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 56: Industrial Way & 3rd Avenue

Movement	NW	NW	NE	NE	SW	SW	SW
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	111	152	250	242	185	400	401
Average Queue (ft)	28	34	141	147	22	275	276
95th Queue (ft)	82	108	239	241	116	508	505
Link Distance (ft)		2710	237	237		370	370
Upstream Blk Time (%)			15	14		26	27
Queuing Penalty (veh)			90	86		100	103
Storage Bay Dist (ft)	175				250		
Storage Blk Time (%)	0	2				36	
Queuing Penalty (veh)	0	1				4	

Intersection: 59: Industrial Way

Movement	EB	EB	WB	WB	NB
Directions Served	T	T	T	TR	R
Maximum Queue (ft)	330	338	242	230	132
Average Queue (ft)	223	233	56	57	57
95th Queue (ft)	415	424	210	210	136
Link Distance (ft)	304	304	208	208	118
Upstream Blk Time (%)	15	20	7	8	19
Queuing Penalty (veh)	79	107	31	36	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 61: Industrial Way

Movement	SB	SE
Directions Served	LR	L
Maximum Queue (ft)	108	30
Average Queue (ft)	47	2
95th Queue (ft)	86	14
Link Distance (ft)	1001	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 64: Industrial Way

Movement	EB	EB	WB	WB	SB
Directions Served	T	TR	T	T	R
Maximum Queue (ft)	305	314	522	545	30
Average Queue (ft)	140	146	97	102	3
95th Queue (ft)	356	366	493	505	17
Link Distance (ft)	295	295	843	843	88
Upstream Blk Time (%)	12	13	2	3	
Queuing Penalty (veh)	77	89	9	12	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 69: Dike Road & Spur Line

Movement	SE	NW	NE	SW
Directions Served	T	T	T	T
Maximum Queue (ft)	518	658	160	226
Average Queue (ft)	215	278	14	21
95th Queue (ft)	518	650	83	118
Link Distance (ft)	2167	1051	566	491
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 5750

Intersection: 1: Weyerhaeuser & Industrial Way

Movement	SE	NW	NW	NE
Directions Served	TR	L	T	LR
Maximum Queue (ft)	3	55	579	174
Average Queue (ft)	0	11	47	63
95th Queue (ft)	3	39	303	127
Link Distance (ft)	116	745	745	484
Upstream Blk Time (%)			1	
Queuing Penalty (veh)			3	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Oregon Way & Industrial Way

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	R	L	T	T	R
Maximum Queue (ft)	231	294	277	257	361	1285	1277	75	376	534	2122	250
Average Queue (ft)	109	114	115	25	176	1082	1205	54	226	267	395	184
95th Queue (ft)	202	221	215	137	309	1613	1437	100	380	462	1215	308
Link Distance (ft)		745				1239	1239				2473	
Upstream Blk Time (%)						23	49				1	
Queuing Penalty (veh)						119	252				0	
Storage Bay Dist (ft)	140		400	400	310			25	235	235		120
Storage Blk Time (%)	9	5		0	0	1	63	19	16	10	34	15
Queuing Penalty (veh)	43	22		0	1	3	143	78	133	82	352	139

Intersection: 2: Oregon Way & Industrial Way

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	236	271	278
Average Queue (ft)	79	226	228
95th Queue (ft)	204	329	328
Link Distance (ft)		236	236
Upstream Blk Time (%)	0	37	40
Queuing Penalty (veh)	0	150	162
Storage Bay Dist (ft)	170		
Storage Blk Time (%)	0	50	
Queuing Penalty (veh)	1	29	

Intersection: 4: Oregon Way & Spur Line

Movement	WB	NB	NB	SB	SB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	75	245	246	698	702
Average Queue (ft)	11	26	28	253	267
95th Queue (ft)	76	143	151	642	655
Link Distance (ft)	4581	236	236	702	702
Upstream Blk Time (%)		6	6	1	2
Queuing Penalty (veh)		29	29	5	7
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Oregon Way & Alabama Street

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	139	109	90	4	11	63	83	130
Average Queue (ft)	54	47	29	0	0	16	7	11
95th Queue (ft)	109	87	68	3	5	47	54	72
Link Distance (ft)	233	852		702	702		3084	3084
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			175			165		
Storage Blk Time (%)							0	
Queuing Penalty (veh)							0	

Intersection: 9: California Way & Spur Line

Movement	WB	SE	NW
Directions Served	T	T	T
Maximum Queue (ft)	30	687	290
Average Queue (ft)	1	65	33
95th Queue (ft)	15	372	179
Link Distance (ft)	464	2581	404
Upstream Blk Time (%)			1
Queuing Penalty (veh)			1
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Industrial Way & Spur Line

Movement	WB	SE	NW
Directions Served	T	T	T
Maximum Queue (ft)	126	1091	122
Average Queue (ft)	44	84	12
95th Queue (ft)	163	522	72
Link Distance (ft)	993	2678	116
Upstream Blk Time (%)			6
Queuing Penalty (veh)			41
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: Industrial Way & Washington Way

Movement	EB	EB	EB	WB	WB	WB	SE	SE	SE	NW	NW
Directions Served	L	T	R	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	41	71	48	154	288	12	216	267	49	229	413
Average Queue (ft)	14	34	11	29	50	0	56	71	9	42	210
95th Queue (ft)	32	61	32	94	188	6	144	187	35	141	367
Link Distance (ft)	7	7	7		1347	1347		1220			1630
Upstream Blk Time (%)	22	58	12								
Queuing Penalty (veh)	19	49	10								
Storage Bay Dist (ft)				90			210		25	160	
Storage Blk Time (%)				1	10		0	12	3	0	13
Queuing Penalty (veh)				1	5		1	17	14	1	5

Intersection: 16: Columbia Ave & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	268	300	179	408	412	250	154
Average Queue (ft)	112	134	22	267	272	94	52
95th Queue (ft)	217	240	103	510	507	201	110
Link Distance (ft)	420	420		379	379	398	
Upstream Blk Time (%)				26	28	0	
Queuing Penalty (veh)				118	125	0	
Storage Bay Dist (ft)			105				130
Storage Blk Time (%)			0	46		8	0
Queuing Penalty (veh)			0	5		7	0

Intersection: 20: California Way & Industrial Way

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	275	868	867	69	125	130	72	61	101	157	215	321
Average Queue (ft)	186	510	525	8	23	19	15	7	28	47	16	65
95th Queue (ft)	331	961	966	38	83	78	51	35	75	114	104	172
Link Distance (ft)		843	843		237	237		684			404	
Upstream Blk Time (%)		8	9								0	0
Queuing Penalty (veh)		50	55								0	0
Storage Bay Dist (ft)	150			150			60		60	165		300
Storage Blk Time (%)	27	37			0		1	0	2	0		1
Queuing Penalty (veh)	156	63			0		0	0	0	1		0

Intersection: 22: 3rd Avenue & Spur Line

Movement	WB	NB	NB	SB	SB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	303	373	380	1091	1094
Average Queue (ft)	150	38	46	221	228
95th Queue (ft)	310	224	245	806	820
Link Distance (ft)	2590	370	370	3012	3012
Upstream Blk Time (%)		6	8		
Queuing Penalty (veh)		39	47		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 24: Industrial Way & Douglas Street

Movement	SE	NW	SW
Directions Served	L	TR	LR
Maximum Queue (ft)	35	3	72
Average Queue (ft)	4	0	28
95th Queue (ft)	22	3	59
Link Distance (ft)		2660	100
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)	195		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 25: Douglas Street & Alder Street

Movement	NW	NE
Directions Served	LT	LR
Maximum Queue (ft)	13	66
Average Queue (ft)	1	29
95th Queue (ft)	8	56
Link Distance (ft)	681	100
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 29: Spur Line & Washington Way

Movement	EB	EB	EB	WB	WB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	190	550	303	22	45
Average Queue (ft)	49	166	39	2	4
95th Queue (ft)	170	488	192	11	22
Link Distance (ft)		1817	1817	7	7
Upstream Blk Time (%)				13	12
Queuing Penalty (veh)				8	8
Storage Bay Dist (ft)	140				
Storage Blk Time (%)	1	30			
Queuing Penalty (veh)	1	25			

Intersection: 31: Weyerhaeuser Access & Spur Line

Movement	NW	NE	SW
Directions Served	T	T	T
Maximum Queue (ft)	166	167	16
Average Queue (ft)	51	24	1
95th Queue (ft)	179	96	8
Link Distance (ft)	5597	313	10
Upstream Blk Time (%)			1
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 33: Weyerhaeuser Access & Industrial Way

Movement	SE	NW	NE
Directions Served	R	L	LR
Maximum Queue (ft)	5	22	24
Average Queue (ft)	0	1	19
95th Queue (ft)	4	12	33
Link Distance (ft)			10
Upstream Blk Time (%)			12
Queuing Penalty (veh)			9
Storage Bay Dist (ft)	210	80	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 37: Weyerhaeuser Access 2 & Industrial Way

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 39: Industrial Way & Prudential Blvd

Movement	SE	SE	NW	NW	SW
Directions Served	L	T	T	T	L
Maximum Queue (ft)	9	95	99	78	100
Average Queue (ft)	0	32	34	23	50
95th Queue (ft)	5	75	79	60	85
Link Distance (ft)		2438	513	513	1261
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	170				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 41: Hoehne Avenue & Industrial Way

Movement	NE
Directions Served	R
Maximum Queue (ft)	33
Average Queue (ft)	11
95th Queue (ft)	36
Link Distance (ft)	26
Upstream Blk Time (%)	1
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 45: International Way & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	333	348	209	317	323	102	157
Average Queue (ft)	140	154	33	171	179	27	75
95th Queue (ft)	294	311	140	347	354	70	128
Link Distance (ft)	746	746		304	304	973	
Upstream Blk Time (%)				12	12		
Queuing Penalty (veh)				54	52		
Storage Bay Dist (ft)			150				150
Storage Blk Time (%)				23		0	0
Queuing Penalty (veh)				4		0	0

Intersection: 47: Fiber Way & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	250	256	246	322	320	131	360
Average Queue (ft)	191	200	58	158	175	48	151
95th Queue (ft)	266	267	158	322	339	102	291
Link Distance (ft)	208	208		295	295	975	975
Upstream Blk Time (%)	15	18		8	9		
Queuing Penalty (veh)	86	102		35	38		
Storage Bay Dist (ft)			150				
Storage Blk Time (%)			1	16			
Queuing Penalty (veh)			3	8			

Intersection: 48: Industrial Way

Movement	WB	WB	NB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	471	447	151	54
Average Queue (ft)	312	318	64	12
95th Queue (ft)	613	601	115	55
Link Distance (ft)	420	420	236	90
Upstream Blk Time (%)	21	24		5
Queuing Penalty (veh)	105	123		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 49: 38th Avenue & Industrial Way

Movement	SE	SE	SE	NW	NW	NE	NE	NE	SW	SW
Directions Served	L	T	R	L	T	L	T	R	L	R
Maximum Queue (ft)	55	97	19	265	363	42	48	67	76	47
Average Queue (ft)	13	25	2	62	58	2	9	17	30	17
95th Queue (ft)	39	68	13	185	192	18	35	51	62	43
Link Distance (ft)		2300			2438	3	3	3		
Upstream Blk Time (%)						1	3	5		
Queuing Penalty (veh)						0	1	1		
Storage Bay Dist (ft)	115		225	155					150	200
Storage Blk Time (%)		0		13	0					
Queuing Penalty (veh)		0		42	0					

Intersection: 50: Aluminum Access 1/38th Avenue & Spur Line

Movement	NE	NE	NE	SW
Directions Served	T	T	T	T
Maximum Queue (ft)	17	978	77	56
Average Queue (ft)	1	381	25	9
95th Queue (ft)	14	1244	67	30
Link Distance (ft)		2045		3
Upstream Blk Time (%)		2		34
Queuing Penalty (veh)		0		15
Storage Bay Dist (ft)	35		25	
Storage Blk Time (%)	3	24	48	
Queuing Penalty (veh)	2	14	28	

Intersection: 55: Industrial Way

Movement	WB	WB	NB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	696	690	68	53
Average Queue (ft)	289	294	18	13
95th Queue (ft)	847	853	53	43
Link Distance (ft)	746	746	99	87
Upstream Blk Time (%)	9	8	0	1
Queuing Penalty (veh)	38	35	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 56: Industrial Way & 3rd Avenue

Movement	NW	NW	NE	NE	SW	SW	SW
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	94	88	244	247	130	404	403
Average Queue (ft)	27	24	119	130	18	239	245
95th Queue (ft)	72	65	217	230	75	439	436
Link Distance (ft)		2710	237	237		370	370
Upstream Blk Time (%)			5	6		13	13
Queuing Penalty (veh)			31	39		48	49
Storage Bay Dist (ft)	175				250		
Storage Blk Time (%)					0	20	
Queuing Penalty (veh)					0	2	

Intersection: 59: Industrial Way

Movement	EB	EB	WB	WB	NB
Directions Served	T	T	T	TR	R
Maximum Queue (ft)	289	296	177	176	98
Average Queue (ft)	101	111	50	52	27
95th Queue (ft)	283	294	196	200	74
Link Distance (ft)	304	304	208	208	118
Upstream Blk Time (%)	2	3	6	6	0
Queuing Penalty (veh)	9	15	26	27	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 61: Industrial Way

Movement	SB	SE	NW
Directions Served	LR	L	TR
Maximum Queue (ft)	104	26	2
Average Queue (ft)	47	2	0
95th Queue (ft)	83	13	2
Link Distance (ft)	1001		2678
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 64: Industrial Way

Movement	EB	EB	WB	WB	SB
Directions Served	T	TR	T	T	R
Maximum Queue (ft)	306	309	411	414	29
Average Queue (ft)	64	68	70	72	2
95th Queue (ft)	247	255	377	383	16
Link Distance (ft)	295	295	843	843	88
Upstream Blk Time (%)	3	4	0	0	
Queuing Penalty (veh)	18	24	1	1	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 69: Dike Road & Spur Line

Movement	SE	NW	NE	SW
Directions Served	T	T	T	T
Maximum Queue (ft)	606	636	198	258
Average Queue (ft)	252	240	19	23
95th Queue (ft)	635	583	106	137
Link Distance (ft)	2167	1051	566	491
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 3745

Intersection: 1: Weyerhaeuser & Industrial Way

Movement	SE	NW	NW	NE
Directions Served	TR	L	T	LR
Maximum Queue (ft)	21	68	608	314
Average Queue (ft)	1	13	83	83
95th Queue (ft)	10	45	403	214
Link Distance (ft)	116	745	745	484
Upstream Blk Time (%)			1	0
Queuing Penalty (veh)			4	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Oregon Way & Industrial Way

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	R	L	T	T	R
Maximum Queue (ft)	239	378	336	306	355	1281	1286	78	384	534	2511	250
Average Queue (ft)	121	140	126	39	190	1046	1156	56	215	306	667	195
95th Queue (ft)	232	299	264	190	336	1695	1557	101	377	521	1971	320
Link Distance (ft)		745				1239	1239				2473	
Upstream Blk Time (%)						26	47				5	
Queuing Penalty (veh)						131	242				0	
Storage Bay Dist (ft)	140		400	400	310			25	235	235		120
Storage Blk Time (%)	17	7	0	0	1	3	60	26	13	19	40	18
Queuing Penalty (veh)	86	32	0	0	3	6	135	108	108	158	423	168

Intersection: 2: Oregon Way & Industrial Way

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	236	271	262
Average Queue (ft)	80	229	224
95th Queue (ft)	211	344	338
Link Distance (ft)		236	236
Upstream Blk Time (%)	0	54	54
Queuing Penalty (veh)	0	222	220
Storage Bay Dist (ft)	170		
Storage Blk Time (%)	0	62	
Queuing Penalty (veh)	1	36	

Intersection: 4: Oregon Way & Spur Line

Movement	WB	NB	NB	SB	SB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	98	247	259	726	734
Average Queue (ft)	19	47	50	637	644
95th Queue (ft)	60	198	207	881	883
Link Distance (ft)	4581	236	236	702	702
Upstream Blk Time (%)		11	12	26	28
Queuing Penalty (veh)		61	65	105	112
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Oregon Way & Alabama Street

Movement	EB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	TR	L	T	TR
Maximum Queue (ft)	222	373	110	9	219	621	651
Average Queue (ft)	123	144	36	0	42	182	199
95th Queue (ft)	254	467	87	4	181	562	589
Link Distance (ft)	233	852		702		3126	3126
Upstream Blk Time (%)	19	3					
Queuing Penalty (veh)	0	0					
Storage Bay Dist (ft)			175		165		
Storage Blk Time (%)						20	
Queuing Penalty (veh)						6	

Intersection: 9: California Way & Spur Line

Movement	WB	SE	NW
Directions Served	T	T	T
Maximum Queue (ft)	70	697	383
Average Queue (ft)	4	101	59
95th Queue (ft)	33	436	249
Link Distance (ft)	464	2581	404
Upstream Blk Time (%)			1
Queuing Penalty (veh)			3
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Industrial Way & Spur Line

Movement	WB	SE	NW
Directions Served	T	T	T
Maximum Queue (ft)	139	1238	124
Average Queue (ft)	56	185	20
95th Queue (ft)	188	831	93
Link Distance (ft)	993	2678	116
Upstream Blk Time (%)			13
Queuing Penalty (veh)			88
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: Industrial Way & Washington Way

Movement	EB	EB	EB	WB	WB	WB	SE	SE	SE	NW	NW
Directions Served	L	T	R	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	43	70	50	189	393	2	268	628	53	218	420
Average Queue (ft)	12	31	12	30	78	0	55	116	17	53	189
95th Queue (ft)	32	63	35	104	258	2	164	439	48	159	355
Link Distance (ft)	7	7	7		1347	1347		1220			1630
Upstream Blk Time (%)	21	58	13					0			
Queuing Penalty (veh)	18	49	11					0			
Storage Bay Dist (ft)				90			210		25	160	
Storage Blk Time (%)				1	23		0	14	14	3	9
Queuing Penalty (veh)				1	13		0	19	58	17	3

Intersection: 16: Columbia Ave & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	325	343	172	420	419	231	167
Average Queue (ft)	159	175	26	271	277	93	57
95th Queue (ft)	348	359	116	512	508	182	120
Link Distance (ft)	420	420		379	379	398	
Upstream Blk Time (%)	2	3		26	28		
Queuing Penalty (veh)	10	13		118	125		
Storage Bay Dist (ft)			105				130
Storage Blk Time (%)			0	46		7	0
Queuing Penalty (veh)			1	5		6	0

Intersection: 20: California Way & Industrial Way

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	275	873	893	60	135	129	73	129	115	184	246	318
Average Queue (ft)	217	791	798	11	18	14	11	10	30	49	23	74
95th Queue (ft)	361	1036	1042	42	80	73	46	57	79	124	125	208
Link Distance (ft)		843	843		237	237		684			404	
Upstream Blk Time (%)		25	27		0						0	0
Queuing Penalty (veh)		167	183		0						0	0
Storage Bay Dist (ft)	150			150			60		60	165		300
Storage Blk Time (%)	37	56			0		1	0	7	1	0	1
Queuing Penalty (veh)	216	95			0		0	0	1	2	0	1

Intersection: 22: 3rd Avenue & Spur Line

Movement	WB	NB	NB	SB	SB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	220	380	386	1549	1535
Average Queue (ft)	89	77	83	875	881
95th Queue (ft)	208	326	337	1644	1639
Link Distance (ft)	2590	370	370	3128	3128
Upstream Blk Time (%)		14	15		
Queuing Penalty (veh)		86	92		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 24: Industrial Way & Douglas Street

Movement	SE	NW	SW
Directions Served	L	TR	LR
Maximum Queue (ft)	34	3	60
Average Queue (ft)	4	0	26
95th Queue (ft)	21	3	54
Link Distance (ft)		2660	100
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	195		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 25: Douglas Street & Alder Street

Movement	NW	NE
Directions Served	LT	LR
Maximum Queue (ft)	19	67
Average Queue (ft)	1	28
95th Queue (ft)	10	60
Link Distance (ft)	681	100
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 29: Spur Line & Washington Way

Movement	EB	EB	EB	WB	WB	NW
Directions Served	T	T	T	T	T	T
Maximum Queue (ft)	190	808	512	26	49	3
Average Queue (ft)	89	418	84	4	8	0
95th Queue (ft)	236	829	328	18	30	3
Link Distance (ft)		1850	1850	7	7	1681
Upstream Blk Time (%)				26	26	
Queuing Penalty (veh)				18	18	
Storage Bay Dist (ft)	140					
Storage Blk Time (%)	0	75				
Queuing Penalty (veh)	0	63				

Intersection: 31: Weyerhaeuser Access & Spur Line

Movement	NW	NE	SW
Directions Served	T	T	T
Maximum Queue (ft)	105	211	20
Average Queue (ft)	36	40	2
95th Queue (ft)	124	144	13
Link Distance (ft)	5597	313	10
Upstream Blk Time (%)			6
Queuing Penalty (veh)			1
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 33: Weyerhaeuser Access & Industrial Way

Movement	SE	NW	NE
Directions Served	R	L	LR
Maximum Queue (ft)	11	26	26
Average Queue (ft)	1	2	17
95th Queue (ft)	10	13	34
Link Distance (ft)			10
Upstream Blk Time (%)			13
Queuing Penalty (veh)			9
Storage Bay Dist (ft)	210	80	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 37: Weyerhaeuser Access 2 & Industrial Way

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 39: Industrial Way & Prudential Blvd

Movement	SE	SE	NW	NW	SW
Directions Served	L	T	T	T	L
Maximum Queue (ft)	6	108	94	81	103
Average Queue (ft)	0	33	33	22	48
95th Queue (ft)	4	80	76	60	84
Link Distance (ft)		2438	513	513	1261
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	170				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 41: Hoehne Avenue & Industrial Way

Movement	NE
Directions Served	R
Maximum Queue (ft)	33
Average Queue (ft)	10
95th Queue (ft)	34
Link Distance (ft)	26
Upstream Blk Time (%)	1
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 45: International Way & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	716	728	213	340	335	397	253
Average Queue (ft)	462	476	33	191	195	79	106
95th Queue (ft)	911	915	139	372	375	303	220
Link Distance (ft)	746	746		304	304	973	
Upstream Blk Time (%)	12	14		12	12		
Queuing Penalty (veh)	57	67		51	53		
Storage Bay Dist (ft)			150				150
Storage Blk Time (%)				25		3	11
Queuing Penalty (veh)				4		5	4

Intersection: 47: Fiber Way & Industrial Way

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	247	254	240	320	328	123	608
Average Queue (ft)	215	219	61	174	190	47	222
95th Queue (ft)	244	248	161	345	361	100	489
Link Distance (ft)	208	208		295	295	975	975
Upstream Blk Time (%)	44	46		7	8		
Queuing Penalty (veh)	253	269		30	34		
Storage Bay Dist (ft)			150				
Storage Blk Time (%)			0	16			
Queuing Penalty (veh)			2	8			

Intersection: 48: Industrial Way

Movement	EB	EB	WB	WB	NB	SB
Directions Served	T	T	T	T	R	R
Maximum Queue (ft)	82	96	467	461	186	54
Average Queue (ft)	10	12	316	319	72	16
95th Queue (ft)	87	97	616	614	150	58
Link Distance (ft)	1239	1239	420	420	236	90
Upstream Blk Time (%)			20	23	2	10
Queuing Penalty (veh)			99	117	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 49: 38th Avenue & Industrial Way

Movement	SE	SE	SE	NW	NW	NE	NE	NE	SW	SW
Directions Served	L	T	R	L	T	L	T	R	L	R
Maximum Queue (ft)	55	95	25	273	363	31	47	74	76	46
Average Queue (ft)	16	25	3	81	58	2	8	16	28	18
95th Queue (ft)	42	68	16	212	221	17	32	53	62	44
Link Distance (ft)		2266			2438	3	3	3		
Upstream Blk Time (%)						1	3	5		
Queuing Penalty (veh)						0	1	2		
Storage Bay Dist (ft)	115		225	155					150	200
Storage Blk Time (%)		0		19	0					
Queuing Penalty (veh)		0		62	0					

Intersection: 50: Aluminum Access 1/38th Avenue & Spur Line

Movement	NW	NE	NE	NE	SW
Directions Served	T	T	T	T	T
Maximum Queue (ft)	47	18	1151	72	51
Average Queue (ft)	4	1	499	35	13
95th Queue (ft)	30	14	1310	75	36
Link Distance (ft)	5784		1907		3
Upstream Blk Time (%)			0		50
Queuing Penalty (veh)			0		23
Storage Bay Dist (ft)		35		25	
Storage Blk Time (%)		3	19	70	
Queuing Penalty (veh)		2	11	41	

Intersection: 55: Industrial Way

Movement	EB	EB	WB	WB	NB	SB
Directions Served	T	T	T	T	R	R
Maximum Queue (ft)	311	323	774	768	86	51
Average Queue (ft)	98	101	310	314	27	14
95th Queue (ft)	354	362	875	880	83	43
Link Distance (ft)	379	379	746	746	99	87
Upstream Blk Time (%)	3	5	7	7	8	0
Queuing Penalty (veh)	13	22	32	30	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 56: Industrial Way & 3rd Avenue

Movement	NW	NW	NE	NE	SW	SW	SW
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	90	106	252	254	269	408	404
Average Queue (ft)	26	26	150	160	26	334	332
95th Queue (ft)	68	72	243	250	134	532	526
Link Distance (ft)		2710	237	237		370	370
Upstream Blk Time (%)			13	14		40	40
Queuing Penalty (veh)			79	87		162	163
Storage Bay Dist (ft)	175				250		
Storage Blk Time (%)		0				52	
Queuing Penalty (veh)		0				6	

Intersection: 59: Industrial Way

Movement	EB	EB	WB	WB	NB
Directions Served	T	T	T	TR	R
Maximum Queue (ft)	332	338	217	215	145
Average Queue (ft)	257	266	54	54	71
95th Queue (ft)	415	418	200	200	154
Link Distance (ft)	304	304	208	208	118
Upstream Blk Time (%)	14	23	4	5	30
Queuing Penalty (veh)	78	129	20	20	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 61: Industrial Way

Movement	SB	SE	NW
Directions Served	LR	L	TR
Maximum Queue (ft)	114	30	6
Average Queue (ft)	45	2	0
95th Queue (ft)	85	14	6
Link Distance (ft)	1001		2678
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 64: Industrial Way

Movement	EB	EB	WB	WB	SB
Directions Served	T	TR	T	T	R
Maximum Queue (ft)	312	317	429	438	26
Average Queue (ft)	188	199	61	65	3
95th Queue (ft)	381	391	330	335	20
Link Distance (ft)	295	295	843	843	88
Upstream Blk Time (%)	11	14	0	0	
Queuing Penalty (veh)	74	98	0	0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 69: Dike Road & Spur Line

Movement	SE	NW	NE	SW
Directions Served	T	T	T	T
Maximum Queue (ft)	409	419	179	306
Average Queue (ft)	152	164	29	43
95th Queue (ft)	392	412	119	192
Link Distance (ft)	2167	1051	566	491
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 6148

FEDERAL RAILROAD ADMINISTRATION

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CORRIDOR AND CROSSING DATA

(without phased improvements)

User:	kchewuk
Dataset:	Initial dataset
Corridor ID	12

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	2018 No Action - Spur					
				Passenger	0.0	Uniform
Technology Factors	0.50	0.50	0.50	*Freight*	2.5	Uniform
Signal Synchronization?	False			*Switch*	0.0	Uniform

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 24-Sep-2015 6:02 pm

	Fatal	Injury	PDO	Total
Base	0.001598	0.021084	0.073685	0.096367
Alternate	0.000518	0.006881	0.024562	0.031961

CROSSING DATA FOR THE 2018 NO ACTION - SPUR CORRIDOR

Milepost 0.69 — Crossing ID 101812K — Accidents in 5 Years: 0

Description BNSF - WEYERHAUSER TBR

Paved? True	Urban? True
GCX Base Type	Passive
Safety Sup. Type	None
GCX Alt Type	Lights
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	10.0
Passenger	10.0
Freight	5.0
Switch	3.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.10	0.1
AADT	200	200
Auto TOD Dist	Uniform	Uniform
Percent Trucks	5.0	5.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement: 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00014	0.00003
Injury	0.00184	0.00046
PDO	0.00609	0.00152
Total	0.00807	0.00202

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	0.2	1.8
Oth. Lcycle	0.0	0.0
Capital		74.8
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 2.68 — Crossing ID 101826T — Accidents in 5 Years: 0

Description BNSF - 3RD AVE

Paved? True	Urban? True
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	New Technology 1
Safety Sup. type	None
No. RR Tracks	2

Train Speeds (mph)

Max Timetable	8.0
Passenger	8.0
Freight	8.0
Switch	3.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	4	4.0
Dist from hway	0.10	0.1
AADT	16,850	16,850
Auto TOD Dist	Uniform	Uniform
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement: 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00029	0.00014
Injury	0.00411	0.00206
PDO	0.01636	0.00818
Total	0.02076	0.01038

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	5.0
Oth. Lcycle	0.0	0.0
Capital		280.0
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

CROSSING DATA FOR THE 2018 NO ACTION - SPUR CORRIDOR

Milepost 2.79 Crossing ID 101821J

Description BNSF - CALIFORNIA WAY

Paved? True	Urban? True
GCX Base Type	Lights
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	10.0
Passenger	10.0
Freight	8.0
Switch	3.0

Accidents in 5 Years 0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.10	0.1
AADT	4,050	4,050
Auto TOD Dist	Uniform	Uniform
Percent Trucks	7.0	7.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00017	0.00002
Injury	0.00225	0.00025
PDO	0.00743	0.00082
Total	0.00984	0.00108

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	1.8	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 3.67 Crossing ID 101805A

Description BNSF - OREGON WAY

Paved? True	Urban? True
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	New Technology 1
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	10.0
Passenger	10.0
Freight	10.0
Switch	3.0

Accidents in 5 Years 0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	4	4.0
Dist from hway	0.10	0.1
AADT	15,200	15,200
Auto TOD Dist	Uniform	Uniform
Percent Trucks	5.0	5.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00031	0.00016
Injury	0.00410	0.00205
PDO	0.01354	0.00677
Total	0.01795	0.00898

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.5	5.0
Oth. Lcycle	0.0	0.0
Capital		280.0
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 3.88 Crossing ID 101806G

Description BNSF - INDUSTRIAL WAY

Paved? True	Urban? True
GCX Base Type	Lights
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	10.0
Passenger	10.0
Freight	10.0
Switch	3.0

Accidents in 5 Years 0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.10	0.1
AADT	10,100	10,100
Auto TOD Dist	Uniform	Uniform
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00023	0.00003
Injury	0.00305	0.00034
PDO	0.01008	0.00111
Total	0.01336	0.00147

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	1.8	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

CROSSING DATA FOR THE 2018 NO ACTION - SPUR CORRIDOR

Milepost 5.05 Crossing ID 101809C

Description BNSF - WEYERHAUSER TBR

Paved? True	Urban? True
GCX Base Type	Passive
Safety Sup. Type	None
GCX Alt Type	Lights
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	10.0
Passenger	10.0
Freight	10.0
Switch	3.0

Accidents in 5 Years 0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.10	0.1
AADT	650	650
Auto TOD Dist	Uniform	Uniform
Percent Trucks	5.0	5.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00021	0.00005
Injury	0.00273	0.00068
PDO	0.00902	0.00226
Total	0.01196	0.00299

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	0.2	1.8
Oth. Lcycle	0.0	0.0
Capital		74.8
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 6.47 Crossing ID 101817U

Description BNSF - REYNOLDS ALUM

Paved? True	Urban? True
GCX Base Type	Lights
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	2

Train Speeds (mph)	
Max Timetable	10.0
Passenger	10.0
Freight	8.0
Switch	3.0

Accidents in 5 Years 0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	4	4.0
Dist from hway	0.10	0.1
AADT	3,300	3,300
Auto TOD Dist	Uniform	Uniform
Percent Trucks	5.0	5.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00025	0.00009
Injury	0.00299	0.00105
PDO	0.01117	0.00391
Total	0.01442	0.00505

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	1.8	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

FEDERAL RAILROAD ADMINISTRATION

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CORRIDOR AND CROSSING DATA

(without phased improvements)

User:	kchewuk
Dataset:	Initial dataset
Corridor ID	13

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	2018 No Action - Dike					
				Passenger	0.0	Uniform
Technology Factors	0.50	0.50	0.50	*Freight*	7.0	Uniform
Signal Synchronization?	False			*Switch*	0.0	Uniform

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 24-Sep-2015 6:02 pm

	Fatal	Injury	PDO	Total
Base	0.000360	0.002870	0.010421	0.013651
Alternate	0.000360	0.002870	0.010421	0.013651

CROSSING DATA FOR THE 2018 NO ACTION - DIKE CORRIDOR

Milepost 13.43 Crossing ID 101791U

Accidents in 5 Years 0

Description BNSF - DIKE RD

Paved? True	Urban? False
GCX Base Type	Lights
Safety Sup. Type	None
GCX Alt Type	Lights
Safety Sup. type	None
No. RR Tracks	4

Train Speeds (mph)

Max Timetable	10.0
Passenger	10.0
Freight	10.0
Switch	3.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.10	0.1
AADT	950	950
Auto TOD Dist	Uniform	Uniform
Percent Trucks	12.0	12.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00036	0.00036
Injury	0.00287	0.00287
PDO	0.01042	0.01042
Total	0.01365	0.01365

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	1.8	1.8
Oth. Lcycle	0.0	0.0
Capital		74.8
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

FEDERAL RAILROAD ADMINISTRATION

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CORRIDOR AND CROSSING DATA

(witho- t Uhased imUrovements)

5 ser:	pchew- p
Dataset:	Initial dataset
Corridor ID	1f

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	2018 Constr- ction Tr- cp uSU- r					
				Passenger	0.0	5 ni9rm
Technology Factors	0.f 0	0.f 0	0.f 0	*Freight*	2.f	5 ni9rm
Signal Synchronization?	False			*Switch*	0.0	5 ni9rm

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calc- lated: 23uSeUu201f f :f k Um

	Fatal	Injury	PDO	Total
Base	0.001804	0.027834	0.08283f	0.1083kk
Alternate	0.000f 40	0.004f 6k	0.0268f 0	0.073k8k

CROSSING DATA FOR THE 2018 CONSTRUCTION TRUC- KSPUR CORRIDOR

MileUost 0.6k — Crossing ID 101812K — Accidents in f Years: 0

DescriUtion BNSF uWEYERHA5 SER TBR

Paved? Tr- e	5 rban? Tr- e
GCX Base TyUe	Passive
Sa9ety S- U. TyUe	None
GCX Alt TyUe	Lights
Sa9ety S- U. tyUe	None
No. RR Tracps	1

Train SUeeds (mUh)	
Max Timetable	10.0
Passenger	10.0
Freight	f .0
Switch	7.0

Highway Tra9c Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist 9rom hway	0.10	0.1
AADT	2,8f 0	2,8f 0
A- to TOD Dist	5 ni9rm	5 ni9rm
Percent Tr- cps	f .0	f .0
O9this, % trailers	0.0	0.0
Tr- cp TOD Dist	5 ni9rm	5 ni9rm
Percent B- s	0.0	0.0
B- s TOD Dist	5 ni9rm	5 ni9rm
Costs in '000 $ o9Hway ImUrovement		0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.00077	0.00008
Inj- ry	0.0037f	0.0010k
PDO	0.01376	0.007f k
Total	0.01k03	0.00346

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	0.2	1.8
Oth. Lcycle	0.0	0.0
CaUital		43.8
S- UUlementary Sa9ety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

MileUost 2.68 — Crossing ID 101826T — Accidents in f Years: 0

DescriUtion BNSF u7RD AVE

Paved? Tr- e	5 rban? Tr- e
GCX Base TyUe	Gates
Sa9ety S- U. TyUe	None
GCX Alt TyUe	New Technology 1
Sa9ety S- U. tyUe	None
No. RR Tracps	2

Train SUeeds (mUh)	
Max Timetable	8.0
Passenger	8.0
Freight	8.0
Switch	7.0

Highway Tra9c Characteristics	Base	Alternate
H'way Lanes	3	3.0
Dist 9rom hway	0.10	0.1
AADT	14,8f 0	14,8f 0
A- to TOD Dist	5 ni9rm	5 ni9rm
Percent Tr- cps	1f .0	1f .0
O9this, % trailers	0.0	0.0
Tr- cp TOD Dist	5 ni9rm	5 ni9rm
Percent B- s	0.0	0.0
B- s TOD Dist	5 ni9rm	5 ni9rm
Costs in '000 $ o9Hway ImUrovement		0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.0002k	0.0001f
Inj- ry	0.00314	0.00208
PDO	0.016f 8	0.0082k
Total	0.02103	0.010f 2

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.f	f .0
Oth. Lcycle	0.0	0.0
CaUital		280.0
S- UUlementary Sa9ety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

CROSSING DATA FOR THE 2018 CONSTRUCTION TRUC- KSPUR CORRIDOR

MileUost 2.4k — Crossing ID 101821J

DescriUtion BNSF uCALIFORNIA WAY

Paved? Tr- e	5 rban? Tr- e
GCX Base TyUe	Lights
Sa9ety S- U. TyUe	None
GCX Alt TyUe	Gates
Sa9ety S- U. tyUe	None
No. RR Tracps	1

Train SUeeds (mUh)	
Max Timetable	10.0
Passenger	10.0
Freight	8.0
Switch	7.0

Accidents in f Years: 0

Highway Tra9ic Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist 9rom hway	0.10	0.1
AADT	3,0f 0	3,0f 0
A- to TOD Dist	5 ni9orm	5 ni9orm
Percent Tr- cps	4.0	4.0
O9this, % trailers	0.0	0.0
Tr- cp TOD Dist	5 ni9orm	5 ni9orm
Percent B- s	0.0	0.0
B- s TOD Dist	5 ni9orm	5 ni9orm

Costs in '000 $ o9Hway ImUrovement: 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.00014	0.00002
Inj- ry	0.0022f	0.0002f
PDO	0.00437	0.00082
Total	0.00k83	0.00108

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	1.8	2.f
Oth. Lcycle	0.0	0.0
CaUital		106.1
S- UUlementary Sa9ety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

MileUost 7.64 — Crossing ID 10180f A

DescriUtion BNSF uOREGON WAY

Paved? Tr- e	5 rban? Tr- e
GCX Base TyUe	Gates
Sa9ety S- U. TyUe	None
GCX Alt TyUe	New Technology 1
Sa9ety S- U. tyUe	None
No. RR Tracps	1

Train SUeeds (mUh)	
Max Timetable	10.0
Passenger	10.0
Freight	10.0
Switch	7.0

Accidents in f Years: 0

Highway Tra9ic Characteristics	Base	Alternate
H'way Lanes	3	3.0
Dist 9rom hway	0.10	0.1
AADT	1f ,6f 0	1f ,6f 0
A- to TOD Dist	5 ni9orm	5 ni9orm
Percent Tr- cps	f .0	f .0
O9this, % trailers	0.0	0.0
Tr- cp TOD Dist	5 ni9orm	5 ni9orm
Percent B- s	0.0	0.0
B- s TOD Dist	5 ni9orm	5 ni9orm

Costs in '000 $ o9Hway ImUrovement: 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.00071	0.00016
Inj- ry	0.00317	0.00206
PDO	0.01767	0.00682
Total	0.01808	0.00k03

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.f	f .0
Oth. Lcycle	0.0	0.0
CaUital		280.0
S- UUlementary Sa9ety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

MileUost 7.88 — Crossing ID 101806G

DescriUtion BNSF uIND5 STRIAL WAY

Paved? Tr- e	5 rban? Tr- e
GCX Base TyUe	Lights
Sa9ety S- U. TyUe	None
GCX Alt TyUe	Gates
Sa9ety S- U. tyUe	None
No. RR Tracps	1

Train SUeeds (mUh)	
Max Timetable	10.0
Passenger	10.0
Freight	10.0
Switch	7.0

Accidents in f Years: 0

Highway Tra9ic Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist 9rom hway	0.10	0.1
AADT	12,000	12,000
A- to TOD Dist	5 ni9orm	5 ni9orm
Percent Tr- cps	1f .0	1f .0
O9this, % trailers	0.0	0.0
Tr- cp TOD Dist	5 ni9orm	5 ni9orm
Percent B- s	0.0	0.0
B- s TOD Dist	5 ni9orm	5 ni9orm

Costs in '000 $ o9Hway ImUrovement: 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.00023	0.00007
Inj- ry	0.00727	0.0007f
PDO	0.0106f	0.00114
Total	0.01312	0.001f f

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	1.8	2.f
Oth. Lcycle	0.0	0.0
CaUital		106.1
S- UUlementary Sa9ety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

CROSSING DATA FOR THE 2018 CONSTRUCTION TRUC- KSPUR CORRIDOR

MileUost f .0f — Crossing ID 10180kC

DescriUtion BNSF uWEYERHA5 SER TBR

Paved? Tr- e	5 rban? Tr- e
GCX Base TyUe	Passive
Sa9ety S- U. TyUe	None
GCX Alt TyUe	Lights
Sa9ety S- U. tyUe	None
No. RR Tracps	1

Train SUeeds (mUh)	
Max Timetable	10.0
Passenger	10.0
Freight	10.0
Switch	7.0

Accidents in f Years: 0

Highway Tra9ic Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist 9rom hway	0.10	0.1
AADT	6f 0	6f 0
A- to TOD Dist	5 ni9orm	5 ni9orm
Percent Tr- cps	f .0	f .0
O9this, % trailers	0.0	0.0
Tr- cp TOD Dist	5 ni9orm	5 ni9orm
Percent B- s	0.0	0.0
B- s TOD Dist	5 ni9orm	5 ni9orm

Costs in '000 $ o9Hway ImUrovement: 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.00021	0.0000f
Inj- ry	0.00247	0.00068
PDO	0.00k02	0.00226
Total	0.011k6	0.002kk

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	0.2	1.8
Oth. Lcycle	0.0	0.0
CaUital		43.8
S- UUlementary Sa9ety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

MileUost 6.34 — Crossing ID 1018145

DescriUtion BNSF uREYNOLDS AL5 M

Paved? Tr- e	5 rban? Tr- e
GCX Base TyUe	Lights
Sa9ety S- U. TyUe	None
GCX Alt TyUe	Gates
Sa9ety S- U. tyUe	None
No. RR Tracps	2

Train SUeeds (mUh)	
Max Timetable	10.0
Passenger	10.0
Freight	8.0
Switch	7.0

Accidents in f Years: 0

Highway Tra9ic Characteristics	Base	Alternate
H'way Lanes	3	3.0
Dist 9rom hway	0.10	0.1
AADT	7,700	7,700
A- to TOD Dist	5 ni9orm	5 ni9orm
Percent Tr- cps	f .0	f .0
O9this, % trailers	0.0	0.0
Tr- cp TOD Dist	5 ni9orm	5 ni9orm
Percent B- s	0.0	0.0
B- s TOD Dist	5 ni9orm	5 ni9orm

Costs in '000 $ o9Hway ImUrovement: 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.0002f	0.0000k
Inj- ry	0.002kk	0.0010f
PDO	0.01114	0.007k1
Total	0.01332	0.00f 0f

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	1.8	2.f
Oth. Lcycle	0.0	0.0
CaUital		106.1
S- UUlementary Sa9ety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

FEDERAL RAILROAD ADMINISTRATION

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CORRIDOR AND CROSSING DATA

(u itho- t phased improvements)

f ser:	kcheu - k
Dataset:	Initial dataset
Corridor ID	1U

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	2018 Constr- ction Tr- ck 3Dike					
				Passenger	0.0	f ni5rm
Technology Factors	0.70	0.70	0.70	*Freight*	6.0	f ni5rm
Signal Synchronization?	False			*Switch*	0.0	f ni5rm

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calc- lated: 2w3Sep32017 U:00 pm

	Fatal	Injury	PDO	Total
Base	0.0004U0	0.002860	0.010w21	0.014U71
Alternate	0.0004U0	0.002860	0.010w21	0.014U71

CROSSING DATA FOR THE 2018 CONSTRUCTION TRUC- KDI- E CORRIDOR

Milepost 14.w4 Crossing ID 101691f Accidents in 7 Years 0

Description BNSF 3DIKE RD

Paved? Tr- e	f rban? False
GCX Base Type	Lights
Sa5ety S- p. Type	None
GCX Alt Type	Lights
Sa5ety S- p. type	None
No. RR Tracks	w

Train Speeds (mph)	
Max Timetable	10.0
Passenger	10.0
Freight	10.0
Su itch	4.0

Highu ay Tra55c Characteristics	Base	Alternate
H'u ay Lanes	2	2.0
Dist 5om hu ay	0.10	0.1
AADT	970	970
A- to TOD Dist	f ni5rm	f ni5rm
Percent Tr- cks	12.0	12.0
O5this, % trailers	0.0	0.0
Tr- ck TOD Dist	f ni5rm	f ni5rm
Percent B- s	0.0	0.0
B- s TOD Dist	f ni5rm	f ni5rm

Costs in '000 $ o5Hu ay Improvement 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.0004U	0.0004U
Inj- ry	0.00286	0.00286
PDO	0.010w2	0.010w2
Total	0.014U7	0.014U7

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	1.8	1.8
Oth. Lcycle	0.0	0.0
Capital		6w.8
S- pplementary Sa5ety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

FEDERAL RAILROAD ADMINISTRATION

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CORRIDOR AND CROSSING DATA

(witho- t uhased imurovements)

User: kchew- k
Dataset: Initial dataset
Corridor ID 18

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	2018 Constr- ction Rail pSu- r					
				Passenger	0.0	Uniform
Technology Factors	0.50	0.50	0.50	*Freight*	9.0	Uniform
Signal Synchronization?	False			*Switch*	0.0	Uniform

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calc- lated: 29pSeup2015 5:57 um

	Fatal	Injury	PDO	Total
Base	0.002151	0.024979	0.035742	0.125288
Alternate	0.000782	0.008475	0.061146	0.090720

CROSSING DATA FOR THE 2018 CONSTRUCTION RAIL - SPUR CORRIDOR

Mileuost 0.73 Crossing ID 101812K Accidents in 5 Years 0

Descriution BNSF pWEYERHAUSER TBR

Paved? Tr- e	Urban? Tr- e
GCX Base Tyue	Passive
Safety S- u. Tyue	None
GCX Alt Tyue	Lights
Safety S- u. tyue	None
No. RR Tracks	1

Train Sueeds (muh)

Max Timetable	10.0
Passenger	10.0
Freight	5.0
Switch	6.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.10	0.1
AADT	1,800	1,800
A- to TOD Dist	Uniform	Uniform
Percent Tr- cks	5.0	5.0
Of this, % trailers	0.0	0.0
Tr- ck TOD Dist	Uniform	Uniform
Percent B- s	0.0	0.0
B- s TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Imurovement 0.0

Predicted Ann- al Accidents

	Base	Alternate
Fatal	0.00067	0.00003
Inj- ry	0.00972	0.00117
PDO	0.01560	0.00682
Total	0.02028	0.00504

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	0.2	1.8
Oth. Lcycle	0.0	0.0
Cauital		49.8
S- uulementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Cauital		0.0

Mileuost 2.78 Crossing ID 101827T Accidents in 5 Years 0

Descriution BNSF p6RD AVE

Paved? Tr- e	Urban? Tr- e
GCX Base Tyue	Gates
Safety S- u. Tyue	None
GCX Alt Tyue	New Technology 1
Safety S- u. tyue	None
No. RR Tracks	2

Train Sueeds (muh)

Max Timetable	8.0
Passenger	8.0
Freight	8.0
Switch	6.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	9	9.0
Dist from hway	0.10	0.1
AADT	14,200	14,200
A- to TOD Dist	Uniform	Uniform
Percent Tr- cks	15.0	15.0
Of this, % trailers	0.0	0.0
Tr- ck TOD Dist	Uniform	Uniform
Percent B- s	0.0	0.0
B- s TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Imurovement 0.0

Predicted Ann- al Accidents

	Base	Alternate
Fatal	0.00065	0.00018
Inj- ry	0.00985	0.00296
PDO	0.01369	0.00374
Total	0.02959	0.01224

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	5.0
Oth. Lcycle	0.0	0.0
Cauital		280.0
S- uulementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Cauital		0.0

CROSSING DATA FOR THE 2018 CONSTRUCTION RAIL - SPUR CORRIDOR

Mileuost 2.43 Crossing ID 101821J

Descriution BNSF pCALIFORNIA WAY

Paved? Tr- e	Urban? Tr- e
GCX Base Tyue	Lights
Safety S- u. Tyue	None
GCX Alt Tyue	Gates
Safety S- u. tyue	None
No. RR Tracks	1

Train Sueeds (muh)	
Max Timetable	10.0
Passenger	10.0
Freight	8.0
Switch	6.0

Accidents in 5 Years 0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.10	0.1
AADT	9,050	9,050
A- to TOD Dist	Uniform	Uniform
Percent Tr- cks	4.0	4.0
Of this, % trailers	0.0	0.0
Tr- ck TOD Dist	Uniform	Uniform
Percent B- s	0.0	0.0
B- s TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Imurovement 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.00021	0.00002
Inj- ry	0.00276	0.00023
PDO	0.00841	0.00037
Total	0.01155	0.00124

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	1.8	2.5
Oth. Lcycle	0.0	0.0
Cauital		107.1
S- uulementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Cauital		0.0

Mileuost 6.74 Crossing ID 101805A

Descriution BNSF pOREGON WAY

Paved? Tr- e	Urban? Tr- e
GCX Base Tyue	Gates
Safety S- u. Tyue	None
GCX Alt Tyue	New Technology 1
Safety S- u. tyue	None
No. RR Tracks	1

Train Sueeds (muh)	
Max Timetable	10.0
Passenger	10.0
Freight	10.0
Switch	6.0

Accidents in 5 Years 0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	9	9.0
Dist from hway	0.10	0.1
AADT	15,750	15,750
A- to TOD Dist	Uniform	Uniform
Percent Tr- cks	5.0	5.0
Of this, % trailers	0.0	0.0
Tr- ck TOD Dist	Uniform	Uniform
Percent B- s	0.0	0.0
B- s TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Imurovement 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.00068	0.00013
Inj- ry	0.00988	0.00299
PDO	0.01715	0.00804
Total	0.02191	0.01041

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.5	5.0
Oth. Lcycle	0.0	0.0
Cauital		280.0
S- uulementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Cauital		0.0

Mileuost 6.88 Crossing ID 101807G

Descriution BNSF pINDUSTRIAL WAY

Paved? Tr- e	Urban? Tr- e
GCX Base Tyue	Lights
Safety S- u. Tyue	None
GCX Alt Tyue	Gates
Safety S- u. tyue	None
No. RR Tracks	1

Train Sueeds (muh)	
Max Timetable	10.0
Passenger	10.0
Freight	10.0
Switch	6.0

Accidents in 5 Years 0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.10	0.1
AADT	11,200	11,200
A- to TOD Dist	Uniform	Uniform
Percent Tr- cks	15.0	15.0
Of this, % trailers	0.0	0.0
Tr- ck TOD Dist	Uniform	Uniform
Percent B- s	0.0	0.0
B- s TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Imurovement 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.00023	0.00006
Inj- ry	0.00675	0.00090
PDO	0.01204	0.00166
Total	0.01700	0.00147

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	1.8	2.5
Oth. Lcycle	0.0	0.0
Cauital		107.1
S- uulementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Cauital		0.0

CROSSING DATA FOR THE 2018 CONSTRUCTION RAIL - SPUR CORRIDOR

Mileuost 5.05 Crossing ID 101803C

Descriution BNSF pWEYERHAUSER TBR

Paved? Tr- e	Urban? Tr- e
GCX Base Tyue	Passive
Safety S- u. Tyue	None
GCX Alt Tyue	Lights
Safety S- u. tyue	None
No. RR Tracks	1

Train Sueeds (muh)	
Max Timetable	10.0
Passenger	10.0
Freight	10.0
Switch	6.0

Accidents in 5 Years 0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.10	0.1
AADT	750	750
A- to TOD Dist	Uniform	Uniform
Percent Tr- cks	5.0	5.0
Of this, % trailers	0.0	0.0
Tr- ck TOD Dist	Uniform	Uniform
Percent B- s	0.0	0.0
B- s TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Imurovement 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.00024	0.00004
Inj- ry	0.00668	0.00085
PDO	0.01113	0.00280
Total	0.01989	0.00641

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	0.2	1.8
Oth. Lcycle	0.0	0.0
Cauital		49.8
S- uulementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Cauital		0.0

Mileuost 7.94 Crossing ID 101814U

Descriution BNSF pREYNOLDS ALUM

Paved? Tr- e	Urban? Tr- e
GCX Base Tyue	Lights
Safety S- u. Tyue	None
GCX Alt Tyue	Gates
Safety S- u. tyue	None
No. RR Tracks	2

Train Sueeds (muh)	
Max Timetable	10.0
Passenger	10.0
Freight	8.0
Switch	6.0

Accidents in 5 Years 0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	9	9.0
Dist from hway	0.10	0.1
AADT	6,600	6,600
A- to TOD Dist	Uniform	Uniform
Percent Tr- cks	5.0	5.0
Of this, % trailers	0.0	0.0
Tr- ck TOD Dist	Uniform	Uniform
Percent B- s	0.0	0.0
B- s TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Imurovement 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.00060	0.00010
Inj- ry	0.00695	0.00121
PDO	0.01231	0.00952
Total	0.01777	0.00586

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	1.8	2.5
Oth. Lcycle	0.0	0.0
Cauital		107.1
S- uulementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Cauital		0.0

FEDERAL RAILROAD ADMINISTRATION

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CORRIDOR AND CROSSING DATA

(u itho- t phased improvements)

f ser:	3cheu - 3
Dataset:	Initial dataset
Corridor ID	1U

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	2018 Constr- ction Rail k Di3e					
				Passenger	0.0	f ni5orm
Technology Factors	0.70	0.70	0.70	*Freight*	8.0	f ni5orm
Signal Synchronization?	False			*Switch*	0.0	f ni5orm

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calc- lated: 2wkSepk2017 7:74 pm

	Fatal	Injury	PDO	Total
Base	0.00064U	0.002UU1	0.01084w	0.01w2ww
Alternate	0.00064U	0.002UU1	0.01084w	0.01w2ww

CROSSING DATA FOR THE 2018 CONSTRUCTION RAIL - DIKE CORRIDOR

Milepost 16.w6 Crossing ID 1014U1f Accidents in 7 Years 0

Description BNSF k DIKE RD

Paved? Tr- e	f rban? False
GCX Base Type	Lights
Sa5ety S- p. Type	None
GCX Alt Type	Lights
Sa5ety S- p. type	None
No. RR Trac3s	w

Train Speeds (mph)	
Max Timetable	10.0
Passenger	10.0
Freight	10.0
Su itch	6.0

Highu ay Tra5c Characteristics	Base	Alternate
H'u ay Lanes	2	2.0
Dist 5om hu ay	0.10	0.1
AADT	U70	U70
A- to TOD Dist	f ni5orm	f ni5orm
Percent Tr- c3s	12.0	12.0
O5this, % trailers	0.0	0.0
Tr- c3 TOD Dist	f ni5orm	f ni5orm
Percent B- s	0.0	0.0
B- s TOD Dist	f ni5orm	f ni5orm

Costs in '000 $ o5Hu ay Improvement 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.00068	0.00068
Inj- ry	0.002UU	0.002UU
PDO	0.01084	0.01084
Total	0.01w2w	0.01w2w

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	1.8	1.8
Oth. Lcycle	0.0	0.0
Capital		4w.8
S- pplementary Sa5ety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

FEDERAL RAILROAD ADMINISTRATION

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CORRIDOR AND CROSSING DATA

(8 itho- t Uhased imUrovements)

5 ser: pche8 - p
Dataset: Initial dataset
Corridor ID 2f

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	2021 No Action 8 C- rrent Tracp uSU- r					
				Passenger	0.0	5 ni9brm
Technology Factors	0.40	0.40	0.40	*Freight*	7.0	5 ni9brm
Signal Synchronization?	False			*Switch*	0.0	5 ni9brm

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calc- lated: 27uSeUu20f 4 w.0k Um

	Fatal	Injury	PDO	Total
Base	0.002043	0.026216	0.03f 3kk	0.f 20w2f
Alternate	0.000666	0.001441	0.0w04k3	0.0w3102

CROSSING DATA FOR THE 2028 NO ACTION W CURRENT TRACK - SPUR CORRIDOR

MileUost 0.63 Crossing ID f 0f 1f 2K

DescriUtion BNSF uWEYERHA5 SER TBR

Paved? Tr- e	5 rban? Tr- e
GCX Base TyUe	Passive
Sa9ety S- U. TyUe	None
GCX Alt TyUe	Lights
Sa9ety S- U. tyUe	None
No. RR Tracps	f

Train SUeeds (mUh)	
Max Timetable	f 0.0
Passenger	f 0.0
Freight	4.0
S8 itch	w.0

Accidents in 4 Years 0

High8 ay Tra9c Characteristics	Base	Alternate
H'8 ay Lanes	2	2.0
Dist 9rom h8 ay	0.f 0	0.f
AADT	240	240
A- to TOD Dist	5 ni9brm	5 ni9brm
Percent Tr- cps	4.0	4.0
O9this, % trailers	0.0	0.0
Tr- cp TOD Dist	5 ni9brm	5 ni9brm
Percent B- s	0.0	0.0
B- s TOD Dist	5 ni9brm	5 ni9brm

Costs in '000 $ o9H8 ay ImUrovement 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.000f 3	0.00004
Inj- ry	0.00271	0.00062
PDO	0.00122	0.00204
Total	0.0f 030	0.002k2

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	0.2	f .1
Oth. Lcycle	0.0	0.0
CaUital		k7.1
S- UUlementary Sa9ety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

MileUost 2.61 Crossing ID f 0f 126T

DescriUtion BNSF uwRD AVE

Paved? Tr- e	5 rban? Tr- e
GCX Base TyUe	Gates
Sa9ety S- U. TyUe	None
GCX Alt TyUe	Ne8 Technology f
Sa9ety S- U. tyUe	None
No. RR Tracps	2

Train SUeeds (mUh)	
Max Timetable	1.0
Passenger	1.0
Freight	1.0
S8 itch	w.0

Accidents in 4 Years 0

High8 ay Tra9c Characteristics	Base	Alternate
H'8 ay Lanes	7	7.0
Dist 9rom h8 ay	0.f 0	0.f
AADT	20,400	20,400
A- to TOD Dist	5 ni9brm	5 ni9brm
Percent Tr- cps	f 4.0	f 4.0
O9this, % trailers	0.0	0.0
Tr- cp TOD Dist	5 ni9brm	5 ni9brm
Percent B- s	0.0	0.0
B- s TOD Dist	5 ni9brm	5 ni9brm

Costs in '000 $ o9H8 ay ImUrovement 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.000wk	0.000f 1
Inj- ry	0.00407	0.00242
PDO	0.020f 0	0.0f 004
Total	0.02440	0.0f 2k4

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.4	4.0
Oth. Lcycle	0.0	0.0
CaUital		210.0
S- UUlementary Sa9ety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

CROSSING DATA FOR THE 2028 NO ACTION W CURRENT TRACK - SPUR CORRIDOR

MileUost 2.k3 Crossing ID f 0f 12f J

DescriUtion BNSF uCALIFORNIA WAY

Paved? Tr- e	5 rban? Tr- e
GCX Base TyUe	Lights
Sa9ety S- U. TyUe	None
GCX Alt TyUe	Gates
Sa9ety S- U. tyUe	None
No. RR Tracps	f

Train SUeeds (mUh)	
Max Timetable	f 0.0
Passenger	f 0.0
Freight	1.0
S8 itch	w.0

Accidents in 4 Years 0

High8 ay Tra9ic Characteristics	Base	Alternate
H'8 ay Lanes	2	2.0
Dist 9rom h8 ay	0.f 0	0.f
AADT	7,100	7,100
A- to TOD Dist	5 ni9orm	5 ni9orm
Percent Tr- cps	k.0	k.0
O9this, % trailers	0.0	0.0
Tr- cp TOD Dist	5 ni9orm	5 ni9orm
Percent B- s	0.0	0.0
B- s TOD Dist	5 ni9orm	5 ni9orm

Costs in '000 $ o9H8 ay ImUrovement 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.00022	0.00002
Inj- ry	0.002k3	0.000wf
PDO	0.00322	0.00f 0f
Total	0.0f 222	0.00f w7

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	f .1	2.4
Oth. Lcycle	0.0	0.0
CaUital		f 06.f
S- UUlementary Sa9ety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

MileUost w.6k Crossing ID f 0f 104A

DescriUtion BNSF uOREGON WAY

Paved? Tr- e	5 rban? Tr- e
GCX Base TyUe	Gates
Sa9ety S- U. TyUe	None
GCX Alt TyUe	Ne8 Technology f
Sa9ety S- U. tyUe	None
No. RR Tracps	f

Train SUeeds (mUh)	
Max Timetable	f 0.0
Passenger	f 0.0
Freight	f 0.0
S8 itch	w.0

Accidents in 4 Years 0

High8 ay Tra9ic Characteristics	Base	Alternate
H'8 ay Lanes	7	7.0
Dist 9rom h8 ay	0.f 0	0.f
AADT	f 1,400	f 1,400
A- to TOD Dist	5 ni9orm	5 ni9orm
Percent Tr- cps	4.0	4.0
O9this, % trailers	0.0	0.0
Tr- cp TOD Dist	5 ni9orm	5 ni9orm
Percent B- s	0.0	0.0
B- s TOD Dist	5 ni9orm	5 ni9orm

Costs in '000 $ o9H8 ay ImUrovement 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.00070	0.00020
Inj- ry	0.0040k	0.0024w
PDO	0.0f 6k1	0.001w3
Total	0.02227	0.0f f f 2

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.4	4.0
Oth. Lcycle	0.0	0.0
CaUital		210.0
S- UUlementary Sa9ety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

MileUost w.11 Crossing ID f 0f 106G

DescriUtion BNSF uIND5 STRIAL WAY

Paved? Tr- e	5 rban? Tr- e
GCX Base TyUe	Lights
Sa9ety S- U. TyUe	None
GCX Alt TyUe	Gates
Sa9ety S- U. tyUe	None
No. RR Tracps	f

Train SUeeds (mUh)	
Max Timetable	f 0.0
Passenger	f 0.0
Freight	f 0.0
S8 itch	w.0

Accidents in 4 Years 0

High8 ay Tra9ic Characteristics	Base	Alternate
H'8 ay Lanes	2	2.0
Dist 9rom h8 ay	0.f 0	0.f
AADT	f f ,740	f f ,740
A- to TOD Dist	5 ni9orm	5 ni9orm
Percent Tr- cps	f 4.0	f 4.0
O9this, % trailers	0.0	0.0
Tr- cp TOD Dist	5 ni9orm	5 ni9orm
Percent B- s	0.0	0.0
B- s TOD Dist	5 ni9orm	5 ni9orm

Costs in '000 $ o9H8 ay ImUrovement 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.00023	0.0000w
Inj- ry	0.00w6k	0.00070
PDO	0.0f 2f 4	0.00f w7
Total	0.0f 6f 0	0.00f kk

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	f .1	2.4
Oth. Lcycle	0.0	0.0
CaUital		f 06.f
S- UUlementary Sa9ety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

CROSSING DATA FOR THE 2028 NO ACTION W CURRENT TRACK - SPUR CORRIDOR

MileUost 4.04 Crossing ID f 0f 103C

DescriUtion BNSF uWEYERHA5 SER TBR

Paved? Tr- e	5 rban? Tr- e
GCX Base TyUe	Passive
Sa9ety S- U. TyUe	None
GCX Alt TyUe	Lights
Sa9ety S- U. tyUe	None
No. RR Tracps	f

Train SUeeds (mUh)	
Max Timetable	f 0.0
Passenger	f 0.0
Freight	f 0.0
S8 itch	w.0

Accidents in 4 Years 0

High8 ay Tra9ic Characteristics	Base	Alternate
H'8 ay Lanes	2	2.0
Dist 9rom h8 ay	0.f 0	0.f
AADT	100	100
A- to TOD Dist	5 ni9orm	5 ni9orm
Percent Tr- cps	4.0	4.0
O9this, % trailers	0.0	0.0
Tr- cp TOD Dist	5 ni9orm	5 ni9orm
Percent B- s	0.0	0.0
B- s TOD Dist	5 ni9orm	5 ni9orm

Costs in '000 $ o9H8 ay ImUrovement 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.00021	0.0000k
Inj- ry	0.00w6f	0.00030
PDO	0.0f f 34	0.00233
Total	0.0f 417	0.00w36

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	0.2	f .1
Oth. Lcycle	0.0	0.0
CaUital		k7.1
S- UUlementary Sa9ety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

MileUost 6.7k Crossing ID f 0f 1f k5

DescriUtion BNSF uREYNOLDS AL5 M

Paved? Tr- e	5 rban? Tr- e
GCX Base TyUe	Lights
Sa9ety S- U. TyUe	None
GCX Alt TyUe	Gates
Sa9ety S- U. tyUe	None
No. RR Tracps	2

Train SUeeds (mUh)	
Max Timetable	f 0.0
Passenger	f 0.0
Freight	1.0
S8 itch	w.0

Accidents in 4 Years 0

High8 ay Tra9ic Characteristics	Base	Alternate
H'8 ay Lanes	7	7.0
Dist 9rom h8 ay	0.f 0	0.f
AADT	w,300	w,300
A- to TOD Dist	5 ni9orm	5 ni9orm
Percent Tr- cps	4.0	4.0
O9this, % trailers	0.0	0.0
Tr- cp TOD Dist	5 ni9orm	5 ni9orm
Percent B- s	0.0	0.0
B- s TOD Dist	5 ni9orm	5 ni9orm

Costs in '000 $ o9H8 ay ImUrovement 0.0

Predicted Ann- al Accidents	Base	Alternate
Fatal	0.000wf	0.000f f
Inj- ry	0.00w6w	0.00f 2k
PDO	0.0f w4k	0.007k4
Total	0.0f k4f	0.006f w

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	f .1	2.4
Oth. Lcycle	0.0	0.0
CaUital		f 06.f
S- UUlementary Sa9ety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

FEDERAL RAILROAD ADMINISTRATION

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CORRIDOR AND CROSSING DATA

(without phased improvements)

User:	kchewuk
Dataset:	Initial dataset
Corridor ID	22

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	2028 No Action w Current Track - Dike					
				Passenger	0.0	Uniform
Technology Factors	0.50	0.50	0.50	*Freight*	7.0	Uniform
Signal Synchronization?	False			*Switch*	0.0	Uniform

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 24-Sep-2015 3:10 pm

	Fatal	Injury	PDO	Total
Base	0.000377	0.003008	0.010919	0.014303
Alternate	0.000377	0.003008	0.010919	0.014303

CROSSING DATA FOR THE 2028 NO ACTION W CURRENT TRACK - DIKE CORRIDOR

Milepost 13.43 Crossing ID 101791U

Accidents in 5 Years 0

Description BNSF - DIKE RD

Paved? True	Urban? False
GCX Base Type	Lights
Safety Sup. Type	None
GCX Alt Type	Lights
Safety Sup. type	None
No. RR Tracks	4

Train Speeds (mph)

Max Timetable	10.0
Passenger	10.0
Freight	10.0
Switch	3.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.10	0.1
AADT	1,100	1,100
Auto TOD Dist	Uniform	Uniform
Percent Trucks	12.0	12.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00038	0.00038
Injury	0.00301	0.00301
PDO	0.01092	0.01092
Total	0.01430	0.01430

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	1.8	1.8
Oth. Lcycle	0.0	0.0
Capital		74.8
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

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CORRIDOR AND CROSSING DATA

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9 ser(	pche8 f p
Dataset(	Initial dataset
Corridor ID	25

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	2021 No Action 8 - lanned Tracp uSUf r			Passenger	0.0	9 ni4brm
Technology Factors	0.50	0.50	0.50	Freight	7.0	9 ni4brm
Signal Synchronization?	False			Switch	0.0	9 ni4brm

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calcf lated(27uSeUu20k5 5(26 Um

	Fatal	Injury	PDO	Total
Base	0.002053	0.026216	0.03k3ww	0.k20: 2k
Alternate	0.000666	0.001551	0.0: 05w3	0.0: 3102

CROSSING DATA FOR THE 2028 NO ACTION W PLANNED TRACK - SPUR CORRIDOR

b ileUost 0.63 Crossing ID k0k1k2K Accidents in 5 Years 0

DescriUtion BNSF uWEYERHA9 SER TBR

- a) ed? Trf e	9 rPan? Trf e
GCX Base TyUe	- assi) e
Sa4ety Sf U. TyUe	None
GCX Alt TyUe	Lights
Sa4ety Sf U. tyUe	None
No. RR Tracps	k

Train SUeeds vmUhM	
b ax TimetaPle	k0.0
- assenger	k0.0
Freight	5.0
S8 itch	: .0

High8 ay Tra4ic Characteristics	Base	Alternate
H'8 ay Lanes	2	2.0
Dist 4om h8 ay	0.k0	0.k
AADT	250	250
Af to TOD Dist	9 ni4brm	9 ni4brm
- ercent Trf cps	5.0	5.0
O4this, % trailers	0.0	0.0
Trf cp TOD Dist	9 ni4brm	9 ni4brm
- ercent Bf s	0.0	0.0
Bf s TOD Dist	9 ni4brm	9 ni4brm

Costs in '000 $ o4H8 ay ImUro) ement 0.0

- redicted Annf al Accidents	Base	Alternate
Fatal	0.000k3	0.00005
Injf ry	0.00271	0.00062
- DO	0.00122	0.00205
Total	0.0k030	0.002w2

Costs in '000 $	Base	Alternate
Grade Crossing De) ices		
O&b	0.2	k.1
Oth. Lcycle	0.0	0.0
CaUital		w7.1
Sf UUlementary Sa4ety		
O&b	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

b ileUost 2.61 Crossing ID k0k126T Accidents in 5 Years 0

DescriUtion BNSF u: RD AVE

- a) ed? Trf e	9 rPan? Trf e
GCX Base TyUe	Gates
Sa4ety Sf U. TyUe	None
GCX Alt TyUe	Ne8 Technology k
Sa4ety Sf U. tyUe	None
No. RR Tracps	2

Train SUeeds vmUhM	
b ax TimetaPle	1.0
- assenger	1.0
Freight	k5.0
S8 itch	: .0

High8 ay Tra4ic Characteristics	Base	Alternate
H'8 ay Lanes	7	7.0
Dist 4om h8 ay	0.k0	0.k
AADT	20,500	20,500
Af to TOD Dist	9 ni4brm	9 ni4brm
- ercent Trf cps	k5.0	k5.0
O4this, % trailers	0.0	0.0
Trf cp TOD Dist	9 ni4brm	9 ni4brm
- ercent Bf s	0.0	0.0
Bf s TOD Dist	9 ni4brm	9 ni4brm

Costs in '000 $ o4H8 ay ImUro) ement 0.0

- redicted Annf al Accidents	Base	Alternate
Fatal	0.000: w	0.000k1
Injf ry	0.00507	0.00252
- DO	0.020k0	0.0k005
Total	0.02550	0.0k2w5

Costs in '000 $	Base	Alternate
Grade Crossing De) ices		
O&b	2.5	5.0
Oth. Lcycle	0.0	0.0
CaUital		210.0
Sf UUlementary Sa4ety		
O&b	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

CROSSING DATA FOR THE 2028 NO ACTION W PLANNED TRACK - SPUR CORRIDOR

b ileUbst 2.w3 Crossing ID k0k12kJ

DescriUtion BNSF uCALIFORNIA WAY

- a)ed? Trf e	9 rPan? Trf e
GCX Base TyUe	Lights
Sa4ety Sf U. TyUe	None
GCX Alt TyUe	Gates
Sa4ety Sf U. tyUe	None
No. RR Tracps	k

Train SUeeds vmUhM	
b ax TimetaPle	k0.0
- assenger	k0.0
Freight	k5.0
S8 itch	: .0

Accidents in 5 Years 0

High8 ay Tra44c Characteristics	Base	Alternate
H'8 ay Lanes	2	2.0
Dist 4om h8 ay	0.k0	0.k
AADT	7,100	7,100
Af to TOD Dist	9 ni4brm	9 ni4brm
- ercent Trf cps	w.0	w.0
O4this, % trailers	0.0	0.0
Trf cp TOD Dist	9 ni4brm	9 ni4brm
- ercent Bf s	0.0	0.0
Bf s TOD Dist	9 ni4brm	9 ni4brm

Costs in '000 $ o4H8 ay ImUro)ement 0.0

- redicted Annf al Accidents	Base	Alternate
Fatal	0.00022	0.00002
Injf ry	0.002w3	0.000: k
- DO	0.00322	0.00k0k
Total	0.0k222	0.00k: 7

Costs in '000 $	Base	Alternate
Grade Crossing De)ices		
O&b	k.1	2.5
Oth. Lcycle	0.0	0.0
CaUital		k06.k
Sf UUlementary Sa4ety		
O&b	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

b ileUbst : .6w Crossing ID k0k105A

DescriUtion BNSF uOREGON WAY

- a)ed? Trf e	9 rPan? Trf e
GCX Base TyUe	Gates
Sa4ety Sf U. TyUe	None
GCX Alt TyUe	Ne8 Technology k
Sa4ety Sf U. tyUe	None
No. RR Tracps	k

Train SUeeds vmUhM	
b ax TimetaPle	k0.0
- assenger	k0.0
Freight	20.0
S8 itch	: .0

Accidents in 5 Years 0

High8 ay Tra44c Characteristics	Base	Alternate
H'8 ay Lanes	7	7.0
Dist 4om h8 ay	0.k0	0.k
AADT	k1,500	k1,500
Af to TOD Dist	9 ni4brm	9 ni4brm
- ercent Trf cps	5.0	5.0
O4this, % trailers	0.0	0.0
Trf cp TOD Dist	9 ni4brm	9 ni4brm
- ercent Bf s	0.0	0.0
Bf s TOD Dist	9 ni4brm	9 ni4brm

Costs in '000 $ o4H8 ay ImUro)ement 0.0

- redicted Annf al Accidents	Base	Alternate
Fatal	0.00070	0.00020
Injf ry	0.0050w	0.0025:
- DO	0.0k6w1	0.001: 3
Total	0.02227	0.0kkk2

Costs in '000 $	Base	Alternate
Grade Crossing De)ices		
O&b	2.5	5.0
Oth. Lcycle	0.0	0.0
CaUital		210.0
Sf UUlementary Sa4ety		
O&b	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

b ileUbst : .11 Crossing ID k0k106G

DescriUtion BNSF uIND9 STRIAL WAY

- a)ed? Trf e	9 rPan? Trf e
GCX Base TyUe	Lights
Sa4ety Sf U. TyUe	None
GCX Alt TyUe	Gates
Sa4ety Sf U. tyUe	None
No. RR Tracps	k

Train SUeeds vmUhM	
b ax TimetaPle	k0.0
- assenger	k0.0
Freight	20.0
S8 itch	: .0

Accidents in 5 Years 0

High8 ay Tra44c Characteristics	Base	Alternate
H'8 ay Lanes	2	2.0
Dist 4om h8 ay	0.k0	0.k
AADT	kk,750	kk,750
Af to TOD Dist	9 ni4brm	9 ni4brm
- ercent Trf cps	k5.0	k5.0
O4this, % trailers	0.0	0.0
Trf cp TOD Dist	9 ni4brm	9 ni4brm
- ercent Bf s	0.0	0.0
Bf s TOD Dist	9 ni4brm	9 ni4brm

Costs in '000 $ o4H8 ay ImUro)ement 0.0

- redicted Annf al Accidents	Base	Alternate
Fatal	0.00023	0.0000:
Injf ry	0.00: 6w	0.00070
- DO	0.0k2k5	0.00k: 7
Total	0.0k6k0	0.00kww

Costs in '000 $	Base	Alternate
Grade Crossing De)ices		
O&b	k.1	2.5
Oth. Lcycle	0.0	0.0
CaUital		k06.k
Sf UUlementary Sa4ety		
O&b	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

CROSSING DATA FOR THE 2028 NO ACTION W PLANNED TRACK - SPUR CORRIDOR

b ileUbst 5.05 Crossing ID k0k103C

DescriUtion BNSF uWEYERHA9 SER TBR

- a)ed? Trf e	9 rPan? Trf e
GCX Base TyUe	- assi)e
Sa4ety Sf U. TyUe	None
GCX Alt TyUe	Lights
Sa4ety Sf U. tyUe	None
No. RR Tracps	k

Train SUeeds vmUhM	
b ax TimetaPle	k0.0
- assenger	k0.0
Freight	k5.0
S8itch	: .0

Accidents in 5 Years 0

High8ay Tra44c Characteristics	Base	Alternate
H'8ay Lanes	2	2.0
Dist 4om h8ay	0.k0	0.k
AADT	100	100
Af to TOD Dist	9ni4brm	9ni4brm
- ercent Trf cps	5.0	5.0
O4this, % trailers	0.0	0.0
Trf cp TOD Dist	9ni4brm	9ni4brm
- ercent Bf s	0.0	0.0
Bf s TOD Dist	9ni4brm	9ni4brm

Costs in '000 $ o4H8ay ImUro)ement 0.0

- redicted Annf al Accidents	Base	Alternate
Fatal	0.00021	0.0000w
Injf ry	0.00: 6k	0.00030
- DO	0.0kk35	0.00233
Total	0.0k517	0.00: 36

Costs in '000 $	Base	Alternate
Grade Crossing De)ices		
O&b	0.2	k.1
Oth. Lcycle	0.0	0.0
CaUital		w7.1
Sf UUlementary Sa4ety		
O&b	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

b ileUbst 6.7w Crossing ID k0k1kw9

DescriUtion BNSF uREYNOLDS AL9 b

- a)ed? Trf e	9 rPan? Trf e
GCX Base TyUe	Lights
Sa4ety Sf U. TyUe	None
GCX Alt TyUe	Gates
Sa4ety Sf U. tyUe	None
No. RR Tracps	2

Train SUeeds vmUhM	
b ax TimetaPle	k0.0
- assenger	k0.0
Freight	k0.0
S8itch	: .0

Accidents in 5 Years 0

High8ay Tra44c Characteristics	Base	Alternate
H'8ay Lanes	7	7.0
Dist 4om h8ay	0.k0	0.k
AADT	: ,300	: ,300
Af to TOD Dist	9ni4brm	9ni4brm
- ercent Trf cps	5.0	5.0
O4this, % trailers	0.0	0.0
Trf cp TOD Dist	9ni4brm	9ni4brm
- ercent Bf s	0.0	0.0
Bf s TOD Dist	9ni4brm	9ni4brm

Costs in '000 $ o4H8ay ImUro)ement 0.0

- redicted Annf al Accidents	Base	Alternate
Fatal	0.000: k	0.000kk
Injf ry	0.00: 6:	0.00k2w
- DO	0.0k: 5w	0.007w5
Total	0.0kw5k	0.006k:

Costs in '000 $	Base	Alternate
Grade Crossing De)ices		
O&b	k.1	2.5
Oth. Lcycle	0.0	0.0
CaUital		k06.k
Sf UUlementary Sa4ety		
O&b	0.0	0.0
Oth. Lcycle	0.0	0.0
CaUital		0.0

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CORRIDOR AND CROSSING DATA

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f ser(	kche8 pk
Dataset(	Initial dataset
Corridor ID	2U

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	2021 No Action 8 - lanned Track 3Dike					
				Passenger	0.0	f ni5orm
Technology Factors	0.70	0.70	0.70	*Freight*	6.0	f ni5orm
Signal Synchronization?	False			*Switch*	0.0	f ni5orm

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calcplated(2: 3Sev320w7 4(w0 vm

	Fatal	Injury	PDO	Total
Base	0.000466	0.004001	0.0w0uwu	0.0w. 404
Alternate	0.000466	0.004001	0.0w0uwu	0.0w. 404

CROSSING DATA FOR THE 2028 NO ACTION W PLANNED TRACK - DIKE CORRIDOR

P ilevost w4.: 4 Crossing ID w0w6uwf Accidents in 7 j ears 0

Descrivtion KNSF 3DIOE RD

- aMed? Trpe	f rXan? False
GCB Kase Tyve	Yights
Sa5ety Spv. Tyve	None
GCB Alt Tyve	Yights
Sa5ety Spv. tyve	None
No. RR Tracks	:

Train Sveeds)mvhb

P a, TimetaXle	w0.0
- assenger	w0.0
Freight	w0.0
S8 itch	4.0

' igh8 ay Tra55c Characteristics

	Base	Alternate
' l8 ay Yanes	2	2.0
Dist 5om h8 ay	0.w0	0.w
AADT	w%00	w%00
Apto THD Dist	f ni5orm	f ni5orm
- ercent Trpcks	w2.0	w2.0
H5this%9 trailers	0.0	0.0
Trpck THD Dist	f ni5orm	f ni5orm
- ercent Kps	0.0	0.0
Kps THD Dist	f ni5orm	f ni5orm

Costs in l000 & o5' 8 ay ImvroMement 0.0

- redicted Annpal Accidents

	Base	Alternate
Fatal	0.00041	0.00041
In$pry	0.0040w	0.0040w
- DH	0.0w0u2	0.0w0u2
Total	0.0w. 40	0.0w. 40

Costs in l000 &

	Base	Alternate
Grade Crossing DeMices		
Hx P	w.1	w.1
Hth. Ycycle	0.0	0.0
Cavital		6: .1
Spvvlementary Sa5ety		
Hx P	0.0	0.0
Hth. Ycycle	0.0	0.0
Cavital		0.0

FEDERAL RAILROAD ADMINISTRATION

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CORRIDOR AND CROSSING DATA

v- ithopt f hased imf ro) ementsM

9 ser(	uche- pu
Dataset(	Initial dataset
Corridor ID	25

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	2021 8 n Site Alt - Cprrent Tracu USf pr			Passenger	0.0	9 ni4brm
Technology Factors	0.70	0.70	0.70	Freight	20.0	9 ni4brm
Signal Synchronization?	False			Switch	0.0	9 ni4brm

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calcplated(23USef U20w7 7(3: f m

	Fatal	Injury	PDO	Total
Base	0.003266	0.03k633	0.w. : 253	0.2wk1k0
Alternate	0.00wk23	0.0w56: 6	0.0: 132:	0.0157w3

CROSSING DATA FOR THE 2028 ON SITE ALT W CURRENT TRACK - SPUR CORRIDOR

b ilef ost 0.: 5 Crossing ID w0w1w2K Accidents in 7 Hears 0

Descrif tion WNSF UY EHEROA9 SER TWR

Xa) ed? Trpe	9 rPan? Trpe
GCB Wase Tyf e	Xassi) e
Sa4ety Spf . Tyf e	None
GCB Alt Tyf e	Lights
Sa4ety Spf . tyf e	None
No. RR Tracus	w

Train Sf eeds vmf hM	
b ax TimetaPle	w0.0
Xassenger	w0.0
Freight	7.0
S- itch	6.0

Oigh- ay Tra44c Characteristics	Base	Alternate
O'- ay Lanes	2	2.0
Dist 4om h- ay	0.w0	0.w
AADT	w,630	w,630
Apto T8 D Dist	9 ni4brm	9 ni4brm
Xercent Trpcus	7.0	7.0
8 4this, % trailers	0.0	0.0
Trpcu T8 D Dist	9 ni4brm	9 ni4brm
Xercent Wps	0.0	0.0
Wps T8 D Dist	9 ni4brm	9 ni4brm

Costs in '000 $ o4O- ay Imf ro) ement 0.0

Xredicted Annpal Accidents	Base	Alternate
Fatal	0.000kw	0.00021
Injpry	0.00k5k	0.006ww
XD8	0.02: : 7	0.0w065
Total	0.06766	0.0w6k1

Costs in '000 $	Base	Alternate
Grade Crossing De) ices		
8 &b	0.2	w.1
8 th. Lcycle	0.0	0.0
Caf ital		k3.1
Spf f lementary Sa4ety		
8 &b	0.0	0.0
8 th. Lcycle	0.0	0.0
Caf ital		0.0

b ilef ost 2.: 1 Crossing ID w0w12: T Accidents in 7 Hears 0

Descrif tion WNSF U6RD AVE

Xa) ed? Trpe	9 rPan? Trpe
GCB Wase Tyf e	Gates
Sa4ety Spf . Tyf e	None
GCB Alt Tyf e	Ne- Technology w
Sa4ety Spf . tyf e	None
No. RR Tracus	2

Train Sf eeds vmf hM	
b ax TimetaPle	1.0
Xassenger	1.0
Freight	1.0
S- itch	6.0

Oigh- ay Tra44c Characteristics	Base	Alternate
O'- ay Lanes	3	3.0
Dist 4om h- ay	0.w0	0.w
AADT	20,k20	20,k20
Apto T8 D Dist	9 ni4brm	9 ni4brm
Xercent Trpcus	w7.0	w7.0
8 4this, % trailers	0.0	0.0
Trpcu T8 D Dist	9 ni4brm	9 ni4brm
Xercent Wps	0.0	0.0
Wps T8 D Dist	9 ni4brm	9 ni4brm

Costs in '000 $ o4O- ay Imf ro) ement 0.0

Xredicted Annpal Accidents	Base	Alternate
Fatal	0.000: 1	0.00063
Injpry	0.001wk	0.00301
XD8	0.06211	0.0w: 33
Total	0.03wk2	0.0201:

Costs in '000 $	Base	Alternate
Grade Crossing De) ices		
8 &b	2.7	7.0
8 th. Lcycle	0.0	0.0
Caf ital		210.0
Spf f lementary Sa4ety		
8 &b	0.0	0.0
8 th. Lcycle	0.0	0.0
Caf ital		0.0

CROSSING DATA FOR THE 2028 ON SITE ALT W CURRENT TRACK - SPUR CORRIDOR

b ilef ost 2.k5 Crossing ID w0w12wJ

Accidents in 7 Hears 0

Descrif tion WNSF UCALIF8 RNIA Y AH

Xa) ed? Trpe	9 rPan? Trpe
GCB Wase Tyf e	Lights
Sa4ety Spf . Tyf e	None
GCB Alt Tyf e	Gates
Sa4ety Spf . tyf e	None
No. RR Tracus	w

Train Sf eeds vmf hM	
b ax TimetaPle	w0.0
Xassenger	w0.0
Freight	1.0
S- itch	6.0

Oigh- ay Tra44c Characteristics	Base	Alternate
O'- ay Lanes	2	2.0
Dist 4om h- ay	0.w0	0.w
AADT	3,100	3,100
Apto T8 D Dist	9 ni4brm	9 ni4brm
Xercent Trpcus	k.0	k.0
8 4this, % trailers	0.0	0.0
Trpcu T8 D Dist	9 ni4brm	9 ni4brm
Xercent Wps	0.0	0.0
Wps T8 D Dist	9 ni4brm	9 ni4brm

Costs in '000 $ o4O- ay Imf ro) ement 0.0

Xredicted Annpal Accidents	Base	Alternate
Fatal	0.00030	0.000w6
Injpry	0.0037w	0.00w30
XD8	0.0w70k	0.003: k
Total	0.0w551	0.00: w5

Costs in '000 $	Base	Alternate
Grade Crossing De) ices		
8 &b	w.1	2.7
8 th. Lcycle	0.0	0.0
Caf ital		w0: .w
Spf f lementary Sa4ety		
8 &b	0.0	0.0
8 th. Lcycle	0.0	0.0
Caf ital		0.0

b ilef ost 6.: k Crossing ID w0w107A

Accidents in 7 Hears 0

Descrif tion WNSF U8 REG8 N Y AH

Xa) ed? Trpe	9 rPan? Trpe
GCB Wase Tyf e	Gates
Sa4ety Spf . Tyf e	None
GCB Alt Tyf e	Ne- Technology w
Sa4ety Spf . tyf e	None
No. RR Tracus	w

Train Sf eeds vmf hM	
b ax TimetaPle	w0.0
Xassenger	w0.0
Freight	w0.0
S- itch	6.0

Oigh- ay Tra44c Characteristics	Base	Alternate
O'- ay Lanes	3	3.0
Dist 4om h- ay	0.w0	0.w
AADT	w1,kk0	w1,kk0
Apto T8 D Dist	9 ni4brm	9 ni4brm
Xercent Trpcus	7.0	7.0
8 4this, % trailers	0.0	0.0
Trpcu T8 D Dist	9 ni4brm	9 ni4brm
Xercent Wps	0.0	0.0
Wps T8 D Dist	9 ni4brm	9 ni4brm

Costs in '000 $ o4O- ay Imf ro) ement 0.0

Xredicted Annpal Accidents	Base	Alternate
Fatal	0.000k:	0.00061
Injpry	0.0013:	0.00326
XD8	0.02125	0.0w3w3
Total	0.06k70	0.0w1k7

Costs in '000 $	Base	Alternate
Grade Crossing De) ices		
8 &b	2.7	7.0
8 th. Lcycle	0.0	0.0
Caf ital		210.0
Spf f lementary Sa4ety		
8 &b	0.0	0.0
8 th. Lcycle	0.0	0.0
Caf ital		0.0

b ilef ost 6.11 Crossing ID w0w10: G

Accidents in 7 Hears 0

Descrif tion WNSF UIND9 STRIAL Y AH

Xa) ed? Trpe	9 rPan? Trpe
GCB Wase Tyf e	Lights
Sa4ety Spf . Tyf e	None
GCB Alt Tyf e	Gates
Sa4ety Spf . tyf e	None
No. RR Tracus	w

Train Sf eeds vmf hM	
b ax TimetaPle	w0.0
Xassenger	w0.0
Freight	w0.0
S- itch	6.0

Oigh- ay Tra44c Characteristics	Base	Alternate
O'- ay Lanes	2	2.0
Dist 4om h- ay	0.w0	0.w
AADT	w2,w00	w2,w00
Apto T8 D Dist	9 ni4brm	9 ni4brm
Xercent Trpcus	w7.0	w7.0
8 4this, % trailers	0.0	0.0
Trpcu T8 D Dist	9 ni4brm	9 ni4brm
Xercent Wps	0.0	0.0
Wps T8 D Dist	9 ni4brm	9 ni4brm

Costs in '000 $ o4O- ay Imf ro) ement 0.0

Xredicted Annpal Accidents	Base	Alternate
Fatal	0.0007w	0.000w:
Injpry	0.007k3	0.00wk1
XD8	0.0w5w1	0.00757
Total	0.02736	0.00k11

Costs in '000 $	Base	Alternate
Grade Crossing De) ices		
8 &b	w.1	2.7
8 th. Lcycle	0.0	0.0
Caf ital		w0: .w
Spf f lementary Sa4ety		
8 &b	0.0	0.0
8 th. Lcycle	0.0	0.0
Caf ital		0.0

CROSSING DATA FOR THE 2028 ON SITE ALT W CURRENT TRACK - SPUR CORRIDOR

b ilef ost 7.07 Crossing ID w0w105C

Accidents in 7 Hears 0

Descrif tion WNSF UY EHEROA9 SER TWR

Xa) ed? Trpe	9 rPan? Trpe
GCB Wase Tyf e	Xassi) e
Sa4ety Spf . Tyf e	None
GCB Alt Tyf e	Lights
Sa4ety Spf . tyf e	None
No. RR Tracus	w

Train Sf eeds vmf hM	
b ax TimetaPle	w0.0
Xassenger	w0.0
Freight	w0.0
S- itch	6.0

Oigh- ay Tra44c Characteristics	Base	Alternate
O'- ay Lanes	2	2.0
Dist 4om h- ay	0.w0	0.w
AADT	100	100
Apto T8 D Dist	9 ni4brm	9 ni4brm
Xercent Trpcus	7.0	7.0
8 4this, % trailers	0.0	0.0
Trpcu T8 D Dist	9 ni4brm	9 ni4brm
Xercent Wps	0.0	0.0
Wps T8 D Dist	9 ni4brm	9 ni4brm

Costs in '000 $ o4O- ay Imf ro) ement 0.0

Xredicted Annpal Accidents	Base	Alternate
Fatal	0.000: 6	0.00023
Injpry	0.00k0w	0.002k6
XD8	0.02636	0.005w3
Total	0.06w0k	0.0w2w2

Costs in '000 $	Base	Alternate
Grade Crossing De) ices		
8 &b	0.2	w.1
8 th. Lcycle	0.0	0.0
Caf ital		k3.1
Spf f lementary Sa4ety		
8 &b	0.0	0.0
8 th. Lcycle	0.0	0.0
Caf ital		0.0

b ilef ost : .3k Crossing ID w0w1wk9

Accidents in 7 Hears 0

Descrif tion WNSF UREHN8 LDS AL9 b

Xa) ed? Trpe	9 rPan? Trpe
GCB Wase Tyf e	Lights
Sa4ety Spf . Tyf e	None
GCB Alt Tyf e	Gates
Sa4ety Spf . tyf e	None
No. RR Tracus	2

Train Sf eeds vmf hM	
b ax TimetaPle	w0.0
Xassenger	w0.0
Freight	1.0
S- itch	6.0

Oigh- ay Tra44c Characteristics	Base	Alternate
O'- ay Lanes	3	3.0
Dist 4om h- ay	0.w0	0.w
AADT	6,500	6,500
Apto T8 D Dist	9 ni4brm	9 ni4brm
Xercent Trpcus	7.0	7.0
8 4this, % trailers	0.0	0.0
Trpcu T8 D Dist	9 ni4brm	9 ni4brm
Xercent Wps	0.0	0.0
Wps T8 D Dist	9 ni4brm	9 ni4brm

Costs in '000 $ o4O- ay Imf ro) ement 0.0

Xredicted Annpal Accidents	Base	Alternate
Fatal	0.00073	0.00020
Injpry	0.00735	0.00206
XD8	0.020k5	0.00k: 5
Total	0.02: 16	0.00556

Costs in '000 $	Base	Alternate
Grade Crossing De) ices		
8 &b	w.1	2.7
8 th. Lcycle	0.0	0.0
Caf ital		w0: .w
Spf f lementary Sa4ety		
8 &b	0.0	0.0
8 th. Lcycle	0.0	0.0
Caf ital		0.0

FEDERAL RAILROAD ADMINISTRATION

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CORRIDOR AND CROSSING DATA

(- ithokt phased improvements)

f ser: 3che- k3
Dataset: Initial dataset
Corridor ID 21

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	2021 8 n Site Alt - Ckrrent Trac3 UDi3e					
				Passenger	0.0	f ni5rm
Technology Factors	0.70	0.70	0.70	*Freight*	26.0	f ni5rm
Signal Synchronization?	False			*Switch*	0.0	f ni5rm

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calcklated: 2wLSepU20u7 7:ww pm

	Fatal	Injury	PDO	Total
Base	0.000714	0.00w224	0.0u77w2	0.020674
Alternate	0.000714	0.00w224	0.0u77w2	0.020674

CROSSING DATA FOR THE 2028 ON SITE ALT W CURRENT TRACK - DIKE CORRIDOR

Milepost u6.w6 Crossing ID u0u%4uf Accidents in 7 Lears 0

Description BNSF UDIKE RD

Paved? Trke f rban? False
GCX Base Type ' ights
Sa5ety Skp. Type None
GCX Alt Type ' ights
Sa5ety Skp. type None

No. RR Trac3s w

Train Speeds (mph)

Ma& Timetable	u0.0
Passenger	u0.0
Freight	u0.0
S- itch	6.0

Oigh- ay Tra5ic Characteristics

	Base	Alternate
OH ay ' anes	2	2.0
Dist 5om h- ay	0.u0	0.u
AADT	uxu00	uxu00
Akto T8 D Dist	f ni5rm	f ni5rm
Percent Trkc3s	u2.0	u2.0
8 5thisx, trailers	0.0	0.0
Trkc3 T8 D Dist	f ni5rm	f ni5rm
Percent Bks	0.0	0.0
Bks T8 D Dist	f ni5rm	f ni5rm

Costs in l900 j o5O- ay Improvement 0.0

Predicted Annkal Accidents

	Base	Alternate
Fatal	0.00074	0.00074
In¥kry	0.00w26	0.00w26
PD8	0.0u77w	0.0u77w
Total	0.02069	0.02069

Costs in l900 j

	Base	Alternate
Grade Crossing Devices		
8 $M	u.1	u.1
8 th. ' cycle	0.0	0.0
Capital		%w.1
Skpplementary Sa5ety		
8 $M	0.0	0.0
8 th. ' cycle	0.0	0.0
Capital		0.0

FEDERAL RAILROAD ADMINISTRATION

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CORRIDOR AND CROSSING DATA

M itho9t 5hased im5robementsP

7 ser)	Uche- 9U
Dataset)	Initial dataset
Corridor ID	40

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	2021 8 n Site Alt - pulanned TracUf S59r			Passenger	0.0	7 ni3rm
Technology Factors	0.60	0.60	0.60	Freight	20.0	7 ni3rm
Signal Synchronization?	False			Switch	0.0	7 ni3rm

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calc9lated) 2kfSe5f20: 6 6)66 5m

	Fatal	Injury	PDO	Total
Base	0.00k244	0.0kw4kk	0.: ((2vk	0.2: w1w0
Alternate	0.00: w2k	0.0: v4(4	0.0(1k2(	0.01v6: k

CROSSING DATA FOR THE 2028 ON SITE ALT W/ PLANNED TRACK - SPUR CORRIDOR

X ile5ost 0.(v — Crossing ID : 0: 1: 2V

Descri5tion YNSF f H EOER' A7 SER TYR

u abed? Tr9e	7 rBan? Tr9e
GCWYase Ty5e	u assibe
Sa3ety S95. Ty5e	None
GCWAlt Ty5e	j ights
Sa3ety S95. ty5e	None
No. RR TracUs	:

Train S5eeds Mn5hP	
X a, TimetaBle	: 0.0
u assenger	: 0.0
Freight	6.0
S- itch	4.0

Accidents in 6 Oears 0

' igh- ay Tra33c Characteristics	Base	Alternate
' L- ay j anes	2	2.0
Dist 3om h- ay	0.: 0	0.:
AADT	: %4k0	: %4k0
A9to T8 D Dist	7 ni3rm	7 ni3rm
u ercent Tr9cUs	6.0	6.0
8 3this%K trailers	0.0	0.0
Tr9cUT8 D Dist	7 ni3rm	7 ni3rm
u ercent Y9s	0.0	0.0
Y9s T8 D Dist	7 ni3rm	7 ni3rm

Costs in l000 & o3' - ay Im5robement 0.0

u redicted Ann9al Accidents	Base	Alternate
Fatal	0.000w.	0.00021
In$9ry	0.00ww	0.004: :
uD8	0.02((6	0.0: 04v
Total	0.04644	0.0: 4w1

Costs in l000 &	Base	Alternate
Grade Crossing Debices		
8 x X	0.2	: .1
8 th. j cycle	0.0	0.0
Ca5ital		wk.1
S955lementary Sa3ety		
8 x X	0.0	0.0
8 th. j cycle	0.0	0.0
Ca5ital		0.0

X ile5ost 2.(1 — Crossing ID : 0: 12(T

Descri5tion YNSF f 4RD A/ E

u abed? Tr9e	7 rBan? Tr9e
GCWYase Ty5e	Gates
Sa3ety S95. Ty5e	None
GCWAlt Ty5e	Ne- Technology :
Sa3ety S95. ty5e	None
No. RR TracUs	2

Train S5eeds Mn5hP	
X a, TimetaBle	1.0
u assenger	1.0
Freight	: 6.0
S- itch	4.0

Accidents in 6 Oears 0

' igh- ay Tra33c Characteristics	Base	Alternate
' L- ay j anes	k	k.0
Dist 3om h- ay	0.: 0	0.:
AADT	20%20	20%20
A9to T8 D Dist	7 ni3rm	7 ni3rm
u ercent Tr9cUs	: 6.0	: 6.0
8 3this%K trailers	0.0	0.0
Tr9cUT8 D Dist	7 ni3rm	7 ni3rm
u ercent Y9s	0.0	0.0
Y9s T8 D Dist	7 ni3rm	7 ni3rm

Costs in l000 & o3' - ay Im5robement 0.0

u redicted Ann9al Accidents	Base	Alternate
Fatal	0.000(1	0.0004k
In$9ry	0.001: w	0.00k01
uD8	0.04211	0.0: (kk
Total	0.0k: w2	0.0201(

Costs in l000 &	Base	Alternate
Grade Crossing Debices		
8 x X	2.6	6.0
8 th. j cycle	0.0	0.0
Ca5ital		210.0
S955lementary Sa3ety		
8 x X	0.0	0.0
8 th. j cycle	0.0	0.0
Ca5ital		0.0

CROSSING DATA FOR THE 2028 ON SITE ALT W/ PLANNED TRACK - SPUR CORRIDOR

X ile5ost 2.ww Crossing ID : 0: 12: J

Descri5tion YNSF f CAj IF8 RNIA H AO

u abed? Tr9e	7 rBan? Tr9e
GCWYase Ty5e	j ights
Sa3ety S95. Ty5e	None
GCWAlt Ty5e	Gates
Sa3ety S95. ty5e	None
No. RR TracUs	:

Train S5eeds Mh5hP	
X a, TimetaBle	: 0.0
u assenger	: 0.0
Freight	: 6.0
S- itch	4.0

Accidents in 6 Oears 0

' igh- ay Tra33c Characteristics	Base	Alternate
' L- ay j anes	2	2.0
Dist 3om h- ay	0.: 0	0.:
AADT	k%00	k%00
A9to T8 D Dist	7 ni3rm	7 ni3rm
u ercent Tr9cUs	w.0	w.0
8 3this%K trailers	0.0	0.0
Tr9cUT8 D Dist	7 ni3rm	7 ni3rm
u ercent Y9s	0.0	0.0
Y9s T8 D Dist	7 ni3rm	7 ni3rm

Costs in l000 & o3' - ay Im5robement 0.0

u redicted Ann9al Accidents	Base	Alternate
Fatal	0.000k0	0.000: 4
In$9ry	0.00k6:	0.00: k0
u D8	0.0: 60w	0.00k(w
Total	0.0: vv1	0.00(: v

Costs in l000 &	Base	Alternate
Grade Crossing Debices		
8 x X	: .1	2.6
8 th. j cycle	0.0	0.0
Ca5ital		: 0(.:
S955lementary Sa3ety		
8 x X	0.0	0.0
8 th. j cycle	0.0	0.0
Ca5ital		0.0

X ile5ost 4.(w Crossing ID : 0: 106A

Descri5tion YNSF f 8 REG8 N H AO

u abed? Tr9e	7 rBan? Tr9e
GCWYase Ty5e	Gates
Sa3ety S95. Ty5e	None
GCWAlt Ty5e	Ne- Technology :
Sa3ety S95. ty5e	None
No. RR TracUs	:

Train S5eeds Mh5hP	
X a, TimetaBle	: 0.0
u assenger	: 0.0
Freight	20.0
S- itch	4.0

Accidents in 6 Oears 0

' igh- ay Tra33c Characteristics	Base	Alternate
' L- ay j anes	k	k.0
Dist 3om h- ay	0.: 0	0.:
AADT	: 1%w0	: 1%w0
A9to T8 D Dist	7 ni3rm	7 ni3rm
u ercent Tr9cUs	6.0	6.0
8 3this%K trailers	0.0	0.0
Tr9cUT8 D Dist	7 ni3rm	7 ni3rm
u ercent Y9s	0.0	0.0
Y9s T8 D Dist	7 ni3rm	7 ni3rm

Costs in l000 & o3' - ay Im5robement 0.0

u redicted Ann9al Accidents	Base	Alternate
Fatal	0.000w(	0.00041
In$9ry	0.001k(	0.00k24
u D8	0.0212v	0.0: k: k
Total	0.04w60	0.0: 1w6

Costs in l000 &	Base	Alternate
Grade Crossing Debices		
8 x X	2.6	6.0
8 th. j cycle	0.0	0.0
Ca5ital		210.0
S955lementary Sa3ety		
8 x X	0.0	0.0
8 th. j cycle	0.0	0.0
Ca5ital		0.0

X ile5ost 4.11 Crossing ID : 0: 10(G

Descri5tion YNSF f IND7 STRIAj H AO

u abed? Tr9e	7 rBan? Tr9e
GCWYase Ty5e	j ights
Sa3ety S95. Ty5e	None
GCWAlt Ty5e	Gates
Sa3ety S95. ty5e	None
No. RR TracUs	:

Train S5eeds Mh5hP	
X a, TimetaBle	: 0.0
u assenger	: 0.0
Freight	20.0
S- itch	4.0

Accidents in 6 Oears 0

' igh- ay Tra33c Characteristics	Base	Alternate
' L- ay j anes	2	2.0
Dist 3om h- ay	0.: 0	0.:
AADT	: 2%00	: 2%00
A9to T8 D Dist	7 ni3rm	7 ni3rm
u ercent Tr9cUs	: 6.0	: 6.0
8 3this%K trailers	0.0	0.0
Tr9cUT8 D Dist	7 ni3rm	7 ni3rm
u ercent Y9s	0.0	0.0
Y9s T8 D Dist	7 ni3rm	7 ni3rm

Costs in l000 & o3' - ay Im5robement 0.0

u redicted Ann9al Accidents	Base	Alternate
Fatal	0.0006:	0.000: (
In$9ry	0.006wk	0.00: w1
u D8	0.0: v: 1	0.006v6
Total	0.026k4	0.00w11

Costs in l000 &	Base	Alternate
Grade Crossing Debices		
8 x X	: .1	2.6
8 th. j cycle	0.0	0.0
Ca5ital		: 0(.:
S955lementary Sa3ety		
8 x X	0.0	0.0
8 th. j cycle	0.0	0.0
Ca5ital		0.0

CROSSING DATA FOR THE 2028 ON SITE ALT W/ PLANNED TRACK - SPUR CORRIDOR

X ile5ost 6.06 Crossing ID : 0: 10vC

Descri5tion YNSF f H EOER' A7 SER TYR

u abed? Tr9e	7 rBan? Tr9e
GCWYase Ty5e	u assibe
Sa3ety S95. Ty5e	None
GCWAlt Ty5e	j ights
Sa3ety S95. ty5e	None
No. RR TracUs	:

Train S5eeds Mh5hP

X a, TimetaBle	: 0.0
u assenger	: 0.0
Freight	: 6.0
S- itch	4.0

Accidents in 6 Oears 0

' igh- ay Tra33c Characteristics

	Base	Alternate
' L- ay j anes	2	2.0
Dist 3om h- ay	0.: 0	0.:
AADT	100	100
A9to T8 D Dist	7 ni3orm	7 ni3orm
u ercent Tr9cUs	6.0	6.0
8 3this%K trailers	0.0	0.0
Tr9cUT8 D Dist	7 ni3orm	7 ni3orm
u ercent Y9s	0.0	0.0
Y9s T8 D Dist	7 ni3orm	7 ni3orm

Costs in l000 & o3' - ay Im5robement 0.0

u redicted Ann9al Accidents

	Base	Alternate
Fatal	0.000(4	0.0002k
In9ry	0.00w0:	0.002w4
u D8	0.024k4	0.00v: k
Total	0.04: 0w	0.0: 2: 2

Costs in l000 &

	Base	Alternate
Grade Crossing Debices		
8 x X	0.2	: .1
8 th. j cycle	0.0	0.0
Ca5ital		wk.1
S955lementary Sa3ety		
8 x X	0.0	0.0
8 th. j cycle	0.0	0.0
Ca5ital		0.0

X ile5ost (.kw Crossing ID : 0: 1: w7

Descri5tion YNSF f REON8 j DS Aj 7 X

u abed? Tr9e	7 rBan? Tr9e
GCWYase Ty5e	j ights
Sa3ety S95. Ty5e	None
GCWAlt Ty5e	Gates
Sa3ety S95. ty5e	None
No. RR TracUs	2

Train S5eeds Mh5hP

X a, TimetaBle	: 0.0
u assenger	: 0.0
Freight	: 0.0
S- itch	4.0

Accidents in 6 Oears 0

' igh- ay Tra33c Characteristics

	Base	Alternate
' L- ay j anes	k	k.0
Dist 3om h- ay	0.: 0	0.:
AADT	4%00	4%00
A9to T8 D Dist	7 ni3orm	7 ni3orm
u ercent Tr9cUs	6.0	6.0
8 3this%K trailers	0.0	0.0
Tr9cUT8 D Dist	7 ni3orm	7 ni3orm
u ercent Y9s	0.0	0.0
Y9s T8 D Dist	7 ni3orm	7 ni3orm

Costs in l000 & o3' - ay Im5robement 0.0

u redicted Ann9al Accidents

	Base	Alternate
Fatal	0.0006k	0.00020
In9ry	0.006kv	0.00204
u D8	0.020w	0.00w(v
Total	0.02(14	0.00vv4

Costs in l000 &

	Base	Alternate
Grade Crossing Debices		
8 x X	: .1	2.6
8 th. j cycle	0.0	0.0
Ca5ital		: 0(.:
S955lementary Sa3ety		
8 x X	0.0	0.0
8 th. j cycle	0.0	0.0
Ca5ital		0.0

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

)- ithopt vhased imvroMementsb

6 ser(	Uchе- pU
Dataset(	Initial dataset
Corridor ID	57

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	2021 8 n Site Alt - k3 lanned TracUf DiUe					
				Passenger	0.0	6 ni4brm
Technology Factors	0.w0	0.w0	0.w0	*Freight*	25.0	6 ni4brm
Signal Synchronization?	False			*Switch*	0.0	6 ni4brm

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calcplated(2: fSevf207w w(w2 vm

	Fatal	Injury	PDO	Total
Base	0.000w1u	0.00: 22u	0.07ww: 2	0.0205wu
Alternate	0.000w1u	0.00: 22u	0.07ww: 2	0.0205wu

CROSSING DATA FOR THE 2028 ON SITE ALT W/ PLANNED TRACK - DIKE CORRIDOR

P ilevost 75.: 5 Crossing ID 7079u76 Accidents in wYears 0

Descrivtion KNSF f DIOE RD

3 aMed? Trpe	6 rXan? False
GCB Kase Tyve	Lights
Sa4ety Spv. Tyve	None
GCB Alt Tyve	Lights
Sa4ety Spv. tyve	None
No. RR TracUs	:

Train Sveeds)mvhb

P ax TimetaXle	70.0
3 assenger	70.0
Freight	70.0
S- itch	5.0

High- ay Tra4ic Characteristics

	Base	Alternate
H'- ay Lanes	2	2.0
Dist 4om h- ay	0.70	0.7
AADT	7,700	7,700
Apto T8 D Dist	6 ni4brm	6 ni4brm
3 ercent TrpcUs	72.0	72.0
8 4this, % trailers	0.0	0.0
TrpcUT8 D Dist	6 ni4brm	6 ni4brm
3 ercent Kps	0.0	0.0
Kps T8 D Dist	6 ni4brm	6 ni4brm

Costs in '000 $ o4H- ay ImvroMement 0.0

3 redicted Annpal Accidents

	Base	Alternate
Fatal	0.000wu	0.000wu
Injpry	0.00: 25	0.00: 25
3 D8	0.07ww:	0.07ww:
Total	0.0205V	0.0205V

Costs in '000 $

	Base	Alternate
Grade Crossing DeMices		
8 &P	7.1	7.1
8 th. Lcycle	0.0	0.0
Cavital		9: .1
Spvvlementary Sa4ety		
8 &P	0.0	0.0
8 th. Lcycle	0.0	0.0
Cavital		0.0