

MEMORANDUM

Date: June 22, 2018

Project #: 21562

To: Colin McArthur, AICP

From: Zachary Bugg, PhD, Diego Arguea, PE, and Phill Worth

Project: University of Oregon North Campus Conditional Use Permit Application

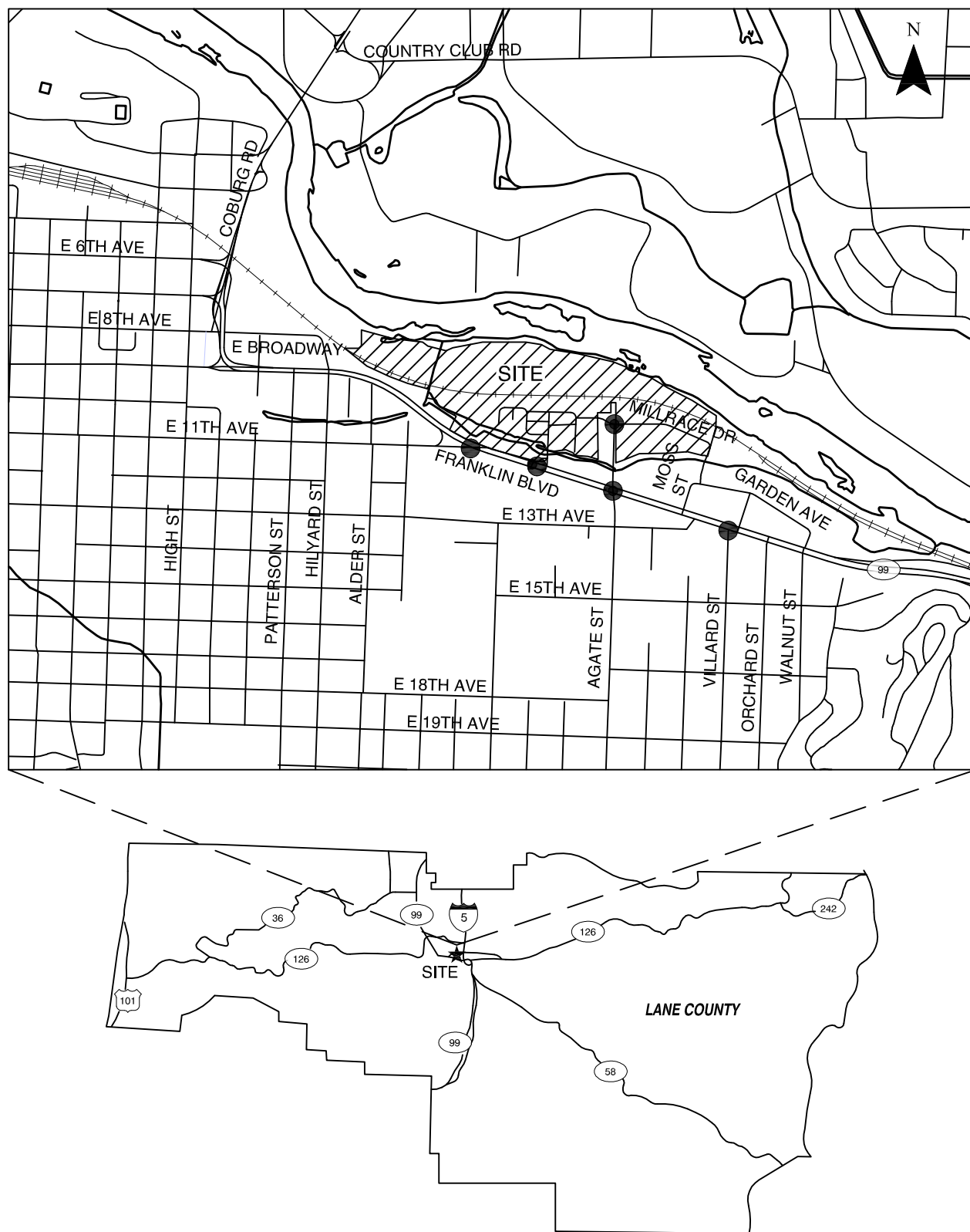
Subject: Transportation Assessment

The University of Oregon proposes to develop up to 1,369,500 square feet of new university uses and research related to the university on the North Campus, an area generally bounded by Franklin Boulevard to the south and the Willamette River to the north. This document includes a transportation assessment of the proposed North Campus, including potential transportation-related impacts to the existing transportation system. This assessment has been prepared to support the accompanying conditional use permit for the North Campus. While a formal traffic impact analysis is not required for conditional use applications, a “technical analysis (particularly with respect to transportation facilities)” should be prepared to address the safety and operations of the existing transportation system’s adequacy and ability to accommodate all modes (City Code 9.3725 and Eugene Planning Letter, March 28, 2018 – Attachment A).

The assumptions and methodology contained in this document are based upon previous studies for University of Oregon, including the proposed Knight Campus for Accelerating Scientific Impact, and discussions with City of Eugene staff. No specific long-term timeframe has been established for buildout of the North Campus, so this assessment assumes a horizon year of 2035, which is concurrent with the planning horizon of the City of Eugene’s current Transportation System Plan. Figure 1 displays a map of the site vicinity, including identified potential study intersections, and Figure 2 shows the proposed Master Site Plan for the North Campus Conditional Use Permit application.

SCOPE OF THE REPORT

This assessment estimates the transportation-related impacts associated with the proposed North Campus. The study intersections and scope of this assessment were identified after a scoping process with City staff. The assessment included herein is the result of this scoping process and represents the recommended trip generation, growth assumptions, study intersections and agreed-upon methodology for operational assessments. The following intersections are considered as part of this transportation

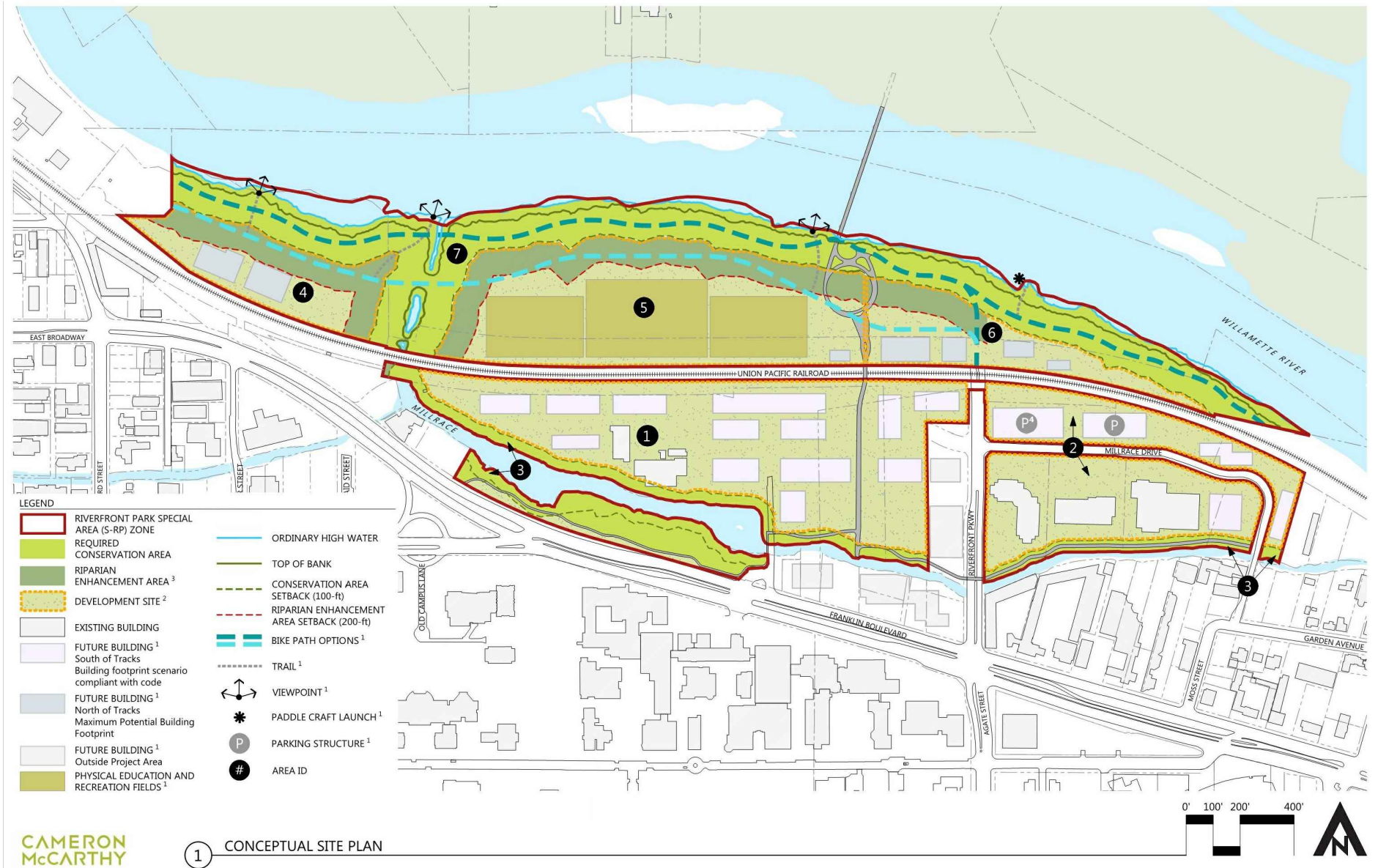


● - Study Intersection

**Site Vicinity
Eugene, Oregon**

**Figure
1**

H:\2121562 - U of O Riverfront Master Plan\dwg\figs\21562_TIA.dwg Jun 13, 2018 - 2:54pm - acary Layout Tab: FIG 2 - Site Plan



Plan provided by Cameron McCarthy and dated 06/13/2018

**Proposed Site Plan
Eugene, Oregon**

**Figure
2**

assessment, based on the potential impact of 50 or more net new trips during a weekday AM or PM peak hour. Millrace Drive/Riverfront Parkway

1. Franklin Boulevard/E 11th Avenue
2. Franklin Boulevard/Onyx Street
3. Franklin Boulevard/Riverfront Parkway-Agate Street
4. Franklin Boulevard/Villard Street

Per scoping discussions with City staff and consistent with previous traffic analysis conducted for the Knight Campus for Accelerating Scientific Impact, the weekday PM peak hour was identified as the critical time period for this assessment. This document evaluates the following transportation issues:

- Existing land-use and transportation-system conditions within the site vicinity during the weekday PM peak hour;
- Developments and transportation improvements planned in the study area;
- Forecast year 2035 background traffic conditions (without the proposed North Campus) during the weekday PM peak hour, based on the Eugene Transportation System Plan;
- Trip generation and distribution estimates for the proposed North Campus;
- Forecast year 2035 (with the proposed North Campus) total traffic conditions during the weekday PM peak hour; and,
- On-site traffic operations and circulation.

EXISTING CONDITIONS

The existing conditions identify the site conditions and current operational and geometric characteristics of the roadways within the study area. These conditions will be compared with future conditions later in this report.

Kittelsohn & Associates, Inc. (KAI) staff visited and inventoried the proposed North Campus project area and surrounding study area in October 2017. At that time, KAI collected information regarding site conditions, adjacent land uses, existing traffic operations, and transportation facilities in the study area.

Site Conditions and Adjacent Land Uses

The proposed North Campus is located on approximately 77 acres bounded by the Willamette River to the north and Millrace Drive to the south. The site currently includes a mix of university, research park, and recreation uses, including the university central power station and other buildings related to the operations of the university, fine art studios, the Urban Farm, university research facilities, three buildings that were developed as part of the Riverfront Research Park, surface parking lots, public bike

paths, and two recreation fields. Adjacent land uses are predominantly institutional (university) and recreational, with some commercial to the south along Franklin Boulevard.

Transportation Facilities

Each of the study area roadways is summarized in Table 1 (Reference 1).

Table 1: Existing Transportation Facilities and Roadways in the Study Area

Roadway	Functional Classification (Eugene)	National Highway System (NHS) Designation	Number of Lanes	Posted Speed	Sidewalks	Bicycle Lanes	On-Street Parking
Franklin Blvd	Major Arterial	Statewide Highway ¹	6	35 mph	Yes	No	No
Agate St	Minor Arterial	None	2	25 mph	Yes	Yes	No
11th Ave	Minor Arterial	Intermodal Connector	3	25 mph	Yes	No	No
Riverfront Pkwy	Local Street	None	2-3	25 mph	Yes	Yes	No
Millrace Dr	Local Street	None	2	25 mph	Yes	No	No
Onyx St	Local Street	None	2	25 mph	Yes	No	No
Villard St	Local Street	None	2-3	25 mph	Yes	No	Yes

¹Jurisdiction of Franklin Boulevard currently under City of Eugene

Roadway Facilities

Figure 3 illustrates the existing lane configurations and traffic control devices at the study intersections. The primary roadway within the study area is Franklin Boulevard, which is a major arterial that connects the site location with downtown Eugene to the west and Interstate 5 to the east. Agate Street and 11th Avenue are both minor arterials and connect the site vicinity with other areas of Eugene. Riverfront Parkway, Millrace Drive, Onyx Street, and Villard Street are all classified as local streets. Within the study area, parking is generally regulated by UO staff and is provided at several surface lots. Metered on-street parking is available on Villard Street. U-turns are allowed at intersections along Franklin Boulevard to account for the presence of a grassy median. At the Franklin Boulevard/Onyx Street intersection, westbound left turns and U-turns are accomplished via a short jug-handle in the northeast corner of the intersection.

Pedestrian and Bicycle Facilities

Field observations and counts revealed a high level of pedestrian and bicycle activity on the study area roadways, including movements crossing and parallel to Franklin Boulevard, consistent with the surrounding University-associated land uses and generally urban environment. Each of the study area roadways has sidewalks on both sides, but there are no separate bicycle facilities other than bicycle lanes along Agate Street/Riverfront Parkway and in the eastbound direction on Franklin Boulevard between 13th Avenue and Villard Street. Video observations at the study intersections revealed that pedestrian push buttons are activated during nearly every cycle of the weekday AM and PM peak hours at the

intersections along Franklin Boulevard—the traffic operations review accounted for this as described later in this report.

The extension of Riverfront Parkway, north of Millrace Drive serves as a pedestrian and bicycle facility and prohibits vehicular activity. This multi-use pathway has a grade-separated undercrossing of the freight railroad that runs parallel with Franklin Boulevard. It also connects with the Ruth Bascom

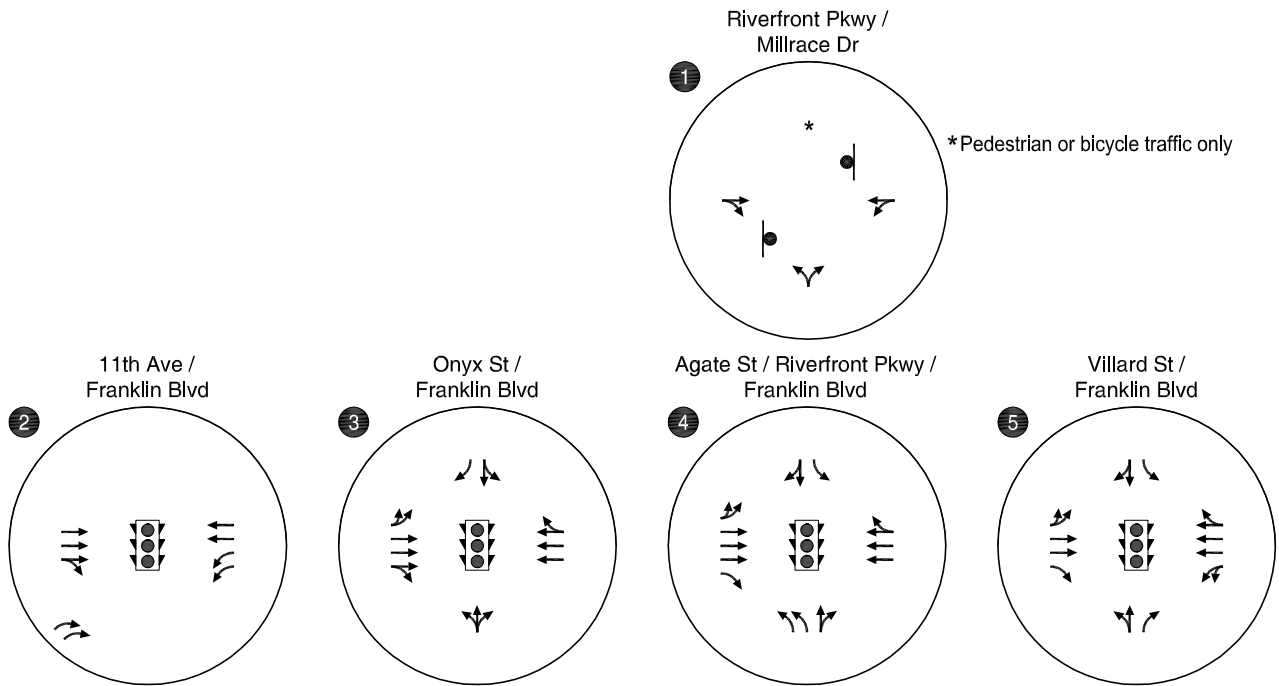
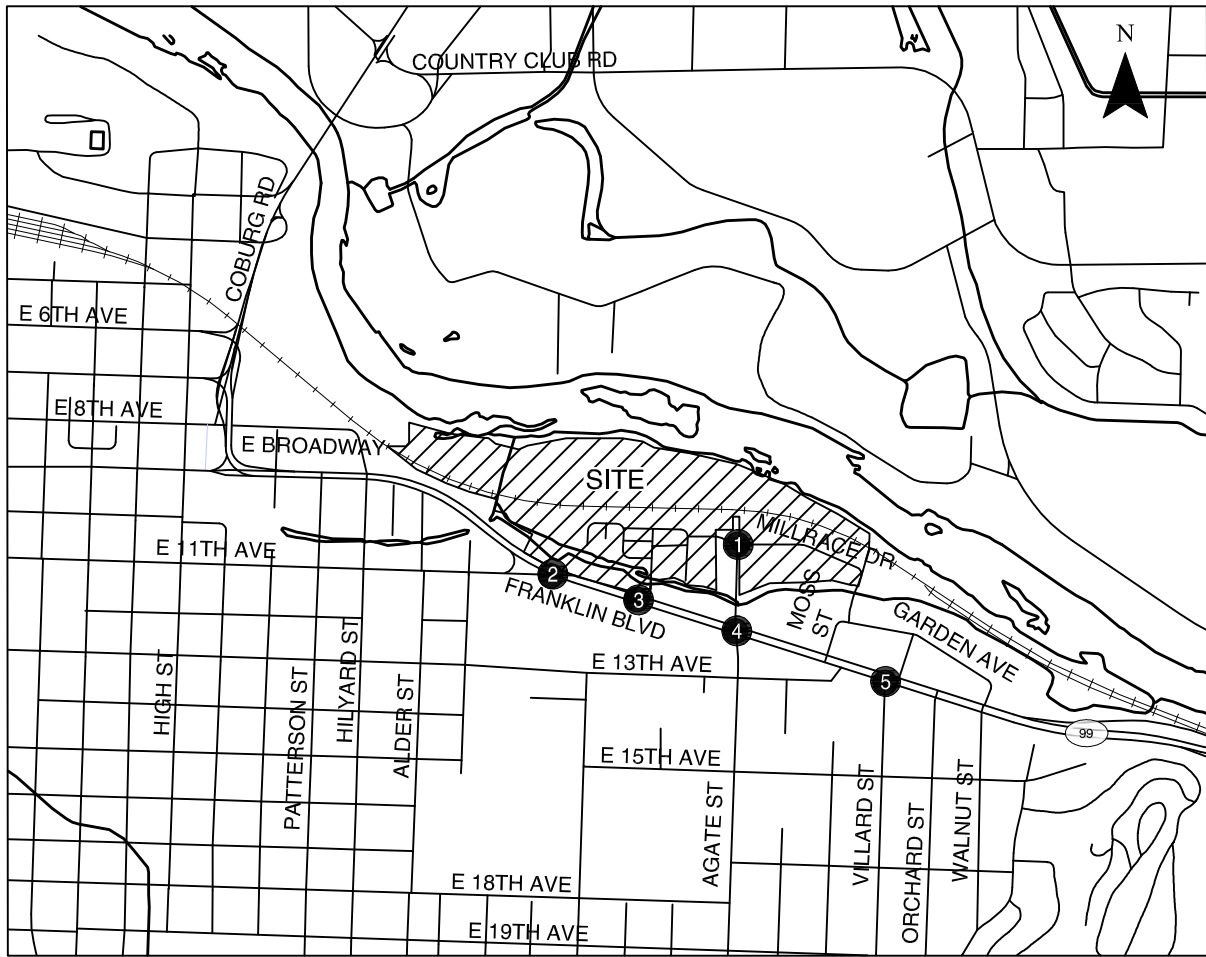
Riverfront Bike Path and other pedestrian and bicycle facilities throughout the North Campus area. A second grade-separated multi-use pathway undercrossing of the railroad is located approximately 420 feet to the west that connects to a pedestrian-bicycle bridge across the Millrace.

The Ruth Bascom Riverfront Bike Path currently runs through the center of the proposed North Campus, connecting the north leg of the Riverfront Parkway/Millrace Drive intersection with points west along the Willamette River, and it will be maintained in North Campus development per Figure 2.

Transit Facilities

Regional transit service is provided via Lane Transit District via the following bus routes (Reference 2):

- The Emerald Express (EmX) Bus Rapid Transit service connects the site with West Eugene, Downtown Eugene, Downtown Springfield, Gateway Mall, and Sacred Heart Medical Center at Riverbend. Weekday service is provided from approximately 6:00 AM to 12:00 AM, with headways as low as 10 minutes during most of the day. Service is more limited on weekends. Buses run within the median of Franklin Boulevard and stop on the east side of Franklin Boulevard/Agate Street.
- Route 91: McKenzie Bridge connects the site vicinity and Eugene with localities to the east of Eugene, including Springfield, Waterville, Leaburg, and McKenzie Bridge. Service is provided twice during the morning and afternoon commutes. Multiple transit stops are located along Franklin Boulevard near the site.
- Route 98: Cottage Grove connects the site vicinity and Eugene with areas south of Eugene, including Lane Community College, Creswell, and Cottage Grove. Eight buses serve the route during a typical weekday, with a span of service from approximately 6:00 AM to 8:00 PM. Multiple transit stops are located along Franklin Boulevard near the site.
- Diamond Express connects the study area with the Eugene Amtrak Station and Oakridge. Service is provided twice during the morning and afternoon commutes. Transit stops are provided in either direction of Franklin Boulevard adjacent to the site.



**Existing Lane Configurations
and Traffic Control Devices
Eugene, Oregon**

**Figure
3**

Traffic Volumes and Peak Hour Operations

Manual turning movement counts were obtained for the study intersections in May 2017 while classes were in regular session. Counts were obtained on a mid-weekday from 2:30 to 6:30 PM, and the system-wide PM peak hour was found to occur between 4:55 PM and 5:55 PM. Figure 4 provides a summary of the year 2017 turning-movement counts for the weekday PM peak hour. *Attachment "B" contains the traffic count worksheets used in this study.*

Current Levels of Service

All level-of-service analyses described in this report were performed in *Synchro 9* in accordance with the procedures stated in the 2000 *Highway Capacity Manual* (Reference 3). All intersection level-of-service evaluations used the peak 60-minute flow rate during the weekday PM peak hour. The transportation system will likely operate under conditions better than those described in this report during time periods outside the PM peak hour.

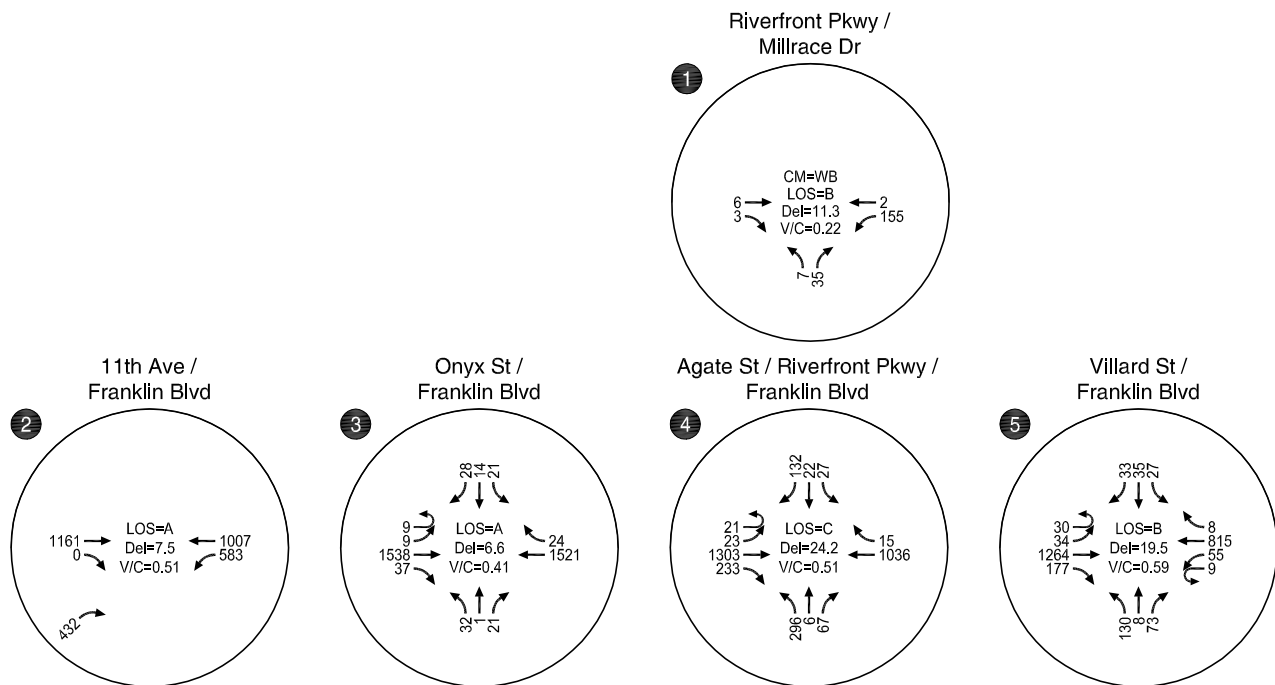
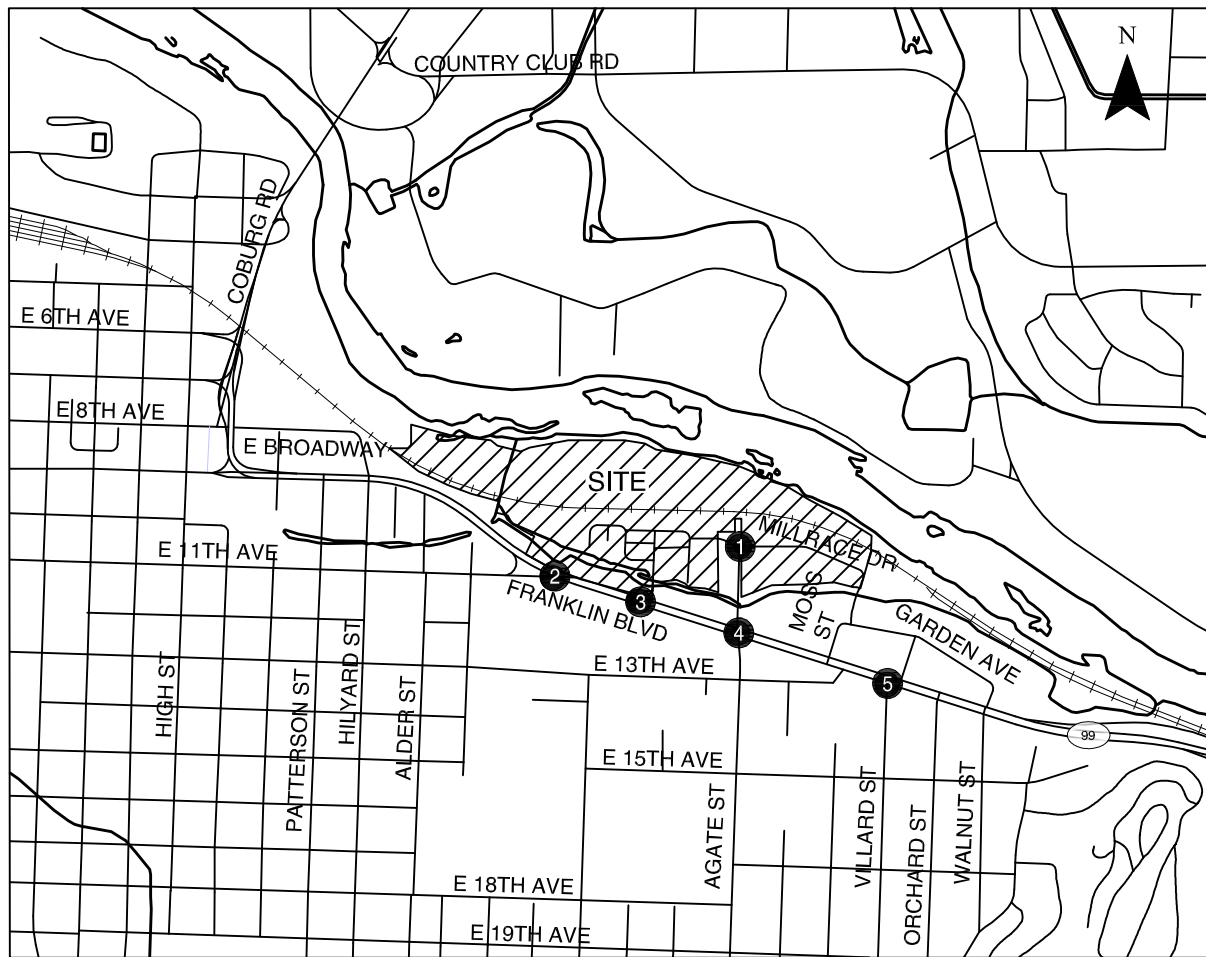
Figure 4 summarizes the level-of-service assessment for the study intersections under the weekday PM peak hour existing traffic conditions. The City of Eugene defines level-of-service (LOS) "D" or better as acceptable performance at signalized intersections. At unsignalized intersections, the critical movement must operate at LOS D or better.

As the figure shows, each of the study intersections currently operates at an acceptable level of service during the weekday PM peak hour. *Attachment "C" includes the level-of-service worksheets under existing traffic conditions.*

Traffic Safety

Oregon Department of Transportation (ODOT) provided the latest five years of reported crash data at the study intersections¹, which includes the period from January 1, 2011 to December 31, 2015. Table 2 summarizes the reported crash data at the study intersections, including the crash severity and crash type of each crash. *Attachment "D" includes the raw crash data provided by ODOT.*

¹ With the transition of Franklin Boulevard from State to City jurisdiction, ODOT no longer maintains a high-crash list for any of the study intersections within the study area.



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
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 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

**Existing Traffic Conditions
 Weekday PM Peak Hour
 Eugene, Oregon**

Figure
4

Table 2: ODOT Reported Crash Data (January 1, 2011 to December 31, 2015)

Intersection	Crash Severity		Crash Type							Total Crashes	Crash Rate*
	Injury	PDO	Fixed Object	Head On	Rear End	Side-swipe	Turning	Angle	Pedestrian		
Millrace Dr/ Riverfront Pkwy	0	1	1	0	0	0	0	0	0	1	0.26
Franklin Blvd/ 11th Ave	3	3	0	1	1	1	2	1	0	6	0.10
Franklin Blvd/ Onyx St	6	2	0	0	4	0	4	0	0	8	0.13
Franklin Blvd/ Riverfront Pkwy/Agate St	3	10	0	0	12	0	0	0	1	13	0.22
Franklin Blvd/ Villard St	10	8	1	0	5	0	6	5	1	18	0.34

*Per million entering vehicles

A review of the reported crash data did not reveal any specific crash trends or deficiencies, and each of the intersection crash rates was found to be well below 1.00 per million entering vehicles. *Appendix “E” contains the reported crash data received from ODOT.*

YEAR 2035 BACKGROUND TRAFFIC CONDITIONS

The year 2035 background traffic assessment identifies how the study area’s transportation system will operate without the proposed North Campus. The assessment includes traffic attributed to planned developments within the study area and general growth in the region but does not include traffic associated with the North Campus.

General Background Growth

The 2035 City of Eugene Transportation System Plan (TSP) was reviewed to estimate future volumes along Franklin Boulevard within the study area (Reference 4). The TSP-recommended improvements are based on estimated turning movement volumes at two study intersections: Franklin Boulevard/11th Avenue and Franklin Boulevard/Agate Street/Riverfront Parkway². The Transportation Impact Analysis report for the recently approved Knight Campus development also was reviewed and incorporated into the 2035 background conditions. This approach provides a reasonable worst-case assessment, given that the TSP anticipated growth on the UO campus, as well as in the immediate vicinity.

Planned Developments and Transportation Improvements

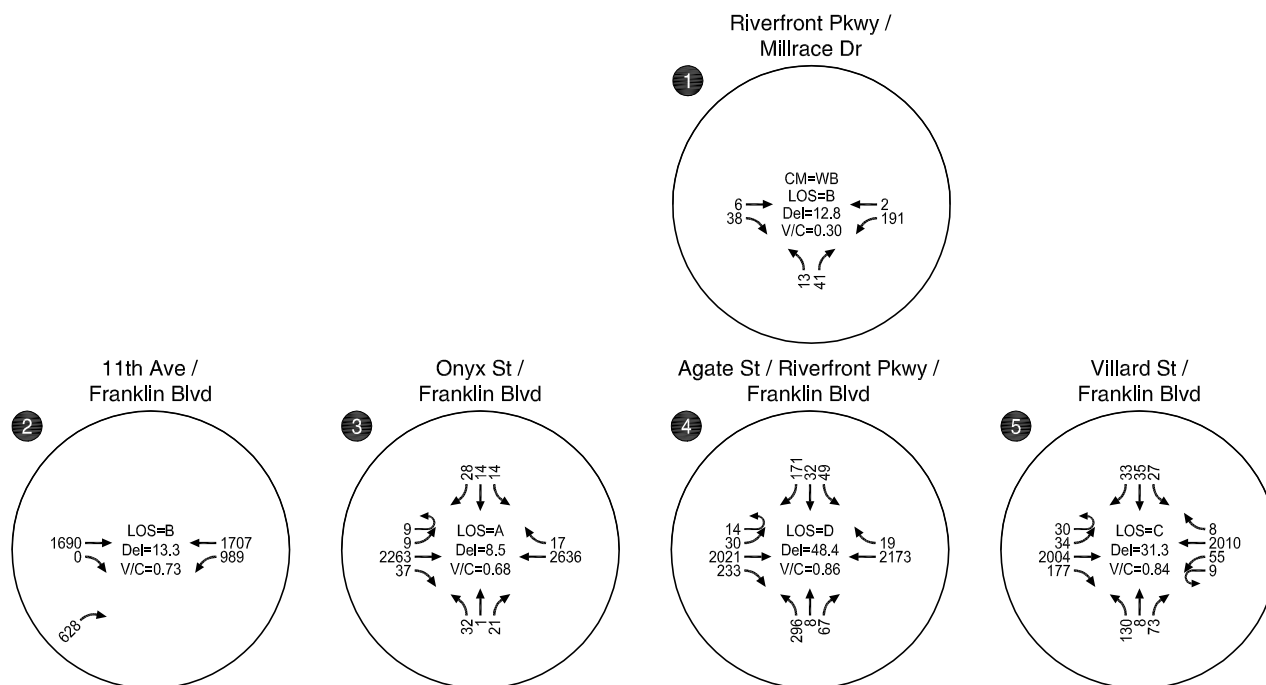
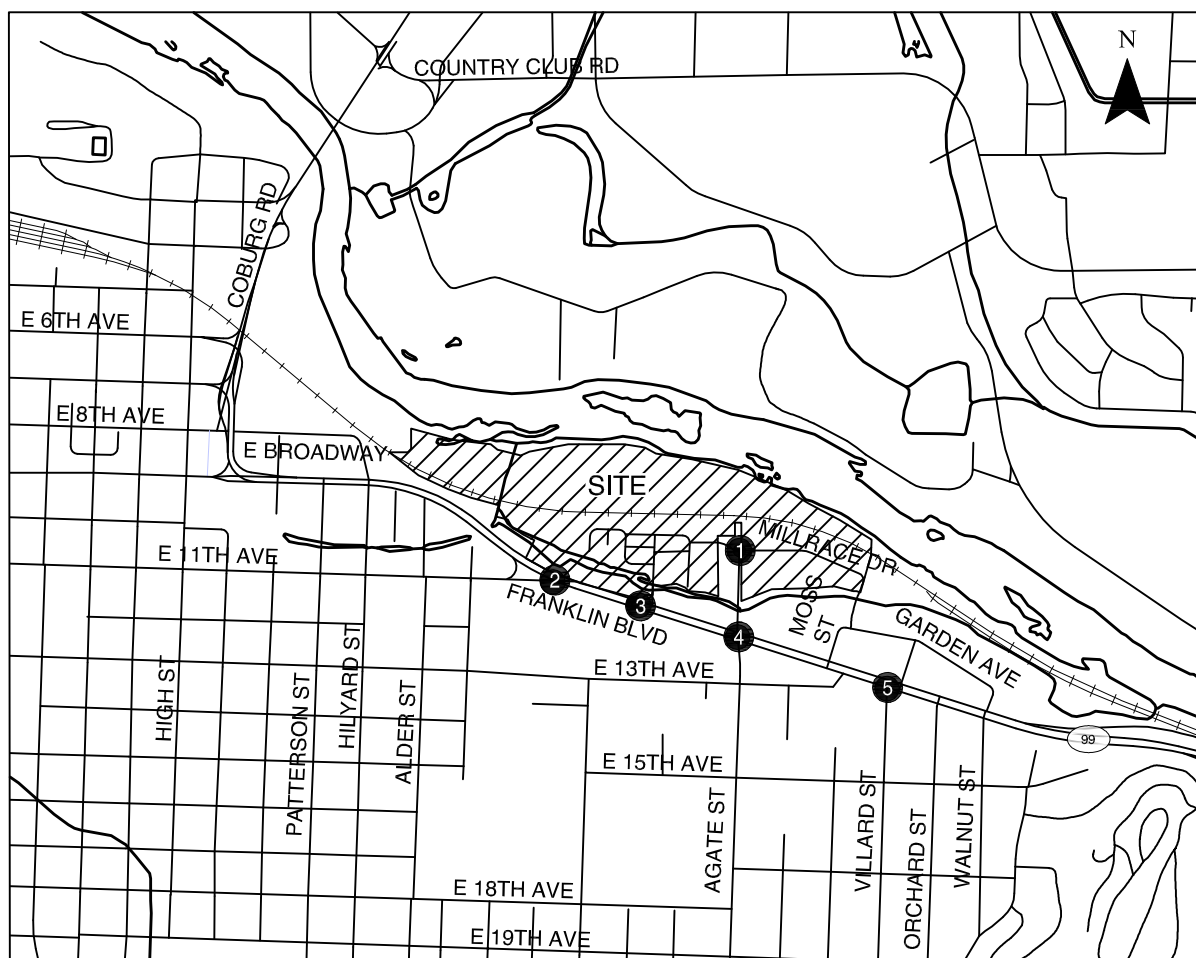
The Knight Campus for Accelerating Scientific Impact will replace several existing university-related and other land uses north of Franklin Boulevard between Onyx Street and Riverfront Parkway, with full build-

² The final adopted TSP does not include forecast volumes in the primary document. Rather, the volumes applied to this analysis are based on technical memoranda and analysis included in the TSP Technical Appendix, Volume 2.

out expected by 2020. Both automobile and non-automobile trips associated with the Knight Campus were included in the 2035 background traffic assessment as in process trips.

Levels of Service

Figure 5 displays the year 2035 background traffic volumes at the study intersections, as well as the corresponding traffic levels of service. ***As shown, each of the study intersections is forecast to continue operating at acceptable levels of service during the weekday PM peak hour.*** Attachment “E” contains the year 2035 background traffic levels of service worksheets.



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**2035 Background Traffic Conditions
 Weekday PM Peak Hour
 Eugene, Oregon**

Figure
5

NORTH CAMPUS DEVELOPMENT PLAN

The North Campus will be developed on an approximately 77-acre site. Existing development includes a mix of university, research park, and recreation uses, including the university central power station and other buildings related to the operations of the university, fine art studios, the Urban Farm, university research facilities, three buildings that were developed as part of the Riverfront Research Park, surface parking lots, public bike paths, and two recreation fields. The proposed development will displace approximately 240,604 square feet of existing university uses and construct up to 1,369,500 square feet of new university uses, including additional university research uses and research related to the university. This study assumes that all passenger car access to the site is expected to occur via proposed parking facilities to be located at the Riverfront Parkway/Millrace Drive intersection. UO anticipates providing approximately 1,100 vehicle parking stalls in this vicinity, including the 400+ space parking garage to be built as a part of the Knight Campus development, which is expected to be completed by 2020.

Trip Generation

Trip generation estimates for the proposed North Campus were developed based on trip rates included in *Trip Generation, 10th Edition*, published by the Institute of Transportation Engineers (ITE, Reference 5). Two ITE trip generation land uses were considered for the site: University/College (land use code 550) and Research and Development Center (land use code 760). The University/College code estimates trip generation based upon the number of students and employees anticipated to attend or work at a University/College facility, while the Research and Development Center code estimates trips based upon the building area (in square feet). While the Research and Development Center land use was used to estimate the trip generation associated with the recently-approved Knight Campus, the University of Oregon no longer emphasizes research and development activities as the primary use for the North Campus but foresees it as one of many activities that will occur. The 2018 North Campus Master Site Plan anticipates a similar range of uses to those that already exist on the campus. As such, the University Land Use Code (550) is most representative of the Plan's intentions.

Student/Faculty Ratio

Per scoping discussions, the North Campus is forecast to accommodate a student population increase of 3,209 students. Table 3 displays the estimated site-generated trips associated with this student population increase—this represents a combination of student and faculty trips. Based on data provided by University staff, the North Campus is expected to maintain the current approximate proportions of 82 percent students and 18 percent faculty/staff/employees—this is reflected in Table 3.

Mode Split

A recent University mode split survey indicated approximately 84 percent of students and 42 percent of staff commute to campus by non-automobile modes. Discussion of additional pedestrian and bicycle demand on the transportation system is provided later in this document.

Table 3: Estimated Trip Generation

Land Use	ITE Code	Size	Weekday Trips	Weekday PM Peak Hour		
				Total	In	Out
University	550	3,209 students	4,428	513	164	349
Student Trips (82%)			3,632	421	134	287
Staff Trips (18%)			796	92	30	62
Non-automobile Student Trips (84%)			(3,050)	(354)	(113)	(241)
Non-automobile Staff Trips (42%)			(334)	(39)	(13)	(26)
Net New Automobile Trips			1,044	120	38	82

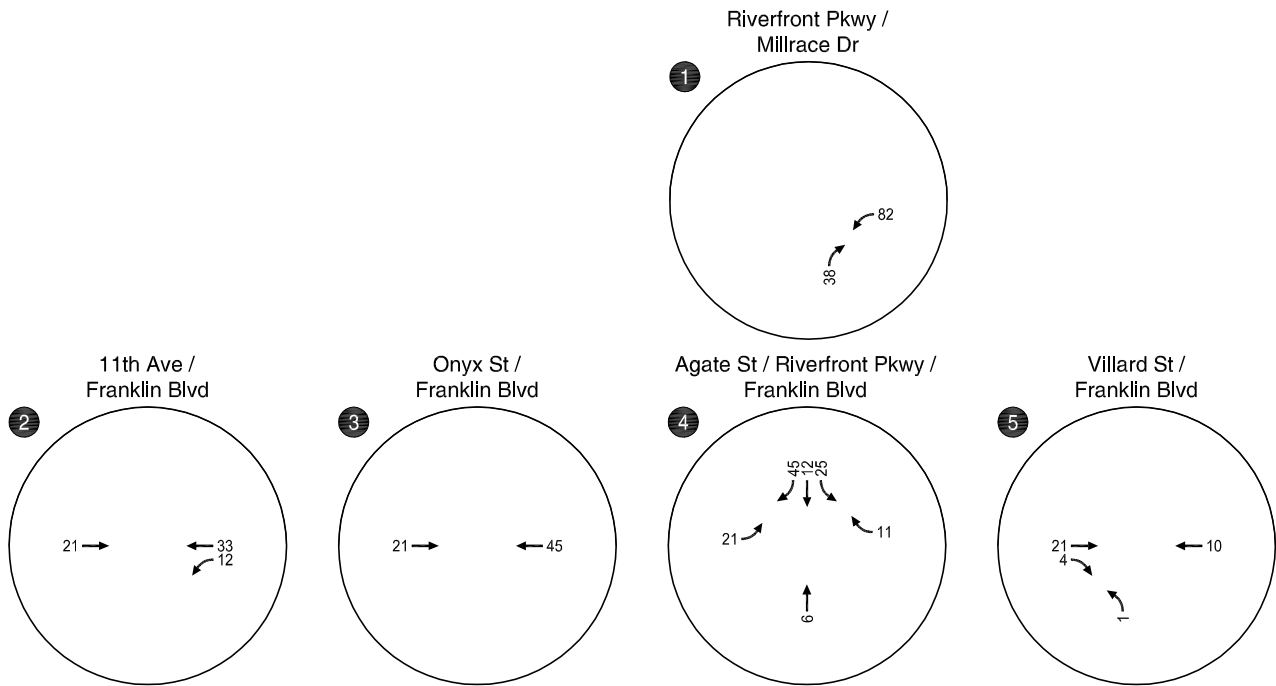
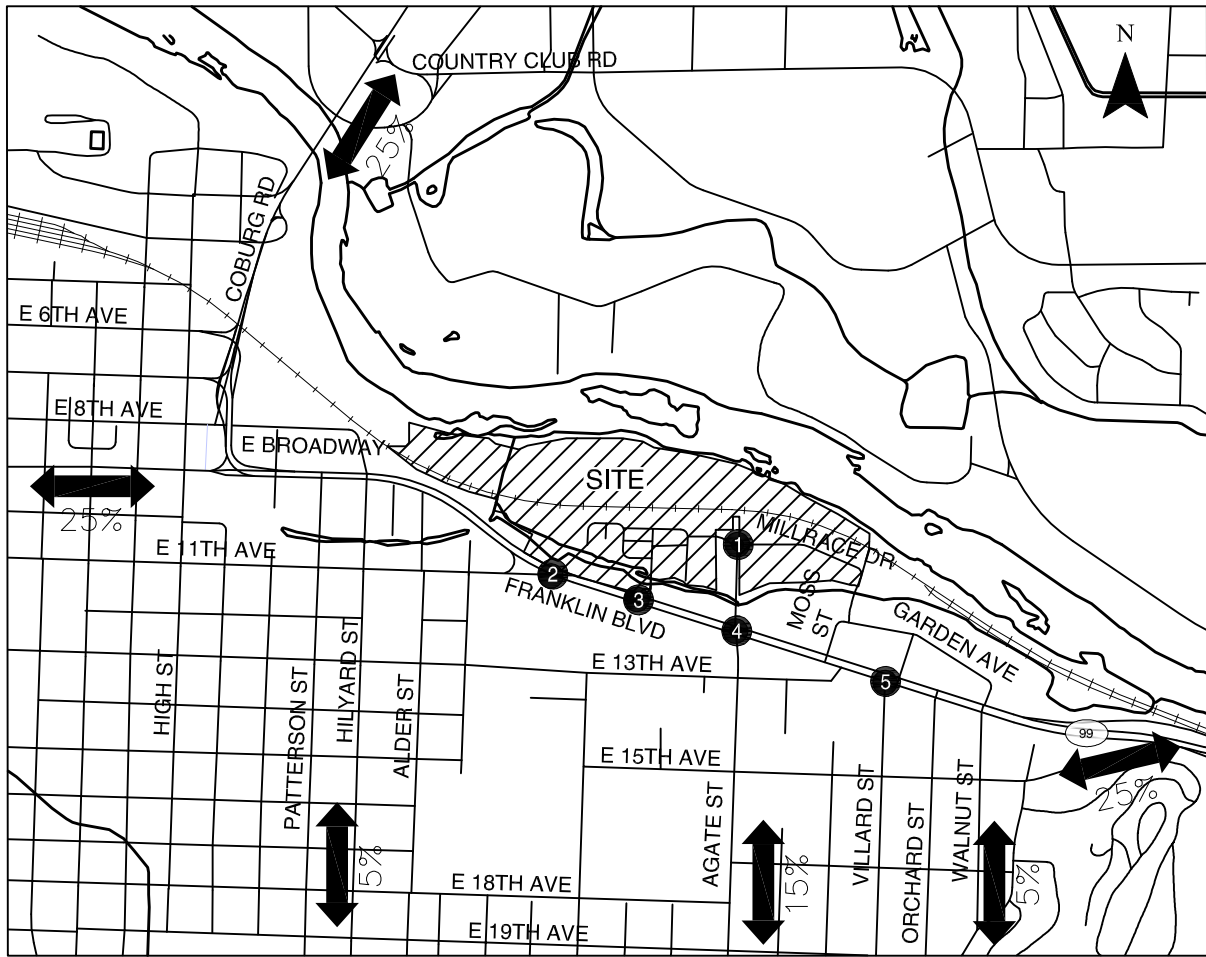
As shown, the proposed North Campus is expected to generate approximately 1,044 net new weekday daily automobile trips, of which 120 will occur during the PM peak hour (38 in, 82 out).

Trip Distribution and Assignment

Trips associated with the proposed North Campus were distributed as follows:

- 25 percent to the north along Coburg Road,
- 25 percent to the west along Broadway,
- 5 percent to the south along Patterson Street,
- 15 percent to the south along Agate Street,
- 5 percent to the south along Villard Street, and
- 25 percent to the east along Franklin Boulevard.

This trip distribution pattern was based upon previous University of Oregon studies and knowledge of surrounding demographics and regional land uses. It has been assumed that all automobile trips will access the North Campus via the proposed parking garage to be located at the northeast corner of the Riverfront Parkway/Millrace Drive intersection. This is a reasonable worst-case assumption, as it places all North Campus parking demand in one location. Figure 6 displays the assignment of trips to the study intersections.



**Site-Generated Trips
Weekday PM Peak Hour
Eugene, Oregon**

**Figure
6**

PEDESTRIAN AND BICYCLE TRIPS

Pedestrian and bicycle access to the North Campus will occur at the following locations:

- Via the Ruth Bascom Riverfront Bike Path and a parallel sidewalk, which is a northward extension of Riverfront Parkway. This connection also serves as the main pedestrian route to the parking garage at the northeast corner of Riverfront Parkway/Millrace Drive.
- Via a second railroad underpass connecting to existing university buildings, a bridge across the Millrace and to facilities on Onyx Street.
- To the west via the Ruth Bascom Riverfront Bike Path, which connects to Hillyard Street toward Downtown Eugene.
- To the north via the Frohnmyer Bridge over the Willamette River, which connects to Day Island and the sports complex.

Table 4 displays the estimated peak hour pedestrian and bicycle demand associated with the North Campus.

Table 4. Peak Hour Pedestrian and Bicycle Trips

Mode	Weekday PM Peak Hour		
	Total	In	Out
Pedestrian	301	97	204
Bicycle	92	29	63

Students and UO employees are expected to travel between areas of campus primarily by walking or biking. Connections include signalized crossings of Franklin Boulevard at Villard, Agate-Riverfront and Onyx. An enclosed pedestrian bridge over Franklin Boulevard is anticipated with construction of the Knight Campus buildings, providing an option for safe, attractive and all-weather crossing directly between both areas of campus.

Intersections along Franklin Boulevard at Onyx Street, Riverfront Parkway and Villard are signalized and have pedestrian crossings (with median refuges), ramps, and signal heads. In general, these pedestrian and bicycle crossing facilities are adequate to accommodate the increased demand associated with buildout of the North Campus.

YEAR 2035 TOTAL TRAFFIC CONDITIONS

The total traffic conditions forecasts how the study area's transportation system will operate under year 2035 total traffic volumes, including trips from the proposed North Campus. The site-generated trips shown in Figure 6 were added to the year 2035 background traffic volumes shown in Figure 5 to calculate the year 2035 total traffic volumes shown in Figure 7.

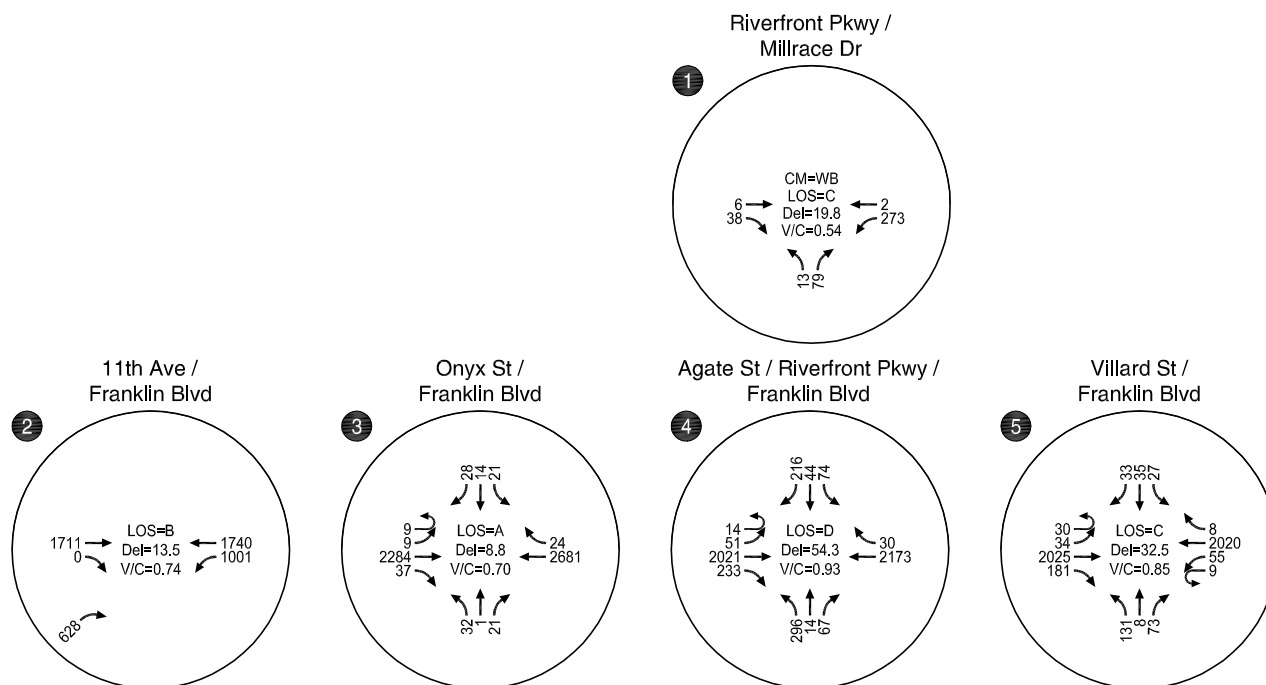
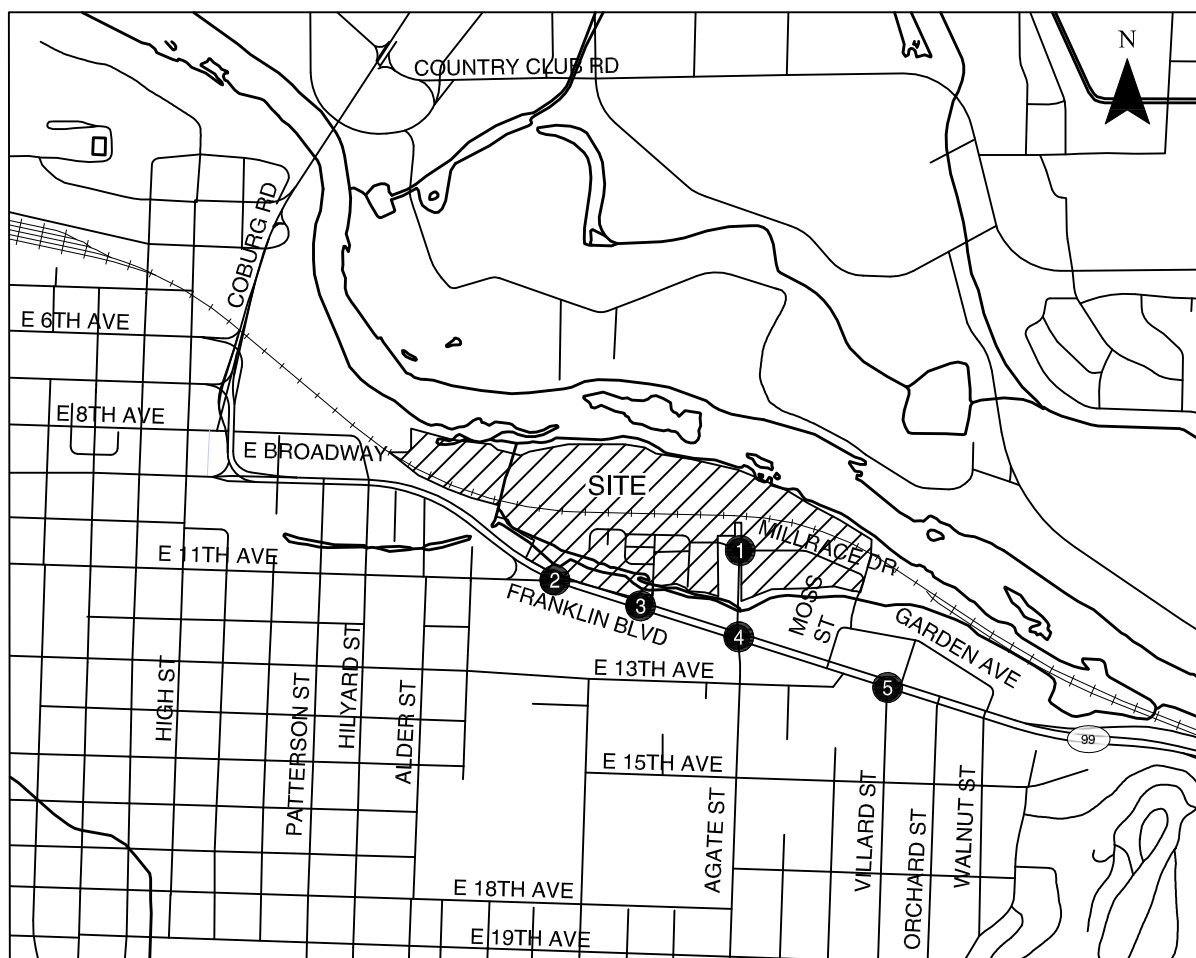
Levels of Service

The weekday PM peak hour turning movement volumes shown in Figure 7 were used to conduct an operational assessment at each study intersection to determine the year 2035 total traffic levels of service. The assessment includes the additional pedestrian and bicycle volume expected to use the study intersections. ***As shown in Figure 7, each of the study intersections is forecast to continue operating at an acceptable level of service during the weekday PM peak hour. Attachment "F" contains the year 2035 total traffic level of service worksheets.***

PARKING AND CIRCULATION IMPACTS

For this assessment, all automobile trips associated with the North Campus (summarized in Table 3 and illustrated in Figure 6) have been assumed to be assigned to proposed parking facilities located near the intersection of Riverfront Parkway and Millrace Drive. UO intends to construct approximately 402-spaces in a parking structure near this intersection with the Knight Campus development and to complete that construction in 2020. In compliance with City code, UO anticipates constructing additional vehicle parking capacity to accommodate estimated peak demands from the North Campus, in areas served by Riverfront Parkway and Millrace Drive and possibly in other long-term future locations not yet identified.

Based on recent analysis, the parking demand for the Knight Campus development was estimated to be approximately 148 occupied stalls. Parking demand for the North Campus is based on the daily trip generation estimate of 1,044 daily trips. Employees are estimated to make 462 of these weekday trips, which would produce a maximum peak parking demand of 231 vehicles (462 trips divided by two trips per parked vehicle). Students, guests and visitors are expected to make the remaining 582 weekday trips. Unlike employees, most student, guest and visitor trips are parked for less than a full day. A high assumption would be that these trips are parked approximately 4 hours (or half a day), and that a high percentage (75%) occur during the same four-hour period (say between 10:00 AM and 2:00 PM). This results in a peak parking demand by students, guests and visitors of approximately 220 spaces sometime during the middle of the typical weekday when classes are in session. The resulting total parking demand estimate of the Knight Campus and the North Campus is approximately 600 parked vehicles during the peak hour of parking demand. Therefore, additional vehicle parking capacity, beyond the garage to be constructed with the Knight Campus, is likely to be needed to address the potential parking demand resulting from buildout of the North Campus. As previously stated, UO intends to meet this demand by complying with City code and providing additional parking within the study area of this assessment.



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**2035 Total Traffic Conditions
 Weekday PM Peak Hour
 Eugene, Oregon**

Figure
7

CONCLUSIONS AND RECOMMENDATIONS

The results of this transportation assessment indicate the proposed North Campus can be completed while maintaining acceptable levels of service and traffic operations for all modes on the surrounding transportation system. The assessment supports the following findings:

Existing Traffic Conditions

- Each of the study intersections currently operates at an acceptable level of service during the weekday PM peak hour.
- A review of historical crash data did not reveal any patterns or trends in the site vicinity that would require mitigation associated with the transportation impacts of the North Campus.

Year 2035 Background Traffic Conditions

- Turning movement volumes along Franklin Boulevard were obtained from the Eugene TSP.
- Trips associated with the approved Knight Campus for Accelerating Scientific Impact, to be located just south of the proposed North Campus, were included as in process traffic.
- No funded transportation improvements were identified within the study area.
- Each of the study intersections is forecast to continue operating at an acceptable level of service during the weekday PM peak hour for all modes.

Proposed Development Plan

- The proposed North Campus includes up to 1,369,500 square feet of new university uses and research related to the university and is expected to accommodate up to 3,209 new students.
- The proposed North Campus is expected to generate approximately 1,044 net new weekday daily automobile trips, of which 120 will occur during the PM peak hour (38 in, 82 out).
- Approximately 84 percent of new student trips and approximately 42 percent of new staff trips are non-automobile, per the results of a University travel behavior survey.

Year 2035 Total Traffic Conditions

- Each of the study intersections is forecast to continue operating at an acceptable level of service during the weekday PM peak hour for all modes.

Pedestrian and Bicycle Traffic

- The proposed North Campus is expected to generate approximately 301 pedestrian trips in the weekday PM peak hour.
- The proposed North Campus is expected to generate approximately 92 bicycle trips in the weekday PM peak hour.

- Pedestrians and bicyclists will access the North Campus from four access points.
- In general, the study area's pedestrian and bicycle systems are adequate to accommodate the increased demand associated with the proposed North Campus.

Parking and Circulation Impacts

- All automobile trips associated with the North Campus are assumed to be assigned to proposed parking facilities near the Riverfront Parkway/Millrace Drive intersection.
- Peak parking demand estimated for the Knight Campus and buildout of the North Campus is expected to be accommodated with existing and planned parking facilities in the North Campus area and in accordance with City code.

REFERENCES

1. City of Eugene, OR. "2015 Proposed Street Classification Update." 2015.
2. Lane Transit District. "Maps, Stations, and Routing." 2017. <<http://www.ltd.org/maps-stations-routing/>>. Accessed 10-23-2017.
3. Transportation Research Board. Highway Capacity Manual 2000. 2000.
4. City of Eugene, OR. 2035 Transportation System Plan. 2014.
5. Institute of Transportation Engineers. Trip Generation, 10th Edition. 2017.

ATTACHMENTS

Attachment A Eugene Planning Letter, March 28, 2018

Attachment B Turning Movement Counts

Attachment C Existing Conditions Level of Service Worksheets

Attachment D ODOT Crash Data

Attachment E Year 2035 Background Conditions Level of Service Worksheets

Attachment F Year 2035 Total Conditions Level of Service Worksheets



Attachment A
Eugene Planning Letter,
March 28, 2018



Atrium Building
99 west 10th Avenue
Eugene, Oregon 97401
Phone: 541-682-5453
Fax: 541-682-5572
www.eugene-or.gov/planning

March 28, 2018

Colin McArthur, AICP
Cameron McCarthy Landscape Architecture & Planning
160 East Broadway
Eugene, OR 97401

RE: UO North Campus (CU 18-1)

Thank you for your application for a Conditional Use Permit. Our completeness review process provides an opportunity to collaboratively address any items that are unclear, incomplete, or missing before your application is evaluated for consistency with our land use code. We also use this as an opportunity to identify other issues which may be raised during the public process. Based on our review, your application is deemed incomplete at this time. Below is a list of items that need to be addressed:

- The written statement needs to address the Riparian Corridors, Wetlands, and Wildlife Habitat (Goal 5) of the Metro Plan, specifically policies C.12, C.13, C.16 and C.17. Staff notes that in reviewing the referenced map in policy C.16 (Goal 5 Significant Wildlife Habitat for the area inside the UGB), it appears that a wildlife habitat corridor and possibly riparian corridor runs adjacent to and through the site.
- Please provide a map that shows all parcel boundaries and includes Map and Tax Lot numbers.
- Please show the location and width of all public and private easements. It appears that a significant EWEB easement is located on the property but is not shown.
- Public Works has indicated that it appears that the wastewater system shown located in the 8th Avenue cul-de-sac does not exist and will need to be shown in the proper location.

The following completeness comments are from Scott Gillespie, PE Public Works, in response to the information provided within the written narrative regarding the following approval criteria:

9.3725 S-RP Riverfront Park Special Area Zone Review Procedures. The master site plan for developments proposed within the S-RP zone shall be reviewed through the conditional use permit process provided in this land use code. For the purpose of this review, the following criteria shall be applied in lieu of the criteria provided in EC 9.8090 Conditional Use Permit Approval Criteria - General:

(1) Criteria for all Development.

- (a) The proposed development shall be consistent with the Metropolitan Area General Plan, Riverfront Park Study, and other applicable policy documents or functional plans.**
- (b) Based on technical analysis (particularly with respect to transportation facilities), planned public facilities shall be shown to accommodate the requirements of the proposed development.**
- (c) The proposed development shall protect visual access from main entry points from Franklin Boulevard to the river/riparian vegetation.**

The applicant has provided a trip generation report that uses ITE code 550. The University of Oregon has long been opposed to using enrollment of students as the independent variable for estimating vehicular trip impacts. The University has been insistent that trip generation impacts should use the ITE land use code that describes the characteristics of the proposed development. That should be the practice used to estimate trip generation impacts from proposed land uses in this CUP. The parking garages for the Knight Center Campus are also located in this CUP. All vehicular trips from the Knight Campus are planned to use the parking garages so the planned public facilities should also include trip generation from that project. Will there be any special events at the sports fields?

Also, the written statement and trip generation report provide no technical engineering analyses of the existing or proposed transportation system. The analyses in Exhibit D should be stamped since it is prepared by a licensed engineer. The engineer should also provide analyses, discussion and affirming statements regarding safety and operations of the existing transportation system's adequacy and ability to accommodate all modes. The density projections in the written statement are also inconsistent with ITE practice. The written statement provides a bulleted list of projects but no information or analyses to determine if those improvements solely provide the adequate planned facilities and capacity to accommodate the requirements of the proposed development. A number of the listed improvements are not within the project boundary or close proximity to the

project. I would question their direct accommodation of impacts from the CUP. The current refinement plan (Riverfront Park Study) went through a fairly exhaustive analysis of the transportation system to verify there were planned facilities to accommodate the additional traffic. The policy document also noted a number of alternate access points and circulation paths. A large portion of the plan does not include multiple points of access and severely limited paths of vehicular circulation. The proposed plan varies from the assumptions made in the original policy documents. The policy addressed variables identified in the study including:

- Types of Land use
- Intensity of Land Use
- Traffic levels using the Franklin Blvd Corridor
- The use of alternative modes of travel

I believe the applicant has addresses 3 of the 4 bullets. Traffic on Franklin and the adequacy of the existing street system to accommodate the development are the areas lacking analyses affirming engineering opinions/recommendations. There were 7 policies that came forward from the original study. The analyses and written statement should show how the modified proposal is still consistent with those policies as required by subsection (a).

Also attached is a document titled, "Incomplete Land Use Application – 180 Day Completeness Review Process." To help City staff proceed with your application, please sign and return this form when resubmitting this application.

I look forward to working with you and the community through the next steps of this process. Please contact me if you have any questions.

I can be reached at (541) 682-5453 or via e-mail: nick.r.gioello@ci.eugene.or.us

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Gioello", written in a cursive style.

Nicholas R. Gioello

Associate Planner

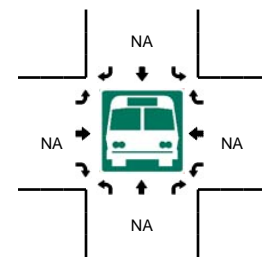
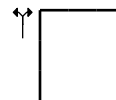
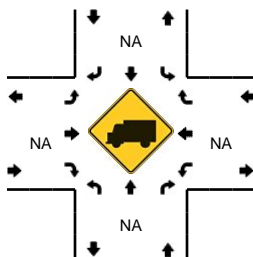
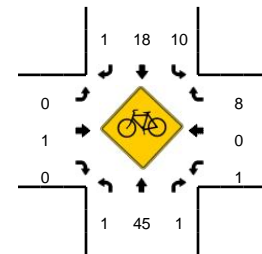
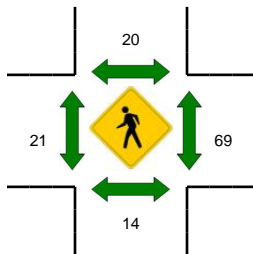
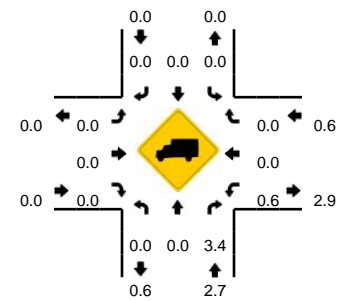
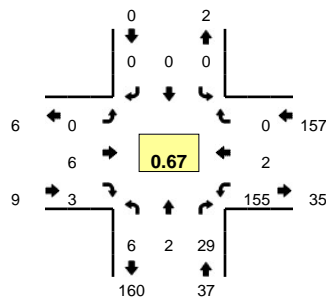
Enclosures: Incomplete Land Use Application Form and Land Use Application Completeness Review Step

Attachment B
Turning Movement Counts

LOCATION: Riverfront Parkway -- Millrace Dr
CITY/STATE: Eugene, OR

QC JOB #: 14432502
DATE: Wed, May 24 2017

Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:00 PM -- 5:15 PM



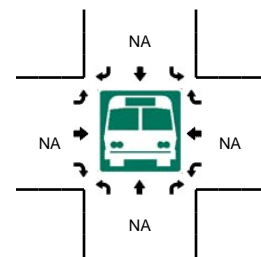
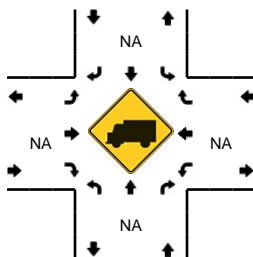
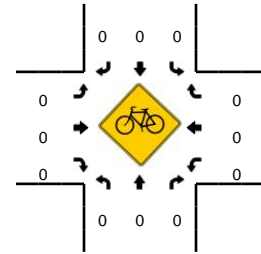
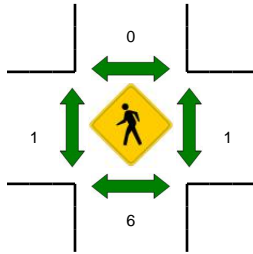
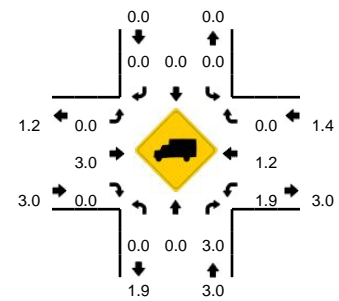
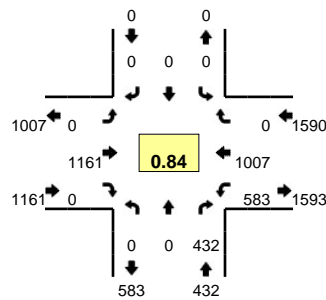
5-Min Count Period Beginning At	Riverfront Parkway (Northbound)				Riverfront Parkway (Southbound)				Millrace Dr (Eastbound)				Millrace Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:55 PM	0	0	1	0	0	0	0	0	0	1	0	0	7	1	0	0	10	
5:00 PM	1	0	3	0	0	0	0	0	0	0	1	0	17	0	0	0	22	
5:05 PM	0	0	7	0	0	0	0	0	0	0	2	0	17	0	0	0	26	
5:10 PM	0	0	3	0	0	0	0	0	0	0	0	0	25	0	0	0	28	
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5:20 PM	1	0	0	1	0	0	0	0	0	0	0	0	13	0	0	0	15	
5:25 PM	0	0	3	1	0	0	0	0	0	0	0	0	13	0	0	0	17	
5:30 PM	1	0	2	0	0	0	0	0	0	0	0	0	15	0	0	0	18	
5:35 PM	0	2	3	0	0	0	0	0	0	0	0	0	11	0	0	0	16	
5:40 PM	0	0	4	0	0	0	0	0	0	2	0	0	10	0	0	0	16	
5:45 PM	1	0	2	0	0	0	0	0	0	3	0	0	5	0	0	0	11	
5:50 PM	0	0	1	0	0	0	0	0	0	0	0	0	8	0	0	0	9	203
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	193
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	171
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6:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	117
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	102
6:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87
6:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52
6:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
6:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
6:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	4	0	52	0	0	0	0	0	0	0	12	0	236	0	0	0	304	
Heavy Trucks	0	0	4		0	0	0		0	0	0		0	0	0		4	
Pedestrians		16				24				48				60			148	
Bicycles	0	16	0		1	3	0		0	1	0		1	0	1		23	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Franklin Blvd -- E 11th Ave
CITY/STATE: Eugene, OR

QC JOB #: 14432526
DATE: Wed, May 24 2017

Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:05 PM -- 5:20 PM



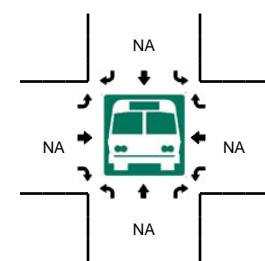
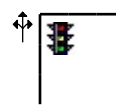
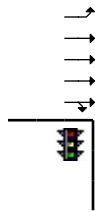
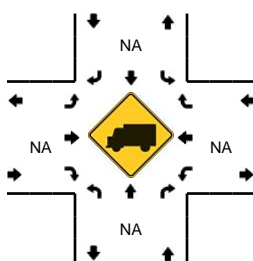
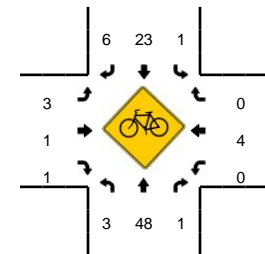
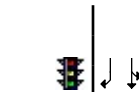
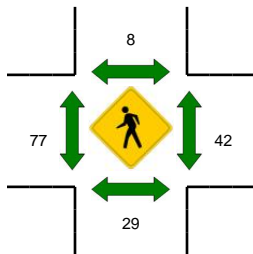
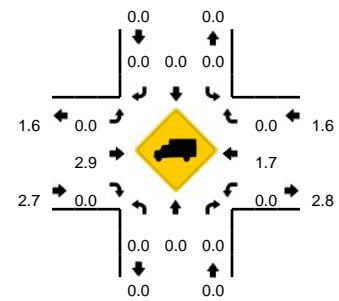
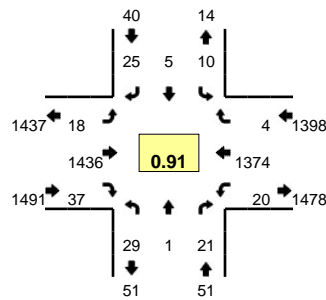
5-Min Count Period Beginning At	Franklin Blvd (Northbound)				Franklin Blvd (Southbound)				E 11th Ave (Eastbound)				E 11th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
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5:05 PM	0	0	41	0	0	0	0	0	0	94	0	0	62	103	0	0	300	
5:10 PM	0	0	45	0	0	0	0	0	0	111	0	0	66	116	0	0	338	
5:15 PM	0	0	36	0	0	0	0	0	0	109	0	0	52	107	0	0	304	
5:20 PM	0	0	36	0	0	0	0	0	0	136	0	0	35	76	0	0	283	
5:25 PM	0	0	47	0	0	0	0	0	0	100	0	0	42	72	0	0	261	
5:30 PM	0	0	32	0	0	0	0	0	0	98	0	0	39	99	0	0	268	
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5:40 PM	0	0	24	0	0	0	0	0	0	103	0	0	50	76	0	0	253	
5:45 PM	0	0	37	0	0	0	0	0	0	74	0	0	45	59	0	0	215	
5:50 PM	0	0	32	0	0	0	0	0	0	101	0	0	42	68	0	0	243	3183
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2926
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6:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2397
6:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2059
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1755
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6:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	488	0	0	0	0	0	0	1256	0	0	720	1304	0	0	3768	
Heavy Trucks	0	0	12	0	0	0	0	0	0	24	0	0	12	20	0	0	68	
Pedestrians		12				0				0				0			12	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Onyx St -- Franklin Blvd
CITY/STATE: Eugene, OR

QC JOB #: 14432528
DATE: Thu, May 25 2017

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Peak 15-Min: 5:05 PM -- 5:20 PM

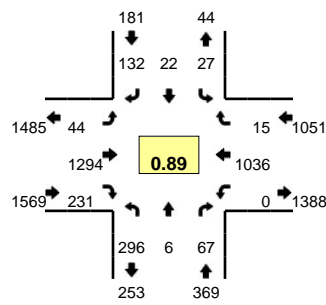


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5:05 PM	2	0	2	0	1	0	3	0	0	116	2	1	0	141	0	2	270	
5:10 PM	2	0	3	0	2	0	5	0	0	130	2	0	3	134	0	2	283	
5:15 PM	1	0	1	0	0	0	2	0	0	136	2	0	2	123	0	0	267	
5:20 PM	4	0	2	0	0	0	1	0	2	119	5	1	0	113	1	0	248	
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6:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1178
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	914
6:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	661
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6:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	20	0	24	0	12	0	40	0	0	1528	24	4	20	1592	0	16	3280	
Heavy Trucks	0	0	0	0	0	0	0	0	0	32	0	0	0	24	0	0	56	
Pedestrians		44				12				116				68			240	
Bicycles	3	12	1		0	6	2		0	0	1		0	0	0		25	
Railroad																		
Stopped Buses																		

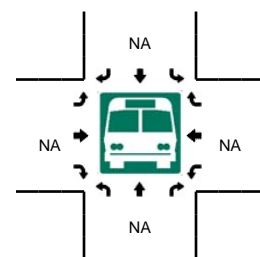
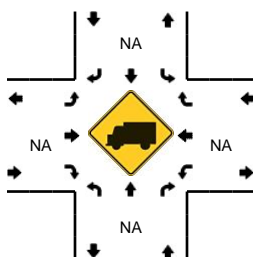
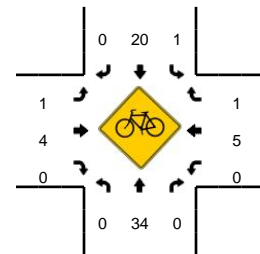
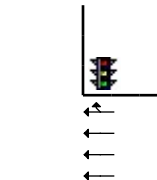
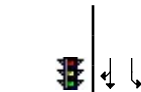
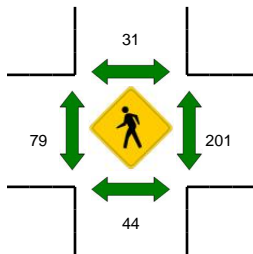
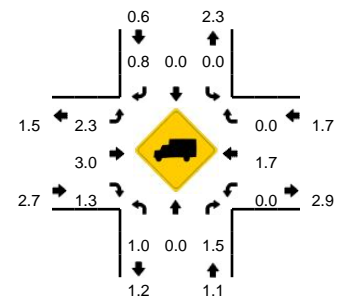
Comments:

LOCATION: Riverfront Pkwy/Agate St -- Franklin Blvd
CITY/STATE: Eugene, OR

QC JOB #: 14432575
DATE: Wed, May 24 2017



Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:10 PM -- 5:25 PM



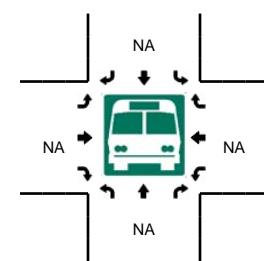
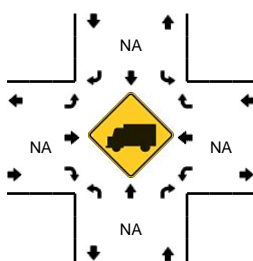
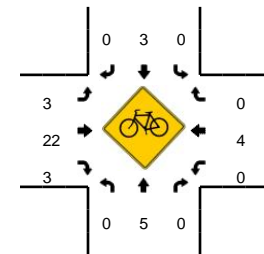
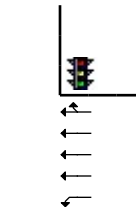
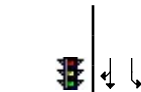
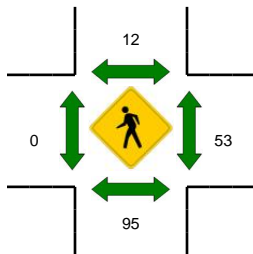
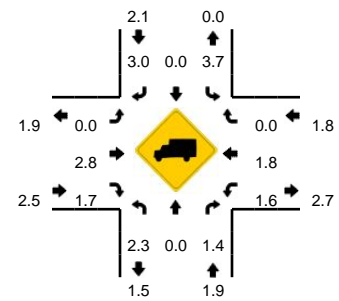
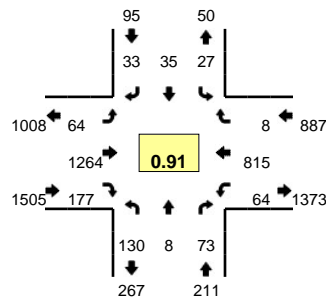
5-Min Count Period Beginning At	Riverfront Pkwy/Agate St (Northbound)				Riverfront Pkwy/Agate St (Southbound)				Franklin Blvd (Eastbound)				Franklin Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	20	0	4	0	1	2	7	0	0	79	14	4	0	100	1	0	232	
4:05 PM	35	0	4	0	1	1	9	0	1	90	27	0	0	113	5	0	286	
4:10 PM	36	0	10	0	3	2	5	0	2	56	15	1	0	65	1	0	196	
4:15 PM	30	0	3	0	4	6	7	1	3	96	17	2	0	108	1	0	278	
4:20 PM	29	0	6	0	0	0	4	0	2	91	20	0	0	94	3	0	249	
4:25 PM	32	4	4	0	5	3	3	0	1	85	13	2	0	63	2	0	217	
4:30 PM	25	1	5	0	0	5	8	0	2	66	17	0	0	74	1	0	204	
4:35 PM	16	2	4	0	0	5	6	0	0	86	18	2	0	114	0	0	253	
4:40 PM	22	2	5	0	1	1	3	0	1	103	16	0	0	84	2	0	240	
4:45 PM	17	0	7	0	1	1	7	0	1	88	22	1	0	79	0	0	224	
4:50 PM	23	1	3	0	1	3	6	0	1	53	21	0	0	70	0	0	182	
4:55 PM	13	0	5	0	0	2	10	0	4	114	21	1	0	95	1	0	266	2827
5:00 PM	31	0	5	0	4	4	13	0	3	87	16	2	0	100	3	0	268	2863
5:05 PM	41	1	8	0	3	1	13	0	4	101	14	4	0	68	1	0	259	2836
5:10 PM	28	1	3	0	4	3	17	0	0	101	20	0	0	115	2	0	294	2934
5:15 PM	27	0	2	0	3	2	17	0	0	147	16	1	0	97	0	0	312	2968
5:20 PM	21	0	7	0	2	1	8	0	2	130	14	1	0	94	1	0	281	3000
5:25 PM	21	1	7	0	1	3	13	0	1	134	24	0	0	85	2	0	292	3075
5:30 PM	18	0	6	0	0	3	14	0	2	81	25	2	0	79	3	0	233	3104
5:35 PM	29	1	5	0	5	1	5	0	4	118	21	2	0	82	0	0	273	3124
5:40 PM	26	0	8	0	3	2	10	0	2	83	13	2	0	92	1	0	242	3126
5:45 PM	22	1	4	0	1	0	4	0	1	93	18	3	0	68	1	0	216	3118
5:50 PM	19	1	7	0	1	0	8	0	0	105	29	3	0	61	0	0	234	3170
5:55 PM	16	2	3	0	0	5	8	0	1	96	19	1	0	85	0	0	236	3140
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	304	4	48	0	36	24	168	0	8	1512	200	8	0	1224	12	0	3548	
Heavy Trucks	4	0	0		0	0	4		0	32	4		0	12	0		56	
Pedestrians		48				40				88				176			352	
Bicycles	0	5	0		0	6	0		1	2	0		0	3	1		18	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Villard St -- Franklin Blvd
CITY/STATE: Lane, OR

QC JOB #: 14432536
DATE: Wed, May 24 2017

Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:10 PM -- 5:25 PM



5-Min Count Period Beginning At	Villard St (Northbound)				Villard St (Southbound)				Franklin Blvd (Eastbound)				Franklin Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:55 PM	1	3	6	0	1	1	2	0	4	105	14	0	6	80	2	1	226	
5:00 PM	16	0	9	0	3	2	5	0	1	75	9	7	4	83	0	1	215	
5:05 PM	12	1	6	0	5	8	6	0	3	101	19	3	5	45	1	1	216	
5:10 PM	8	0	7	0	4	9	1	0	1	116	17	2	7	80	0	0	252	
5:15 PM	10	0	4	0	0	1	6	0	3	146	14	2	2	73	0	1	262	
5:20 PM	13	1	11	0	1	1	1	0	2	116	13	4	4	59	0	2	228	
5:25 PM	10	1	4	0	0	1	0	0	5	119	22	1	6	67	2	0	238	
5:30 PM	10	1	6	0	3	4	0	0	0	103	20	2	6	78	0	1	234	
5:35 PM	11	0	3	0	2	3	4	0	1	103	19	1	5	82	1	1	236	
5:40 PM	16	0	5	0	3	3	4	0	6	79	6	2	6	48	1	1	180	
5:45 PM	10	0	8	0	3	2	0	0	2	84	13	2	1	56	0	0	181	
5:50 PM	13	1	4	0	2	0	4	0	6	117	11	4	3	64	1	0	230	2698
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2472
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2257
6:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2041
6:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1789
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1527
6:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1299
6:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1061
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	827
6:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	591
6:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	411
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	230
6:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	124	4	88	0	20	44	32	0	24	1512	176	32	52	848	0	12	2968	
Heavy Trucks	0	0	0	0	4	0	0	0	0	16	4	0	0	12	0	0	36	
Pedestrians		88				16				0				52			156	
Bicycles	0	0	0	0	0	0	0	0	3	9	1	0	0	0	0	0	13	
Railroad																		
Stopped Buses																		

















Comments:

Attachment C
Existing Conditions Level of
Service Worksheets

HCM Unsignalized Intersection Capacity Analysis

1: Riverfront Pkwy & Millrace Dr

06/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	6	3	155	2	0	7	0	35	0	0	0
Future Volume (Veh/h)	0	6	3	155	2	0	7	0	35	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	6	3	155	2	0	7	0	35	0	0	0
Pedestrians		21			69			14			20	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		2			7			1			2	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								815				
pX, platoon unblocked												
vC, conflicting volume	74	139	35	120	122	106	21			104		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	74	139	35	120	122	106	21			104		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	100	79	100	100	100			100		
cM capacity (veh/h)	825	689	1009	730	704	874	1576			1402		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	9	157	42	0								
Volume Left	0	155	7	0								
Volume Right	3	0	35	0								
cSH	770	729	1576	1700								
Volume to Capacity	0.01	0.22	0.00	0.00								
Queue Length 95th (ft)	1	20	0	0								
Control Delay (s)	9.7	11.3	1.2	0.0								
Lane LOS	A	B	A									
Approach Delay (s)	9.7	11.3	1.2	0.0								
Approach LOS	A	B										
Intersection Summary												
Average Delay			9.2									
Intersection Capacity Utilization			34.7%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

2: 11th Ave & Franklin Blvd


















06/12/2018

	→	↘	↙	←	↗	↖
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑↑		↘↙	↑↑		↗↖
Traffic Volume (vph)	1161	0	583	1007	0	432
Future Volume (vph)	1161	0	583	1007	0	432
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11
Total Lost time (s)	4.5		4.5	4.5		4.5
Lane Util. Factor	0.91		0.97	0.95		0.88
Frpb, ped/bikes	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	4868		3319	3455		2668
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	4868		3319	3455		2668
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1161	0	583	1007	0	432
RTOR Reduction (vph)	0	0	0	0	0	74
Lane Group Flow (vph)	1161	0	583	1007	0	358
Confl. Peds. (#/hr)		6	6			1
Heavy Vehicles (%)	3%	0%	2%	1%	0%	3%
Turn Type	NA		Prot	NA		Over
Protected Phases	2		1	6		1
Permitted Phases						
Actuated Green, G (s)	24.9		14.8	48.7		14.8
Effective Green, g (s)	24.9		14.8	48.7		14.8
Actuated g/C Ratio	0.51		0.30	1.00		0.30
Clearance Time (s)	4.5		4.5	4.5		4.5
Vehicle Extension (s)	4.0		2.5	4.0		2.5
Lane Grp Cap (vph)	2488		1008	3455		810
v/s Ratio Prot	c0.24		c0.18	0.29		0.13
v/s Ratio Perm						
v/c Ratio	0.47		0.58	0.29		0.44
Uniform Delay, d1	7.6		14.3	0.0		13.6
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.2		0.7	0.1		0.3
Delay (s)	7.8		15.0	0.1		13.9
Level of Service	A		B	A		B
Approach Delay (s)	7.8			5.5	13.9	
Approach LOS	A			A	B	
Intersection Summary						
HCM 2000 Control Delay			7.5		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.51			
Actuated Cycle Length (s)			48.7		Sum of lost time (s)	9.0
Intersection Capacity Utilization			53.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

3: Franklin Blvd & Onyx St

06/12/2018

												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	9	9	1538	37	0	1521	24	32	1	21	21	14
Future Volume (vph)	9	9	1538	37	0	1521	24	32	1	21	21	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	11	11	11	12	12	12	12	12
Total Lost time (s)		4.5	4.5			4.5			4.5			4.5
Lane Util. Factor		1.00	0.91			0.91			1.00			1.00
Frpb, ped/bikes		1.00	1.00			1.00			0.93			1.00
Flpb, ped/bikes		1.00	1.00			1.00			0.96			0.94
Frt		1.00	1.00			1.00			0.95			1.00
Flt Protected		0.95	1.00			1.00			0.97			0.97
Satd. Flow (prot)		1745	4843			4902			1559			1733
Flt Permitted		0.95	1.00			1.00			0.84			0.85
Satd. Flow (perm)		1745	4843			4902			1348			1517
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)	9	9	1538	37	0	1521	24	32	1	21	21	14
RTOR Reduction (vph)	0	0	2	0	0	1	0	0	17	0	0	0
Lane Group Flow (vph)	0	18	1573	0	0	1544	0	0	37	0	0	35
Confl. Peds. (#/hr)		8		29			8	77		42	42	
Confl. Bikes (#/hr)				1			4			48		
Heavy Vehicles (%)	0%	0%	3%	0%	0%	2%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA			NA		Perm	NA		Perm	NA
Protected Phases	5	5	2			6			8			4
Permitted Phases								8			4	
Actuated Green, G (s)		2.8	80.5			73.2			20.5			20.5
Effective Green, g (s)		2.8	80.5			73.2			20.5			20.5
Actuated g/C Ratio		0.03	0.73			0.67			0.19			0.19
Clearance Time (s)		4.5	4.5			4.5			4.5			4.5
Vehicle Extension (s)		2.0	4.0			4.0			3.0			3.0
Lane Grp Cap (vph)		44	3544			3262			251			282
v/s Ratio Prot		0.01	c0.32			c0.31						
v/s Ratio Perm									c0.03			0.02
v/c Ratio		0.41	0.44			0.47			0.15			0.12
Uniform Delay, d1		52.8	5.9			9.0			37.4			37.3
Progression Factor		1.00	1.00			0.40			1.00			1.00
Incremental Delay, d2		2.2	0.4			0.4			0.3			0.2
Delay (s)		55.0	6.3			4.0			37.7			37.5
Level of Service		E	A			A			D			D
Approach Delay (s)			6.8			4.0			37.7			37.1
Approach LOS			A			A			D			D
Intersection Summary												
HCM 2000 Control Delay			6.6			HCM 2000 Level of Service			A			
HCM 2000 Volume to Capacity ratio			0.41									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			13.5			
Intersection Capacity Utilization			75.8%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Franklin Blvd & Onyx St

06/12/2018























Movement	SBR
Land Configurations	7
Traffic Volume (vph)	28
Future Volume (vph)	28
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frpb, ped/bikes	0.89
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1432
Flt Permitted	1.00
Satd. Flow (perm)	1432
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	28
RTOR Reduction (vph)	23
Lane Group Flow (vph)	5
Confl. Peds. (#/hr)	77
Confl. Bikes (#/hr)	23
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	20.5
Effective Green, g (s)	20.5
Actuated g/C Ratio	0.19
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	266
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.02
Uniform Delay, d1	36.5
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	36.6
Level of Service	D
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

4: Agate St/Riverfront Pkwy & Franklin Blvd

06/12/2018

												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	21	23	1303	233	0	1036	15	296	6	67	27	22
Future Volume (vph)	21	23	1303	233	0	1036	15	296	6	67	27	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	11	11	11	11	11	11	11	11
Grade (%)			0%			0%			0%			2%
Total Lost time (s)		4.5	4.5	4.5		4.5		5.0	5.0		5.0	5.0
Lane Util. Factor		1.00	0.91	1.00		0.91		0.97	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.90		1.00		1.00	0.80		1.00	0.91
Flpb, ped/bikes		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	0.86		1.00	0.87
Flt Protected		0.95	1.00	1.00		1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)		1711	4868	1388		4900		3351	1249		1727	1432
Flt Permitted		0.95	1.00	1.00		1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)		1711	4868	1388		4900		3351	1249		1727	1432
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)	21	23	1303	233	0	1036	15	296	6	67	27	22
RTOR Reduction (vph)	0	0	0	74	0	1	0	0	46	0	0	56
Lane Group Flow (vph)	0	44	1303	159	0	1050	0	296	27	0	27	98
Confl. Peds. (#/hr)		31		44	44		31	79		201	201	
Confl. Bikes (#/hr)				4			5			34		
Heavy Vehicles (%)	2%	2%	3%	1%	0%	2%	0%	1%	0%	2%	0%	0%
Turn Type	Prot	Prot	NA	Perm		NA		Prot	NA		Prot	NA
Protected Phases	5	5	2			6		3	8		7	4
Permitted Phases				2								
Actuated Green, G (s)		6.5	55.7	55.7		44.7		16.1	34.2		5.6	23.7
Effective Green, g (s)		6.5	55.7	55.7		44.7		16.1	34.2		5.6	23.7
Actuated g/C Ratio		0.06	0.51	0.51		0.41		0.15	0.31		0.05	0.22
Clearance Time (s)		4.5	4.5	4.5		4.5		5.0	5.0		5.0	5.0
Vehicle Extension (s)		2.5	2.5	2.5		2.5		2.5	2.5		2.5	2.5
Lane Grp Cap (vph)		101	2464	702		1991		490	388		87	308
v/s Ratio Prot		0.03	c0.27			0.21		c0.09	0.02		0.02	c0.07
v/s Ratio Perm				0.11								
v/c Ratio		0.44	0.53	0.23		0.53		0.60	0.07		0.31	0.32
Uniform Delay, d1		50.0	18.3	15.1		24.7		44.0	26.7		50.3	36.4
Progression Factor		1.23	0.85	0.92		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		2.0	0.8	0.7		1.0		1.8	0.1		1.5	0.4
Delay (s)		63.5	16.4	14.7		25.7		45.7	26.7		51.8	36.8
Level of Service		E	B	B		C		D	C		D	D
Approach Delay (s)			17.5			25.7			42.0			39.0
Approach LOS			B			C			D			D
Intersection Summary												
HCM 2000 Control Delay			24.2			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.51									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			19.0			
Intersection Capacity Utilization			76.1%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Agate St/Riverfront Pkwy & Franklin Blvd

06/12/2018























Movement	SBR
Lane Configurations	
Traffic Volume (vph)	132
Future Volume (vph)	132
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	132
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	79
Confl. Bikes (#/hr)	20
Heavy Vehicles (%)	1%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

5: Villard St & Franklin Blvd

06/12/2018

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	30	34	1264	177	9	55	815	8	130	8	73	27
Future Volume (vph)	30	34	1264	177	9	55	815	8	130	8	73	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	11	11	11	12	12	12	12
Total Lost time (s)		4.5	4.5	4.5		4.5	4.5			4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.91			1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.80		1.00	1.00			1.00	0.93	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00			1.00	1.00	0.96
Frt		1.00	1.00	0.85		1.00	1.00			1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00			0.96	1.00	0.95
Satd. Flow (prot)		1745	3388	1229		1711	4907			1781	1492	1665
Flt Permitted		0.95	1.00	1.00		0.95	1.00			0.69	1.00	0.60
Satd. Flow (perm)		1745	3388	1229		1711	4907			1285	1492	1056
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)	30	34	1264	177	9	55	815	8	130	8	73	27
RTOR Reduction (vph)	0	0	0	72	0	0	1	0	0	0	46	0
Lane Group Flow (vph)	0	64	1264	105	0	64	822	0	0	138	27	27
Confl. Peds. (#/hr)		12		95		95		12			53	53
Confl. Bikes (#/hr)				22				4			5	
Heavy Vehicles (%)	0%	0%	3%	2%	2%	2%	2%	0%	2%	0%	1%	4%
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Perm	NA	Perm	Perm
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases				2					8		8	4
Actuated Green, G (s)		7.8	62.4	62.4		8.7	63.3			25.4	25.4	25.4
Effective Green, g (s)		7.8	62.4	62.4		8.7	63.3			25.4	25.4	25.4
Actuated g/C Ratio		0.07	0.57	0.57		0.08	0.58			0.23	0.23	0.23
Clearance Time (s)		4.5	4.5	4.5		4.5	4.5			4.5	4.5	4.5
Vehicle Extension (s)		2.5	3.0	3.0		3.5	3.0			3.5	3.5	3.5
Lane Grp Cap (vph)		123	1921	697		135	2823			296	344	243
v/s Ratio Prot		0.04	c0.37			c0.04	0.17					
v/s Ratio Perm				0.09						c0.11	0.02	0.03
v/c Ratio		0.52	0.66	0.15		0.47	0.29			0.47	0.08	0.11
Uniform Delay, d1		49.3	16.4	11.3		48.5	11.9			36.5	33.1	33.4
Progression Factor		1.00	1.00	1.00		1.00	1.00			1.00	1.00	1.00
Incremental Delay, d2		3.0	1.8	0.5		3.1	0.3			1.4	0.1	0.2
Delay (s)		52.3	18.2	11.7		51.5	12.2			37.8	33.2	33.6
Level of Service		D	B	B		D	B			D	C	C
Approach Delay (s)			18.9				15.0			36.2		
Approach LOS			B				B			D		
Intersection Summary												
HCM 2000 Control Delay			19.5		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			110.0		Sum of lost time (s)					13.5		
Intersection Capacity Utilization			82.3%		ICU Level of Service					E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Villard St & Franklin Blvd

06/12/2018

	↓	↙
Movement	SBT	SBR
Lane Configurations	↰	↱
Traffic Volume (vph)	35	33
Future Volume (vph)	35	33
Ideal Flow (vphpl)	1900	1900
Lane Width	12	12
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.93	
Flt Protected	1.00	
Satd. Flow (prot)	1724	
Flt Permitted	1.00	
Satd. Flow (perm)	1724	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	35	33
RTOR Reduction (vph)	25	0
Lane Group Flow (vph)	43	0
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		3
Heavy Vehicles (%)	0%	3%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	25.4	
Effective Green, g (s)	25.4	
Actuated g/C Ratio	0.23	
Clearance Time (s)	4.5	
Vehicle Extension (s)	3.5	
Lane Grp Cap (vph)	398	
v/s Ratio Prot	0.02	
v/s Ratio Perm		
v/c Ratio	0.11	
Uniform Delay, d1	33.4	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	33.5	
Level of Service	C	
Approach Delay (s)	33.5	
Approach LOS	C	
Intersection Summary		

Attachment D
ODOT Crash Data

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Riverfront Pkwy & Mill Race Dr
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2012														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	0	1	0	1	1	0	1
2012 TOTAL	0	0	1	1	0	0	0	0	1	0	1	1	0	1
FINAL TOTAL	0	0	1	1	0	0	0	0	1	0	1	1	0	1

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

Riverfront Pkwy & Mill Race Dr
January 1, 2011 through December 31, 2015

[illegible]

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Franklin St & E 11th Ave
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
HEAD-ON	0	1	0	1	0	1	0	1	0	0	1	1	0	0
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
SIDESWIPE - OVERTAKING	0	0	1	1	0	0	0	1	0	0	1	1	0	0
2015 TOTAL	0	1	2	3	0	1	0	3	0	1	2	3	0	0
YEAR: 2014														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2014 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR: 2012														
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	0	1	1	0	0
2012 TOTAL	0	1	0	1	0	1	0	1	0	0	1	1	0	0
YEAR: 2011														
ANGLE	0	1	0	1	0	2	0	1	0	0	1	1	0	0
2011 TOTAL	0	1	0	1	0	2	0	1	0	0	1	1	0	0
FINAL TOTAL	0	3	3	6	0	4	0	6	0	2	4	6	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

Franklin St & E 11th Ave
January 1, 2011 through December 31, 2015

SER#	P	R	S	D	DATE		CITY STREET		INT-TYP		WTHR	CRASH TYP	SPCL USE	MOVE		A	S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														</
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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Franklin St & Onyx St
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
REAR-END	0	0	1	1	0	0	0	0	0	0	0	1	0	0
2015 TOTAL	0	0	1	1	0	0	0	0	0	0	0	1	0	0
YEAR: 2013														
REAR-END	0	1	0	1	0	1	0	1	0	0	1	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	3	0	1	0	1	0	1	0	0
2013 TOTAL	0	2	0	2	0	4	0	2	0	1	1	2	0	0
YEAR: 2012														
REAR-END	0	1	0	1	0	1	0	0	1	1	0	1	0	0
TURNING MOVEMENTS	0	2	0	2	0	2	0	2	0	2	0	2	0	0
2012 TOTAL	0	3	0	3	0	3	0	2	1	3	0	3	0	0
YEAR: 2011														
REAR-END	0	1	0	1	0	4	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	0	1	1	0	0
2011 TOTAL	0	1	1	2	0	4	0	2	0	1	1	2	0	0
FINAL TOTAL	0	6	2	8	0	11	0	6	1	5	2	8	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

Franklin St & Onyx St
January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	S D P R S W E A U C O L G H R D C S L K						DATE DAY/TIME LAT/LONG	FC DISTNC	CITY STREET		RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTRY	SPCL USE		MOVE FROM TO	P#	PRTC TYPE	INJ SVRTRY	A S G E X RES		PED LOC	ERROR	ACTN	EVENT	CAUSE
	FIRST STREET	SECOND STREET	TRLR	QTY OWNER																									
					VEH	TYPE																							
04206 NO RPT No	N N N N N 44 2 50.23	12/25/2012 Tue 12P -123 4 22.99	14 0	FRANKLIN BLVD ONYX ST 1	INTER SE 06	CROSS 0	N TRF SIGNAL N	N WET DAY	S-1STOP REAR INJ	01 NONE PSNGR	0 PRVTE CAR	STRGHT SE NW	01 DRVR	NONE	43 F	OR-Y OR<25	026	000 000	07 00 07										
										02 NONE PSNGR	0 PRVTE CAR	STOP SE NW	01 DRVR	INJC	62 F	OR-Y OR<25	000	011 000	00 00										
00859 NONE No	N N N N N 44 2 49.89	03/24/2015 Tue 7A -123 4 21.37	14 0	FRANKLIN BLVD ONYX ST 1	INTER SE 06	3-LEG 0	N TRF SIGNAL N	N UNK UNK	S-1STOP REAR PDO	01 NONE PSNGR	0 PRVTE CAR	STRGHT UN UN	01 DRVR	NONE	45 M	OR-Y OR<25	026	000 000	29 00 29										
										02 NONE PSNGR	0 PRVTE CAR	STOP UN UN	01 DRVR	NONE	27 M	OR-Y OR<25	000	011 000	00 00										
04121 NO RPT No	N N N N N 44 2 50.23	12/17/2013 Tue 6P -123 4 22.99	14 0	FRANKLIN BLVD ONYX ST 1	INTER W 06	CROSS 0	N TRF SIGNAL N	N CLR DLIT	S-1STOP REAR INJ	01 NONE PSNGR	0 UNKN CAR	STRGHT NW SE	01 DRVR	NONE	00 U	UNK UNK	026	000 000	07 00 07										
										02 NONE PSNGR	0 PRVTE CAR	STOP NW SE	01 DRVR	INJC	25 F	OR-Y OR<25	000	011 000	013 00	00									
										03 NONE PSNGR	0 UNKN CAR	STOP NW SE	01 DRVR	NONE	00 U	UNK UNK	000	022 000	013 00	00									
										04 NONE PSNGR	0 PRVTE CAR	STOP NW SE	01 DRVR	NONE	65 F	OR-Y OR<25	000	022 000	00	00									
02379 CITY No	N N N N N 44 2 49.62	08/01/2013 Thu 1P -123 4 23.23	14 0	FRANKLIN BLVD ONYX ST 1	INTER NW 06	CROSS 0	N TRF SIGNAL N	N CLR DAY	S-1TURN TURN INJ	01 NONE SCHL	0 PUBLC BUS	STRGHT NW SE	01 DRVR	NONE	66 M	OR-Y OR>25	000	000 000	08,13 00 00										
													02 PSNG	INJC	24 F		000	000	00	00									
										02 NONE PSNGR	0 PRVTE CAR	TURN-L NW NE	01 DRVR	INJB	54 M	OTH-Y N-RES	006,002,028	000	00	00									
													02 PSNG	INJB	55 F		000	000	00	00									
03084 NO RPT No	N N N 44 2 50.23	10/03/2011 Mon 5P -123 4 22.98	14 0	FRANKLIN BLVD ONYX ST 1	INTER CN 03	3-LEG 0	N TRF SIGNAL N	N CLR DAY	S-1STOP REAR INJ	01 NONE PSNGR	0 PRVTE CAR	STRGHT SE NW	01 DRVR	INJB	51 F	OR-Y OR<25	026,009	000 000	013 00 07	00									

Franklin St & Onyx St
January 1, 2011 through December 31, 2015

SER# INVEST UNLOC?	S D P R S W E A U C O E L G H R D C S L K					DATE DAY/TIME LAT/LONG	FC DISTNC	CITY STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	SPCL USE		MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A S G E LICNS E X RES			PED LOC	ERROR	ACTN	EVENT	CAUSE											
	TRLR QTY OWNER	VEH TYPE	G	E	LICNS																																		
	V#																																						
02037 CITY No	N	N	N	N	N	07/09/2012 Mon 10A	14 0	FRANKLIN BLVD ONYX ST 1	INTER CN 03	CROSS 0	N TRF SIGNAL	N CLR DAY	O-1 L-TURN TURN INJ	01	NONE PRVTE PSNGR CAR	0	STOP SE NW	01	DRVR	INJC	41	M	OR-Y OR<25	009	000	011 013	00 10												
																												02	PSNG	INJC	11	M	000	000	00				
																												03	PSNG	INJB	02	M	000	000	00				
																												04	PSNG	NO<5	01	M	000	000	00				
03542 NONE No	N	N	N	N	N	11/11/2011 Fri 5P	14 0	FRANKLIN BLVD ONYX ST 1	INTER CN 04	CROSS 0	N TRF SIGNAL	N CLR DUSK	ANGL-OTH TURN PDO	01	NONE PRVTE PSNGR CAR	0	TURN-L SE S	01	DRVR	INJC	69	M	OR-Y OR<25	004,028	000	000	02 00 02												
																												02	PSNGR	CAR	01	DRVR	INJC	69	M	OR-Y OR<25	000	000	00
																												03	PSNGR	CAR	01	DRVR	INJC	69	M	OR-Y OR<25	000	000	00
																												04	PSNGR	CAR	01	DRVR	INJC	69	M	OR-Y OR<25	000	000	00
03413 NONE No	N	N	N	N	N	10/26/2012 Fri 12P	14 0	FRANKLIN BLVD ONYX ST 1	INTER CN 04	CROSS 0	N TRF SIGNAL	N CLR DAY	S-1TURN TURN INJ	01	NONE PRVTE PSNGR CAR	0	TURN-L NW N	01	DRVR	NONE	71	M	OTH-Y N-RES	006,028	000	000	14,08 00 14,08												
																												02	PSNGR	CAR	01	DRVR	NONE	26	F	OR-Y OR<25	000	000	00
																												03	PSNGR	CAR	01	DRVR	NONE	26	F	OR-Y OR<25	000	000	00
																												04	PSNGR	CAR	01	DRVR	NONE	26	F	OR-Y OR<25	000	000	00
03413 NONE No	N	N	N	N	N	10/26/2012 Fri 12P	14 0	FRANKLIN BLVD ONYX ST 1	INTER CN 04	CROSS 0	N TRF SIGNAL	N CLR DAY	S-1TURN TURN INJ	01	NONE PRVTE PSNGR CAR	0	TURN-L NW N	01	DRVR	NONE	71	M	OTH-Y N-RES	006,028	000	000	14,08 00 14,08												
																												02	PSNGR	CAR	01	DRVR	NONE	26	F	OR-Y OR<25	000	000	00
																												03	PSNGR	CAR	01	DRVR	NONE	26	F	OR-Y OR<25	000	000	00
																												04	PSNGR	CAR	01	DRVR	NONE	26	F	OR-Y OR<25	000	000	00

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Franklin St & Riverfront Pkwy / Agate St
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
PEDESTRIAN	0	1	0	1	0	1	0	1	0	1	0	1	0	0
REAR-END	0	0	3	3	0	0	0	3	0	3	0	3	0	0
2015 TOTAL	0	1	3	4	0	1	0	4	0	4	0	4	0	0
YEAR: 2014														
REAR-END	0	1	1	2	0	1	1	1	1	2	0	2	0	0
2014 TOTAL	0	1	1	2	0	1	1	1	1	2	0	2	0	0
YEAR: 2013														
REAR-END	0	1	1	2	0	1	0	0	1	1	1	2	0	0
2013 TOTAL	0	1	1	2	0	1	0	0	1	1	1	2	0	0
YEAR: 2012														
REAR-END	0	0	4	4	0	0	0	3	1	2	2	4	0	0
2012 TOTAL	0	0	4	4	0	0	0	3	1	2	2	4	0	0
YEAR: 2011														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2011 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	3	10	13	0	3	1	9	3	10	3	13	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

Franklin St & Riverfront Pkwy / Agate St
January 1, 2011 through December 31, 2015

SER#	INVEST	UNLOC?	P E D A U C O L G H R D C S L K	DATE DAY/TIME LAT/LONG	FC DISTNC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RDNBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	SPCL USE TRLR QTY OWNER	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A S G E X RES	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00298	NO RPT	No	N N N N N	01/28/2013 Mon 1P	14 0	AGATE ST FRANKLIN BLVD	INTER E	CROSS	N		N RAIN WET	S-1STOP REAR	01 NONE PRVTE	0 STRGHT SE NW										07 00
			44 2 47.80	-123 4 11.21		1	06	0			N DAY	PDO	PSNGR CAR		01	DRVR	NONE	52 M	OR-Y OR<25		026	000	000	07
													02 NONE PRVTE	0 STOP SE NW									011 000	00 00
													PSNGR CAR		01	DRVR	NONE	65 F	OR-Y OR<25		000	000	000	00
00430	NO RPT	No	N N N N N	02/12/2013 Tue 7P	14 0	AGATE ST FRANKLIN BLVD	INTER E	CROSS	N		N UNK DLIT	S-1STOP REAR	01 NONE PRVTE	0 STRGHT SE NW										07 00
			44 2 47.13	-123 4 11.12		1	06	0			N UNK DLIT	INJ	PSNGR CAR		01	DRVR	INJC	61 F	OR-Y OR<25		016,026	000	000	07
													02 NONE PRVTE	0 STOP SE NW									011 000	00 00
													PSNGR CAR		01	DRVR	NONE	22 M	OR-Y OR<25		000	000	000	00
03536	NONE	No	N N N	11/05/2012 Mon 9A	14 0	AGATE ST FRANKLIN BLVD	INTER SE	CROSS	N		N CLR DAY	S-1STOP REAR	01 NONE PRVTE	0 STRGHT SE NW										07 00
			44 2 47.80	-123 4 11.21		1	06	0			N DAY	PDO	PSNGR CAR		01	DRVR	NONE	25 F	OR-Y OR<25		026	000	000	07
													02 NONE PRVTE	0 STOP SE NW									011 000	00 00
													PSNGR CAR		01	DRVR	NONE	36 F	OR-Y OR<25		000	000	000	00
03934	NONE	No	N N N	12/03/2012 Mon 8P	14 0	AGATE ST FRANKLIN BLVD	INTER SE	CROSS	N		N CLR DLIT	S-1STOP REAR	01 NONE PRVTE	0 STRGHT SE NW										07 00
			44 2 47.80	-123 4 11.21		1	06	0			N DLIT	PDO	PSNGR CAR		01	DRVR	NONE	00 F	OR-Y OR<25		026	000	000	07
													02 NONE PRVTE	0 STOP SE NW									011 000	00 00
													PSNGR CAR		01	DRVR	NONE	19 F	OR-Y OR>25			000	000	00
01018	CITY	No	N N N N N	04/06/2015 Mon 6P	14 0	AGATE ST FRANKLIN BLVD	INTER W	CROSS	N		N CLD DAY	PED INJ	01 NONE PRVTE	0 STRGHT E W										04 00
			44 2 47.80	-123 4 11.21		1	05	0			N DAY		PSNGR CAR		01	DRVR	NONE	46 M	OR-Y OR<25		020	000	000	04
														STRGHT N S	01	PED	INJB	26 F		01	000	035		00
02123	CITY	No	N N Y Y N	07/10/2011 Sun 9A	14 0	AGATE ST FRANKLIN BLVD	INTER NW	CROSS	N		N CLR DAY	S-1STOP REAR	01 NONE PRVTE	0 STRGHT NW SE										10 00
			44 2 47.15	-123 4 11.13		1	06	0			N DAY	PDO	PSNGR CAR		01	DRVR	NONE	41 M	SUSP OR<25		016,026	000	000	10
													02 NONE PUBLC	0 STOP NW SE									012 000	00 00
													PSNGR CAR		01	DRVR	NONE	39 M	OR-Y OR<25		000	000	000	00

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF EUGENE, LANE COUNTY

Franklin St & Riverfront Pkwy / Agate St
January 1, 2011 through December 31, 2015

SER#	S D						CITY STREET	RD CHAR	INT-TYP	WTHR	CRASH TYP	SPCL USE		MOVE	A S					PED	ACTN	EVENT	CAUSE								
	INVEST	E L G H R	U C O	DATE	FC	FIRST STREET						SECOND STREET	TRLR QTY		OWNER	G E	X RES	LICNS	LOC					ERROR							
																									UNLOC?	D C S L K	LAT/LONG	DISTNC	INTERSECTION	SEQ #	VEH TYPE
03278	N	N	N	N	N	10/15/2012	14	AGATE ST	INTER	CROSS	N	CLR	S-1STOP	01	NONE	0	STRGHT														07
NONE						Mon	1P	FRANKLIN BLVD	NW		TRF	DRY	REAR		PRVTE		NW	SE												00	
No	44	2	47.13	-123	4	11.12		1	06	0		DAY	PDO		PSNGR	CAR			01	DRVR	NONE	00	F	OTH-Y		026		000		07	

Franklin St & Riverfront Pkwy / Agate St
January 1, 2011 through December 31, 2015

SER#	INVEST	UNLOC?	S	P	R	S	W	D	DATE	FC	CITY STREET	RD CHAR	INT-TYP	INT-REL	OFF-RD	WTHR	CRASH TYP	SPCL USE	MOVE	A	S	PED	CAUSE									
			E	A	U	C	O				FIRST STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL TYP	TLRL QTY	FROM	G	E	LICNS										
			D	C	S	L	K	LAT/LONG		DISTNC	INTERSECTION SEQ #	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	VEH TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACTN	EVENT		
																		02	NONE	0	STOP											
																			PRVTE	E	W								011		00	
																			PSNGR	CAR		01	DRVR	NONE	60	M	OR-Y		000	000		00
																										OR<25						
02156	N	N	N	N	N	N	N	07/17/2014	14		FRANKLIN BLVD	INTER	CROSS	N		CLR	S-1STOP	01	NONE	0	STRGHT								000		07	
NO RPT								Thu	5P	0	RIVERFRONT PKY	W	TRF SIGNAL		N	DRY	REAR		PRVTE	N	NW	SE							000		00	
No	44	2	47.13	-123	4	11.12					1	06	0		N	DAY	PDO		PSNGR	CAR		01	DRVR	NONE	40	M	OR-Y		026	000	07	
																										OR-?						
																			02	NONE	0	STOP										
																			PRVTE	NW	SE								011		00	
																			PSNGR	CAR		01	DRVR	NONE	43	F	OR-Y		000	000		00
																										OR<25						

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Franklin Blvd & Villard St
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
REAR-END	0	2	0	2	0	5	0	1	1	0	2	2	0	0
2015 TOTAL	0	2	1	3	0	5	0	2	1	1	2	3	0	0
YEAR: 2014														
ANGLE	0	2	1	3	0	2	0	3	0	2	1	3	0	0
TURNING MOVEMENTS	0	2	1	3	0	3	0	2	1	2	1	3	0	0
2014 TOTAL	0	4	2	6	0	5	0	5	1	4	2	6	0	0
YEAR: 2013														
REAR-END	0	1	0	1	0	2	0	1	0	1	0	1	0	0
2013 TOTAL	0	1	0	1	0	2	0	1	0	1	0	1	0	0
YEAR: 2012														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FIXED / OTHER OBJECT	0	1	0	1	0	1	0	1	0	1	0	1	0	1
PEDESTRIAN	0	1	0	1	0	1	0	1	0	1	0	1	0	0
REAR-END	0	1	1	2	0	1	0	2	0	2	0	2	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	1	1	0	1	0	1	0	0
2012 TOTAL	0	3	3	6	0	3	1	6	0	6	0	6	0	1
YEAR: 2011														
TURNING MOVEMENTS	0	0	2	2	0	0	0	2	0	2	0	2	0	0
2011 TOTAL	0	0	2	2	0	0	0	2	0	2	0	2	0	0
FINAL TOTAL	0	10	8	18	0	15	1	16	2	14	4	18	0	1

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

Franklin Blvd & Villard St
January 1, 2011 through December 31, 2015

[illegible]

Franklin Blvd & Villard St
January 1, 2011 through December 31, 2015

[illegible]

Franklin Blvd & Villard St
January 1, 2011 through December 31, 2015

[illegible]

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF EUGENE, LANE COUNTY

Franklin Blvd & Villard St
January 1, 2011 through December 31, 2015

SER#	S D P R S W						CITY STREET	RD CHAR	INT-TYP (MEDIAN)	INT-REL	OFF-RD	WTHR	CRASH TYP	SPCL USE		MOVE	A	S	PED	ERROR	ACTN	EVENT	CAUSE					
	E L G H R DATE													TRLR QTY	OWNER									PRTC	INJ	G	E	LICNS
	INVEST	E	L	G	H	R																						
UNLOC?	D	C	S	L	K	LAT/LONG	DISTNC	INTERSECTION SEQ #	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	VEH TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC				
03645	N	N	N	N	N	11/10/2014	14	FRANKLIN BLVD	INTER	CROSS	N		N	CLR	O-1 L-TURN	01	NONE	0	TURN-L							02		
NONE						Mon 7P	0	VILLARD ST	CN		TRF SIGNAL		N	DRY	TURN		PRVTE	SE SW						000	00			
No	44	2	43.20	-123	3	52.01		1	03	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	45	M	OR-Y	016,004,028	000	02		
																02	NONE	0	STRGHT									
																	PRVTE	NW SE						000	00			
																	PSNGR CAR		01	DRVR	NONE	31	F	OTH-Y	000	000		
																							OR<25					
01934	N	N	N			06/28/2012	14	FRANKLIN BLVD	INTER	CROSS	N		N	CLR	ANGL-OTH	01	NONE	0	STRGHT							04		
NO RPT						Thu 3P	0	VILLARD ST	CN		TRF SIGNAL		N	DRY	TURN		PRVTE	W E						000	00			
No	44	2	43.20	-123	3	52.01		1	04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	73	F	OR-Y	016,020	000	04		
																02	NONE	1	TURN-L									
																	PRVTE	S NW						000	00			
																	SEMI TOW		01	DRVR	NONE	48	M	OR-Y	000	000		
																							OR<25					

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
014	EMR V PKD	EMERGENCY VEHICLE LEGALLY PARKED IN THE ROADWAY
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRACT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
088	OTHER	OTHER ACTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER
51	FAIL LN	FAILED TO MAINTAIN LANE
52	OFF RD	RAN OFF ROAD

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1 L-TURN	FROM OPPOSITE DIRECTION-ONE LEFT TURN, ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

ERROR	SHORT	
CODE	DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLUMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRGL PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN MAJOR COLLECTOR
18	URBAN MINOR COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY
2	INJA	INCAPACITATING INJURY - BLEEDING, BROKEN BONES
3	INJB	NON-INCAPACITATING INJURY
4	INJC	POSSIBLE INJURY - COMPLAINT OF PAIN
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE

LIGHT CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYANCE
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OBJECT
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN OBJECT
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

PEDESTRIAN LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVHRD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

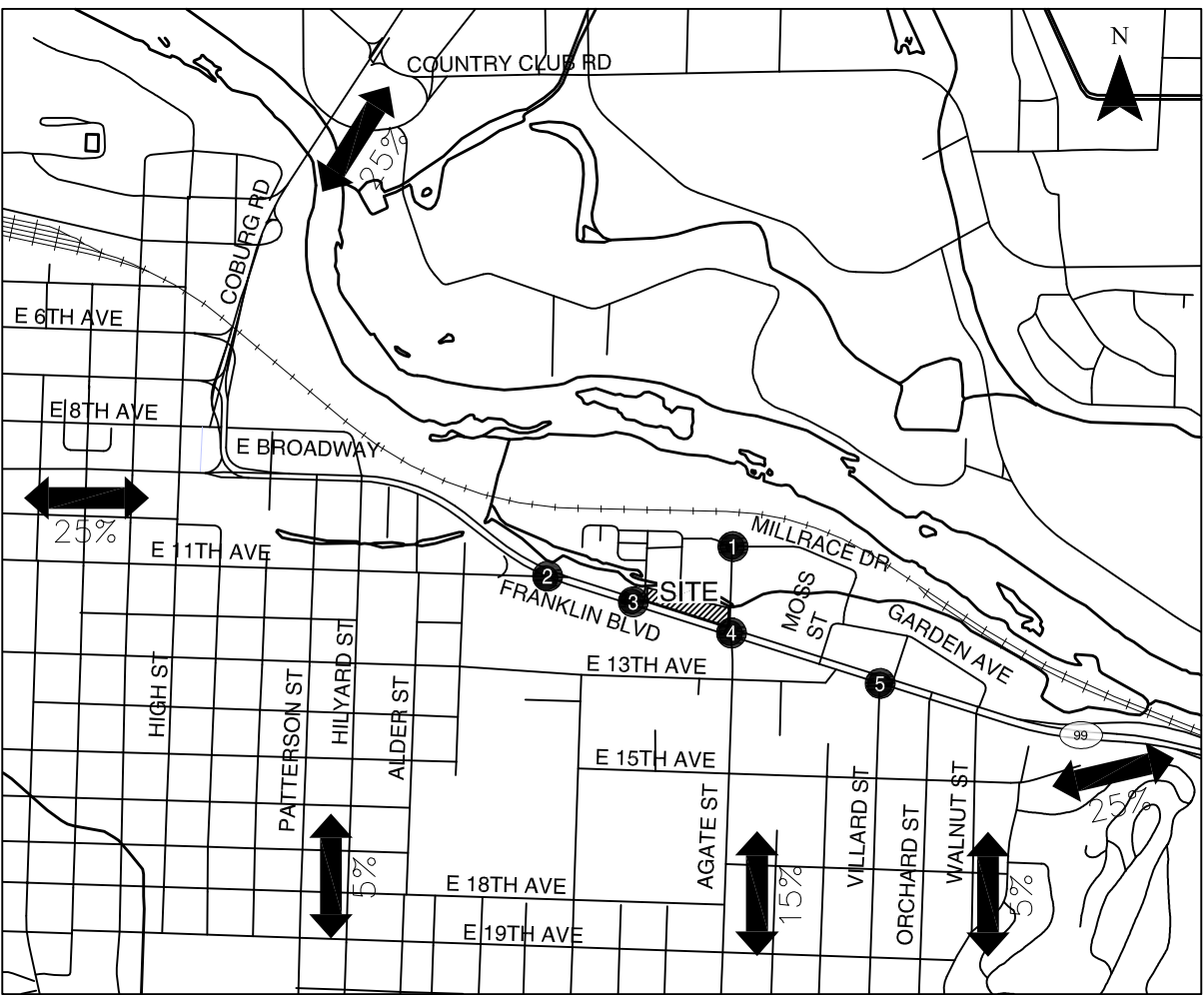
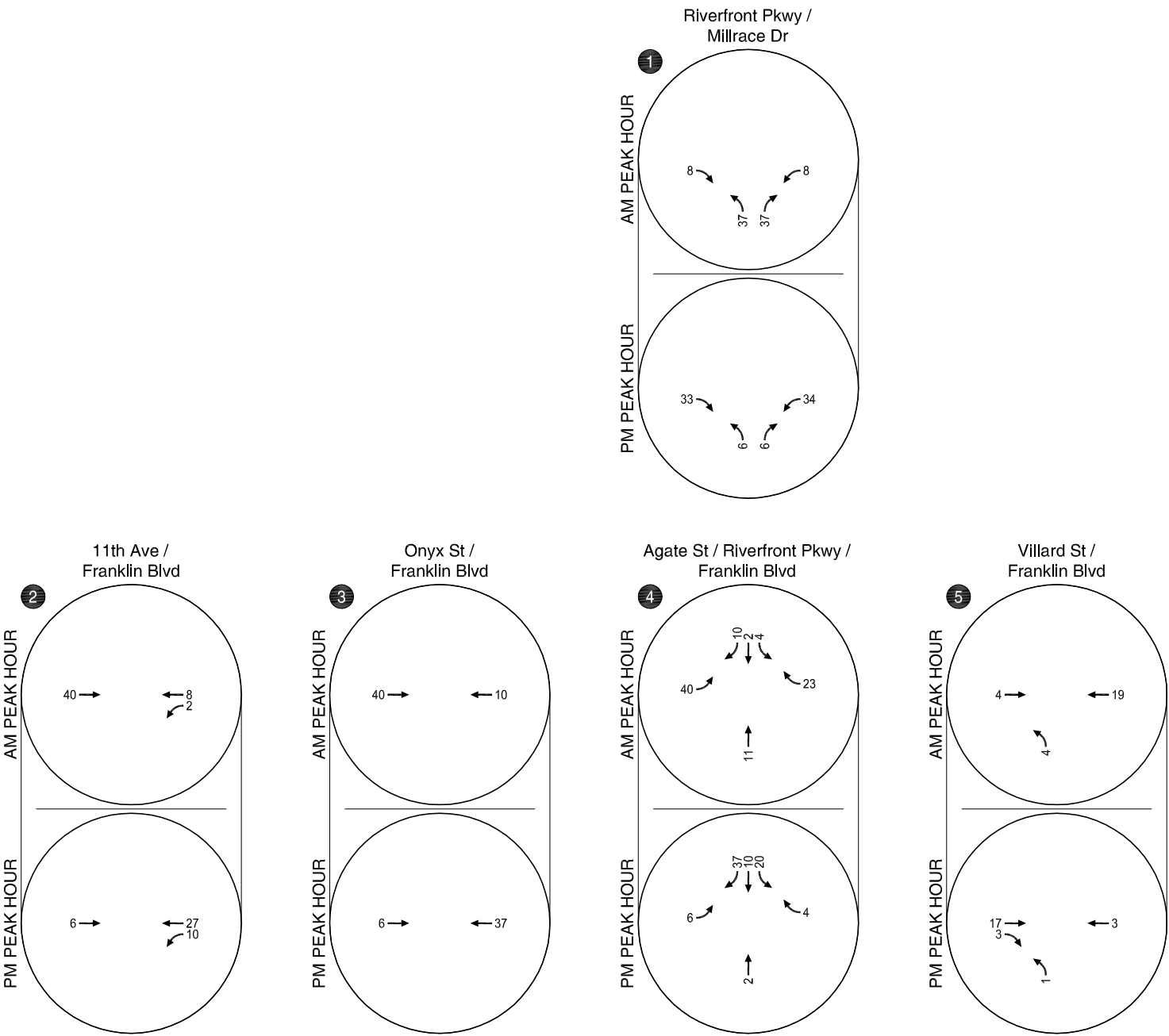
VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
00	PDO	NOT COLLECTED FOR PDO CRASHES
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST

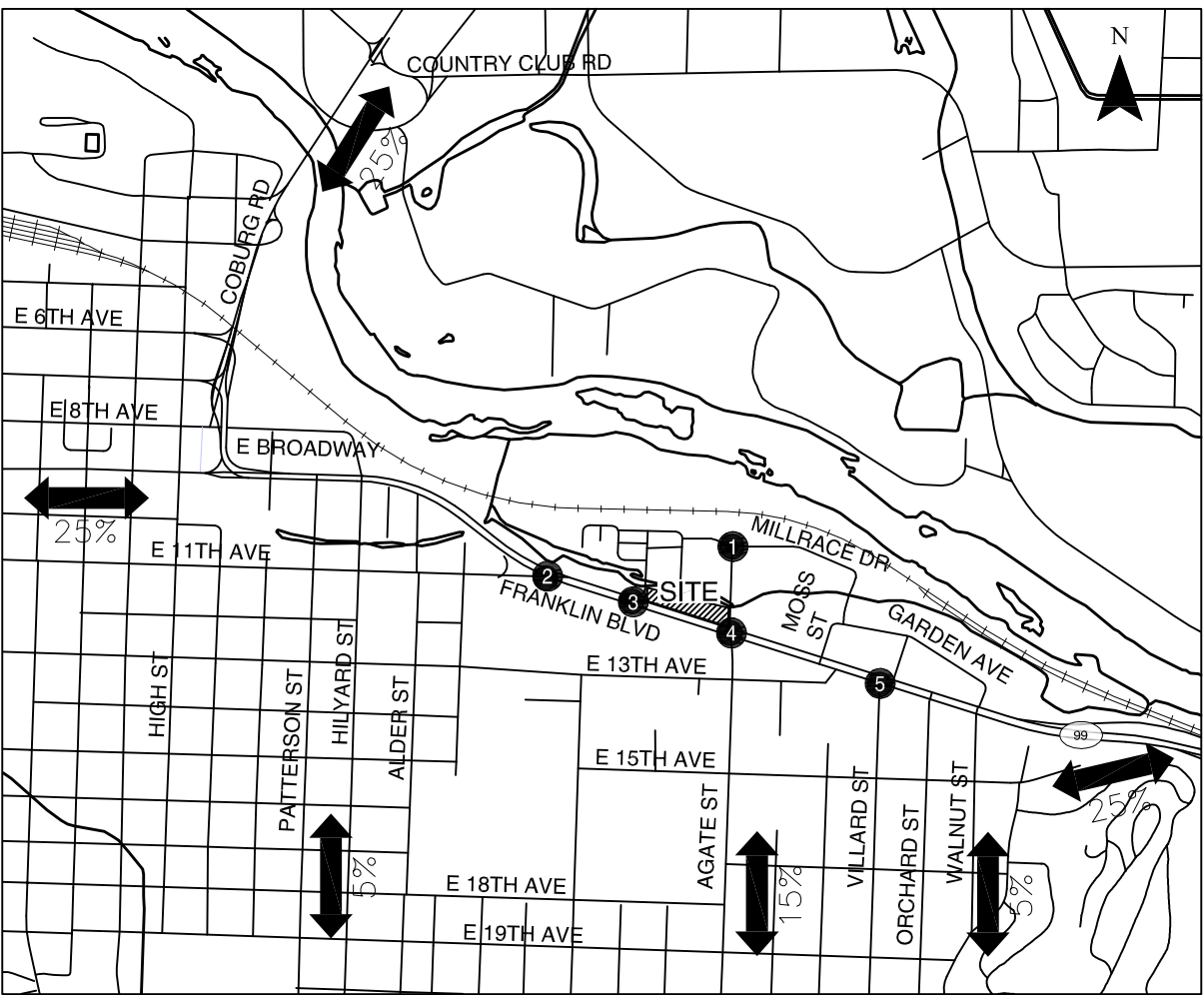
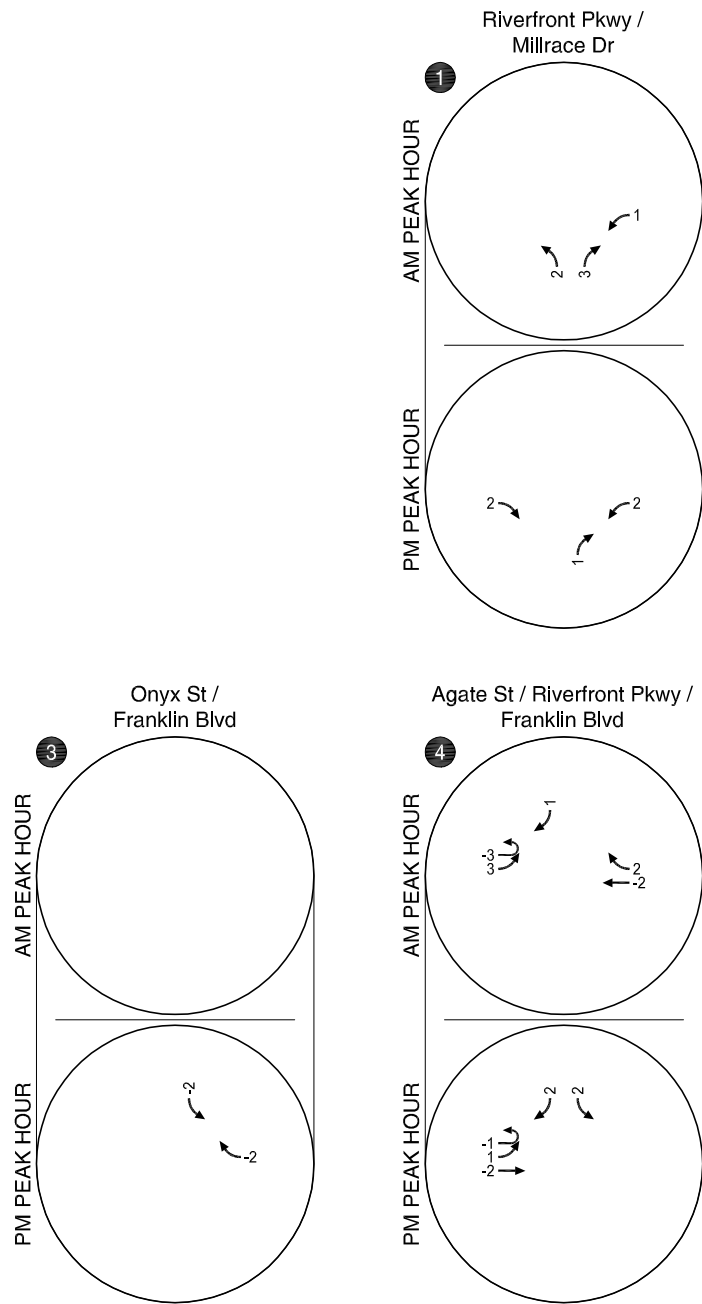
CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

Attachment E
Year 2035 Background
Conditions Level of Service
Worksheets



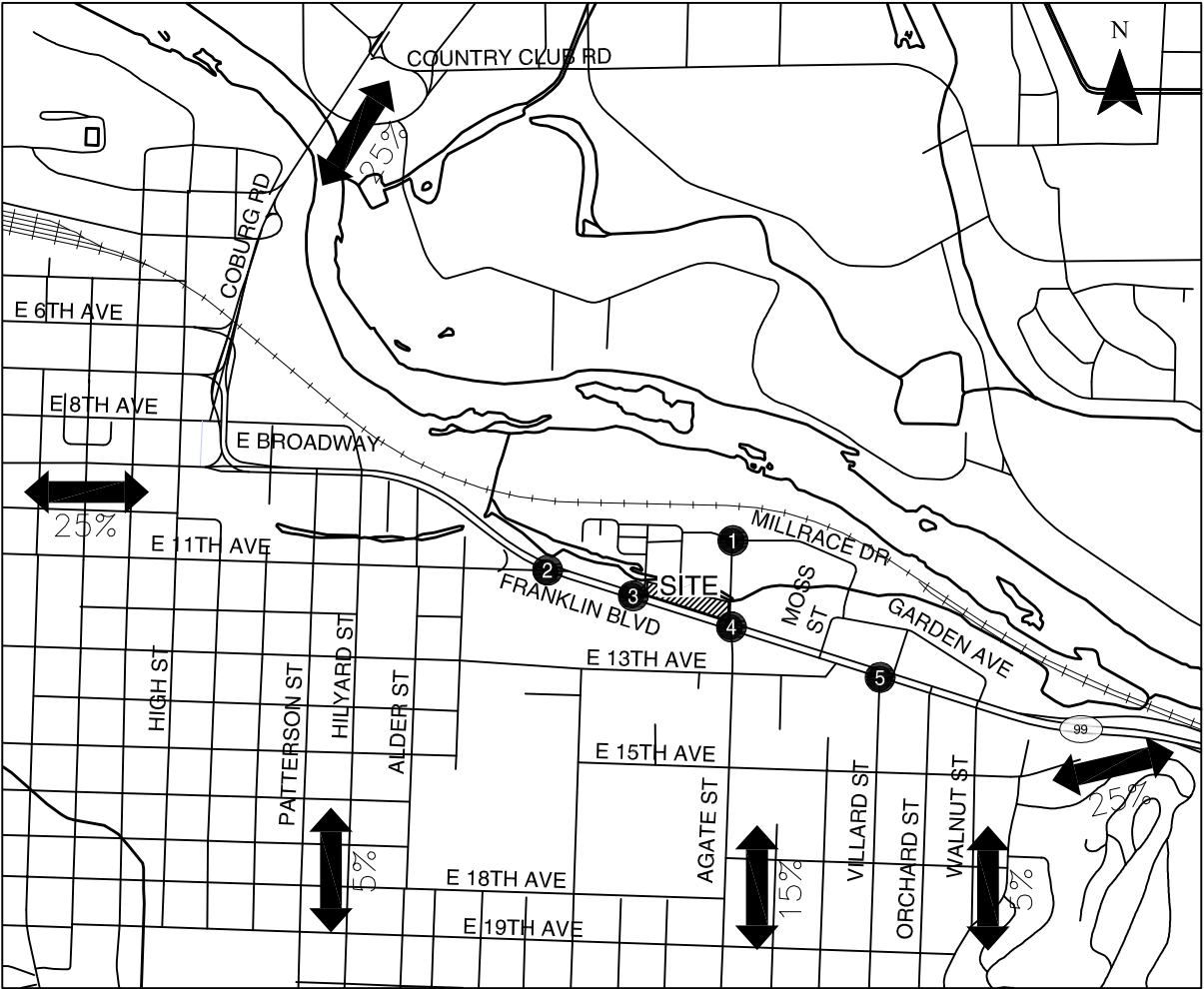
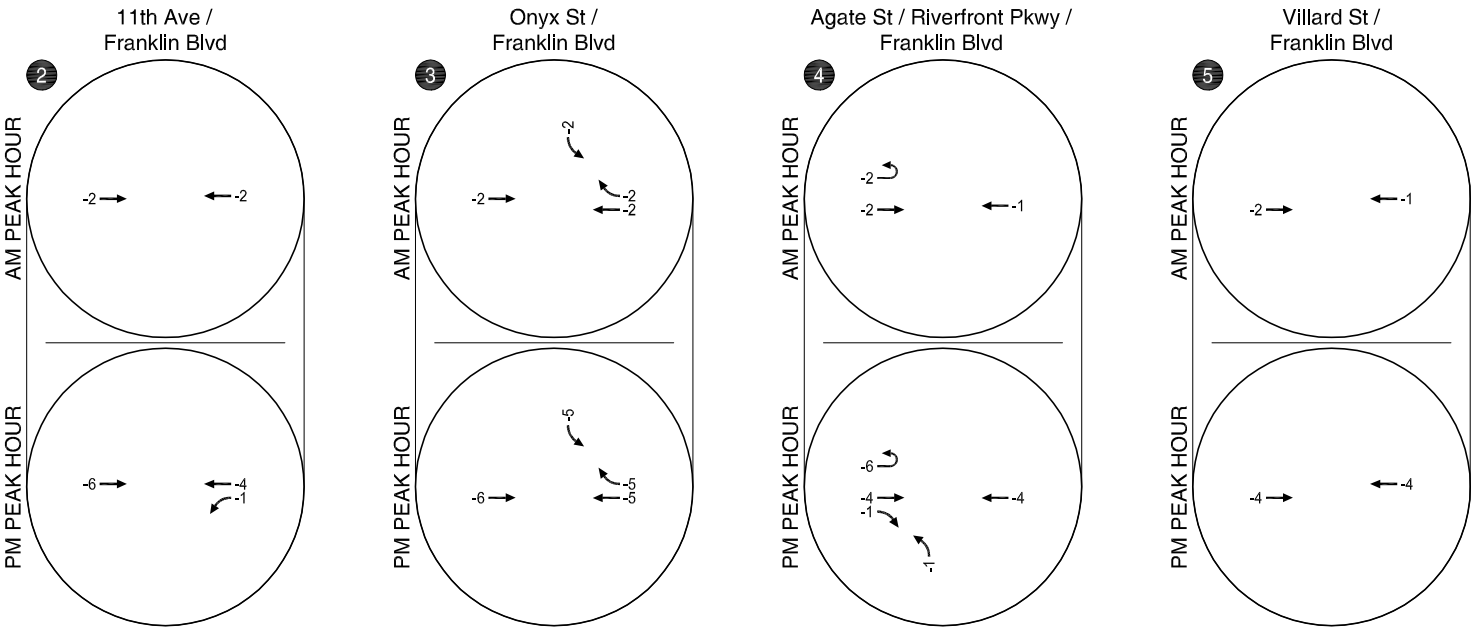
Gross Site-Generated Trips
Weekday AM and PM Peak Hours
Eugene, Oregon

Figure
6



Existing Trips to be Rerouted
Weekday AM and PM Peak Hours
Eugene, Oregon

Figure
7



















Existing Trips to be Removed
Weekday AM and PM Peak Hours
Eugene, Oregon

Figure
8

HCM Unsignalized Intersection Capacity Analysis

1: Riverfront Pkwy & Millrace Dr

06/13/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	6	38	191	2	0	13	0	41	0	0	0
Future Volume (Veh/h)	0	6	38	191	2	0	13	0	41	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	6	38	191	2	0	13	0	41	0	0	0
Pedestrians		21			69			14			20	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		2			7			1			2	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								815				
pX, platoon unblocked												
vC, conflicting volume	88	157	35	170	136	110	21			110		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	88	157	35	170	136	110	21			110		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	96	71	100	100	99			100		
cM capacity (veh/h)	804	671	1009	651	688	870	1576			1395		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	44	193	54	0								
Volume Left	0	191	13	0								
Volume Right	38	0	41	0								
cSH	944	652	1576	1700								
Volume to Capacity	0.05	0.30	0.01	0.00								
Queue Length 95th (ft)	4	31	1	0								
Control Delay (s)	9.0	12.8	1.8	0.0								
Lane LOS	A	B	A									
Approach Delay (s)	9.0	12.8	1.8	0.0								
Approach LOS	A	B										
Intersection Summary												
Average Delay			10.2									
Intersection Capacity Utilization			36.7%			ICU Level of Service				A		
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

2: 11th Ave & Franklin Blvd


















06/13/2018

	→	↘	↙	←	↗	↖
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑↑		↘↙	↑↑		↗↖
Traffic Volume (vph)	1690	0	989	1707	0	628
Future Volume (vph)	1690	0	989	1707	0	628
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11
Total Lost time (s)	4.5		4.5	4.5		4.5
Lane Util. Factor	0.91		0.97	0.95		0.88
Frpb, ped/bikes	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	4868		3319	3455		2668
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	4868		3319	3455		2668
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1690	0	989	1707	0	628
RTOR Reduction (vph)	0	0	0	0	0	16
Lane Group Flow (vph)	1690	0	989	1707	0	612
Confl. Peds. (#/hr)		6	6			1
Heavy Vehicles (%)	3%	0%	2%	1%	0%	3%
Turn Type	NA		Prot	NA		Over
Protected Phases	2		1	6		1
Permitted Phases						
Actuated Green, G (s)	40.9		26.3	76.2		26.3
Effective Green, g (s)	40.9		26.3	76.2		26.3
Actuated g/C Ratio	0.54		0.35	1.00		0.35
Clearance Time (s)	4.5		4.5	4.5		4.5
Vehicle Extension (s)	4.0		2.5	4.0		2.5
Lane Grp Cap (vph)	2612		1145	3455		920
v/s Ratio Prot	c0.35		c0.30	0.49		0.23
v/s Ratio Perm						
v/c Ratio	0.65		0.86	0.49		0.66
Uniform Delay, d1	12.5		23.3	0.0		21.2
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.6		6.9	0.2		1.6
Delay (s)	13.2		30.2	0.2		22.8
Level of Service	B		C	A		C
Approach Delay (s)	13.2			11.2	22.8	
Approach LOS	B			B	C	
Intersection Summary						
HCM 2000 Control Delay			13.3		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.73			
Actuated Cycle Length (s)			76.2		Sum of lost time (s)	9.0
Intersection Capacity Utilization			75.4%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

3: Franklin Blvd & Onyx St

06/13/2018

												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	9	9	2263	37	0	2636	17	32	1	21	14	14
Future Volume (vph)	9	9	2263	37	0	2636	17	32	1	21	14	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	11	11	11	12	12	12	12	12
Total Lost time (s)		4.5	4.5			4.5			4.5			4.5
Lane Util. Factor		1.00	0.91			0.91			1.00			1.00
Frpb, ped/bikes		1.00	1.00			1.00			0.93			1.00
Flpb, ped/bikes		1.00	1.00			1.00			0.95			0.95
Frt		1.00	1.00			1.00			0.95			1.00
Flt Protected		0.95	1.00			1.00			0.97			0.98
Satd. Flow (prot)		1745	4851			4910			1558			1760
Flt Permitted		0.95	1.00			1.00			0.84			0.89
Satd. Flow (perm)		1745	4851			4910			1354			1598
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)	9	9	2263	37	0	2636	17	32	1	21	14	14
RTOR Reduction (vph)	0	0	1	0	0	0	0	0	5	0	0	0
Lane Group Flow (vph)	0	18	2299	0	0	2653	0	0	49	0	0	28
Confl. Peds. (#/hr)		8		29			8	77		42	42	
Confl. Bikes (#/hr)				1			4			48		
Heavy Vehicles (%)	0%	0%	3%	0%	0%	2%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA			NA		Perm	NA		Perm	NA
Protected Phases	5	5	2			6			8			4
Permitted Phases								8			4	
Actuated Green, G (s)		1.4	80.3			74.4			20.7			20.7
Effective Green, g (s)		1.4	80.3			74.4			20.7			20.7
Actuated g/C Ratio		0.01	0.73			0.68			0.19			0.19
Clearance Time (s)		4.5	4.5			4.5			4.5			4.5
Vehicle Extension (s)		2.0	4.0			4.0			3.0			3.0
Lane Grp Cap (vph)		22	3541			3320			254			300
v/s Ratio Prot		0.01	c0.47			c0.54						
v/s Ratio Perm									c0.04			0.02
v/c Ratio		0.82	0.65			0.80			0.19			0.09
Uniform Delay, d1		54.2	7.6			12.5			37.6			36.9
Progression Factor		1.00	1.00			0.43			1.00			1.00
Incremental Delay, d2		105.7	0.9			0.7			0.4			0.1
Delay (s)		159.9	8.6			6.1			38.0			37.0
Level of Service		F	A			A			D			D
Approach Delay (s)			9.7			6.1			38.0			36.7
Approach LOS			A			A			D			D
Intersection Summary												
HCM 2000 Control Delay			8.5			HCM 2000 Level of Service			A			
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			13.5			
Intersection Capacity Utilization			96.5%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Franklin Blvd & Onyx St

06/13/2018























Movement	SBR
Land Configurations	7
Traffic Volume (vph)	28
Future Volume (vph)	28
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frpb, ped/bikes	0.89
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1432
Flt Permitted	1.00
Satd. Flow (perm)	1432
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	28
RTOR Reduction (vph)	23
Lane Group Flow (vph)	5
Confl. Peds. (#/hr)	77
Confl. Bikes (#/hr)	23
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	20.7
Effective Green, g (s)	20.7
Actuated g/C Ratio	0.19
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	269
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.02
Uniform Delay, d1	36.4
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	36.4
Level of Service	D
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

4: Agate St/Riverfront Pkwy & Franklin Blvd

06/13/2018

												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	14	30	2021	233	0	2173	19	296	8	67	49	32
Future Volume (vph)	14	30	2021	233	0	2173	19	296	8	67	49	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	11	11	11	11	11	11	11	11
Grade (%)			0%			0%			0%			2%
Total Lost time (s)		4.5	4.5	4.5		4.5		5.0	5.0		5.0	5.0
Lane Util. Factor		1.00	0.91	1.00		0.91		0.97	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.90		1.00		1.00	0.81		1.00	0.91
Flpb, ped/bikes		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	0.87		1.00	0.87
Flt Protected		0.95	1.00	1.00		1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)		1711	4868	1388		4906		3351	1261		1727	1441
Flt Permitted		0.95	1.00	1.00		1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)		1711	4868	1388		4906		3351	1261		1727	1441
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)	14	30	2021	233	0	2173	19	296	8	67	49	32
RTOR Reduction (vph)	0	0	0	56	0	1	0	0	19	0	0	6
Lane Group Flow (vph)	0	44	2021	177	0	2191	0	296	56	0	49	197
Confl. Peds. (#/hr)		31		44	44		31	79		201	201	
Confl. Bikes (#/hr)				4			5			34		
Heavy Vehicles (%)	2%	2%	3%	1%	0%	2%	0%	1%	0%	2%	0%	0%
Turn Type	Prot	Prot	NA	Perm		NA		Prot	NA		Prot	NA
Protected Phases	5	5	2			6		3	8		7	4
Permitted Phases				2								
Actuated Green, G (s)		3.7	54.6	54.6		46.4		14.2	31.4		9.5	26.7
Effective Green, g (s)		3.7	54.6	54.6		46.4		14.2	31.4		9.5	26.7
Actuated g/C Ratio		0.03	0.50	0.50		0.42		0.13	0.29		0.09	0.24
Clearance Time (s)		4.5	4.5	4.5		4.5		5.0	5.0		5.0	5.0
Vehicle Extension (s)		2.5	2.5	2.5		2.5		2.5	2.5		2.5	2.5
Lane Grp Cap (vph)		57	2416	688		2069		432	359		149	349
v/s Ratio Prot		0.03	c0.42			c0.45		c0.09	0.04		0.03	c0.14
v/s Ratio Perm				0.13								
v/c Ratio		0.77	0.84	0.26		1.06		0.69	0.16		0.33	0.56
Uniform Delay, d1		52.7	23.9	16.0		31.8		45.8	29.4		47.3	36.5
Progression Factor		1.01	1.08	1.63		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		37.4	2.9	0.7		37.6		4.1	0.1		0.9	1.7
Delay (s)		90.9	28.7	26.8		69.4		49.9	29.5		48.2	38.2
Level of Service		F	C	C		E		D	C		D	D
Approach Delay (s)			29.7			69.4			45.7			40.2
Approach LOS			C			E			D			D
Intersection Summary												
HCM 2000 Control Delay			48.4			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			19.0			
Intersection Capacity Utilization			91.2%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Agate St/Riverfront Pkwy & Franklin Blvd

06/13/2018























Movement	SBR
Lane Configurations	
Traffic Volume (vph)	171
Future Volume (vph)	171
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	171
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	79
Confl. Bikes (#/hr)	20
Heavy Vehicles (%)	1%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

5: Villard St & Franklin Blvd

06/13/2018

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	30	34	2004	177	9	55	2010	8	130	8	73	27
Future Volume (vph)	30	34	2004	177	9	55	2010	8	130	8	73	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	11	11	11	12	12	12	12
Total Lost time (s)		4.5	4.5	4.5		4.5	4.5			4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.91			1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.80		1.00	1.00			1.00	0.93	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00			1.00	1.00	0.96
Frt		1.00	1.00	0.85		1.00	1.00			1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00			0.96	1.00	0.95
Satd. Flow (prot)		1745	3388	1229		1711	4912			1781	1492	1665
Flt Permitted		0.95	1.00	1.00		0.95	1.00			0.69	1.00	0.60
Satd. Flow (perm)		1745	3388	1229		1711	4912			1285	1492	1056
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)	30	34	2004	177	9	55	2010	8	130	8	73	27
RTOR Reduction (vph)	0	0	0	52	0	0	0	0	0	0	46	0
Lane Group Flow (vph)	0	64	2004	125	0	64	2018	0	0	138	27	27
Confl. Peds. (#/hr)		12		95		95		12			53	53
Confl. Bikes (#/hr)				22				4			5	
Heavy Vehicles (%)	0%	0%	3%	2%	2%	2%	2%	0%	2%	0%	1%	4%
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Perm	NA	Perm	Perm
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases				2					8		8	4
Actuated Green, G (s)		5.7	64.6	64.6		6.5	65.4			25.4	25.4	25.4
Effective Green, g (s)		5.7	64.6	64.6		6.5	65.4			25.4	25.4	25.4
Actuated g/C Ratio		0.05	0.59	0.59		0.06	0.59			0.23	0.23	0.23
Clearance Time (s)		4.5	4.5	4.5		4.5	4.5			4.5	4.5	4.5
Vehicle Extension (s)		2.5	3.0	3.0		3.5	3.0			3.5	3.5	3.5
Lane Grp Cap (vph)		90	1989	721		101	2920			296	344	243
v/s Ratio Prot		0.04	c0.59			c0.04	0.41					
v/s Ratio Perm				0.10						c0.11	0.02	0.03
v/c Ratio		0.71	1.01	0.17		0.63	0.69			0.47	0.08	0.11
Uniform Delay, d1		51.3	22.7	10.4		50.6	15.3			36.5	33.1	33.4
Progression Factor		1.00	1.00	1.00		1.00	1.00			1.00	1.00	1.00
Incremental Delay, d2		21.8	22.0	0.5		12.8	1.4			1.4	0.1	0.2
Delay (s)		73.1	44.7	10.9		63.4	16.7			37.8	33.2	33.6
Level of Service		E	D	B		E	B			D	C	C
Approach Delay (s)			42.9				18.1			36.2		
Approach LOS			D				B			D		
Intersection Summary												
HCM 2000 Control Delay			31.3				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			95.5%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Villard St & Franklin Blvd

06/13/2018

















	↓	↘
Movement	SBT	SBR
Lane Configurations	↰	↱
Traffic Volume (vph)	35	33
Future Volume (vph)	35	33
Ideal Flow (vphpl)	1900	1900
Lane Width	12	12
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.93	
Flt Protected	1.00	
Satd. Flow (prot)	1724	
Flt Permitted	1.00	
Satd. Flow (perm)	1724	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	35	33
RTOR Reduction (vph)	25	0
Lane Group Flow (vph)	43	0
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		3
Heavy Vehicles (%)	0%	3%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	25.4	
Effective Green, g (s)	25.4	
Actuated g/C Ratio	0.23	
Clearance Time (s)	4.5	
Vehicle Extension (s)	3.5	
Lane Grp Cap (vph)	398	
v/s Ratio Prot	0.03	
v/s Ratio Perm		
v/c Ratio	0.11	
Uniform Delay, d1	33.4	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	33.5	
Level of Service	C	
Approach Delay (s)	33.5	
Approach LOS	C	
Intersection Summary		

Attachment F
Year 2035 Total Conditions
Level of Service Worksheets

HCM Unsignalized Intersection Capacity Analysis

1: Riverfront Pkwy & Millrace Dr

06/13/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	6	38	273	2	0	13	0	79	0	0	0
Future Volume (Veh/h)	0	6	38	273	2	0	13	0	79	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	6	38	273	2	0	13	0	79	0	0	0
Pedestrians		71			119			14			20	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		7			11			1			2	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								815				
pX, platoon unblocked												
vC, conflicting volume	158	295	85	240	256	178	71			198		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	158	295	85	240	256	178	71			198		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	96	47	100	100	99			100		
cM capacity (veh/h)	639	508	901	513	534	756	1438			1229		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	44	275	92	0								
Volume Left	0	273	13	0								
Volume Right	38	0	79	0								
cSH	815	513	1438	1700								
Volume to Capacity	0.05	0.54	0.01	0.00								
Queue Length 95th (ft)	4	78	1	0								
Control Delay (s)	9.7	19.8	1.1	0.0								
Lane LOS	A	C	A									
Approach Delay (s)	9.7	19.8	1.1	0.0								
Approach LOS	A	C										
Intersection Summary												
Average Delay			14.6									
Intersection Capacity Utilization			41.9%			ICU Level of Service				A		
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

2: 11th Ave & Franklin Blvd


















06/13/2018

	→	↘	↙	←	↗	↖
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑↑↑		↘↙	↑↑		↗↖
Traffic Volume (vph)	1711	0	1001	1740	0	628
Future Volume (vph)	1711	0	1001	1740	0	628
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11
Total Lost time (s)	4.5		4.5	4.5		4.5
Lane Util. Factor	0.91		0.97	0.95		0.88
Frpb, ped/bikes	1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	4868		3319	3455		2668
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	4868		3319	3455		2668
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1711	0	1001	1740	0	628
RTOR Reduction (vph)	0	0	0	0	0	16
Lane Group Flow (vph)	1711	0	1001	1740	0	612
Confl. Peds. (#/hr)		6	6			1
Heavy Vehicles (%)	3%	0%	2%	1%	0%	3%
Turn Type	NA		Prot	NA		Over
Protected Phases	2		1	6		1
Permitted Phases						
Actuated Green, G (s)	41.2		26.5	76.7		26.5
Effective Green, g (s)	41.2		26.5	76.7		26.5
Actuated g/C Ratio	0.54		0.35	1.00		0.35
Clearance Time (s)	4.5		4.5	4.5		4.5
Vehicle Extension (s)	4.0		2.5	4.0		2.5
Lane Grp Cap (vph)	2614		1146	3455		921
v/s Ratio Prot	c0.35		c0.30	0.50		0.23
v/s Ratio Perm						
v/c Ratio	0.65		0.87	0.50		0.66
Uniform Delay, d1	12.7		23.5	0.0		21.3
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.7		7.5	0.2		1.6
Delay (s)	13.3		31.1	0.2		23.0
Level of Service	B		C	A		C
Approach Delay (s)	13.3			11.4	23.0	
Approach LOS	B			B	C	
Intersection Summary						
HCM 2000 Control Delay			13.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.74			
Actuated Cycle Length (s)			76.7		Sum of lost time (s)	9.0
Intersection Capacity Utilization			76.1%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

3: Franklin Blvd & Onyx St

06/13/2018

												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	9	9	2284	37	0	2681	24	32	1	21	21	14
Future Volume (vph)	9	9	2284	37	0	2681	24	32	1	21	21	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	11	11	11	12	12	12	12	12
Total Lost time (s)		4.5	4.5			4.5			4.5			4.5
Lane Util. Factor		1.00	0.91			0.91			1.00			1.00
Frpb, ped/bikes		1.00	1.00			1.00			0.89			1.00
Flpb, ped/bikes		1.00	1.00			1.00			0.93			0.88
Frt		1.00	1.00			1.00			0.95			1.00
Flt Protected		0.95	1.00			1.00			0.97			0.97
Satd. Flow (prot)		1745	4851			4908			1452			1626
Flt Permitted		0.95	1.00			1.00			0.84			0.85
Satd. Flow (perm)		1745	4851			4908			1257			1424
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)	9	9	2284	37	0	2681	24	32	1	21	21	14
RTOR Reduction (vph)	0	0	1	0	0	1	0	0	5	0	0	0
Lane Group Flow (vph)	0	18	2320	0	0	2704	0	0	49	0	0	35
Confl. Peds. (#/hr)		8		29			8	117		82	82	
Confl. Bikes (#/hr)				1			4			63		
Heavy Vehicles (%)	0%	0%	3%	0%	0%	2%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA			NA		Perm	NA		Perm	NA
Protected Phases	5	5	2			6			8			4
Permitted Phases								8			4	
Actuated Green, G (s)		1.4	80.3			74.4			20.7			20.7
Effective Green, g (s)		1.4	80.3			74.4			20.7			20.7
Actuated g/C Ratio		0.01	0.73			0.68			0.19			0.19
Clearance Time (s)		4.5	4.5			4.5			4.5			4.5
Vehicle Extension (s)		2.0	4.0			4.0			3.0			3.0
Lane Grp Cap (vph)		22	3541			3319			236			267
v/s Ratio Prot		0.01	c0.48			c0.55						
v/s Ratio Perm									c0.04			0.02
v/c Ratio		0.82	0.66			0.81			0.21			0.13
Uniform Delay, d1		54.2	7.7			12.8			37.7			37.2
Progression Factor		1.00	1.00			0.48			1.00			1.00
Incremental Delay, d2		105.7	1.0			0.6			0.4			0.2
Delay (s)		159.9	8.6			6.8			38.2			37.4
Level of Service		F	A			A			D			D
Approach Delay (s)			9.8			6.8			38.2			37.0
Approach LOS			A			A			D			D
Intersection Summary												
HCM 2000 Control Delay			8.8			HCM 2000 Level of Service			A			
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			13.5			
Intersection Capacity Utilization			99.6%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: Franklin Blvd & Onyx St

06/13/2018























Movement	SBR
Land Configurations	7
Traffic Volume (vph)	28
Future Volume (vph)	28
Ideal Flow (vphpl)	1900
Lane Width	12
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frpb, ped/bikes	0.83
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1347
Flt Permitted	1.00
Satd. Flow (perm)	1347
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	28
RTOR Reduction (vph)	23
Lane Group Flow (vph)	5
Confl. Peds. (#/hr)	117
Confl. Bikes (#/hr)	38
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Actuated Green, G (s)	20.7
Effective Green, g (s)	20.7
Actuated g/C Ratio	0.19
Clearance Time (s)	4.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	253
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.02
Uniform Delay, d1	36.4
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	36.4
Level of Service	D
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

4: Agate St/Riverfront Pkwy & Franklin Blvd

06/13/2018

												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	14	51	2021	233	0	2173	30	296	14	67	74	44
Future Volume (vph)	14	51	2021	233	0	2173	30	296	14	67	74	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	11	11	11	11	11	11	11	11
Grade (%)			0%			0%			0%			2%
Total Lost time (s)		4.5	4.5	4.5		4.5		5.0	5.0		5.0	5.0
Lane Util. Factor		1.00	0.91	1.00		0.91		0.97	1.00		1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.90		1.00		1.00	0.78		1.00	0.88
Flpb, ped/bikes		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	0.88		1.00	0.88
Flt Protected		0.95	1.00	1.00		1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)		1711	4868	1388		4900		3351	1232		1727	1387
Flt Permitted		0.95	1.00	1.00		1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)		1711	4868	1388		4900		3351	1232		1727	1387
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)	14	51	2021	233	0	2173	30	296	14	67	74	44
RTOR Reduction (vph)	0	0	0	57	0	1	0	0	11	0	0	6
Lane Group Flow (vph)	0	65	2021	176	0	2202	0	296	70	0	74	254
Confl. Peds. (#/hr)		31		44	44		31	119		241	241	
Confl. Bikes (#/hr)				4			5			49		
Heavy Vehicles (%)	2%	2%	3%	1%	0%	2%	0%	1%	0%	2%	0%	0%
Turn Type	Prot	Prot	NA	Perm		NA		Prot	NA		Prot	NA
Protected Phases	5	5	2			6		3	8		7	4
Permitted Phases				2								
Actuated Green, G (s)		4.5	54.5	54.5		45.5		12.6	22.7		18.3	28.4
Effective Green, g (s)		4.5	54.5	54.5		45.5		12.6	22.7		18.3	28.4
Actuated g/C Ratio		0.04	0.50	0.50		0.41		0.11	0.21		0.17	0.26
Clearance Time (s)		4.5	4.5	4.5		4.5		5.0	5.0		5.0	5.0
Vehicle Extension (s)		2.5	2.5	2.5		2.5		2.5	2.5		2.5	2.5
Lane Grp Cap (vph)		69	2411	687		2026		383	254		287	358
v/s Ratio Prot		0.04	c0.42			c0.45		c0.09	0.06		0.04	c0.18
v/s Ratio Perm				0.13								
v/c Ratio		0.94	0.84	0.26		1.09		0.77	0.28		0.26	0.71
Uniform Delay, d1		52.6	23.9	16.0		32.2		47.3	36.7		39.9	37.1
Progression Factor		1.01	1.09	1.64		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		76.0	2.9	0.7		48.1		9.0	0.4		0.3	5.9
Delay (s)		129.4	28.9	27.0		80.3		56.3	37.2		40.3	42.9
Level of Service		F	C	C		F		E	D		D	D
Approach Delay (s)			31.6			80.3			52.2			42.3
Approach LOS			C			F			D			D
Intersection Summary												
HCM 2000 Control Delay			54.3			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			19.0			
Intersection Capacity Utilization			99.6%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Agate St/Riverfront Pkwy & Franklin Blvd

06/13/2018























Movement	SBR
Lane Configurations	
Traffic Volume (vph)	216
Future Volume (vph)	216
Ideal Flow (vphpl)	1900
Lane Width	11
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	216
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	119
Confl. Bikes (#/hr)	35
Heavy Vehicles (%)	1%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

5: Villard St & Franklin Blvd

06/13/2018

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	30	34	2025	181	9	55	2020	8	131	8	73	27
Future Volume (vph)	30	34	2025	181	9	55	2020	8	131	8	73	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	11	11	11	12	12	12	12
Total Lost time (s)		4.5	4.5	4.5		4.5	4.5			4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.91			1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.80		1.00	1.00			1.00	0.93	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00			1.00	1.00	0.96
Frt		1.00	1.00	0.85		1.00	1.00			1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00			0.95	1.00	0.95
Satd. Flow (prot)		1745	3388	1229		1711	4912			1781	1492	1665
Flt Permitted		0.95	1.00	1.00		0.95	1.00			0.69	1.00	0.60
Satd. Flow (perm)		1745	3388	1229		1711	4912			1285	1492	1052
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)	30	34	2025	181	9	55	2020	8	131	8	73	27
RTOR Reduction (vph)	0	0	0	53	0	0	0	0	0	0	46	0
Lane Group Flow (vph)	0	64	2025	128	0	64	2028	0	0	139	27	27
Confl. Peds. (#/hr)		12		95		95		12			53	53
Confl. Bikes (#/hr)				22				4			5	
Heavy Vehicles (%)	0%	0%	3%	2%	2%	2%	2%	0%	2%	0%	1%	4%
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Perm	NA	Perm	Perm
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases				2					8		8	4
Actuated Green, G (s)		5.7	64.6	64.6		6.5	65.4			25.4	25.4	25.4
Effective Green, g (s)		5.7	64.6	64.6		6.5	65.4			25.4	25.4	25.4
Actuated g/C Ratio		0.05	0.59	0.59		0.06	0.59			0.23	0.23	0.23
Clearance Time (s)		4.5	4.5	4.5		4.5	4.5			4.5	4.5	4.5
Vehicle Extension (s)		2.5	3.0	3.0		3.5	3.0			3.5	3.5	3.5
Lane Grp Cap (vph)		90	1989	721		101	2920			296	344	242
v/s Ratio Prot		0.04	c0.60			c0.04	0.41					
v/s Ratio Perm				0.10						c0.11	0.02	0.03
v/c Ratio		0.71	1.02	0.18		0.63	0.69			0.47	0.08	0.11
Uniform Delay, d1		51.3	22.7	10.5		50.6	15.4			36.5	33.1	33.4
Progression Factor		1.00	1.00	1.00		1.00	1.00			1.00	1.00	1.00
Incremental Delay, d2		21.8	24.8	0.5		12.8	1.4			1.4	0.1	0.2
Delay (s)		73.1	47.5	11.0		63.4	16.8			37.9	33.2	33.6
Level of Service		E	D	B		E	B			D	C	C
Approach Delay (s)			45.3				18.2			36.3		
Approach LOS			D				B			D		
Intersection Summary												
HCM 2000 Control Delay			32.5				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			96.1%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Villard St & Franklin Blvd

06/13/2018

	↓	↘
Movement	SBT	SBR
Lane Configurations	↰	↱
Traffic Volume (vph)	35	33
Future Volume (vph)	35	33
Ideal Flow (vphpl)	1900	1900
Lane Width	12	12
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.93	
Flt Protected	1.00	
Satd. Flow (prot)	1724	
Flt Permitted	1.00	
Satd. Flow (perm)	1724	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	35	33
RTOR Reduction (vph)	24	0
Lane Group Flow (vph)	44	0
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		3
Heavy Vehicles (%)	0%	3%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	25.4	
Effective Green, g (s)	25.4	
Actuated g/C Ratio	0.23	
Clearance Time (s)	4.5	
Vehicle Extension (s)	3.5	
Lane Grp Cap (vph)	398	
v/s Ratio Prot	0.03	
v/s Ratio Perm		
v/c Ratio	0.11	
Uniform Delay, d1	33.4	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	33.5	
Level of Service	C	
Approach Delay (s)	33.6	
Approach LOS	C	
Intersection Summary		