EXHIBIT D

TPR Analysis

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September 16, 2021 Project #: 26462

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City of Tualatin
18880 SW Martinazzi Avenue
Tualatin, OR 97062

RE: Tualatin Heights Plan Map Amendment

Dear Mike,

This letter presents a Traffic Impact Analysis supporting a proposed plan map amendment that would rezone the Tualatin Heights multifamily apartment property from its existing Residential Medium Low zoning to Residential Medium-High Density zoning.

Based on the results of the transportation analysis outlined in this report, the proposed rezone has the potential to create a significant effect on the surrounding transportation network if no mitigations are proposed. However, acceptable operational levels can be achieved at the study intersections in the planning horizon year 2040 with potential mitigation measures in place as described in the report.

FINDINGS

Existing Transportation Conditions

- Traffic counts were collected in June 2021 at all of the study intersections during the critical weekday AM and PM peak travel periods. Historical 2019 counts were supplemented at several key intersections in order to account for travel demand reductions associated with on-going COVID-related factors.
- Operational analyses indicate that all of the study intersections currently operate acceptably based on the applicable City of Tualatin and Washington county standards.

Future Year 2040 Traffic Conditions

- The proposed land use action is a unique case that would involve upzoning the Tualatin Heights apartment complex property. The complex is approximately 22 acres in size and contains 220-unit multifamily apartment units. The underlying zoning is Residential Medium Low (RML) which currently allows for a maximum density of 10 dwelling units per

acre. Accordingly, the Tualatin Heights apartment complex is essentially maximizing the allowed development potential under the existing zoning. In order to support a vision for additional housing units on the site, the property owner is proposing to modify the zoning to Residential Medium-High Density (RMH) which would increase the density to a maximum of 15 dwelling units per acre.

- Background traffic volumes for the 2040 planning horizon year were estimated using a combination of regional travel demand model output and historical growth trends. Since the existing site is built out to its maximum allowed density, the resulting 2040 background traffic volumes represent the future traffic conditions that can be expected under the existing RML zoning.
- Operations of the study intersections under 2040 Background conditions (assuming regional and local traffic growth but no land use action on the Tualatin Heights site) found that all of the study intersections are forecast to continue to operate acceptably during both the weekday AM and PM peak hours with the exception of the SW Boones Ferry Road/SW Sagert Street intersection. During the weekday AM Peak hour, this intersection is forecast to operate over capacity (v/c of 1.09) and at Level of Service F conditions.
- With the proposed RMH zoning, it was determined that the increased density allowance can potentially result in 116 additional multifamily housing units. Using ITE land use code 221, this increased density has the potential to generate approximately 630 net new daily trips, 42 net new AM peak hour trips, and 51 net new PM peak hour trips.
- Operations of the study intersections under the 2040 proposed RMH zoning scenario found that all of the study intersections are forecast to operate acceptably during both the weekday AM and PM peak hours with the continued exception of the SW Boones Ferry Road/SW Sagert Street intersection. During the weekday AM Peak hour, this intersection is forecast to also operate over capacity (v/c of 1.10) and at Level of Service F conditions. While a very small degradation in operations compared to existing zoning, this technically represents an impact to the operations of the intersection. To address TPR requirements, the identification of a long-term mitigation plan would be needed to restore capacity to the intersection and show it can meet operating standards.
    - Although not formally included in the City of Tualatin's latest Transportation System Plan project list, the future year analysis behind the study did identify the potential for a northbound right-turn lane at the intersection. Such an improvement would restore capacity to the intersection and result in acceptable operations.

PROJECT BACKGROUND

The property located at 9301 SW Sagert Street, Tualatin, Oregon (see Figure 1) is approximately 22 acres in size and consists of the Tualatin Heights Apartments, a 220-unit multifamily apartment complex. The underlying zoning is Residential Medium Low (RML) which currently allows for a maximum density of 10 dwelling units per acre. Accordingly, the Tualatin Heights Apartments is essentially maximizing the allowed development potential under the existing zoning. In order to support a vision for additional housing units on the site, the property owner is proposing to modify the zoning to Residential Medium-High Density (RMH) which would increase the density to a maximum of 15 dwelling units per acre.

Per Oregon Administrative Rule 660-012-0060, also known as the Transportation Planning Rule (TPR), land use actions such as these need to determine if there will be a significant effect on an existing or planned transportation facility. Under these types of land use actions, a significant effect to a transportation facility typically is anything that could involve the degradation of the performance of an existing or planned transportation facility such that it would not meet adopted local performance standards. The following report addresses the TPR requirements.

Figure 1 – Site Vicinity Map

STUDY SCOPE & ANALYSIS METHODOLOGY

The proposed land use action is a unique case in that the existing development already represents the maximum development potential under the existing zoning. As such, the focus of this analysis is on the transportation impacts of the proposed zone amendment.

Study Scope

This analysis identifies the transportation-related impacts associated with the proposed land change. The study was prepared in accordance with the City of Tualatin's traffic impact study requirements and supplemental direction provided by City staff. The study scope and overall study area for this project were selected based on an analysis of current and future traffic volumes at study intersections and discussions with City staff. As required by the City's development review requirements and the TPR requirements, the analysis was prepared to address the following transportation issues:

- Existing land use and transportation system conditions within the site vicinity;
- Review of regional traffic growth and seasonal traffic patterns, in-process developments, planned transportation improvements, and related transportation impact studies for other developments in the study area;
- Site trip generation and distribution estimates for reasonable worst-case development scenarios for the proposed RMH zoning;
- Planning horizon year 2034 traffic operations under existing zoning and proposed RMH zoning scenarios;
- Identification of traffic system deficiencies and potential mitigation measures;
- Assessment of zone change compliance with the TPR (OAR Section 660-12-060); and,
- Conclusions and recommendations.

Study Intersections

The study intersections were identified in collaboration with City staff. Figure 1 illustrates the location of the study intersections that are listed below. For ease of review, each intersection is referenced within this report using a numerical ID.

1. Tualatin Sherwood Road / SW 95th Avenue
2. SW Sagert Street / SW 95th Avenue
3. SW Sagert Street / SW 93rd Avenue / West Tualatin Heights Site Access Driveway
4. SW Sagert Street / East Tualatin Heights Site Access Driveway
5. SW Sagert Street / SW Boones Ferry Road
6. SW Avery Street / SW 95th Avenue

Traffic Analysis Time Periods

Study intersection operations were analyzed during the weekday morning (intersection peak hour between 7:00-9:00 AM) and evening peak hour (intersection peak hour between 4:00-6:00 PM).

Analysis Methodology

The unsignalized and signalized intersection operational analyses presented in this report were prepared following Highway Capacity Manual 6th edition (Reference 2) analysis procedures using VISTRO software.

Applicable Mobility Standards

While the study area roadways are located exclusively within the City of Tualatin, some of the study intersections are owned/operated by Washington County. Intersection operating targets adopted by the City of Tualatin and Washington County are summarized below.

Washington County Intersection Operating Standards

Washington County maintains the traffic signal timing at the signalized SW Tualatin Sherwood Road/SW 95th Avenue and SW Boones Ferry Road/SW Sagert Street intersections. The acceptable standard for signalized intersections per Washington County motor vehicle performance measures is a v/c ratio no greater than 0.99 during the peak hour.

City of Tualatin Operating Standards

The City of Tualatin maintains all of the other study intersections. At unsignalized intersections, LOS E is considered the maximum operating standard.

EXISTING CONDITIONS TRAFFIC ANALYSIS

The existing conditions analysis identifies field conditions and the current operational, traffic control, and geometric characteristics of the roadways and other transportation facilities within the study vicinity. These conditions will be compared with future year conditions later in this report. Kittelson staff visited the study area and inventoried the existing transportation system to identify lane configurations, traffic control devices, bicycle and pedestrian facilities, transit stops, and geometric features at the study intersections during the summer of 2019.

Site Conditions and Adjacent Land Uses

The Tualatin Heights apartment complex is bounded by SW Sagert Street to the south, SW 95th Avenue to the west, a Pacific & Wester rail line to the north, and residential development to the east.

Transportation Facilities

Table 2 summarizes the attributes of key roadways in the site vicinity. Figure 2 illustrates the existing lane configurations and traffic control devices at the study intersections.

Table 1 – Existing Transportation Facilities

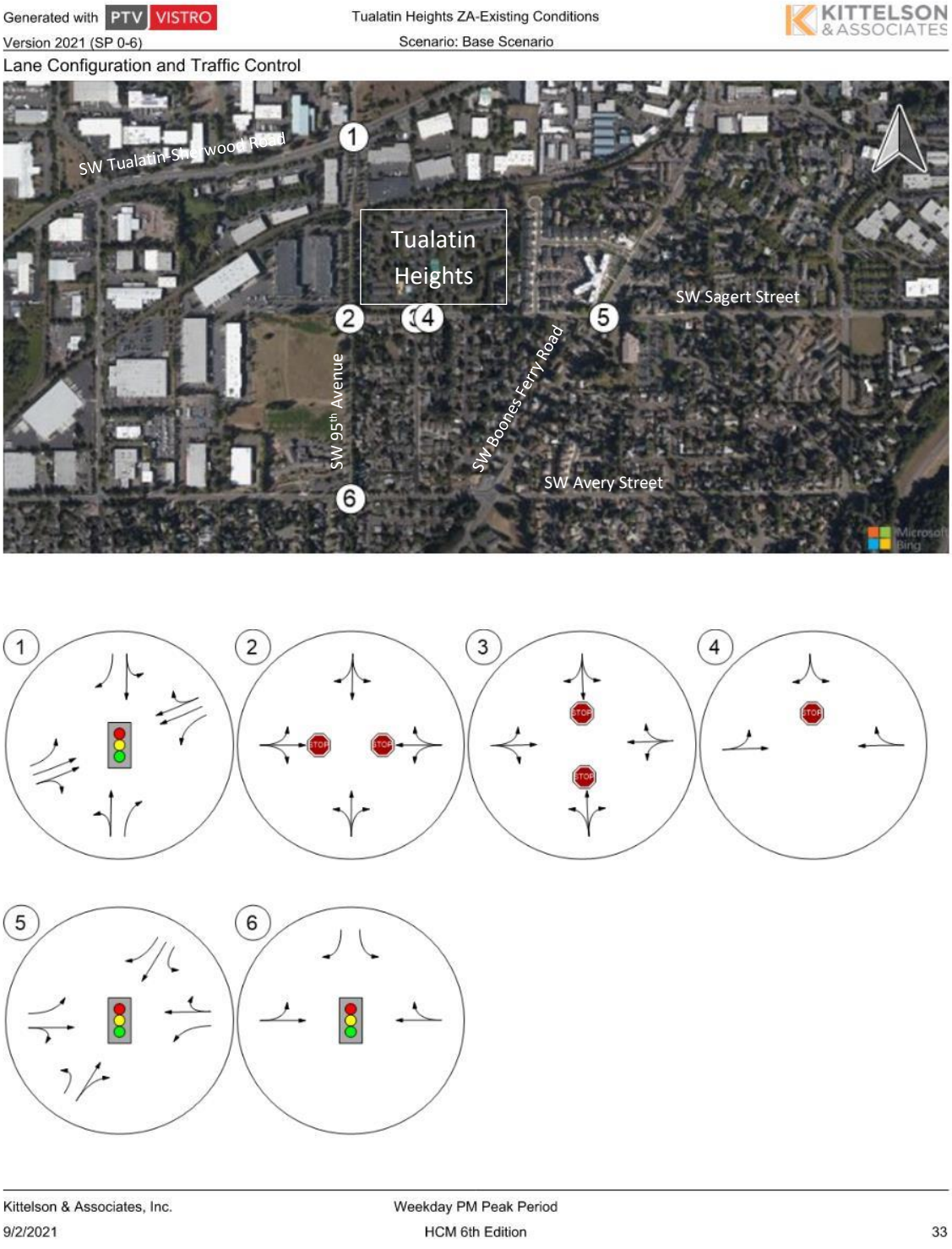
Roadway	Jurisdictional Authority	Functional Classification[1]	Number of Auto Lanes	Posted Speed (MPH)	Sidewalks Present	Bicycle Lanes Present	On-Street Parking Allowed?
SW Tualatin Sherwood Road	Washington County	Arterial – Washinton County Major Arterial - Tualatin	5	45	Yes	Yes	No
SW Sagert Street	Tualatin	Minor Collector	2	25	Yes	Yes[2]	Yes[2]
SW Avery Street	Tualatin	Major Collector	2	35	Yes	Yes	No
SW 95th Avenue	Tualatin	Minor Collector	2	35	Yes	Partial	No
SW 93rd Avenue	Tualatin	Local Street	2	25	Partial	No	Yes
SW Boones Ferry Road	Tualatin	Arterial – Washington County Major Arterial - Tualatin	3	35	Yes	Yes	No

[1] Source: City of Tualatin Transportation System Plan and Washington County Transportation System Plan
[3] Only on the south side

Transit Facilities

TriMet provides transit service in the Portland Metro area including fixed bust route, light rail, and commuter rail transit services. The Tualatin Heights apartment complex is not directly served by fixed route transit service. However, Route 97 provides daily weekday service along SW Tualatin Sherwood Road and Route 96 provides daily weekday service along portions of SW Boones Ferry Road and SW Sagert Street (east of SW Boones Ferry Road). Both stops are within a ¼-mile walking distance of the Tualatin Heights apartment complex.

Figure 2 - Existing Study Intersection Lane Configurations and Traffic Control Devices



Existing Conditions Operational Analysis

COVID Adjustment

Turning movement counts at the study intersections were conducted on a mid-week day in June 2021. *Appendix "A" contains the intersection turning movement count sheets*. Due to the atypical traffic conditions associated with the on-going COVID-19 pandemic, prior turning movement counts at several of the study intersections were consulted to assess the validity of the June 2021 counts. Available counts collected in 2019 at SW 95th Avenue/SW Avery Street, SW 95th Avenue/SW Sagert Street, SW Boones Ferry Road/SW Avery Street, and SW Tualatin Sherwood Road/SW Teton Avenue[1] were compared to counts taken in June 2021. As shown in Table 2, the 2021 counts revealed significantly lower volumes at the SW 95th Avenue/SW Sagert Street and SW 95th Avenue/SW Avery Street intersections. This is likely due in part to the fact that although the 2021 counts were taken while the nearby Tualatin Elementary School was still in session, the school was operating in a hybrid setting with split cohort schedules and some kids still in a virtual learning setting. In addition to these differences, the SW Boones Ferry Road corridor volumes measured in 2021 appear to be significantly lower when compared to the 2019 volumes takes at the SW Boones Ferry Road/SW Avery Street intersection.

Based on these findings, the following changes were made to the study intersection volumes to better reflect conditions that occur when schools are fully in-session and fewer people are working from home:

- The 2019 AM peak hour volumes at the SW 95th Avenue/SW Avery Street and SW 95th Avenue/SW Sagert Street intersections were used in place of the more recent 2021 AM peak hour counts as it was determined that they more accurately represent typical traffic volumes with the Tualatin Elementary School in full/normal session.
- The 2021 AM peak hour volumes at the SW Boones Ferry Road/SW Sagert Street intersection were proportionally adjusted based on the SW Boones Ferry Road corridor volumes extracted from the 2019 SW Boones Ferry Road/SW Avery Street intersection volumes.
- All other intersection volumes were factored and balanced (where necessary) according to the percent change in volumes summarized in Table 2.

[1] Although not study intersections, counts at the SW Tualatin Sherwood Road/SW Teton Avenue and SW Boones Ferry Road/SW Avery Street intersection were assessed to help understand volume differences along the SW Tualatin Sherwood Road and SW Boones Ferry Road corridors.

Table 2 - COVID Adjustment

Intersection	Weekday AM Peak Hour			Weekday PM Peak Hour		
	2019 Count	2021 Count	Difference	2019 Count	2021 Count	Difference
SW 95th Avenue/ SW Sagert Street[1]	583	265	-120%	492	468	-5%
SW 95th Avenue/ SW Avery Street[1]	920	583	-58%	962	949	-1%
SW Boones Ferry Road/ SW Avery Street[2]	1,228	810	-68%	1,428	1,433	+1%
SW Tualatin Sherwood Road/ SW Teton Avenue[3]	2,039	1,902	-7%	2,126	2,140	+1%

[1] Identified volumes represent the total entering volume at the intersection
[2] Identified volume is the total volume on the north leg of SW Boones Ferry Road (representing the segment volume between SW Sagert Street and SW Avery Street.
[3] Identified volume is the total volume on the east leg of SW Tualatin Sherwood Road (representing the segment volume between SW Teton Avenue and SW 95th Avenue.

Figures 3 and 4 illustrate the adjusted 2021 existing traffic volumes at the study intersections while Table 3 summarizes the corresponding traffic operations during the weekday morning and evening peak hours. As shown in Table 3 and detailed in *Appendix "B"* (which includes the existing conditions operations analysis worksheets), the study intersection operations satisfy applicable City of Tualatin and Washington County standards.

Table 3 – Existing Traffic Conditions

Intersection	Weekday AM Peak Hour				Weekday PM Peak Hour			
	Critical Approach/ Lane	V/C	Delay (sec)	LOS	Critical Approach/ Lane	V/C	Delay (sec)	LOS
SW Tualatin Sherwood Road/ SW 95th Avenue	-	0.54	16.9	B	-	0.55	17.6	B
SW Sagert Street/ SW 95th Avenue	WB	0.55	19.3	C	WB	0.24	12.8	B
SW Sagert Street/ SW 93rd Avenue/ West Tualatin Heights Driveway	SB	0.06	11.7	B	SB	0.04	11.7	B
SW Sagert Street/East Tualatin Heights Driveway	SB	0.07	11.7	B	SB	0.07	10.9	B
SW Sagert Street/ SW Boones Ferry Road	-	0.86	32.5	C	-	0.70	19.0	B
SW Avery Street/ SW 95th Avenue	-	0.55	6.6	A	-	0.54	6.4	A

Figure 3 – Existing Traffic Volumes, Weekday AM Peak Hour

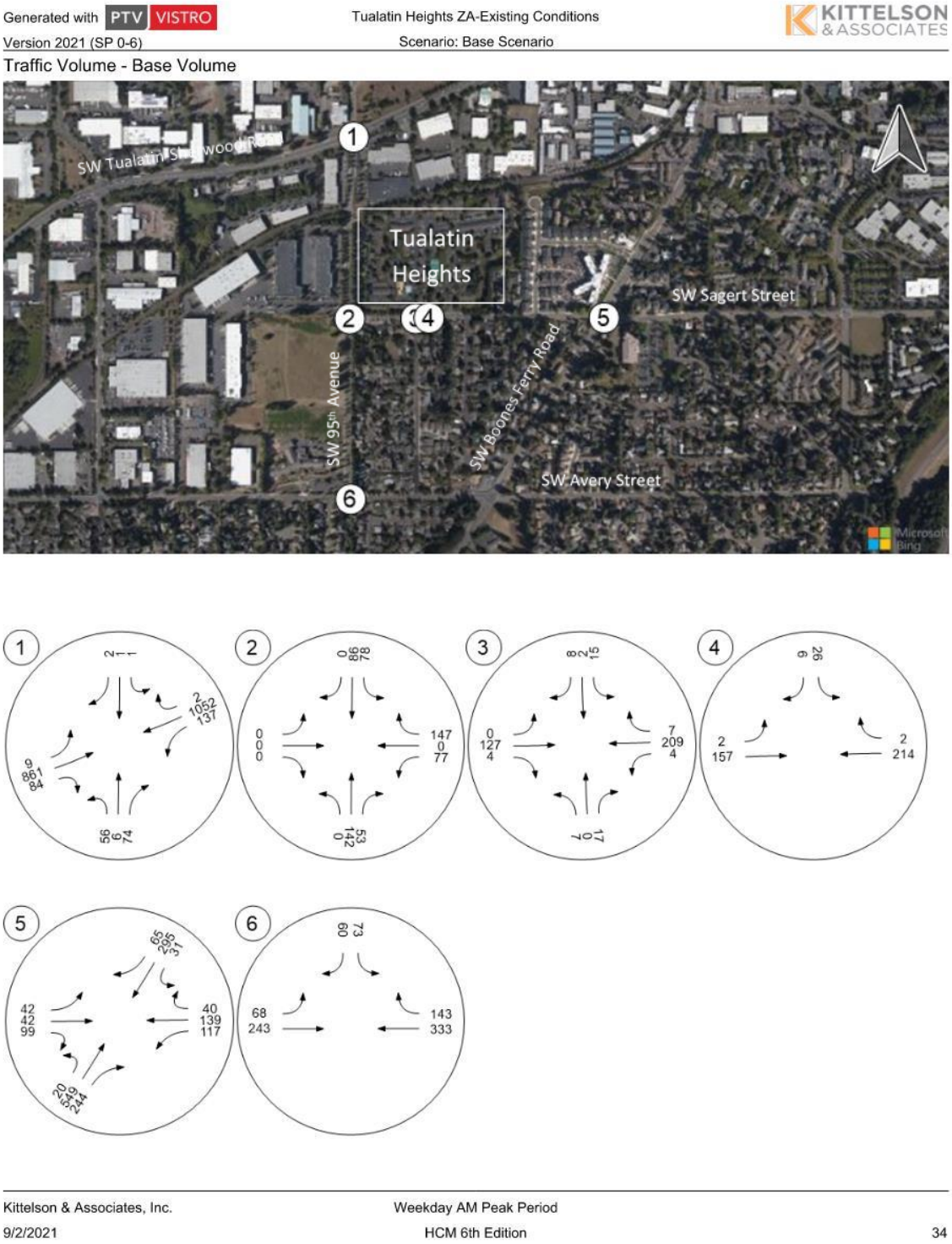
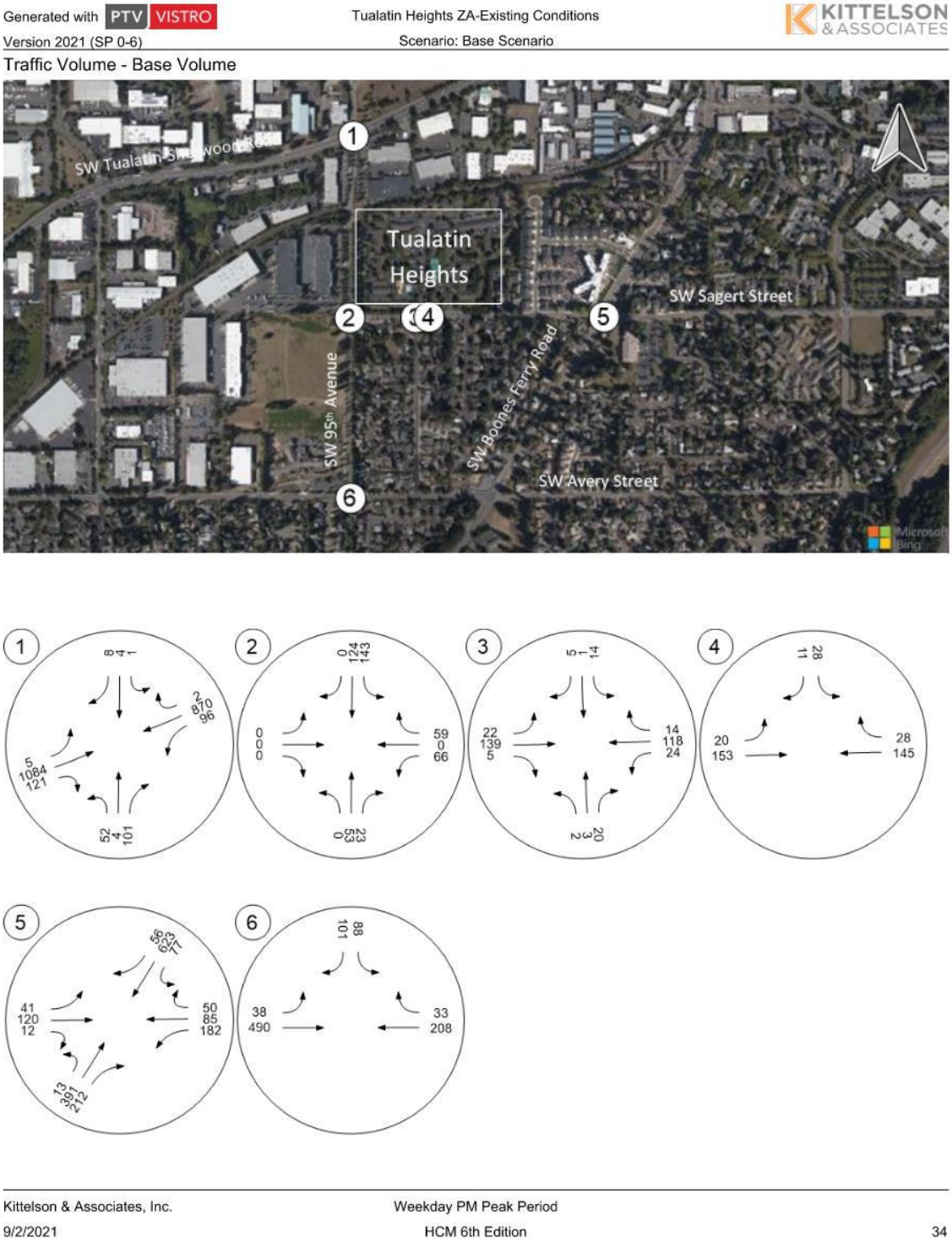


Figure 4 – Existing Traffic Volumes, Weekday PM Peak Hour



Intersection Crash History

The crash histories at the individual study intersections were obtained and reviewed in an effort to identify potential safety issues. ODOT provided crash records for the study intersections for the five-year period from January 1, 2015 through December 31, 2019. Table 4 summarizes the ODOT crash data.

Table 4 – Study Intersection Crash Summary (January 2015 to December 2019)

Study Intersections	Collision Type					Severity			Total
	Rear-End	Turning	Angle	Fixed Object	Other	PDO	Injury	Fatal	
Tualatin Sherwood Road / SW 95th Avenue	9	7	1	0	0	6	11	0	17
SW Sagert Street / SW 95th Avenue	0	3	0	0	0	0	3	0	3
SW Sagert Street / SW 93rd Avenue / Tualatin Heights Site Access Driveway	0	0	0	0	0	0	0	0	0
SW Sagert Street / SW Boones Ferry Road	1	7	3	0	0	5	6	0	11
SW Avery Street / SW 95th Avenue	1	0	0	0	0	1	0	0	1

In addition to the crash types, intersection crash rates were calculated and compared to statewide crash rate performance thresholds per guidance in the ODOT *Analysis Procedures Manual*. For this analysis, the observed crash rate was calculated and compared with the 90th percentile crash rates for urban intersections by traffic control and approach configuration. The intersection crash rate assessment for the study intersections is summarized in Table 5.

Table 5 – Intersection Critical Crash Rate Assessment

Intersection	Total Crashes	Observed Crash Rate	90th Percentile Crash Rate by Lane Type and Traffic Control	Observed Crash Rate > 90th Percentile Crash Rate?
Tualatin Sherwood Road / SW 95th Avenue	17	0.40	0.86	No
SW Sagert Street / SW 95th Avenue	3	0.35	0.29	Yes
SW Sagert Street / SW 93rd Avenue / Tualatin Heights Site Access Driveway	0	0.00	0.29	No
SW Sagert Street / SW Boones Ferry Road	11	0.32	0.86	No
SW Avery Street / SW 95th Avenue	1	0.06	0.29	No

A review of Table 5 revealed the following:

- The majority of crashes at the SW Tualatin Sherwood Road/SW 95th Avenue intersection consisted of rear-end and turning crashes. A review of these crashes indicated they were evenly distributed amongst the applicable approaches/movements with no other discernable patterns.

- The observed crash rate at the SW Sagert Street/SW 95th Avenue intersection exceeds the 90th percentile crash rates for similar urban intersections statewide. Partly for this reason, the City of Tualatin will be converting the intersection to an all-way stop-controlled intersection in late 2021/2022. Additional details regarding this planned and funded improvement are provided later in this report.
- The majority of crashes at the SW Boones Ferry Road/SW Sagert Street intersection consisted of turning crashes. A review of these crashes revealed that the crashes were generally distributed amongst the various turn movements with no other discernable patterns.

No safety-based mitigation measures were identified for implementation with the proposed development based on review of the study intersection crash history. *Appendix "C" contains the crash data summary sheets.*

YEAR 2040 TRAFFIC CONDITIONS

This section of the report contains a detailed assessment of the long-term traffic impacts associated with the proposed plan map amendment. More specifically, it evaluates the impacts of additional housing units within the Tualatin Heights apartment complex consistent with the higher density allowed in the proposed RMH zone. The analysis of long-term traffic conditions is mandated by the State's Transportation Planning Rule (TPR, OAR Section 660-12-0060), given that the proposed plan map amendment would require an amendment to an acknowledged land use regulation and may have the potential to significantly affect a transportation facility.

To test for significant effect, an analysis of traffic conditions was conducted under reasonable worst-case site development scenarios for the subject site under the proposed RMH zoning and its maximum 15 dwelling units per acre allowance.

Based on the required analysis, the impacts of traffic generated by the potential RMH zoning were examined in the following manner:

- Anticipated background traffic growth patterns were identified for the weekday AM and PM peak hour under the 2040 planning horizon year[2].
- Planned transportation improvements in the site vicinity were identified and reviewed.
- Reasonable worst-case land development scenarios were developed under the proposed RMH zoning designation. Estimates of average daily, weekday AM, and weekday PM peak hour site trips were prepared for the potential RMH zoning designation.
- A site trip distribution pattern was derived through a review of existing traffic volumes at the Tualatin Heights site access driveways.
- Weekday AM and PM peak hour site-generated trips from the RMH zoning were assigned to the surrounding street/study intersections network.
- Planning horizon year 2040 traffic volumes, operations, and vehicle queuing conditions were analyzed for the weekday AM and PM peak hour under existing background conditions and for the proposed RMH zoning designation.
- Operational deficiencies were identified and appropriate mitigation measures were evaluated.

[2] 2034 is technically the official planning horizon year as it matches the 20-year planning period from the City of Tualatin's 2014 Transportation System Plan. This time period is consistent with OAR 660-012-0060 which requires that the comparative operations analysis be *measured at the end of the planning period identified in the adopted TSP*. However, as will be outlined later in this report, a more conservative 2040 horizon year was chosen as it is consistent with the long-term planning year used in the Metro Regional Travel Demand Model.

Year 2040 Planned Transportation Improvements

The Transportation Planning Rule provides specific language and direction on how planned transportation improvements can be included in the long-range transportation impact analyses for proposed comprehensive plan and zone changes. Specifically, the TPR allows roadway or intersection improvement projects to be included in the analysis if they are in a Capital Improvement Plan with secured funding, are on a "financially constrained" project list in the adopted TSP, or alternatively, are deemed by the local agency to be "reasonably likely to occur" within the planning horizon. Within the study area, the following improvements have been identified to occur within the 2040 planning horizon based on consultation with City of Tualatin engineering staff:

- Conversion of the SW 95th Avenue/SW Sagert Street intersection to all-way stop-control. This project includes the removal of the existing curb extensions and reconstruction of the curbs, ramps, and sidewalks in the vicinity of the intersection.
- Installation of a pedestrian activated pedestrian beacon to facilitate mid-block pedestrian crossings of SW Sagert Street near the SW 93rd Avenue intersection.
- Installation of "No Turn on Red" signs at the south and east legs of the SW 95th Avenue/SW Avery Street intersection.

Year 2040 Background Traffic Forecast

To achieve a reasonable estimate of background traffic levels during the 2040 planning horizon year, this analysis relied primarily on travel forecasting data from the Metro Regional Travel Demand Model. For the weekday PM time period, intersection turn movements were generated by the model at the study intersections for the base year 2015 and forecast year 2040 model scenarios. These turn movement volumes were then processed and refined using the 2019 and 2021 intersection turning movement counts to generate base level future year intersection volumes. To account for a noted imbalance and inconsistency with the volumes generated by the 2015 Tualatin Transportation System Plan (TSP), an additional 2% per year growth rate was applied to the north/south volumes on SW Boones Ferry Road at the SW Sagert Street intersection.

Since the travel demand model is only a PM peak hour based model, the weekday AM 2040 background volumes at the study intersections were developed by applying a growth rate calculated from the percentage increase in total entering volumes from the existing weekday PM and 2040 background weekday PM volumes.

The resulting Year 2040 background traffic volumes forecast for the weekday AM and PM peak hour are illustrated in Figures 5 and 6 for all study intersections. These figures reflect background traffic levels without any changes to the underlying zoning on the subject site.

Figure 5 – 2040 Background Traffic Volumes, Weekday AM Peak Hour

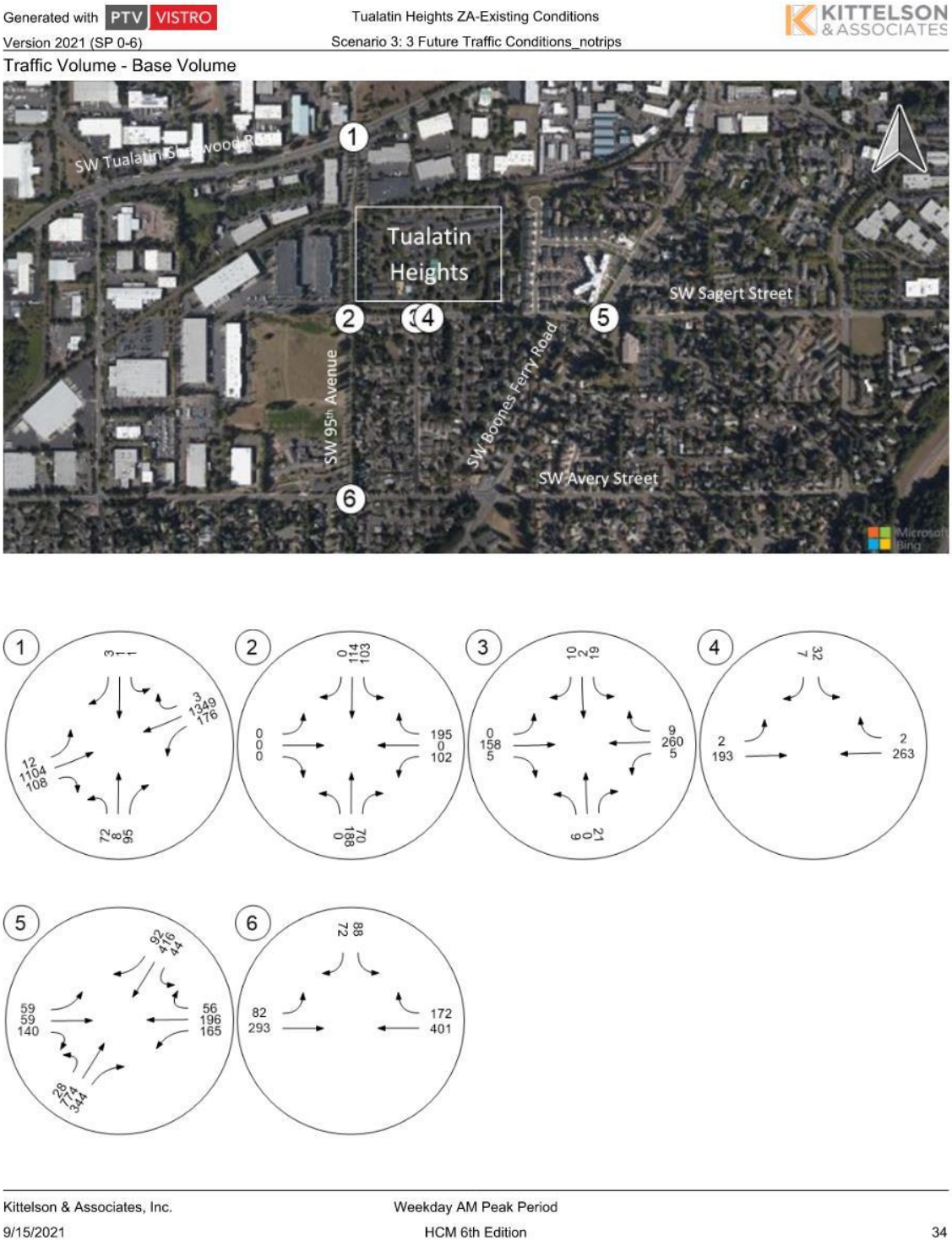
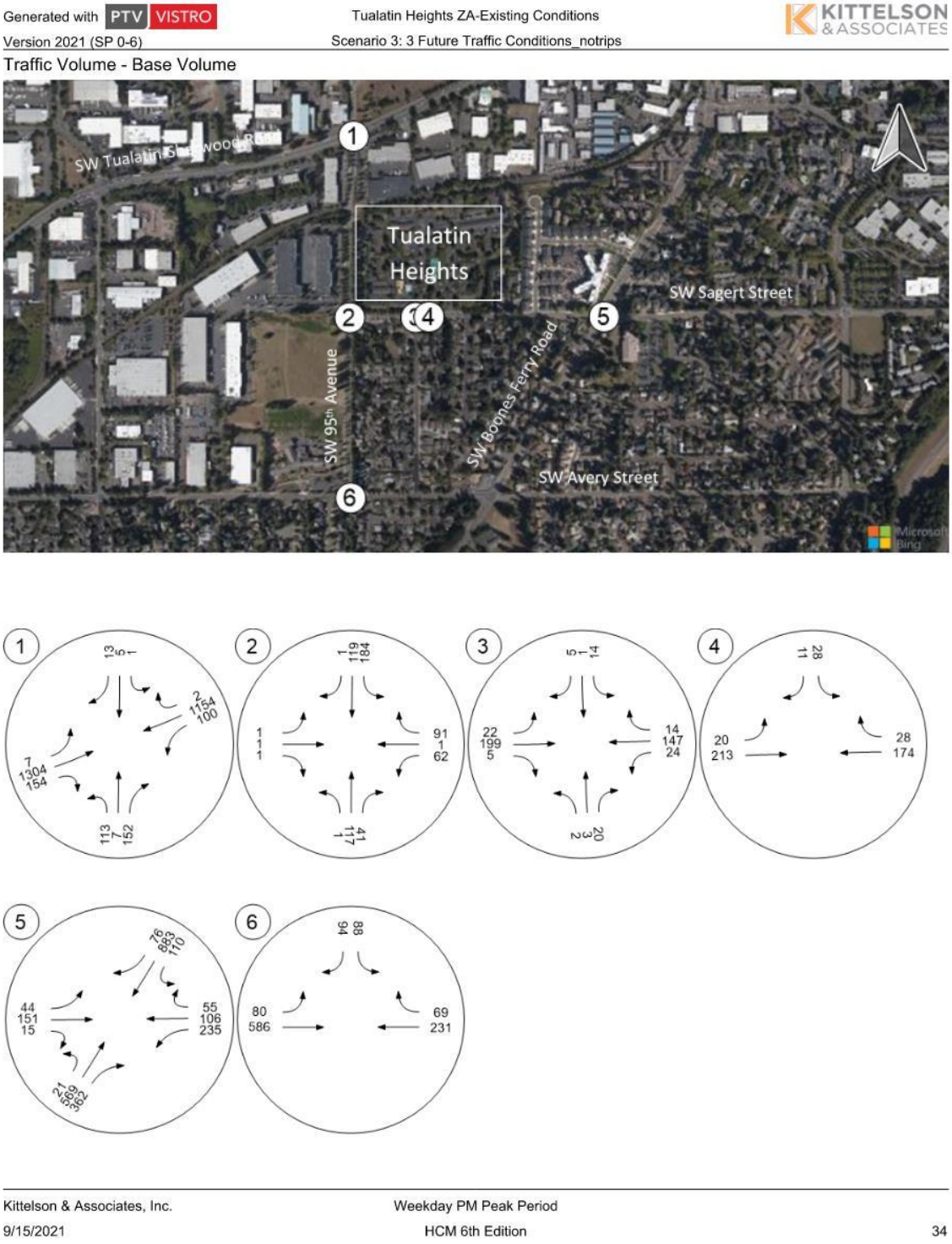


Figure 6 – 2040 Background Traffic Volumes, Weekday PM Peak Hour



Year 2040 Background Intersection Operations (No Change in Zoning)

Operations of the study intersections under 2040 Background conditions (representing no zoning modifications on the Tualatin Heights property) were assessed with the previously noted transportation improvements to understand the base future year operations assuming no changes are made to the Tualatin Heights Apartment site zoning. Table 6 summarizes the operational analyses for the weekday AM and PM peak hour reflective of anticipated regional and local traffic volume growth. As shown, all of the study intersections are forecast to continue to operate acceptably during both the weekday AM and PM peak hours with the exception of the SW Boones Ferry Road/SW Sagert Street intersection. During the weekday AM Peak hour, the intersection is forecast to operate with a volume-to-capacity ratio of 1.09[3] which exceeds the 0.99 volume to capacity ratio standard. *Appendix "D" includes the 2040 background conditions intersection operations analysis worksheets.*

Table 6 – 2040 Background Traffic Conditions (No Change in Zoning)

Intersection	Weekday AM Peak Hour				Weekday PM Peak Hour			
	Critical Approach/ Lane	V/C	Delay (sec)	LOS	Critical Approach/ Lane	V/C	Delay (sec)	LOS
SW Tualatin Sherwood Road/ SW 95th Avenue	-	0.67	19.6	B	-	0.66	21.4	C
SW Sagert Street/ SW 95th Avenue	-	0.61	15.1	C	-	0.41	9.9	A
SW Sagert Street/ SW 93rd Avenue/ West Tualatin Heights Driveway	SB	0.09	13.0	B	SB	0.05	12.8	B
SW Sagert Street/East Tualatin Heights Driveway	SB	0.09	12.9	B	SB	0.08	11.7	B
SW Sagert Street/ SW Boones Ferry Road	-	1.09	102.8	F	-	0.91	45.1	D
SW Avery Street/ SW 95th Avenue	-	0.64	7.2	A	-	0.64	6.7	A

[3] The 2040 operations are reflective of the existing overall cycle length and no timing optimization.

Proposed RMH Zoning

Under the proposed RMH zoning, the maximum allowed density would be increased to 15 dwelling units/acre. Increasing the density to 15 dwelling units per acres would result in a maximum of 336 multifamily housing units. Considering the site already has 220 units, this zone change analysis is conservatively assessing the impacts of 116 additional housing units on the site.

Table 7 shows the trip generation estimate for 116 additional multifamily housing units as calculated by Land Use 221 (Multifamily Housing Mid-Rise) in the ITE *Trip Generation Manual, 10th Edition*. As shown, the additional housing units are forecast to generate approximately 630 new daily trips, 42 new AM peak hour trips, and 51 new PM peak hour trips.

Table 7 – Estimated Trip Generation (Proposed RMH Zone w/116 Additional Multifamily Housing Units)

Land Use	ITE Code	Size	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Assumed RMH Zoning									
Multifamily Housing (Mid-Rise)	221	116 units	630	42	11	31	51	31	20

Site Trip Distribution and Assignment

The trips from the additional 116 housing units were assigned to the study area network utilizing the Tualatin Heights Apartment's two site driveways along SW Sagert Street. From these points of access, the distribution of site-generated trips onto the study area roadway system was estimated based on a review of major transportation facilities within the site vicinity and travel characteristics observed from the existing weekday AM and PM traffic counts.

Year 2040 Rezone Intersection Operations (w/Proposed RMH Zoning)

To produce the analysis under the 2040 RMH zoning scenario, the weekday AM and PM peak hour site generated traffic volumes shown in Table 7 were added to the background traffic volumes shown in Figures 5 an 6 to arrive at the cumulative 2040 traffic volumes shown in Figures 7 and 8.

Operations of the study intersections under 2040 conditions (with the site converted to RMH zoning) are summarized in Table 8 for the weekday AM and PM peak hours. As shown, all of the study intersections are forecast to continue to operate acceptably during both the weekday AM and PM peak hours with the continued exception of the SW Boones Ferry Road/SW Sagert Street intersection. During the weekday AM Peak hour, the intersection is forecast to operate with a volume-to-capacity ratio of 1.10 which exceeds the respective 0.99 volume to capacity ratio standard. *Appendix "E" includes the 2040 total traffic conditions intersection operations analysis worksheets.*

Table 8 - 2040 Rezone Traffic Conditions (w/Proposed RMH Zoning)

Intersection	Weekday AM Peak Hour				Weekday PM Peak Hour			
	Critical Approach/ Lane	V/C	Delay (sec)	LOS	Critical Approach/ Lane	V/C	Delay (sec)	LOS
SW Tualatin Sherwood Road/ SW 95th Avenue	-	0.68	19.9	B	-	0.66	21.7	C
SW Sagert Street/ SW 95th Avenue	-	0.64	16.0	C	-	0.43	10.1	B
SW Sagert Street/ SW 93rd Avenue/ West Tualatin Heights Driveway	SB	0.16	13.7	B	SB	0.09	13.1	B
SW Sagert Street/East Tualatin Heights Driveway	SB	0.10	13.2	B	SB	0.08	12.0	B
SW Sagert Street/ SW Boones Ferry Road	-	1.10	104.9	F	-	0.91	46.3	D
SW Avery Street/ SW 95th Avenue	-	0.64	7.2	A	-	0.64	6.7	A

Figure 7 – 2040 Traffic Volumes (w/ Proposed RMH Zoning), Weekday AM Peak Hour

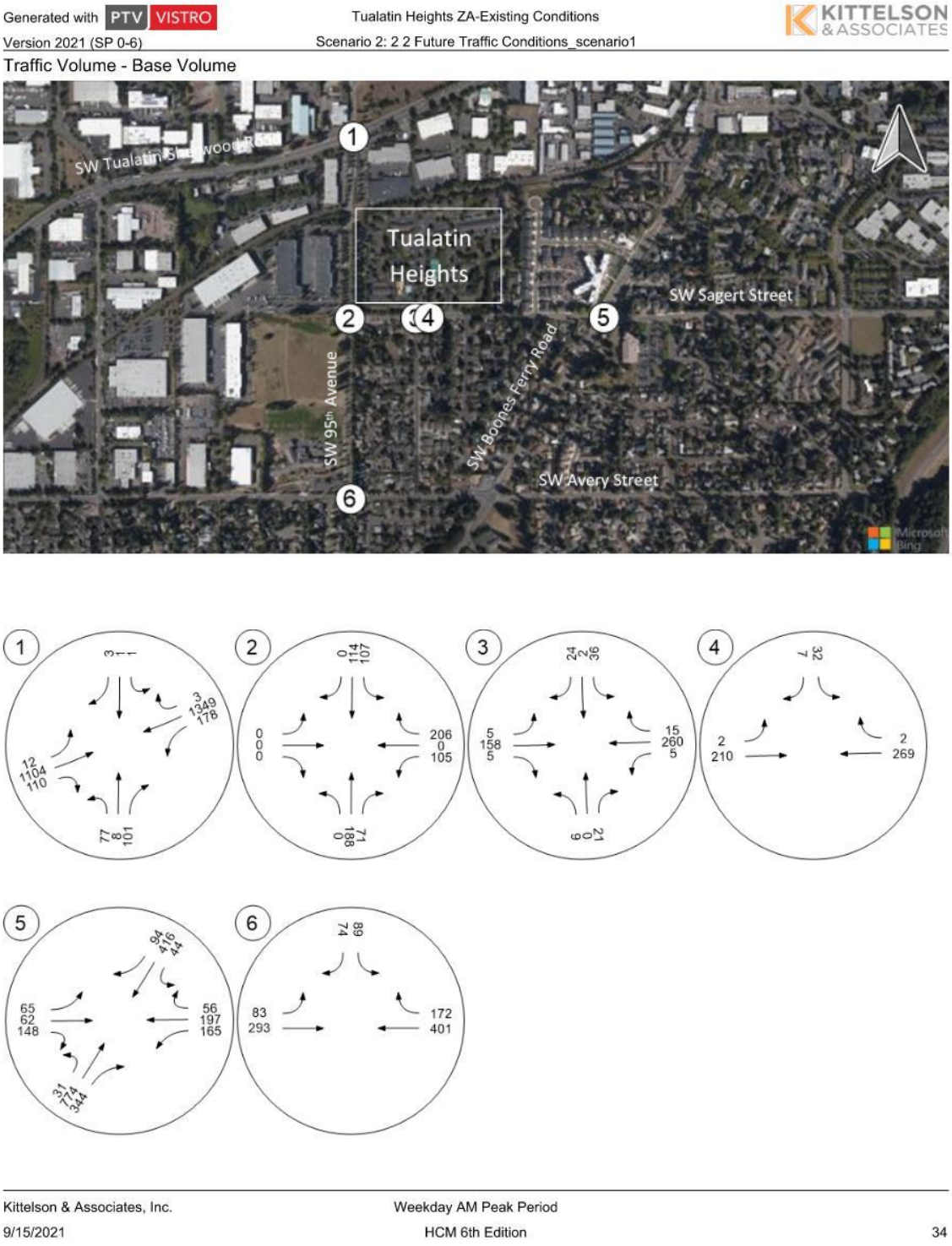
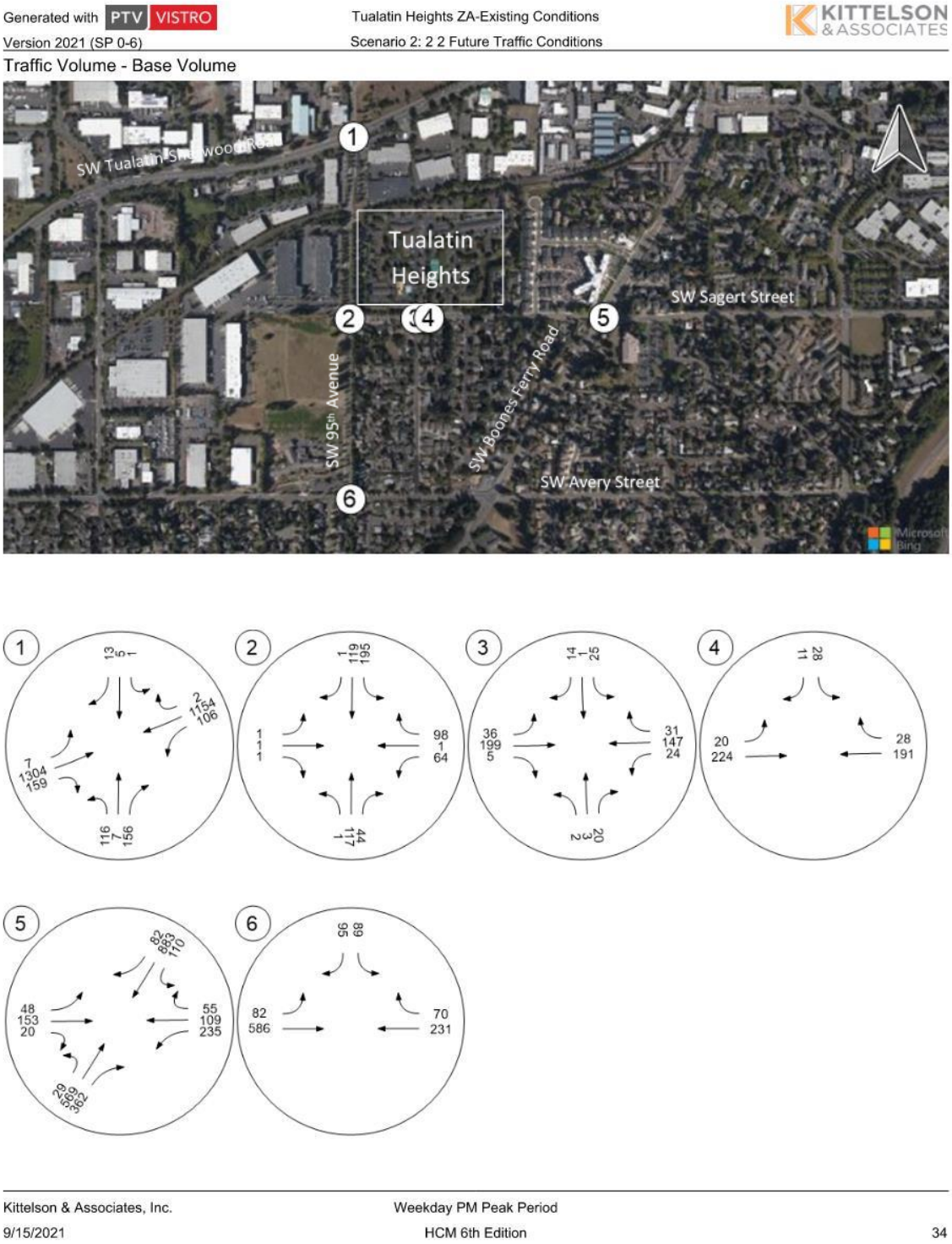


Figure 8 – 2040 Traffic Volumes (w/ Proposed RMH Zoning), Weekday PM Peak Hour

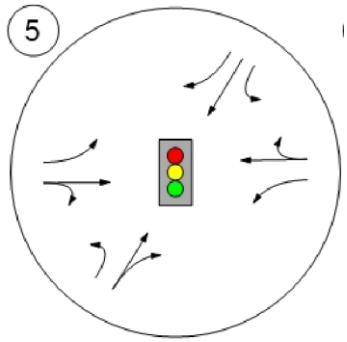
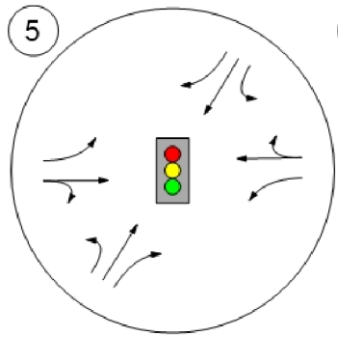


Year 2040 Intersection Operation Deficiencies and Mitigation Measures

As noted in Table 8, the inclusion of RMH zoning and the potential for up to 116 additional multifamily housing units is forecast to result in a slight degradation of the SW Boones Ferry Road/SW Sagert Street intersection when compared to the 2040 Background Conditions analysis. While minor, this further degradation of an intersection that is already forecast to experience capacity constraints requires the identification of mitigation measures to address forecast operations.

A review of the City of Tualatin's Transportation System Plan revealed no long-term improvement projects at the SW Boones Ferry Road/SW Sagert Street intersection. However, the future alternatives analysis did identify and investigate several potential capacity enhancing projects. One specific project involved the construction of a separate northbound right-turn lane on SW Boones Ferry Road to better facilitate peak time period demand to the SW Sagert Street corridor. Based on a review of the existing and 2040 forecast volumes generated in this study, such an improvement would restore long-term capacity to the intersection and result in acceptable operations under both the 2040 Background (no zone change) and 2040 Rezone (with RMH zoning) conditions as summarized below. *Appendix "E" includes the 2040 mitigation operations analysis worksheets.*

Table 9 - SW Boones Ferry Road/SW Sagert Street Intersection Mitigation Operations

	2040 Background (No Change in Zoning)		2040 Rezone (With RMZ Zoning)	
Scenario	**Weekday AM Peak Hour**	**Weekday PM Peak Hour**	**Weekday AM Peak Hour**	**Weekday PM Peak Hour**
Existing Intersection Configuration 	LOS F Delay = 102.8 V/C = 1.09	LOS D Delay = 45.1 V/C = 0.91	LOS F Delay = 104.9 V/C = 1.10	LOS D Delay = 46.3 V/C = 0.91
With a NB Right-Turn Lane 	LOS D Delay = 37.8 V/C = 0.88	LOS C Delay = 26.6 V/C = 0.82	LOS D Delay = 38.7 V/C = 0.89	LOS C Delay = 27.6 V/C = 0.83

TRANSPORTATION PLANNING RULE COMPLIANCE

This section addresses the Oregon Administrative Rule Section 660-12-0060 of the Oregon Transportation Planning Rule (TPR) requirements for the proposed zone change.

TRANSPORTATION PLAN RULE

OAR Section 660-12-0060 Plan and Land Use Regulation Amendments of the TPR sets forth the criteria for evaluating plan and land use regulation amendments. The criteria establish the determination of significant effect on a transportation system resulting from a land use action; where a significant effect is identified, the criteria establish the means for achieving compliance. The relevant portion of this section of the TPR is reproduced below in italics followed by the response for this project in standard text.

660-12-0060 Plan and Land Use Regulation Amendments

(1) If an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation (including a zoning map) would significantly affect an existing or planned transportation facility, then the local government must put in place measures as provided in section (2) of this rule, unless the amendment is allowed under section (3), (9) or (10) of this rule. A plan or land use regulation amendment significantly affects a transportation facility if it would:

(a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);

Response: The proposed rezone will not require or result in any changes to the functional classification of any transportation facility in the vicinity of the site.

(b) Change standards implementing a functional classification system; or

Response: The proposed rezone will not outright require changes to the standards that implement the functional classification system.

(c) Result in any of the effects listed in paragraphs (A) through (C) of this subsection based on projected conditions measured at the end of the planning period identified in the adopted TSP. As part of evaluating projected conditions, the amount of traffic projected to be generated within the area of the amendment may be reduced if the amendment includes an enforceable, ongoing requirement that would demonstrably limit traffic generation, including, but not limited to, transportation demand management. This reduction may diminish or completely eliminate the significant effect of the amendment.

(A) Types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

Response: The proposed rezone would result in future traffic volumes that are still consistent with the functional classifications of the roadways in the study area.

(B) Degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards identified in the TSP or comprehensive plan; or

Response: The proposed rezone would slightly degrade operations of the SW Boones Ferry Road/SW Sagert Street intersection beyond 2040 background conditions. However, the intersection is already forecast to operate over capacity under 2040 background conditions. The installation of a northbound right-turn lane would restore long-term capacity to the intersection and result in acceptable operations under both the 2040 Background (no zone change) and 2040 Rezone (with RMH zoning) conditions.

(C) Degrade the performance of an existing or planned transportation facility that is otherwise projected to not meet the performance standards identified in the TSP or comprehensive plan.

Response: Without any mitigation measures in place, the proposed rezone would result in a small degradation of failing operations at the SW Boones Ferry Road/SW Sagert Street intersection. The installation of a northbound right-turn lane would restore long-term capacity to the intersection and result in acceptable operations under both the 2040 Background (no zone change) and 2040 Rezone (with RMH zoning) conditions.

CONCLUSIONS

Based on the long-term traffic impact analyses detailed in this report, the proposed rezone has the potential to generate a small degradation in the operations of the SW Boones Ferry Road/SW Sagert Street intersection compared to existing zoning. To comply with the TPR (OAR Section 660-012-0060), the installation of a northbound right-turn lane on SW Boones Ferry Road would restore long-term capacity to the intersection and result in acceptable operations under both the 2040 Background (no zone change) and 2040 Rezone (with RMH zoning) conditions.

Sincerely,
KITTELSON & ASSOCIATES, INC.

Matt Hughart, AICP	Bincy Koshy	Julia Kuhn, P.E.
Principal Planner	Transportation Analyst	Senior Principal Engineer

Appendix A Traffic Counts

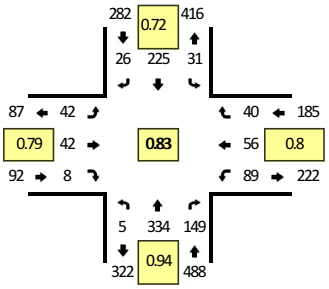
Type of peak hour being reported: Intersection Peak

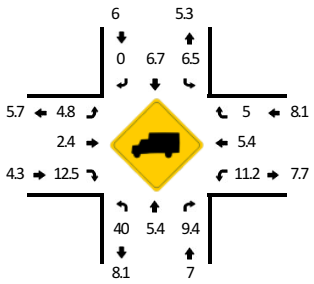
Method for determining peak hour: Total Entering Volume

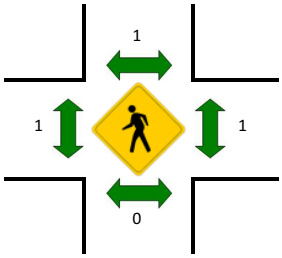
LOCATION: SW Boones Ferry Rd -- SW Sagert St
CITY/STATE: Tualatin, OR

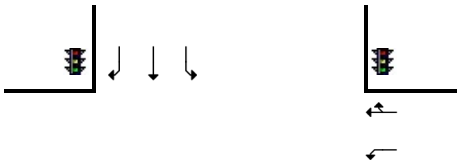
QC JOB #: 15473301
DATE: Fri, Jun 11 2021

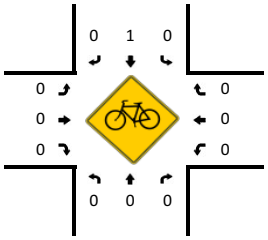
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

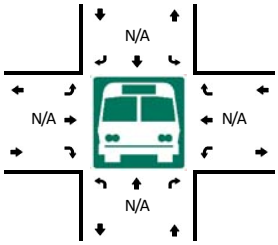


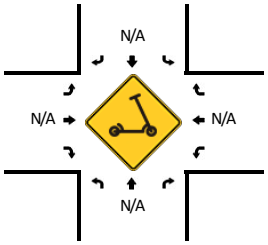












15-Min Count Period Beginning At	SW Boones Ferry Rd (Northbound)				SW Boones Ferry Rd (Southbound)				SW Sagert St (Eastbound)				SW Sagert St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	69	18	0	6	16	5	0	10	6	1	0	23	6	3	0	163	
7:15 AM	0	77	36	0	6	38	14	0	5	11	1	0	24	12	8	0	232	
7:30 AM	1	92	31	0	4	41	6	0	12	10	2	0	23	17	7	0	246	
7:45 AM	2	90	38	0	11	74	13	0	12	15	2	0	26	26	6	0	315	956
8:00 AM	1	79	41	0	4	39	4	0	13	10	3	0	28	11	9	0	242	1035
8:15 AM	0	73	35	0	9	58	3	0	6	9	0	0	17	9	15	0	234	1037
8:30 AM	2	92	35	0	7	54	6	0	11	8	3	0	18	10	10	0	256	1047
8:45 AM	2	83	27	0	14	56	8	0	12	14	0	0	31	12	15	0	274	1006

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	8	360	152	0	44	296	52	0	48	60	8	0	104	104	24	0	1260
Heavy Trucks	4	12	4		4	24	0		4	0	4		12	0	0		68
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/25/2021 12:06 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW Boones Ferry Rd -- SW Sagert St
CITY/STATE: Tualatin, OR

QC JOB #: 15473302
DATE: Thu, Jun 10 2021

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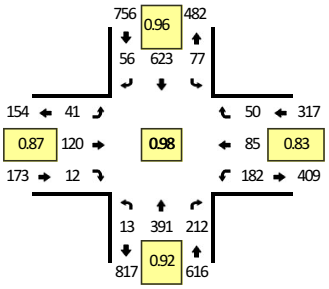
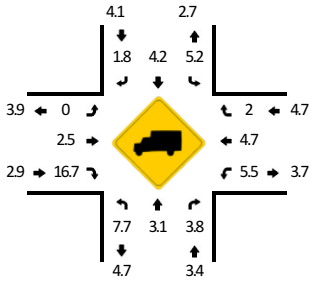
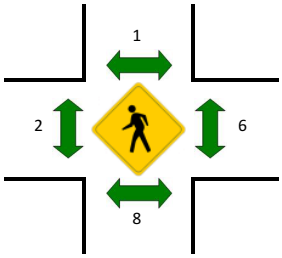
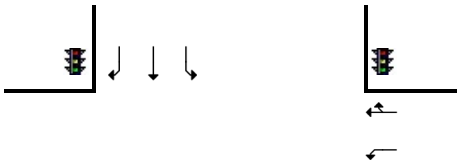
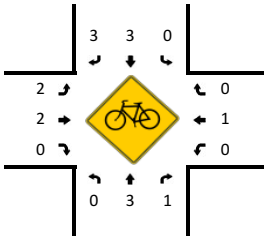
Peak 15-Min: 5:00 PM -- 5:15 PM

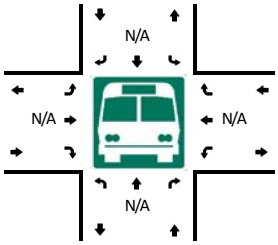


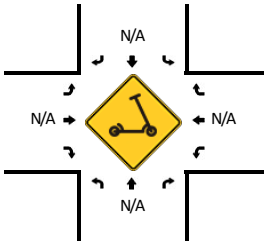












15-Min Count Period Beginning At	SW Boones Ferry Rd (Northbound)				SW Boones Ferry Rd (Southbound)				SW Sagert St (Eastbound)				SW Sagert St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	106	64	0	10	159	19	0	12	38	2	0	37	17	5	0	472	
4:15 PM	3	103	48	0	13	171	12	0	6	22	3	0	43	20	8	0	452	
4:30 PM	4	97	66	0	21	161	13	0	15	25	2	0	36	16	18	0	474	
4:45 PM	3	92	44	0	20	153	17	0	4	41	5	0	47	23	10	0	459	1857
5:00 PM	3	99	54	0	23	138	14	0	16	32	2	0	56	26	14	0	477	1862
5:15 PM	1	97	51	0	18	150	19	0	5	25	1	0	59	20	6	0	452	1862
5:30 PM	3	100	41	0	21	168	15	0	14	26	0	0	37	26	18	0	469	1857
5:45 PM	3	81	46	0	20	150	23	0	8	23	2	0	47	25	12	0	440	1838

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	12	396	216	0	92	552	56	0	64	128	8	0	224	104	56	0	1908
Heavy Trucks	0	12	4		4	8	0		0	4	0		4	4	4		44
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/25/2021 12:06 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 95th Ave -- Tualatin-Sherwood Rd
CITY/STATE: Tualatin, OR

QC JOB #: 15473303
DATE: Fri, Jun 11 2021

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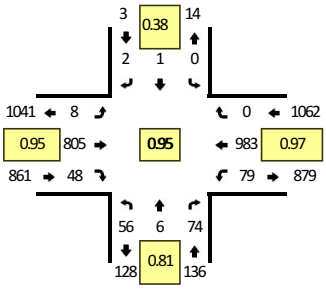
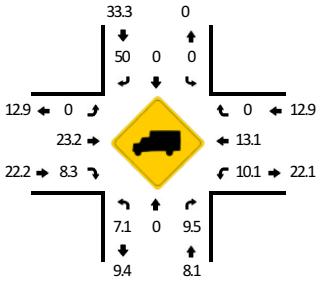
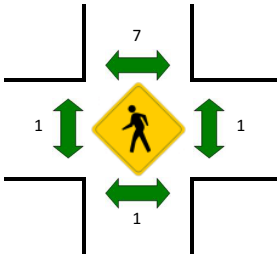
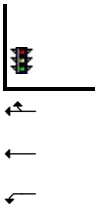
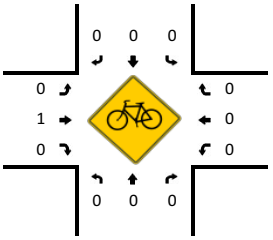
Peak 15-Min: 7:45 AM -- 8:00 AM

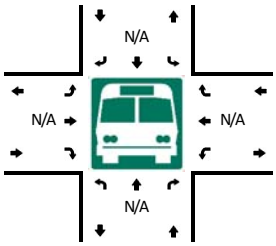


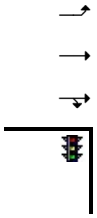


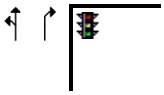


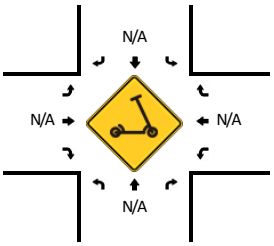












15-Min Count Period Beginning At	SW 95th Ave (Northbound)				SW 95th Ave (Southbound)				Tualatin-Sherwood Rd (Eastbound)				Tualatin-Sherwood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	16	0	7	0	0	0	0	0	0	154	9	0	20	230	0	0	436	
7:15 AM	10	2	16	0	0	0	0	0	1	177	10	0	11	261	0	0	488	
7:30 AM	17	2	18	0	0	0	0	0	1	210	15	0	12	242	0	0	517	
7:45 AM	18	2	22	0	0	1	1	0	4	206	15	0	37	238	0	0	544	1985
8:00 AM	11	0	18	0	0	0	1	0	2	212	8	0	19	242	0	0	513	2062
8:15 AM	7	0	16	0	0	0	2	0	1	218	7	0	9	198	1	0	459	2033
8:30 AM	12	3	17	0	0	0	1	0	3	213	11	0	14	223	1	0	498	2014
8:45 AM	11	2	22	0	1	0	2	0	1	198	9	0	22	199	1	0	468	1938

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	72	8	88	0	0	4	4	0	16	824	60	0	148	952	0	0	2176
Heavy Trucks	0	0	4		0	0	4		0	204	8		24	148	0		392
Buses																	
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/25/2021 12:06 PM

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

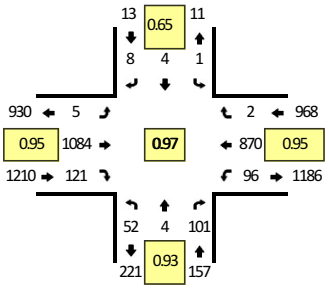
Type of peak hour being reported: Intersection Peak

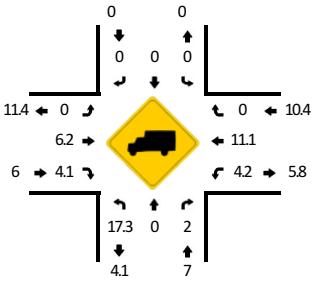
Method for determining peak hour: Total Entering Volume

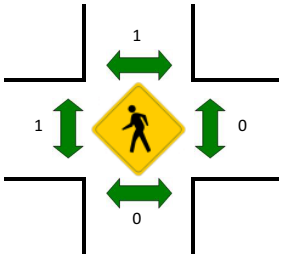
LOCATION: SW 95th Ave -- Tualatin-Sherwood Rd
CITY/STATE: Tualatin, OR

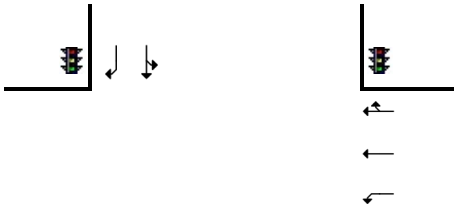
QC JOB #: 15473304
DATE: Thu, Jun 10 2021

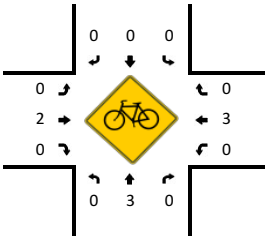
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

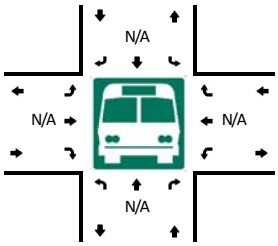


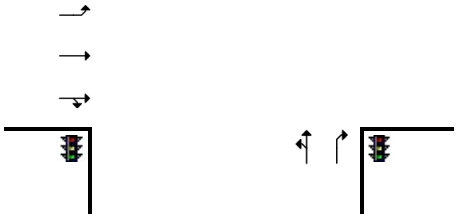


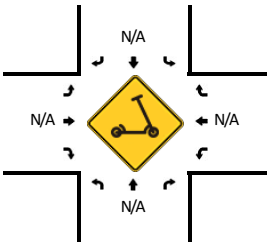












15-Min Count Period Beginning At	SW 95th Ave (Northbound)				SW 95th Ave (Southbound)				Tualatin-Sherwood Rd (Eastbound)				Tualatin-Sherwood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	14	1	27	0	0	0	1	0	1	281	31	0	18	226	0	0	600	
4:15 PM	14	0	25	0	0	1	2	0	0	240	24	0	16	225	2	0	549	
4:30 PM	11	1	30	0	1	1	3	0	2	279	36	0	24	203	0	0	591	
4:45 PM	13	2	19	0	0	2	2	0	2	284	30	0	38	216	0	0	608	2348
5:00 PM	17	0	28	0	1	2	0	0	1	235	33	0	25	189	1	0	532	2280
5:15 PM	18	0	22	0	2	3	3	0	2	267	25	0	29	206	1	0	578	2309
5:30 PM	16	0	15	0	0	1	4	0	0	244	26	0	28	227	0	0	561	2279
5:45 PM	19	0	11	0	0	0	0	0	0	217	18	0	15	241	0	0	521	2192

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	52	8	76	0	0	8	8	0	8	1136	120	0	152	864	0	0	2432
Heavy Trucks	4	0	0		0	0	0		0	80	12		0	104	0		200
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	

Comments:

Report generated on 6/25/2021 12:06 PM

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

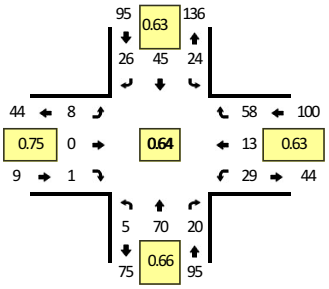
Type of peak hour being reported: Intersection Peak

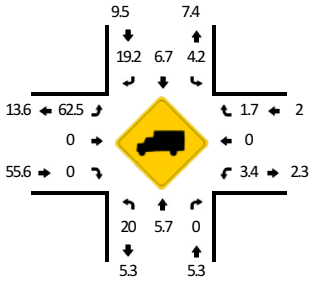
Method for determining peak hour: Total Entering Volume

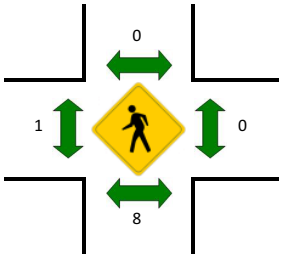
LOCATION: SW 95th Ave -- SW Sagert St
CITY/STATE: Tualatin, OR

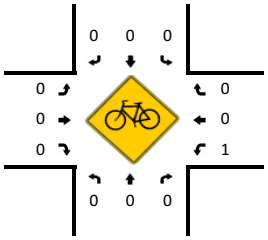
QC JOB #: 15473305
DATE: Fri, Jun 11 2021

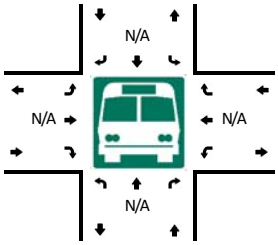
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

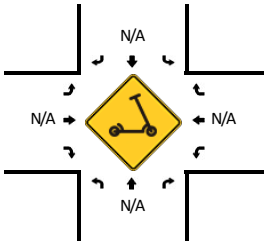












15-Min Count Period Beginning At	SW 95th Ave (Northbound)				SW 95th Ave (Southbound)				SW Sagert St (Eastbound)				SW Sagert St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	6	1	0	6	9	5	0	1	1	0	0	3	1	16	0	51	
7:15 AM	1	18	1	0	5	5	4	0	1	0	0	0	4	5	9	0	53	
7:30 AM	2	14	0	0	11	8	2	0	3	0	0	0	5	3	18	0	66	
7:45 AM	2	23	11	0	5	23	10	0	1	0	1	0	16	2	22	0	116	286
8:00 AM	0	15	8	0	3	9	10	0	3	0	0	0	4	3	9	0	64	299
8:15 AM	2	11	1	0	3	3	7	0	1	1	0	0	2	1	7	0	39	285
8:30 AM	1	14	1	0	8	6	2	0	3	3	2	0	5	1	15	0	61	280
8:45 AM	0	20	1	0	10	10	8	0	2	1	2	0	2	4	14	0	74	238

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	8	92	44	0	20	92	40	0	4	0	4	0	64	8	88	0	464
Heavy Trucks	0	4	0		0	8	20		4	0	0		4	0	0		40
Buses																	
Pedestrians		8				0				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/25/2021 12:06 PM

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

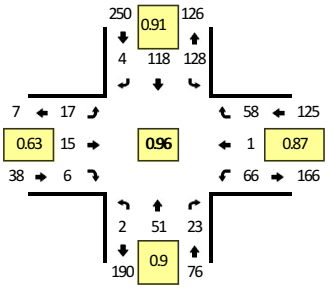
Type of peak hour being reported: Intersection Peak

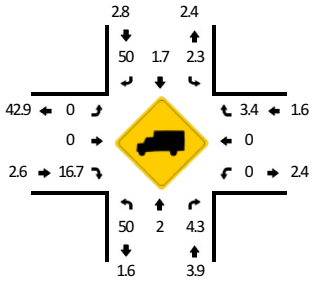
Method for determining peak hour: Total Entering Volume

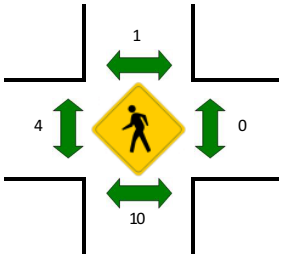
LOCATION: SW 95th Ave -- SW Sagert St
CITY/STATE: Tualatin, OR

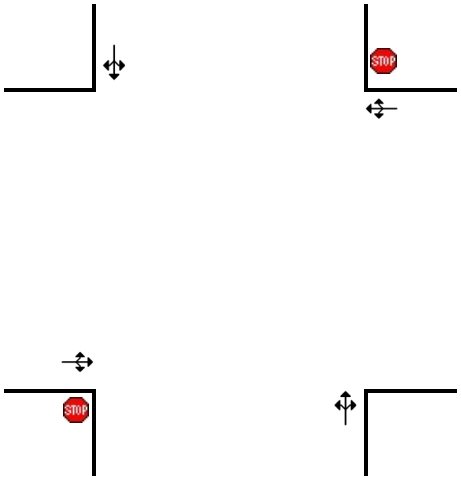
QC JOB #: 15473306
DATE: Thu, Jun 10 2021

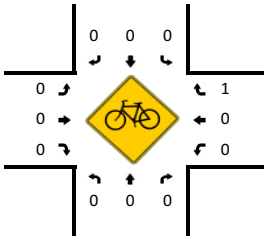
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

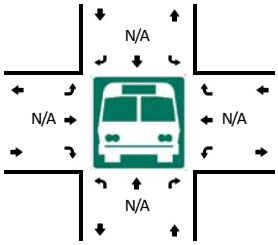


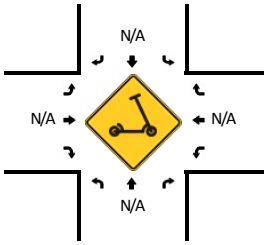












15-Min Count Period Beginning At	SW 95th Ave (Northbound)				SW 95th Ave (Southbound)				SW Sagert St (Eastbound)				SW Sagert St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	16	8	0	33	16	1	0	2	8	4	0	6	0	16	0	112	
4:15 PM	0	17	7	0	20	18	3	0	1	1	2	0	6	3	18	0	96	
4:30 PM	0	11	7	0	36	28	0	0	9	5	1	0	11	0	15	0	123	
4:45 PM	0	13	6	0	36	32	1	0	1	3	2	0	16	0	15	0	125	456
5:00 PM	1	15	5	0	32	29	1	0	5	7	1	0	21	0	11	0	128	472
5:15 PM	1	12	5	0	24	29	2	0	2	0	2	0	18	1	17	0	113	489
5:30 PM	2	11	2	0	28	23	1	0	2	6	2	0	4	0	16	0	97	463
5:45 PM	0	9	3	0	13	21	0	0	2	1	0	0	18	1	16	0	84	422

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	60	20	0	128	116	4	0	20	28	4	0	84	0	44	0	512
Heavy Trucks	4	0	0		4	4	4		0	0	0		0	0	0		16
Buses																	
Pedestrians		12				4				8				0			24
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/25/2021 12:06 PM

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

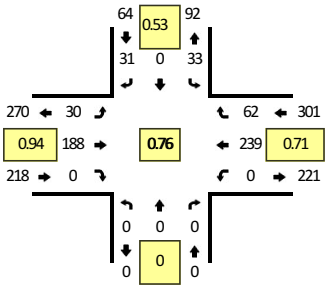
Type of peak hour being reported: Intersection Peak

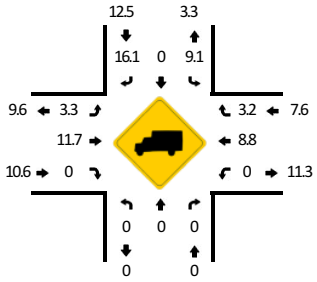
Method for determining peak hour: Total Entering Volume

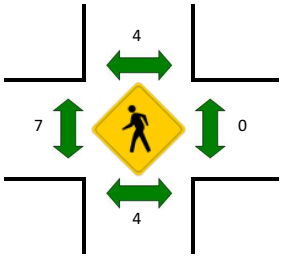
LOCATION: SW 95th Ave -- SW Avery St
CITY/STATE: Tualatin, OR

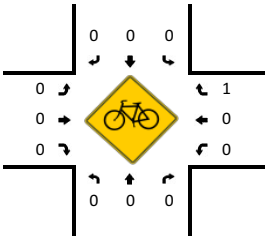
QC JOB #: 15473307
DATE: Fri, Jun 11 2021

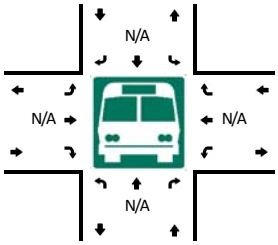
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

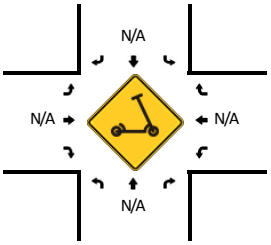












15-Min Count Period Beginning At	SW 95th Ave (Northbound)				SW 95th Ave (Southbound)				SW Avery St (Eastbound)				SW Avery St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	4	0	9	0	3	26	0	0	0	46	11	0	99	
7:15 AM	0	0	0	0	1	0	5	0	10	39	0	0	0	69	11	0	135	
7:30 AM	0	0	0	0	3	0	1	0	11	42	0	0	0	53	13	0	123	
7:45 AM	0	0	0	0	16	0	14	0	14	41	0	0	0	77	29	0	191	548
8:00 AM	0	0	0	0	7	0	7	0	4	45	0	0	0	43	12	0	118	567
8:15 AM	0	0	0	0	5	0	2	0	6	50	0	0	0	65	10	0	138	570
8:30 AM	0	0	0	0	5	0	8	0	6	52	0	0	0	54	11	0	136	583
8:45 AM	0	0	0	0	4	0	10	0	7	46	0	0	0	54	10	0	131	523

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	0	0	64	0	56	0	56	164	0	0	0	308	116	0	764
Heavy Trucks	0	0	0		4	0	4		0	28	0		0	32	4		72
Buses																	
Pedestrians		4				12				28				0			44
Bicycles	0	0	0		0	0	0		0	0	0		0	0	4		4
Scooters																	

Comments:

Report generated on 6/25/2021 12:06 PM

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

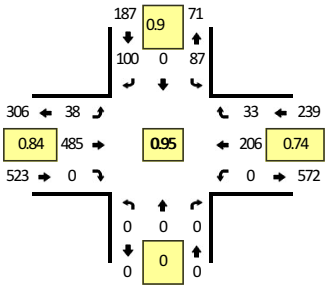
Type of peak hour being reported: Intersection Peak

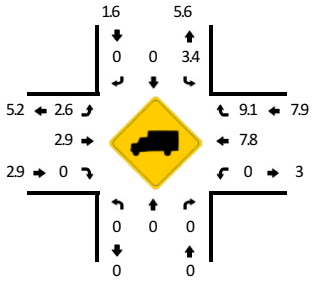
Method for determining peak hour: Total Entering Volume

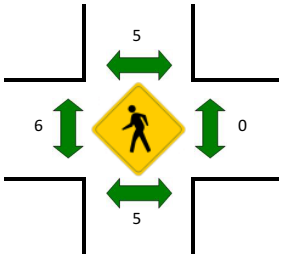
LOCATION: SW 95th Ave -- SW Avery St
CITY/STATE: Tualatin, OR

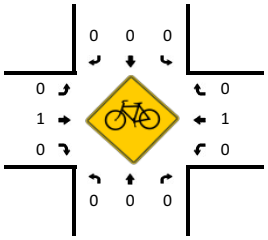
QC JOB #: 15473308
DATE: Thu, Jun 10 2021

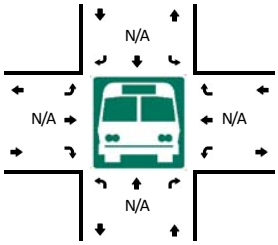
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

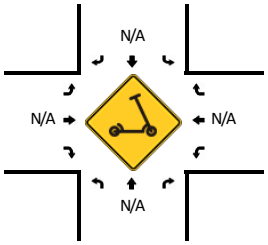












15-Min Count Period Beginning At	SW 95th Ave (Northbound)				SW 95th Ave (Southbound)				SW Avery St (Eastbound)				SW Avery St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	18	0	14	0	8	122	0	0	0	44	12	0	218	
4:15 PM	0	0	0	0	14	0	12	0	13	88	0	0	0	41	10	0	178	
4:30 PM	0	0	0	0	19	0	19	0	11	145	0	0	0	45	5	0	244	
4:45 PM	0	0	0	0	23	0	26	0	8	111	0	0	0	39	8	0	215	855
5:00 PM	0	0	0	0	20	0	32	0	12	124	0	0	0	54	7	0	249	886
5:15 PM	0	0	0	0	25	0	23	0	7	105	0	0	0	68	13	0	241	949
5:30 PM	0	0	0	0	17	0	12	0	5	98	0	0	0	47	7	0	186	891
5:45 PM	0	0	0	0	12	0	24	0	4	54	0	0	0	41	8	0	143	819

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	0	0	80	0	128	0	48	496	0	0	0	216	28	0	996
Heavy Trucks	0	0	0		4	0	0		0	8	0		0	20	4		36
Buses																	
Pedestrians		4				4				8				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/25/2021 12:06 PM

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

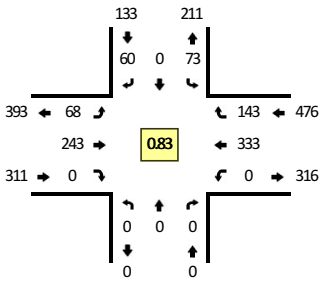
Type of peak hour being reported: Intersection Peak

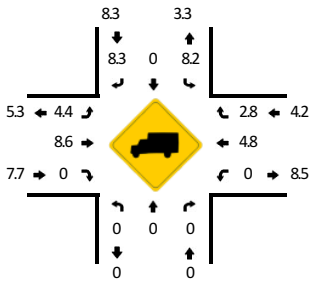
Method for determining peak hour: Total Entering Volume

LOCATION: SW 95th Ave -- SW Avery St
CITY/STATE: Washington, OR

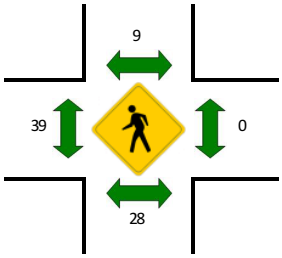
QC JOB #: 15109501
DATE: Tue, Oct 29 2019

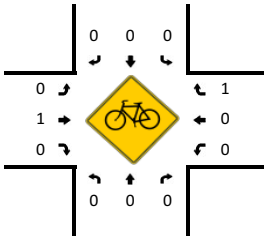
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

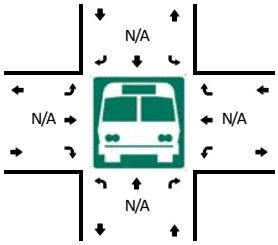


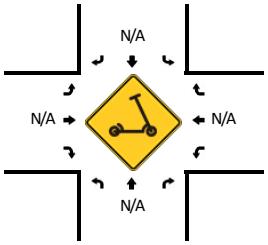


Quality Counts
DATA THAT DRIVES COMMUNITIES









5-Min Count Period Beginning At	SW 95th Ave (Northbound)				SW 95th Ave (Southbound)				SW Avery St (Eastbound)				SW Avery St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:30 AM	0	0	0	0	1	0	5	0	6	18	0	0	0	32	9	0	71	
7:35 AM	0	0	0	0	7	0	3	0	6	23	0	0	0	46	17	0	102	
7:40 AM	0	0	0	0	8	0	2	0	4	24	0	0	0	25	17	0	80	
7:45 AM	0	0	0	0	6	0	3	0	7	25	0	0	0	24	10	0	75	
7:50 AM	0	0	0	0	14	0	5	0	10	15	0	0	0	35	24	0	103	
7:55 AM	0	0	0	0	12	0	2	0	9	19	0	0	0	26	19	0	87	
8:00 AM	0	0	0	0	9	0	10	0	7	18	0	0	0	29	15	0	88	
8:05 AM	0	0	0	0	11	0	11	0	4	26	0	0	0	29	9	0	90	
8:10 AM	0	0	0	0	1	0	9	0	2	26	0	0	0	19	8	0	65	
8:15 AM	0	0	0	0	3	0	1	0	5	21	0	0	0	24	4	0	58	
8:20 AM	0	0	0	0	0	0	3	0	4	17	0	0	0	24	4	0	52	
8:25 AM	0	0	0	0	1	0	6	0	4	11	0	0	0	20	7	0	49	920

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	0	0	140	0	68	0	104	208	0	0	0	360	232	0	1112
Heavy Trucks	0	0	0		8	0	8		4	8	0		0	8	12		48
Buses																	
Pedestrians		76				8				136				0			220
Bicycles	0	0	0		0	0	0		0	0	0		0	0	4		4
Scooters																	

Comments:

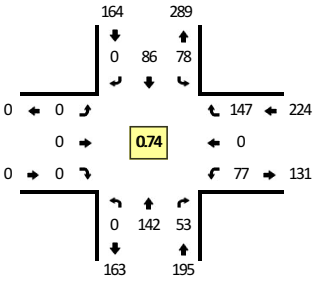
Report generated on 8/26/2021 9:59 AM

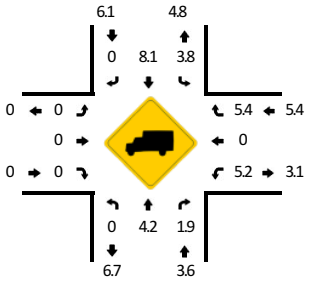
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

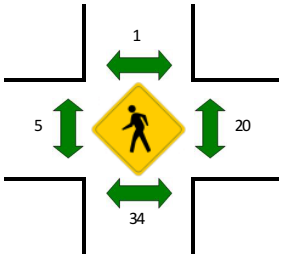
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

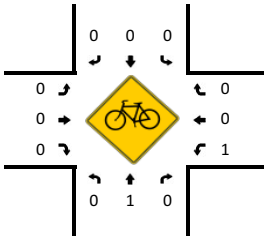
LOCATION: SW 95th Ave -- SW Sagert St | **QC JOB #:** 15109504
CITY/STATE: Washington, OR | **DATE:** Tue, Oct 29 2019

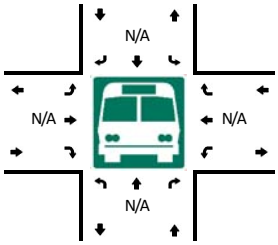
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:55 AM -- 8:10 AM

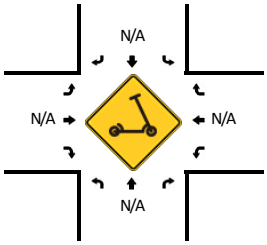












5-Min Count Period Beginning At	SW 95th Ave (Northbound)				SW 95th Ave (Southbound)				SW Sagert St (Eastbound)				SW Sagert St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:30 AM	0	11	1	0	4	7	0	0	0	0	0	0	5	0	9	0	37	
7:35 AM	0	19	1	0	4	5	0	0	0	0	0	0	8	0	16	0	53	
7:40 AM	0	11	1	0	8	7	0	0	0	0	0	0	7	0	6	0	40	
7:45 AM	0	11	6	0	10	8	0	0	0	0	0	0	7	0	18	0	60	
7:50 AM	0	7	2	0	7	9	0	0	0	0	0	0	11	0	6	0	42	
7:55 AM	0	17	11	0	11	14	0	0	0	0	0	0	8	0	16	0	77	
8:00 AM	0	9	5	0	7	10	0	0	0	0	0	0	12	0	19	0	62	
8:05 AM	0	11	12	0	6	13	0	0	0	0	0	0	6	0	10	0	58	
8:10 AM	0	20	9	0	5	5	0	0	0	0	0	0	3	0	17	0	59	
8:15 AM	0	11	3	0	5	3	0	0	0	0	0	0	0	0	10	0	32	
8:20 AM	0	5	1	0	9	5	0	0	0	0	0	0	3	0	7	0	30	
8:25 AM	0	10	1	0	2	0	0	0	0	0	0	0	7	0	13	0	33	583

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	148	112	0	96	148	0	0	0	0	0	0	104	0	180	0	788
Heavy Trucks	0	8	4		8	16	0		0	0	0		0	0	12		48
Buses																	
Pedestrians		20				0				8				8			36
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 8/26/2021 9:59 AM

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

Appendix B Existing Operations

Tualatin Heights ZA-Existing Conditions

Vistro File: H:\...\26462_AM.vistro
Report File: H:\...\Existing_AM.pdf
Scenario: Base Scenario
9/2/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SW 95th Ave/Tualatin-Sherwood Rd	Signalized	HCM 6th Edition	NB Right	0.541	16.9	B
2	SW 95th Ave/SW Sagert St	Two-way stop	HCM 6th Edition	WB Left	0.292	22.9	C
3	Tualatin Heights West Dwy/SW 93rd Ave/SW Sagert St	Two-way stop	HCM 6th Edition	SB Thru	0.006	12.5	B
4	Tualatin Heights East Dwy/SW Sagert St	Two-way stop	HCM 6th Edition	SB Left	0.060	12.1	B
5	SW Boones Ferry Rd/SW Sagert St	Signalized	HCM 6th Edition	EB Right	0.855	32.5	C
6	SW 95th Ave/SW Avery St	Signalized	HCM 6th Edition	SB Left	0.553	6.6	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SW 95th Ave/Tualatin-Sherwood Rd

Control Type:	Signalized	Delay (sec / veh):	16.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.541

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	70.00	100.00	100.00	100.00	120.00	100.00	100.00	400.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	56	6	74	1	1	2	9	861	84	137	1052	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	7.00	0.00	9.00	0.00	0.00	50.00	0.00	23.00	8.00	10.00	13.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	56	6	74	1	1	2	9	861	84	137	1052	2
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	2	19	0	0	1	2	227	22	36	277	1
Total Analysis Volume [veh/h]	59	6	78	1	1	2	9	906	88	144	1107	2
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	1			4			0			3		
v_di, Inbound Pedestrian Volume crossing major street [	0			3			1			4		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			1			1		
v_ci, Inbound Pedestrian Volume crossing minor street [	1			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			1			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	0	5	0	0	5	0	5	10	0	10	10	0
Maximum Green [s]	0	35	0	0	35	0	20	65	0	20	65	0
Amber [s]	0.0	3.5	0.0	0.0	3.5	0.0	3.0	4.5	0.0	3.0	4.5	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	0	41	0	0	41	0	25	74	0	25	74	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	21	0	0	17	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.5	0.0	0.0	3.5	0.0	3.0	4.5	0.0	3.0	4.5	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R	L	C	C	L	C	C
C, Cycle Length [s]	50	50	50	50	50	50	50	50	50	50
L, Total Lost Time per Cycle [s]	5.50	5.50	5.50	5.50	5.00	6.50	6.50	5.00	6.50	6.50
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.50	3.50	3.50	3.50	3.00	4.50	4.50	3.00	4.50	4.50
g_i, Effective Green Time [s]	4	4	4	4	8	19	19	9	20	20
g / C, Green / Cycle	0.09	0.09	0.09	0.09	0.17	0.39	0.39	0.17	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.04	0.05	0.00	0.00	0.00	0.32	0.33	0.09	0.33	0.33
s, saturation flow rate [veh/h]	1620	1495	1826	974	1810	1555	1500	1667	1705	1704
c, Capacity [veh/h]	285	135	274	88	307	611	590	291	679	678
d1, Uniform Delay [s]	21.34	21.71	20.60	20.62	17.24	13.56	13.59	18.55	13.35	13.36
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.40	3.84	0.01	0.10	0.04	2.90	3.08	1.30	2.49	2.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.58	0.01	0.02	0.03	0.83	0.83	0.50	0.82	0.82
d, Delay for Lane Group [s/veh]	21.74	25.54	20.61	20.72	17.27	16.46	16.67	19.85	15.84	15.84
Lane Group LOS	C	C	C	C	B	B	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.68	0.94	0.02	0.02	0.08	4.59	4.49	1.44	4.92	4.92
50th-Percentile Queue Length [ft/ln]	17.06	23.46	0.50	0.55	2.02	114.86	112.23	36.09	123.11	123.05
95th-Percentile Queue Length [veh/ln]	1.23	1.69	0.04	0.04	0.15	8.11	7.96	2.60	8.56	8.56
95th-Percentile Queue Length [ft/ln]	30.72	42.23	0.91	0.98	3.63	202.74	199.10	64.97	214.09	214.01

Movement, Approach, & Intersection Results

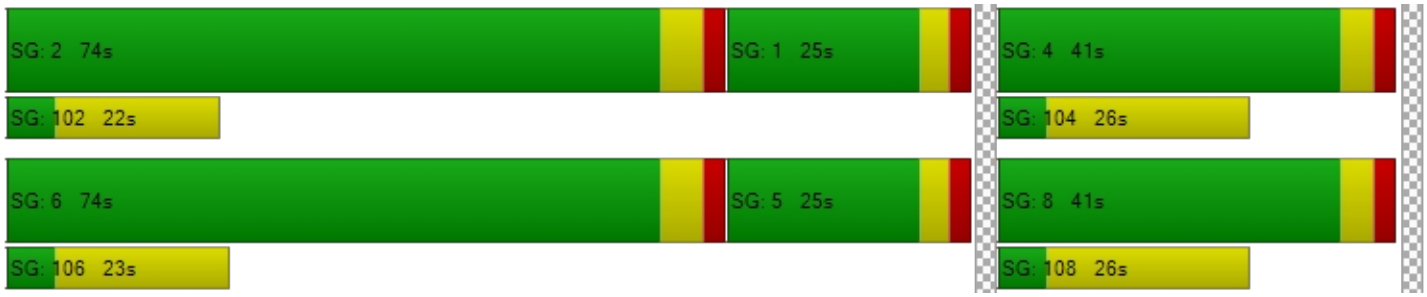
d_M, Delay for Movement [s/veh]	21.74	21.74	25.54	20.61	20.61	20.72	17.27	16.55	16.67	19.85	15.84	15.84
Movement LOS	C	C	C	C	C	C	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	23.82			20.67			16.57			16.30		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	16.87											
Intersection LOS	B											
Intersection V/C	0.541											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	9664.49	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	16.62	16.62	16.62	16.62
I_p,int, Pedestrian LOS Score for Intersection	2.032	1.917	2.777	2.708
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1431	1431	2721	2721
d_b, Bicycle Delay [s]	2.01	2.01	3.23	3.22
I_b,int, Bicycle LOS Score for Intersection	1.796	1.566	2.387	2.593
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SW 95th Ave/SW Sagert St

Control Type:	Two-way stop	Delay (sec / veh):	22.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.292

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	142	53	78	86	0	0	0	0	77	0	147
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	4.00	8.00	0.00	0.00	0.00	0.00	5.00	0.00	5.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	142	53	78	86	0	0	0	0	77	0	147
Peak Hour Factor	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	48	18	26	29	0	0	0	0	26	0	50
Total Analysis Volume [veh/h]	0	192	72	105	116	0	0	0	0	104	0	199
Pedestrian Volume [ped/h]	34			1			5			20		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.26
d_M, Delay for Movement [s/veh]	7.45	0.00	0.00	8.16	0.00	0.00	18.84	14.91	9.17	22.86	22.21	17.45
Movement LOS	A	A	A	A	A	A	C	B	A	C	C	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.28	0.28	0.28	0.00	0.00	0.00	3.33	3.33	3.33
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	6.91	6.91	6.91	0.00	0.00	0.00	83.22	83.22	83.22
d_A, Approach Delay [s/veh]	0.00			3.88			14.31			19.31		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	8.51											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 3: Tualatin Heights West Dwy/SW 93rd Ave/SW Sagert St

Control Type:	Two-way stop	Delay (sec / veh):	12.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	7	0	17	15	2	8	0	127	4	4	209	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	6.00	0.00	0.00	0.00	0.00	4.00	25.00	0.00	4.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	0	17	15	2	8	0	127	4	4	209	7
Peak Hour Factor	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	5	5	1	3	0	40	1	1	65	2
Total Analysis Volume [veh/h]	9	0	21	19	3	10	0	159	5	5	261	9
Pedestrian Volume [ped/h]	2			2			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.02	0.04	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.21	12.33	9.36	12.46	12.47	10.02	7.77	0.00	0.00	7.54	0.00	0.00
Movement LOS	B	B	A	B	B	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.13	0.18	0.18	0.18	0.00	0.00	0.00	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	3.25	3.25	3.25	4.46	4.46	4.46	0.00	0.00	0.00	0.26	0.26	0.26
d_A, Approach Delay [s/veh]	10.22			11.70			0.00			0.14		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	1.43											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 4: Tualatin Heights East Dwy/SW Sagert St

Control Type:	Two-way stop	Delay (sec / veh):	12.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.060

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	26	6	2	157	214	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	3.00	4.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	6	2	157	214	2
Peak Hour Factor	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	2	1	49	67	1
Total Analysis Volume [veh/h]	33	8	3	196	268	3
Pedestrian Volume [ped/h]	5		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.06	10.18	7.79	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.23	0.23	0.01	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.70	5.70	0.17	0.17	0.00	0.00
d_A, Approach Delay [s/veh]	11.69		0.12		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.98					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: SW Boones Ferry Rd/SW Sagert St

Control Type:	Signalized	Delay (sec / veh):	32.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.855

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	115.00	100.00	100.00	125.00	100.00	210.00	90.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	20	549	244	31	295	65	42	42	99	117	139	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	40.00	5.00	9.00	6.00	7.00	0.00	5.00	2.00	12.00	11.00	5.00	5.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	549	244	31	295	65	42	42	99	117	139	40
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	165	73	9	89	20	13	13	30	35	42	12
Total Analysis Volume [veh/h]	24	661	294	37	355	78	51	51	119	141	167	48
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			1			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			1		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			1			1		
v_ci, Inbound Pedestrian Volume crossing minor street [	1			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			1			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	14.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	6	0	5	6	0
Maximum Green [s]	15	60	0	15	60	0	15	20	0	15	20	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	3.5	0.0	3.5	3.5	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	65	0	20	65	0	20	25	0	20	25	0
Vehicle Extension [s]	2.0	4.5	0.0	2.0	4.5	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	22	0	0	24	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.0	0.0	2.5	3.0	0.0	2.5	2.5	0.0	2.5	2.5	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C
C, Cycle Length [s]	101	101	101	101	101	101	101	101	101
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	0.00	3.00	3.00	0.00	2.50	0.00	2.50
g_i, Effective Green Time [s]	66	58	66	59	59	26	12	26	17
g / C, Green / Cycle	0.65	0.57	0.65	0.58	0.58	0.25	0.12	0.25	0.17
(v / s)_i Volume / Saturation Flow Rate	0.03	0.55	0.06	0.20	0.05	0.04	0.10	0.10	0.12
s, saturation flow rate [veh/h]	753	1730	670	1795	1580	1286	1664	1362	1754
c, Capacity [veh/h]	514	994	243	1045	920	302	201	338	301
d1, Uniform Delay [s]	6.78	20.34	21.13	10.95	9.23	29.55	43.34	31.19	39.36
k, delay calibration	0.19	0.43	0.04	0.19	0.19	0.04	0.04	0.13	0.08
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.06	18.43	0.11	0.33	0.07	0.10	3.71	0.97	2.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.96	0.15	0.34	0.08	0.17	0.84	0.42	0.71
d, Delay for Lane Group [s/veh]	6.85	38.77	21.23	11.28	9.30	29.65	47.05	32.16	41.84
Lane Group LOS	A	D	C	B	A	C	D	C	D
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.18	24.28	0.27	3.98	0.74	0.95	4.31	2.86	5.17
50th-Percentile Queue Length [ft/ln]	4.42	606.89	6.66	99.58	18.43	23.79	107.80	71.47	129.28
95th-Percentile Queue Length [veh/ln]	0.32	32.36	0.48	7.17	1.33	1.71	7.72	5.15	8.90
95th-Percentile Queue Length [ft/ln]	7.96	808.90	11.99	179.25	33.18	42.81	192.94	128.65	222.51

Movement, Approach, & Intersection Results

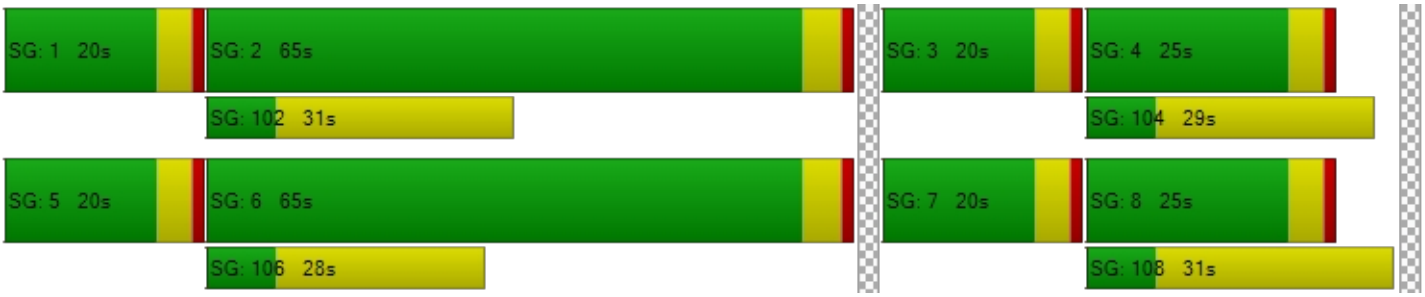
d_M, Delay for Movement [s/veh]	6.85	38.77	38.77	21.23	11.28	9.30	29.65	47.05	47.05	32.16	41.84	41.84
Movement LOS	A	D	D	C	B	A	C	D	D	C	D	D
d_A, Approach Delay [s/veh]	37.99			11.73			43.03			38.00		
Approach LOS	D			B			D			D		
d_I, Intersection Delay [s/veh]	32.45											
Intersection LOS	C											
Intersection V/C	0.855											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.89	39.89	39.89	39.89
I_p,int, Pedestrian LOS Score for Intersection	2.492	2.450	2.125	2.216
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1193	1193	408	408
d_b, Bicycle Delay [s]	8.18	8.19	31.88	31.88
I_b,int, Bicycle LOS Score for Intersection	3.175	2.335	1.924	2.147
Bicycle LOS	C	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: SW 95th Ave/SW Avery St

Control Type:	Signalized	Delay (sec / veh):	6.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.553

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	80.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	73	60	68	243	333	143
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	8.00	4.00	9.00	5.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	73	60	68	243	333	143
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	18	20	73	100	43
Total Analysis Volume [veh/h]	88	72	82	293	401	172
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	3		4		0	
v_di, Inbound Pedestrian Volume crossing major street [	4		3		0	
v_co, Outbound Pedestrian Volume crossing minor stree	2		0		2	
v_ci, Inbound Pedestrian Volume crossing minor street [	2		0		2	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	4	0	0	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	10	10	0
Maximum Green [s]	25	0	0	40	40	0
Amber [s]	3.5	0.0	0.0	4.0	4.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	0	7	0
Pedestrian Clearance [s]	14	0	0	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	0.0	3.0	3.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C
C, Cycle Length [s]	26	26	26	26
L, Total Lost Time per Cycle [s]	4.50	4.50	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	3.00	3.00
g_i, Effective Green Time [s]	4	4	12	12
g / C, Green / Cycle	0.15	0.15	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.35	0.33
s, saturation flow rate [veh/h]	1695	1477	1068	1718
c, Capacity [veh/h]	252	220	685	828
d1, Uniform Delay [s]	9.83	9.78	4.84	5.18
k, delay calibration	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.83	0.86	0.68	1.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.33	0.55	0.69
d, Delay for Lane Group [s/veh]	10.65	10.64	5.52	6.23
Lane Group LOS	B	B	A	A
Critical Lane Group	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.36	0.29	0.72	0.95
50th-Percentile Queue Length [ft/ln]	8.88	7.37	18.01	23.65
95th-Percentile Queue Length [veh/ln]	0.64	0.53	1.30	1.70
95th-Percentile Queue Length [ft/ln]	15.98	13.26	32.42	42.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.65	10.64	5.52	5.52	6.23	6.23
Movement LOS	B	B	A	A	A	A
d_A, Approach Delay [s/veh]	10.65		5.52		6.23	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	6.63					
Intersection LOS	A					
Intersection V/C	0.553					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	6701.16	3864.57	0.00
d_p, Pedestrian Delay [s]	4.23	4.23	4.23
I_p,int, Pedestrian LOS Score for Intersection	2.107	2.043	2.095
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1941	3106	3106
d_b, Bicycle Delay [s]	0.01	3.94	3.94
I_b,int, Bicycle LOS Score for Intersection	1.560	2.178	2.505
Bicycle LOS	A	B	B

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Tualatin Heights ZA-Existing Conditions

Vistro File: H:\...\26462_PM.vistro
Report File: H:\...\Existing_PM.pdf

Scenario: Base Scenario
9/2/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SW 95th Ave/Tualatin-Sherwood Rd	Signalized	HCM 6th Edition	NB Right	0.550	17.6	B
2	SW 95th Ave/SW Sagert St	Two-way stop	HCM 6th Edition	WB Left	0.157	14.9	B
3	Tualatin Heights West Dwy/SW 93rd Ave/SW Sagert St	Two-way stop	HCM 6th Edition	SB Left	0.032	12.5	B
4	Tualatin Heights East Dwy/SW Sagert St	Two-way stop	HCM 6th Edition	SB Left	0.054	11.5	B
5	SW Boones Ferry Rd/SW Sagert St	Signalized	HCM 6th Edition	EB Thru	0.697	19.0	B
6	SW 95th Ave/SW Avery St	Signalized	HCM 6th Edition	SB Right	0.536	6.4	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SW 95th Ave/Tualatin-Sherwood Rd

Control Type:	Signalized	Delay (sec / veh):	17.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.550

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	70.00	100.00	100.00	100.00	120.00	100.00	100.00	400.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	52	4	101	1	4	8	5	1084	121	96	870	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	17.00	0.00	2.00	0.00	0.00	0.00	0.00	6.00	4.00	4.00	11.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	52	4	101	1	4	8	5	1084	121	96	870	2
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	1	26	0	1	2	1	279	31	25	224	1
Total Analysis Volume [veh/h]	54	4	104	1	4	8	5	1118	125	99	897	2
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			1			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			1		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			1			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	3			0			2			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	0	5	0	0	5	0	5	10	0	10	10	0
Maximum Green [s]	0	35	0	0	35	0	20	65	0	20	65	0
Amber [s]	0.0	3.5	0.0	0.0	3.5	0.0	3.0	4.5	0.0	3.0	4.5	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	0	41	0	0	41	0	25	74	0	25	74	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	21	0	0	17	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.5	0.0	0.0	3.5	0.0	3.0	4.5	0.0	3.0	4.5	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R	L	C	C	L	C	C
C, Cycle Length [s]	52	52	52	52	52	52	52	52	52	52
L, Total Lost Time per Cycle [s]	5.50	5.50	5.50	5.50	5.00	6.50	6.50	5.00	6.50	6.50
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.50	3.50	3.50	3.50	3.00	4.50	4.50	3.00	4.50	4.50
g_i, Effective Green Time [s]	5	5	5	5	13	22	22	8	17	17
g / C, Green / Cycle	0.10	0.10	0.10	0.10	0.25	0.42	0.42	0.15	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.04	0.07	0.00	0.00	0.00	0.35	0.35	0.06	0.26	0.26
s, saturation flow rate [veh/h]	1599	1560	1860	1610	1810	1810	1738	1752	1735	1733
c, Capacity [veh/h]	293	155	268	160	450	768	737	259	561	560
d1, Uniform Delay [s]	21.66	22.44	21.03	21.08	14.64	13.17	13.23	19.90	15.98	15.98
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	4.95	0.03	0.13	0.01	2.29	2.49	0.93	2.72	2.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.20	0.67	0.02	0.05	0.01	0.82	0.83	0.38	0.80	0.80
d, Delay for Lane Group [s/veh]	21.99	27.39	21.05	21.20	14.65	15.46	15.71	20.83	18.70	18.71
Lane Group LOS	C	C	C	C	B	B	B	C	B	B
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.63	1.33	0.05	0.09	0.04	5.70	5.57	1.04	4.56	4.56
50th-Percentile Queue Length [ft/ln]	15.67	33.20	1.31	2.16	1.02	142.49	139.37	26.12	114.01	113.94
95th-Percentile Queue Length [veh/ln]	1.13	2.39	0.09	0.16	0.07	9.62	9.45	1.88	8.06	8.06
95th-Percentile Queue Length [ft/ln]	28.21	59.77	2.35	3.88	1.83	240.38	236.18	47.02	201.57	201.47

Movement, Approach, & Intersection Results

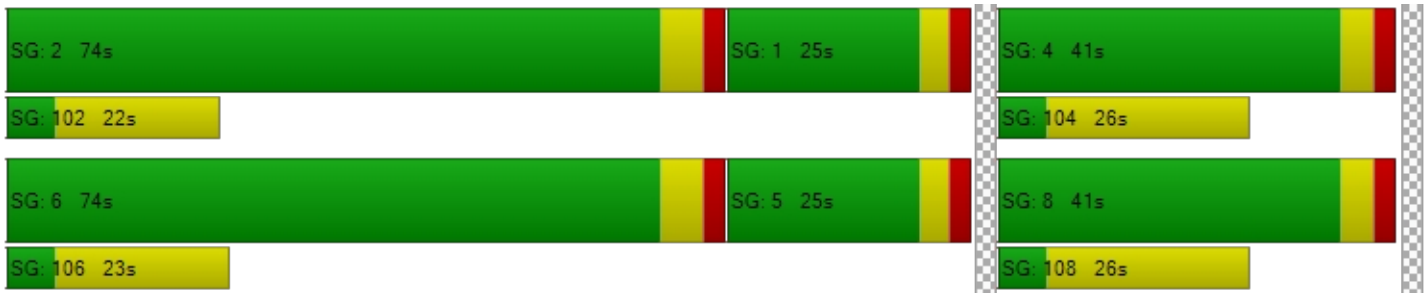
d_M, Delay for Movement [s/veh]	21.99	21.99	27.39	21.05	21.05	21.20	14.65	15.57	15.71	20.83	18.70	18.71
Movement LOS	C	C	C	C	C	C	B	B	B	C	B	B
d_A, Approach Delay [s/veh]	25.46			21.15			15.58			18.92		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	17.65											
Intersection LOS	B											
Intersection V/C	0.550											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	17.57	17.57	17.57	17.57
I_p,int, Pedestrian LOS Score for Intersection	2.039	1.920	2.779	2.707
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1377	1377	2618	2618
d_b, Bicycle Delay [s]	2.51	2.50	2.47	2.47
I_b,int, Bicycle LOS Score for Intersection	1.827	1.581	2.589	2.383
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SW 95th Ave/SW Sagert St

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.157

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	53	23	143	124	0	0	0	0	66	0	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	50.00	2.00	4.00	2.00	2.00	50.00	0.00	0.00	17.00	0.00	0.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	53	23	143	124	0	0	0	0	66	0	59
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	14	6	37	32	0	0	0	0	17	0	15
Total Analysis Volume [veh/h]	0	55	24	149	129	0	0	0	0	69	0	61
Pedestrian Volume [ped/h]	10			1			4			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.06
d_M, Delay for Movement [s/veh]	8.00	0.00	0.00	7.63	0.00	0.00	14.05	13.61	9.21	14.90	15.17	10.32
Movement LOS	A	A	A	A	A	A	B	B	A	B	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.33	0.33	0.33	0.00	0.00	0.00	0.83	0.83	0.83
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	8.14	8.14	8.14	0.00	0.00	0.00	20.73	20.73	20.73
d_A, Approach Delay [s/veh]	0.00			4.09			12.29			12.75		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	5.74											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 3: Tualatin Heights West Dwy/SW 93rd Ave/SW Sagert St

Control Type:	Two-way stop	Delay (sec / veh):	12.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.032

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	2	3	20	14	1	5	22	139	5	24	118	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	5.00	7.00	0.00	0.00	9.00	3.00	0.00	0.00	7.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	3	20	14	1	5	22	139	5	24	118	14
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	6	4	0	1	6	39	1	7	34	4
Total Analysis Volume [veh/h]	2	3	23	16	1	6	25	158	6	27	134	16
Pedestrian Volume [ped/h]	3			6			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.03	0.03	0.00	0.01	0.02	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	11.97	12.38	9.31	12.55	12.44	9.28	7.67	0.00	0.00	7.59	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.11	0.13	0.13	0.13	0.06	0.06	0.06	0.06	0.06	0.06
95th-Percentile Queue Length [ft/ln]	2.81	2.81	2.81	3.20	3.20	3.20	1.39	1.39	1.39	1.45	1.45	1.45
d_A, Approach Delay [s/veh]	9.83			11.69			1.01			1.16		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	2.26											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 4: Tualatin Heights East Dwy/SW Sagert St

Control Type:	Two-way stop	Delay (sec / veh):	11.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.054

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	28	11	20	153	145	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	3.00	6.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	11	20	153	145	28
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	3	6	43	41	8
Total Analysis Volume [veh/h]	32	13	23	174	165	32
Pedestrian Volume [ped/h]	4		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.02	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.49	9.60	7.66	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.22	0.22	0.05	0.05	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.56	5.56	1.27	1.27	0.00	0.00
d_A, Approach Delay [s/veh]	10.94		0.89		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.52					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: SW Boones Ferry Rd/SW Sagert St

Control Type:	Signalized	Delay (sec / veh):	19.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.697

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	115.00	100.00	100.00	125.00	100.00	210.00	90.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	13	391	212	77	623	56	41	120	12	182	85	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	3.00	4.00	5.00	4.00	2.00	0.00	2.00	17.00	5.00	5.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	391	212	77	623	56	41	120	12	182	85	50
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	100	54	20	159	14	10	31	3	46	22	13
Total Analysis Volume [veh/h]	13	399	216	79	636	57	42	122	12	186	87	51
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	4			1			4			0		
v_di, Inbound Pedestrian Volume crossing major street [	4			0			4			1		
v_co, Outbound Pedestrian Volume crossing minor stree	3			1			1			3		
v_ci, Inbound Pedestrian Volume crossing minor street [	3			1			1			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	4			6			4			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	14.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	6	0	5	6	0
Maximum Green [s]	15	60	0	15	60	0	15	20	0	15	20	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	3.5	0.0	3.5	3.5	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	65	0	20	65	0	20	25	0	20	25	0
Vehicle Extension [s]	2.0	4.5	0.0	2.0	4.5	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	22	0	0	24	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.0	0.0	2.5	3.0	0.0	2.5	2.5	0.0	2.5	2.5	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	0.00	3.00	3.00	0.00	2.50	0.00	2.50
g_i, Effective Green Time [s]	36	27	36	30	30	19	8	19	12
g / C, Green / Cycle	0.55	0.42	0.55	0.47	0.47	0.30	0.12	0.30	0.19
(v / s)_i Volume / Saturation Flow Rate	0.02	0.36	0.08	0.35	0.04	0.03	0.07	0.13	0.08
s, saturation flow rate [veh/h]	847	1726	956	1840	1547	1413	1828	1483	1696
c, Capacity [veh/h]	418	730	440	857	720	504	218	528	324
d1, Uniform Delay [s]	9.18	16.74	10.49	14.12	9.58	16.31	27.07	17.84	23.04
k, delay calibration	0.19	0.19	0.04	0.19	0.19	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.05	4.60	0.07	2.20	0.08	0.03	1.05	0.15	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.03	0.84	0.18	0.74	0.08	0.08	0.61	0.35	0.43
d, Delay for Lane Group [s/veh]	9.23	21.34	10.56	16.33	9.66	16.34	28.12	17.99	23.37
Lane Group LOS	A	C	B	B	A	B	C	B	C
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.07	8.07	0.44	7.04	0.41	0.42	1.93	2.03	1.78
50th-Percentile Queue Length [ft/ln]	1.84	201.73	10.90	176.03	10.31	10.45	48.27	50.75	44.42
95th-Percentile Queue Length [veh/ln]	0.13	12.73	0.79	11.39	0.74	0.75	3.48	3.65	3.20
95th-Percentile Queue Length [ft/ln]	3.31	318.20	19.63	284.82	18.55	18.82	86.89	91.34	79.95

Movement, Approach, & Intersection Results

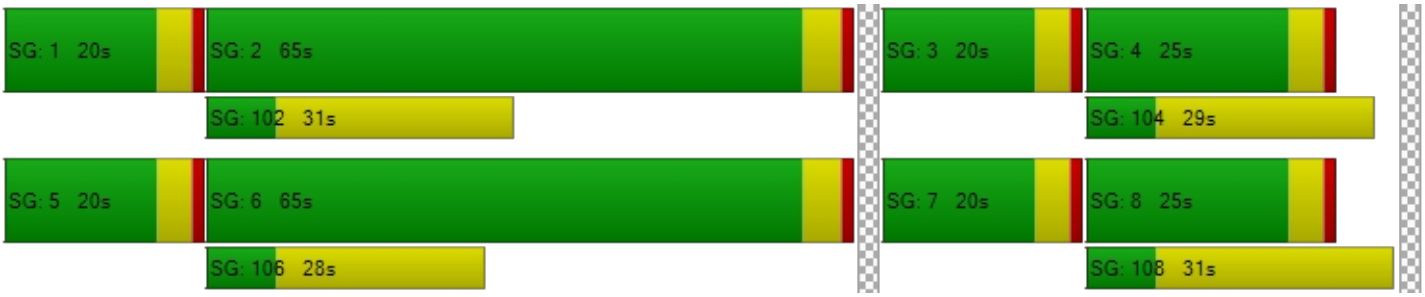
d_M, Delay for Movement [s/veh]	9.23	21.34	21.34	10.56	16.33	9.66	16.34	28.12	28.12	17.99	23.37	23.37
Movement LOS	A	C	C	B	B	A	B	C	C	B	C	C
d_A, Approach Delay [s/veh]	21.08			15.24			25.31			20.28		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	18.97											
Intersection LOS	B											
Intersection V/C	0.697											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.22	22.22	22.22	22.22
I_p,int, Pedestrian LOS Score for Intersection	2.437	2.434	2.039	2.214
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1859	1859	635	635
d_b, Bicycle Delay [s]	0.16	0.16	15.07	15.04
I_b,int, Bicycle LOS Score for Intersection	2.596	2.833	1.850	2.094
Bicycle LOS	B	C	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: SW 95th Ave/SW Avery St

Control Type:	Signalized	Delay (sec / veh):	6.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.536

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	80.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	88	101	38	490	208	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	0.00	3.00	3.00	8.00	9.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	88	101	38	490	208	33
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	27	10	129	55	9
Total Analysis Volume [veh/h]	93	106	40	516	219	35
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street [	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor stree	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street [	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	4	0	0	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	10	10	0
Maximum Green [s]	25	0	0	40	40	0
Amber [s]	3.5	0.0	0.0	4.0	4.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	0	7	0
Pedestrian Clearance [s]	14	0	0	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	0.0	3.0	3.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C
C, Cycle Length [s]	23	23	23	23
L, Total Lost Time per Cycle [s]	4.50	4.50	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	3.00	3.00
g_i, Effective Green Time [s]	4	4	10	10
g / C, Green / Cycle	0.16	0.16	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.05	0.07	0.31	0.15
s, saturation flow rate [veh/h]	1767	1615	1810	1732
c, Capacity [veh/h]	286	262	940	740
d1, Uniform Delay [s]	8.58	8.70	5.42	4.44
k, delay calibration	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.65	1.01	0.60	0.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.41	0.59	0.34
d, Delay for Lane Group [s/veh]	9.23	9.70	6.02	4.72
Lane Group LOS	A	A	A	A
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.30	0.35	0.77	0.29
50th-Percentile Queue Length [ft/ln]	7.38	8.86	19.31	7.19
95th-Percentile Queue Length [veh/ln]	0.53	0.64	1.39	0.52
95th-Percentile Queue Length [ft/ln]	13.28	15.95	34.76	12.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.23	9.70	6.02	6.02	4.72	4.72
Movement LOS	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	9.48		6.02		4.72	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.37					
Intersection LOS	A					
Intersection V/C	0.536					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	3.12	3.12	3.12
l_p,int, Pedestrian LOS Score for Intersection	1.989	2.047	2.039
Crosswalk LOS	A	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2175	3481	3481
d_b, Bicycle Delay [s]	0.09	6.30	6.30
l_b,int, Bicycle LOS Score for Intersection	1.560	2.477	1.979
Bicycle LOS	A	B	A

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix C Crash Data

CITY OF TUALATIN, WASHINGTON COUNTY

Intersectional Crashes at SW Avery St & SW 95th Ave in Tualatin, OR
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG/MJ	SCHL	WORK	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 / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
01784	N	N	N			03/17/2016	17	SW AVERY ST	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 9	STRGHT											29
CITY			N			Thu 6P	0	SW 95TH AVE	E		TRF SIGNAL	N	DRY	REAR		N/A	E W									000		00
No						*45 22 17.97*			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
						-122 46 29.41	1																	UNK					
															02	NONE 9	STOP											
																N/A	E W									011		00
																PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																							UNK					

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

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
055	SPRAY	BLINDED BY WATER SPRAY
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
4	EXP	EXPIRED
8	N-VAL	OTHER NON-VALID LICENSE
9	UNK	UNKNOWN IF DRIVER WAS LICENSED AT TIME OF CRASH

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)

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS
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	JACKNIFE	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 COLMN	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

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT
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

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
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
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)
135	RAIL OCC	INJURED OCCUPANT OF RAILWAY TRAIN, LIGHT RAIL, STREET CAR OR CABLE CAR

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 (K)
2	INJA	SUSPECTED SERIOUS INJURY (A)
3	INJB	SUSPECTED MINOR INJURY (B)
4	INJC	POSSIBLE INJURY (C)
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE
9	NONE	NO APPARENT INJURY (O)

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
9	PARKNG	PARKING MANEUVER

NON-MOTORIST 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
18	OTHER, NOT IN ROADWAY
99	UNKNOWN LOCATION

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

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 CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	OTHR	OTHER TYPE OF NON-MOTORIST

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	OFCR/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	OVRHD 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
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

CITY OF TUALATIN, WASHINGTON COUNTY

Intersectional Crashes at SW Boones Ferry Rd & SW Sagert St in Tualatin, OR
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG/MJ	SCHL	WORK	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 / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
05417	N	N	N	N	N	09/18/2015	16	SW BOONES FERRY RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
CITY		N				Fri 5P	0	SW SAGERT ST	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N S									000		00
No	*45 22 31.14*		*-122 46 3.18*					1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y OR<25		026	000		29
															02	NONE 0	STOP											
																PRVTE	N S									011		00
																PSNGR CAR		01	DRVR	NONE	34	M	OR-Y OR>25		000	000		00
04396	N	N	N			07/02/2015	16	SW BOONES FERRY RD	INTER	CROSS	N	N	CLR	BIKE	01	NONE 0	TURN-R											110	02
CITY		N				Thu 4P	0	SW SAGERT ST	E		TRF SIGNAL	N	DRY	TURN		PRVTE	E N									000		00
No	*45 22 31.14*		*-122 46 3.18*					1	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	34	M	OR-Y OR<25		027	000		29
																	STRGHT S N	01	BIKE	INJB	15	F		01	000	035	110	00
01979	N	N	N	N	N	04/09/2017	16	SW BOONES FERRY RD	INTER	CROSS	N	N	CLD	ANGL-STP	01	NONE 0	TURN-L											27,08,32
CITY		N				Sun 2P	0	SW SAGERT ST	E		TRF SIGNAL	N	DRY	TURN		PRVTE	N E									000		00
No	*45 22 31.14*		*-122 46 3.18*					1	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	17	F	OR-Y OR<25		016,002,052	038		27,08,32
															02	NONE 0	STOP											
																PRVTE	E W									012		00
																PSNGR CAR		01	DRVR	NONE	32	M	OR-Y OR<25		000	000		00
																		02	PSNG	INJC	32	F			000	000		00
																		03	PSNG	NO<5	03	M			000	000		00
																		04	PSNG	NO<5	01	F			000	000		00
08232	N	Y	N	N	N	12/22/2017	16	SW BOONES FERRY RD	INTER	CROSS	N	N	CLR	ANGL-STP	01	NONE 0	TURN-R											08
CITY		N				Fri 3P	0	SW SAGERT ST	E		TRF SIGNAL	N	DRY	TURN		PRVTE	S E									000		00
No	*45 22 31.14*		*-122 46 3.18*					1	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	59	M	OR-Y OR<25		001	000		08
															02	NONE 0	STOP											
																PRVTE	E W									012		00
																PSNGR CAR		01	DRVR	NONE	65	F	OR-Y OR<25		000	000		00
															03	NONE 0	STOP											
																PRVTE	E W									022		00
																PSNGR CAR		01	DRVR	INJA	48	F	OR-Y OR<25		000	000		00
																		02	PSNG	INJA	43	M			000	000		00
04949	N	N	N	N	N	09/26/2019	16	SW BOONES FERRY RD	INTER	CROSS	N	N	CLR	ANGL-STP	01	NONE 9	TURN-L											08
CITY		N				Thu 3P	0	SW SAGERT ST	E		TRF SIGNAL	N	DRY	TURN		N/A	N E									000		00
No	*45 22 31.14*		*-122 46 3.18*					1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00

CITY OF TUALATIN, WASHINGTON COUNTY

Intersectional Crashes at SW Boones Ferry Rd & SW Sagert St in Tualatin, OR
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG/MJ	SCHL	SWOR 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 / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
															02	NONE 9 N/A	STOP E W									012	00
																PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000	00
04901	N	N	N	N	N	07/25/2016	16	SW BOONES FERRY RD	INTER	CROSS	N		N	CLR	ANGL-OTH	01	NONE 9 N/A	STRGHT N S										27,04
CITY		N				Mon 1P	0	SW SAGERT ST	CN		TRF SIGNAL		N	DRY	ANGL											000	00
No	*45 22 31.14*		*-122 46 3.18*				1		01	0			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000	00
															02	NONE 9 N/A	STRGHT E W									000	00
																PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000	00
01878	N	N	N			03/21/2016	16	SW BOONES FERRY RD	INTER	CROSS	N		N	RAIN	ANGL-OTH	01	NONE 0 PRVTE	STRGHT E W										04
CITY		N				Mon 4P	0	SW SAGERT ST	CN		TRF SIGNAL		N	WET	ANGL											000	00
No	*45 22 31.14*		*-122 46 3.18*				1		02	0			N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	32	M	OR-Y OR<25		000	000	00
															02	NONE 0 PRVTE	STRGHT S N									000	00
																PSNGR CAR		01	DRVR	INJC	52	F	OR-Y OR<25		020	000	04
02871	N	N	N	N	N	06/05/2018	16	SW BOONES FERRY RD	INTER	CROSS	N		N	CLR	O-1 L-TURN	01	NONE 0 PRVTE	TURN-L E S										02
CITY		N				Tue 1P	0	SW SAGERT ST	CN		TRF SIGNAL		N	DRY	TURN											000	00
No	*45 22 31.14*		*-122 46 3.18*				1		03	0			N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	21	F	OR-Y OR<25		028,004	000	02
															02	NONE 0 PRVTE	STRGHT W E									000	00
																PSNGR CAR		01	DRVR	INJC	53	F	OR-Y OR<25		000	000	00
04209	N	N	N	N	N	08/07/2018	16	SW BOONES FERRY RD	INTER	CROSS	N		N	CLR	O-1 L-TURN	01	NONE 9 N/A	TURN-L E S										02
CITY		N				Tue 11A	0	SW SAGERT ST	CN		TRF SIGNAL		N	DRY	TURN											000	00
No	*45 22 31.14*		*-122 46 3.18*				1		03	0			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000	00
															02	NONE 9 N/A	STRGHT W E									000	00
																PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000	00
06922	N	N	N			12/16/2018	16	SW BOONES FERRY RD	INTER	CROSS	N		N	CLR	ANGL-OTH	01	NONE 9 N/A	STRGHT N S										04
NONE		N				Sun 4P	0	SW SAGERT ST	CN		TRF SIGNAL		N	DRY	ANGL											000	00
No	*45 22 31.14*		*-122 46 3.18*				1		03	0			N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000	00

CITY OF TUALATIN, WASHINGTON COUNTY

Intersectional Crashes at SW Boones Ferry Rd & SW Sagert St in Tualatin, OR
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG/MJ	SCHL	WORK	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 / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
															02	NONE 9 N/A	STRGHT W E									000		00
																PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00
01467 CITY	N	N	N N	N	N	03/23/2019 Sat 10A	16 0	SW BOONES FERRY RD SW SAGERT ST	INTER CN	CROSS	N TRF SIGNAL	N N	CLD DRY	O-1 L-TURN TURN	01	NONE 0 PRVTE	TURN-L E S										000		04 00
No	*45 22 31.14*					*-122 46 3.18*	1		03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	22	F	OR-Y OR<25		020	000		04
															02	NONE 0 PRVTE	STRGHT W E									000		00
																PSNGR CAR		01	DRVR	INJC	26	F	OR-Y OR<25		000	000		00

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

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
055	SPRAY	BLINDED BY WATER SPRAY
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
4	EXP	EXPIRED
8	N-VAL	OTHER NON-VALID LICENSE
9	UNK	UNKNOWN IF DRIVER WAS LICENSED AT TIME OF CRASH

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)

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS
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	JACKNIFE	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 COLMN	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

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT
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

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
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
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)
135	RAIL OCC	INJURED OCCUPANT OF RAILWAY TRAIN, LIGHT RAIL, STREET CAR OR CABLE CAR

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 (K)
2	INJA	SUSPECTED SERIOUS INJURY (A)
3	INJB	SUSPECTED MINOR INJURY (B)
4	INJC	POSSIBLE INJURY (C)
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE
9	NONE	NO APPARENT INJURY (O)

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
9	PARKNG	PARKING MANEUVER

NON-MOTORIST 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
18	OTHER, NOT IN ROADWAY
99	UNKNOWN LOCATION

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

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 CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	OTHR	OTHER TYPE OF NON-MOTORIST

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	OFCR/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	OVRHD 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
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

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

Intersectional Crashes at SW Sagert St & SW 95th Ave in Tualatin, OR
January 1, 2015 through December 31, 2019

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: 2016														
TURNING MOVEMENTS	0	2	0	2	0	2	0	0	2	2	0	2	0	0
2016 TOTAL	0	2	0	2	0	2	0	0	2	2	0	2	0	0
YEAR: 2015														
TURNING MOVEMENTS	0	1	0	1	0	2	0	1	0	0	1	1	0	0
2015 TOTAL	0	1	0	1	0	2	0	1	0	0	1	1	0	0
FINAL TOTAL	0	3	0	3	0	4	0	1	2	2	1	3	0	0

Disclaimers: *Effective 2016,* ***collection of "Property Damage Only" (PDO) crash data elements was reduced for vehicles and participants.*** *Age, Gender, License, Error and other elements are no longer available for PDO crash reporting. Please keep this in mind when comparing 2016 PDO crash data to prior years.*

A higher number of crashes may be reported as of 2011 compared to prior years. This does not necessarily reflect an increase in annual crashes. The higher numbers may 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. For all disclaimers, see https://www.oregon.gov/ODOT/Data/documents/Crash_Data_Disclaimers.pdf.

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

Intersectional Crashes at SW Tualatin-Sherwood Rd & SW 95th Ave in Tualatin, OR
January 1, 2015 through December 31, 2019

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: 2019														
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	2	0	2	0	2	0	1	1	2	0	2	0	0
2019 TOTAL	0	3	0	3	0	3	0	2	1	3	0	3	0	0
YEAR: 2018														
REAR-END	0	1	1	2	0	2	1	2	0	2	0	2	0	0
TURNING MOVEMENTS	0	3	0	3	0	4	0	2	1	2	1	3	0	0
2018 TOTAL	0	4	1	5	0	6	1	4	1	4	1	5	0	0
YEAR: 2017														
REAR-END	0	1	1	2	0	1	0	2	0	2	0	2	0	0
2017 TOTAL	0	1	1	2	0	1	0	2	0	2	0	2	0	0
YEAR: 2016														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
REAR-END	0	1	3	4	0	1	0	3	1	4	0	4	0	0
TURNING MOVEMENTS	0	1	0	1	0	2	0	1	0	0	1	1	0	0
2016 TOTAL	0	2	4	6	0	3	0	5	1	5	1	6	0	0
YEAR: 2015														
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2015 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
FINAL TOTAL	0	11	6	17	0	14	1	14	3	15	2	17	0	0

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

Crashes on SW Sagert St between SW Boones Ferry Rd & SW 95th Ave in Tualatin, OR
January 1, 2015 through December 31, 2019

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: 2019														
REAR-END	0	1	0	1	0	1	0	1	0	1	0	0	0	0
2019 TOTAL	0	1	0	1	0	1	0	1	0	1	0	0	0	0
YEAR: 2017														
MISCELLANEOUS	0	0	1	1	0	0	0	0	1	1	0	0	0	0
2017 TOTAL	0	0	1	1	0	0	0	0	1	1	0	0	0	0
YEAR: 2016														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	0	0	0
2016 TOTAL	0	0	1	1	0	0	0	1	0	1	0	0	0	0
FINAL TOTAL	0	1	2	3	0	1	0	2	1	3	0	0	0	0

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CITY OF TUALATIN, WASHINGTON COUNTY

Crashes on SW Sagert St between SW Boones Ferry Rd & SW 95th Ave in Tualatin, OR
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG/MJ	SCHL	WORK	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 / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
03520	N	N	N			05/30/2016	18	SW SAGERT ST	STRGHT		N	N	CLR	PRKD MV	01	NONE 9	STRGHT											27
NONE			N			Mon 3P	200	SW 95TH AVE	E	(NONE)	UNKNOWN	N	DRY	REAR		N/A	W E									000		00
No						*45 22 31.10* *-122 46 26.43*	1		07			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
										(02)														UNK					
															02	NONE 9	PRKD-P											
																N/A	W E									008		00
																PSNGR CAR											
01270	N	N	N			03/06/2017	18	SW SAGERT ST	STRGHT		N	N	RAIN	O-STRGHT	01	NONE 9	STRGHT										080	10
NONE			N			Mon 11A	110	SW APACHE DR	E	(NONE)	UNKNOWN	N	WET	OTH		N/A	W E									000		00
No						*45 22 31.18* *-122 46 15.40*	1		08			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
										(02)														UNK					
															02	NONE 9	STRGHT											
																N/A	E W									000		00
																PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																							UNK					
04827	N	N	N			09/08/2019	18	SW SAGERT ST	ALLEY		N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE			N			Sun 11A	200	SW BOONES FERRY RD	W	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	W E									000		00
No						*45 22 31.23* *-122 46 6.74*	1		08			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	32	M	OR-Y		026	000		29
										(02)														OR<25					
															02	NONE 0	STOP											
																PRVTE	W E									012		00
																PSNGR CAR		01	DRVR	INJC	58	F	OR-Y		000	000		00
																							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

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
055	SPRAY	BLINDED BY WATER SPRAY
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
4	EXP	EXPIRED
8	N-VAL	OTHER NON-VALID LICENSE
9	UNK	UNKNOWN IF DRIVER WAS LICENSED AT TIME OF CRASH

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)

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS
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	JACKNIFE	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 COLMN	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

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT
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

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
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
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)
135	RAIL OCC	INJURED OCCUPANT OF RAILWAY TRAIN, LIGHT RAIL, STREET CAR OR CABLE CAR

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 (K)
2	INJA	SUSPECTED SERIOUS INJURY (A)
3	INJB	SUSPECTED MINOR INJURY (B)
4	INJC	POSSIBLE INJURY (C)
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE
9	NONE	NO APPARENT INJURY (O)

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
9	PARKNG	PARKING MANEUVER

NON-MOTORIST 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
18	OTHER, NOT IN ROADWAY
99	UNKNOWN LOCATION

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

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 CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	OTHR	OTHER TYPE OF NON-MOTORIST

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	OFCR/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	OVRHD 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
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

Crashes on SW Sagert St between SW Boones Ferry Rd & SW 95th Ave in Tualatin, OR
January 1, 2015 through December 31, 2019

WASHINGTON COUNTY

SERIAL NO	DATE	TIME	DAY	*COUNTY OR CITY NAME	CRASH LOCATION	COLL TYPE	EVENT	CAUSE	ERROR	SURF	TOT VEH	VEHICLE TYP #1	VEHICLE OWN #2	PEOPLE KILL	PEOPLE INJ	PEOPLE ALC	PEOPLE SPED
03520	05/30/2016	3P	MO	Tualatin	SW SAGERT ST 200 FT E OF SW 95TH AVE	REAR		27		DRY	2	010	010	0	0	N	N
01270	03/06/2017	11A	MO	Tualatin	SW SAGERT ST 110 FT E OF SW APACHE DR	OTH	080	10		WET	2	010	010	0	0	N	N
04827	09/08/2019	11A	SU	Tualatin	SW SAGERT ST 200 FT W OF SW BOONES FERRY RD	REAR		29	026	DRY	2	011	011	0	1	N	N

VEHICLE OWNERSHIP CODES

Code	Short Description	Long Description
0	N/A	Not collected for PDO Crashes
1	PRVTE	Private
2	GOVMT	Government
3	PUBLC	Public
4	RENTL	Rental vehicle
5	STOLN	Stolen vehicle
9	UNKN	Unknown ownership

VEHICLE TYPE CODES

Code	Short Description	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

CAUSE CODES

Code	Short Description	Medium Description	Long Description	Code Termination Date
00	NO CODE	NO CODE APPLICABLE	No cause associated at this level	
01	TOO-FAST	TOO FAST FOR COND	Too fast for conditions (not exceed posted speed)	
02	NO-YIELD	FAILED YIELD ROW	Did not yield right-of-way	
03	PAS-STOP	PASSED STOP SIGN	Passed stop sign or red flasher	
04	DIS SIG	DISREGRD TRAF SIGNAL	Disregarded traffic signal	
05	LEFT-CTR	LEFT OF CTR/STRADDLE	Drove left of center on two-way road; straddling	
06	IMP-OVER	IMPROPER PASSING	Improper overtaking	
07	TOO-CLOS	FOLLOW TOO CLOSE	Followed too closely	
08	IMP-TURN	IMPROPER TURN	Made improper turn	
09	DRINKING	ALC OR DRUGS	Alcohol or Drug Involved	12/31/2002
10	OTHR-IMP	OTHER DRIVE ERR	Other improper driving	
11	MECH-DEF	MECH DEFECT	Mechanical defect	
12	OTHER	OTHER	Other (not improper driving)	
13	IMP LN C	IMP LANE CHANGE	Improper change of traffic lanes	
14	DIS TCD	DISRG OTHR TCD	Disregarded other traffic control device	
15	WRNG WAY	WRONG WAY / 1-WAY RD	Wrong way on one-way road; wrong side divided road	
16	FATIGUE	DRIVER FATIGUED	Driver drowsy/fatigued/sleepy	
17	ILLNESS	PHYSICAL ILLNESS	Physical illness	
18	IN RDWY	ILLEGALLY IN RDWY	Non-motorist illegally in roadway	
19	NT VISBL	NOT VISIBLE	Non-motorist not visible; non-reflective clothing	
20	IMP PKNG	IMPROPER PARKING	Vehicle improperly parked	
21	DEF STER	DEFECTIVE STEERING	Defective steering mechanism	
22	DEF BRKE	DEFECTIVE BRAKES	Inadequate or no brakes	
24	LOADSHFT	LOAD SHIFTED	Vehicle lost load or load shifted	
25	TIREFAIL	TIRE FAILURE	Tire Failure	
26	PHANTOM	PHANTOM VEHICLE	Phantom / Non-contact Vehicle	
27	INATTENT	INATTENTION	Inattention	
28	NM INATT	NON-MTRST INATTENT	Non-Motorist Inattention	
29	F AVOID	FAIL AVOID VEH AHEAD	Failed to avoid vehicle ahead	
30	SPEED	EXCED POSTED SPEED	Driving in excess of posted speed	
31	RACING	SPEED RACING	Speed Racing (per PAR)	
32	CARELESS	CARELESS DRIVING	Careless Driving (per PAR)	
33	RECKLESS	RECKLESS DRIVING	Reckless Driving (per PAR)	
34	AGGRESV	AGGRESSIVE DRIVING	Aggressive Driving (per PAR)	
35	RD RAGE	ROAD RAGE	Road Rage (per PAR)	
40	VIEW OBS	VIEW OBSCURED	View obscured	
50	USED MDN	IMP USE MEDIAN/SHLDR	Improper use of median or shoulder	
51	FAIL LN	F MAINT LANE	Failed to maintain lane	12/31/2015
52	OFF RD	RAN OFF RD	Ran off road	12/31/2015

ERR CODES

Code	Short Description	Medium Description	Long Description
000	NONE	NO ERROR	No error
001	WIDE TRN	WIDE TURN	Wide turn
002	CUT CORN	CUT CORNER	Cut corner on turn
003	FAIL TRN	F OBEY TRN	Failed to obey mandatory traffic turn signal, sign or lane markings
004	L IN TRF	LTRN FNT TRAF	Left turn in front of oncoming traffic
005	L PROHIB	LTRN PROHIB	Left turn where prohibited
006	FRM WRNG	T FRM WRNG LN	Turned from wrong lane
007	TO WRONG	T TO WRONG LN	Turned into wrong lane
008	ILLEG U	ILLEG U-TURN	U-turned illegally
009	IMP STOP	IMP STOP	Improperly stopped in traffic lane
010	IMP SIG	IMP/FAIL SIG	Improper signal or failure to signal
011	IMP BACK	IMP BACKING	Backing improperly (not parking)
012	IMP PARK	IMP PARKED	Improperly parked
013	UNPARK	IMP STRT PARK	Improper start leaving parked position
014	IMP STRT	IMP STRT STOP	Improper start from stopped position
015	IMP LGHT	IMP/NO LIGHTS	Improper or no lights (vehicle in traffic)
016	INATTENT	INATTENTION	Inattention (Failure to Dim Lights prior to 4/1/97)
017	UNSF VEH	DR UNSAFE VEH	Driving unsafe vehicle (no other error apparent)
018	OTH PARK	PRK MAN N/CLR	Entering/exiting parked position w/ insufficient clearance; other improper parking maneuver
019	DIS DRIV	DISRG DR SIG	Disregarded other driver's signal
020	DIS SGNL	DISRG TRF SIG	Disregarded traffic signal
021	RAN STOP	DISRG STP SGN	Disregarded stop sign or flashing red
022	DIS SIGN	DISRG WRN SGN	Disregarded warning sign, flares or flashing amber
023	DIS OFCR	DISRG POL/FLG	Disregarded police officer or flagman
024	DIS EMER	DISRG SIR/EMR	Disregarded siren or warning of emergency vehicle
025	DIS RR	DISRG RR SIG	Disregarded RR signal, RR sign, or RR flagman
026	REAR-END	F AVOID STP V	Failed to avoid stopped or parked vehicle ahead other than school bus
027	BIKE ROW	F/YLD ROW BIK	Did not have right-of-way over pedalcyclist
028	NO ROW	NO R-O-W	Did not have right-of-way
029	PED ROW	F/YLD ROW PED	Failed to yield right-of-way to pedestrian
030	PAS CURV	PASS ON CURVE	Passing on a curve
031	PAS WRNG	PASS WRNG SID	Passing on the wrong side
032	PAS TANG	PASS TANGENT	Passing on straight road under unsafe conditions
033	PAS X-WK	PASS STP4PED	Passed vehicle stopped at crosswalk for pedestrian
034	PAS INTR	PASS AT INTER	Passing at intersection
035	PAS HILL	PASS ON HILL	Passing on crest of hill
036	N/PAS ZN	PASS N/PASSNG	Passing in "No Passing" zone
037	PAS TRAF	PASS ONC TRAF	Passing in front of oncoming traffic
038	CUT-IN	CUTTING IN	Cutting in (two lanes - two way only)
039	WRNGSIDE	DR WRONG SIDE	Driving on wrong side of the road (2-way undivided roadways)
040	THRU MED	DR THRU MEDN	Driving through safety zone or over island
041	F/ST BUS	F/STP SCHLBUS	Failed to stop for school bus
042	F/SLO MV	F/SLO SLO VEH	Failed to decrease speed for slower moving vehicle
043	TOO CLOSE	FOLLW TO CLOS	Following too closely (must be on officer's report)
044	STRDL LN	STRD/DR WRNG	Straddling or driving on wrong lanes
045	IMP CHG	IMP LANE CHG	Improper change of traffic lanes

ERR CODES

Code	Short Description	Medium Description	Long Description
046	WRNG WAY	WRNG WY/1 WAY	Wrong way on one-way roadway; wrong side divided road
047	BASCRULE	V BASIC RULE	Driving too fast for conditions (not exceeding posted speed)
048	OPN DOOR	OPN DOOR TRAF	Opened door into adjacent traffic lane
049	IMPEDING	IMPEDING TRAF	Impeding Traffic
050	SPEED	SPEED	Driving in excess of posted speed
051	RECKLESS	RECKLSS DRVNG	Reckless driving (per PAR)
052	CARELESS	CARELSS DRVNG	Careless driving (per PAR)
053	RACING	RACING	Speed Racing (per PAR)
054	X N/SGNL	X-INT NO SGNL	Crossing at intersection, no traffic signal present
055	X W/SGNL	X-INT W/ SGNL	Crossing at intersection, traffic signal present
056	DIAGONAL	X-INT DIAGNL	Crossing at intersection - diagonally
057	BTWN INT	X-BTWN INTER	Crossing between intersections
059	W/TRAF-S	W SHLD W/TRAF	Walking, running, riding, etc., on shoulder WITH traffic
060	A/TRAF-S	W SHLD A/TRAF	Walking, running, riding, etc., on shoulder FACING traffic
061	W/TRAF-P	W PAVE W/TRAF	Walking, running, riding, etc., on pavement WITH traffic
062	A/TRAF-P	W PAVE A/TRAF	Walking, running, riding, etc., on pavement FACING traffic
063	PLAYINRD	PLAY IN RDWY	Playing in street or road
064	PUSH MV	PUSH MV IN RD	Pushing or working on vehicle in road or on shoulder
065	WORK IN RD	WORK IN RD	Working in roadway or along shoulder
070	LAY ON RD	LYING IN RD	Standing or lying in roadway
071	NM IMP USE	N-M IMP USE	Improper use of traffic lane by non-motorist
073	ELUDING	ELUDING	Eluding / Attempt to elude
079	F NEG CURV	FAIL NEG CURV	Failed to negotiate a curve
080	FAIL LN	F MAINT LANE	Failed to maintain lane
081	OFF RD	RAN OFF RD	Ran off road
082	NO CLEAR	MISJUDGE CLR	Driver misjudged clearance
083	OVRSTEER	OVERSTEER	Over-correcting
084	NOT USED	NOT USED	Code not in use
085	OVRLOAD	OVERLOAD	Overloading or improper loading of vehicle with cargo or passengers
097	UNA DIS TC	UNA DISRG TCD	Unable to determine which driver disregarded traffic control device

EVENT CODES

Code	Short Description	Medium Description	Long Description
001	FEL/JUMP	FELL/JUMPED MV	Occupant fell, jumped or was ejected from moving vehicle
002	INTERFER	PSNGR INTERFERED	Passenger interfered with driver
003	BUG INTF	ANML INTERFERED	Animal or insect in vehicle interfered with driver
004	INDRCT PED	PED INDRCTLY INVLV	Pedestrian indirectly involved (not struck)
005	SUB-PED	SUBSEQUENT PED	"Sub-Ped": pedestrian injured subsequent to collision, etc.
006	INDRCT BIK	BIKE INDRCTLY INVLV	Pedalcyclist indirectly involved (not struck)
007	HITCHIKR	HITCHHIKER	Hitchhiker (soliciting a ride)
008	PSNGR TOW	PSNGR TOWED	Passenger or non-motorist being towed or pushed on conveyance
009	ON/OFF V	ON/OFF STOP VEH	Getting on/off stopped/parked vehicle (occupants only; must have physical contact w/ vehicle)
010	SUB OTRN	SUBSEQ OVERTURN	Overturned after first harmful event
011	MV PUSHD	VEH BEING PUSHED	Vehicle being pushed
012	MV TOWED	VEH TOWED/TOWING	Vehicle towed or had been towing another vehicle
013	FORCED	FORCED BY IMPACT	Vehicle forced by impact into another vehicle, pedalcyclist or pedestrian
014	SET MOTN	MV SET IN MOTION	Vehicle set in motion by non-driver (child released brakes, etc.)
015	RR ROW	RAILROAD ROW	At or on railroad right-of-way (not Light Rail)
016	LT RL ROW	LIGHT RAIL ROW	At or on Light-Rail right-of-way
017	RR HIT V	TRAIN HIT VEH	Train struck vehicle
018	V HIT RR	VEH HIT TRAIN	Vehicle struck train
019	HIT RR CAR	VEH HIT RR CAR	Vehicle struck railroad car on roadway
020	JACKNIFE	JACKKNIFE	Jackknife; trailer or towed vehicle struck towing vehicle
021	TRL OTRN	TRAILER O'TURN	Trailer or towed vehicle overturned
022	CN BROKE	TRLR CONN BROKE	Trailer connection broke
023	DETACH TRL	DETCHD TRLR STRKNG	Detached trailing object struck other vehicle, non-motorist, or object
024	V DOOR OPN	V DOOR OPN IN TRAF	Vehicle door opened into adjacent traffic lane
025	WHEELOFF	WHEEL CAME OFF	Wheel came off
026	HOOD UP	HOOD FLEW UP	Hood flew up
028	LOAD SHIFT	LOAD SHIFTED	Lost load, load moved or shifted
029	TIREFAIL	TIRE FAILURE	Tire failure
030	PET	PET	Pet: cat, dog and similar
031	LVSTOCK	LIVESTOCK	Stock: cow, calf, bull, steer, sheep, etc.
032	HORSE	HORSE	Horse, mule, or donkey
033	HRSE&RID	HORSE & RIDER	Horse and rider
034	GAME	GAME NO DEER/ELK	Wild animal, game (includes birds; not deer or elk)
035	DEER ELK	DEER OR ELK	Deer or elk, wapiti
036	ANML VEH	ANIMAL-DRAWN VEH	Animal-drawn vehicle
037	CULVERT	CULVERT/MANHOLE	Culvert, open low or high manhole
038	ATENUATN	IMPACT CUSHION	Impact attenuator
039	PK METER	PARKING METER	Parking meter
040	CURB	CURB	Curb (also narrow sidewalks on bridges)
041	JIGGLE	JIGGLE BAR N/MED	Jiggle bar or traffic snake for channelization

EVENT CODES

Code	Short Description	Medium Description	Long Description
042	GDRL END	GUARDRAIL END	Leading edge of guardrail
043	GARDRAIL	GUARDRAIL	Guard rail (not metal median barrier)
044	BARRIER	MEDIAN BARRIER	Median barrier (raised or metal)
045	WALL	WALL	Retaining wall or tunnel wall
046	BR RAIL	BRIDGE RAIL	Bridge railing or parapet (on bridge or approach)
047	BR ABUTMNT	BRIDGE ABUTMENT	Bridge abutment (included "approach end" thru 2013)
048	BR COLMN	BRIDGE COLUMN	Bridge pillar or column
049	BR GIRDR	BRIDGE GIRDER	Bridge girder (horizontal bridge structure overhead)
050	ISLAND	TRAFFIC ISLAND	Traffic raised island
051	GORE	GORE	Gore
052	POLE UNK	POLE-UNKNOWN	Pole – type unknown
053	POLE UTL	POLE-UTILITY	Pole – power or telephone
054	ST LIGHT	POLE-ST LIGHT	Pole – street light only
055	TRF SGNL	POLE-TRAF SIGNAL	Pole – traffic signal and ped signal only
056	SGN BRDG	POLE-SIGN BRIDGE	Pole – sign bridge
057	STOPSIGN	STOP/YIELD SIGN	Stop or yield sign
058	OTH SIGN	OTHER SIGN	Other sign, including street signs
059	HYDRANT	HYDRANT	Hydrant
060	MARKER	DELINEATOR	Delineator or marker (reflector posts)
061	MAILBOX	MAILBOX	Mailbox
062	TREE	TREE/STUMP	Tree, stump or shrubs
063	VEG OHED	VEGTN OVER RDWY	Tree branch or other vegetation overhead, etc.
064	WIRE/CBL	CABLE ACROSS RD	Wire or cable across or over the road
065	TEMP SGN	TEMP SIGN/BARR	Temporary sign or barricade in road, etc.
066	PERM SGN	PERM SIGN/BARR	Permanent sign or barricade in/off road
067	SLIDE	SLIDE/ROCKS	Slides, fallen or falling rocks
068	FRGN OBJ	FOREIGN OBJECT	Foreign obstruction/debris in road (not gravel)
069	EQP WORK	EQUIP WORKING	Equipment working in/off road
070	OTH EQP	OTHER EQUIPMENT	Other equipment in or off road (includes parked trailer, boat)
071	MAIN EQP	MAINTNCE EQUIP	Wrecker, street sweeper, snow plow or sanding equipment
072	OTHER WALL	OTHER WALL	Rock, brick or other solid wall
073	IRRGL PVMT	IRREGULAR PAVEMENT	Other bump (not speed bump), pothole or pavement irregularity (per PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJ	Other overhead object (highway sign, signal head, etc.); not bridge
075	CAVE IN	CAVE IN	Bridge or road cave in
076	HI WATER	HIGH WATER	High Water
077	SNO BANK	SNOW BANK	Snow Bank
078	LO-HI EDGE	LOW-HIGH PVMNT EDGE	Low or high shoulder at pavement edge
079	DITCH	CUT SLOPE/DITCH	Cut slope or ditch embankment
080	OBJ FRM MV	OBJ FRM OTHR VEH	Struck by rock or other object set in motion by other vehicle (incl. lost loads)
081	FLY-OBJ	OTHER MOVING OBJ	Struck by rock or other moving or flying object (not set in motion by vehicle)
082	VEH HID	VEH OBSCURE VIEW	Vehicle obscured view
083	VEG HID	VEG OBSCURE VIEW	Vegetation obscured view
084	BLDG HID	BLD OBSCURE VIEW	View obscured by fence, sign, phone booth, etc.

EVENT CODES

Code	Short Description	Medium Description	Long Description
085	WIND GUST	WIND GUST	Wind Gust
086	IMMERSED	IMMERSION	Vehicle immersed in body of water
087	FIRE/EXP	FIRE/EXPLOSION	Fire or explosion
088	FENC/BLD	FENCE/BUILDING	Fence or building, etc.
089	OTHR CRASH	REFER OTHR CRASH	Crash related to another separate crash
090	TO 1 SIDE	TWO WAY ONE SIDE	Two-way traffic on divided roadway all routed to one side
091	BUILDING	BUILDING	Building or other structure
092	PHANTOM	PHANTOM VEH	Other (phantom) non-contact vehicle
093	CELL PHONE	CELL PHONE PER PAR	Cell phone (on PAR or driver in use)
094	VIOL GDL	VIOL GRAD DR LIC	Teenage driver in violation of graduated license pgm
095	GUY WIRE	GUY WIRE	Guy wire
096	BERM	BERM	Berm (earthen or gravel mound)
097	GRAVEL	GRAVEL IN RDWY	Gravel in roadway
098	ABR EDGE	ABRUPT EDGE	Abrupt edge
099	CELL WTNSD	CELL PHONE WITNESSED	Cell phone use witnessed by other participant
100	UNK FIXD	UNK FIX OBJ	Fixed object, unknown type.
101	OTHER OBJ	OTHER OBJ NOT FIXED	Non-fixed object, other or unknown type
102	TEXTING	TEXTING	Texting
103	WZ WORKER	WZ WORKER	Work Zone Worker
104	ON VEHICLE	RIDE ON VEH EXTERIOR	Passenger riding on vehicle exterior
105	PEDAL PSGR	PSNGR ON PEDALCYCLE	Passenger riding on pedalcycle
106	MAN WHLCHR	NONMOTOR WHEELCHAIR	Pedestrian in non-motorized wheelchair
107	MTR WHLCHR	MOTORIZED WHEELCHAIR	Pedestrian in motorized wheelchair
108	OFFICER	POLICE OFFICER	Law Enforcement / Police Officer
109	SUB-BIKE	SUBSEQUENT BICYCLIST	"Sub-Bike": pedalcyclist injured subsequent to collision, etc.
110	N-MTR	NM STR VEH	Non-motorist struck vehicle
111	S CAR VS V	ST CAR STRUCK VEH	Street Car/Trolley (on rails or overhead wire system) struck vehicle
112	V VS S CAR	VEH STRUCK ST CAR	Vehicle struck Street Car/Trolley (on rails or overhead wire system)
113	S CAR ROW	STREET CAR ROW	At or on street car or trolley right-of-way
114	RR EQUIP	VEH STRUCK RR EQUIP	Vehicle struck railroad equipment (not train) on tracks
115	DSTRCT GPS	DISTRACT GPS DEVICE	Distracted by navigation system or GPS device
116	DSTRCT OTH	DISTRACT OTHR DEVICE	Distracted by other electronic device
117	RR GATE	RR DROP-ARM GATE	Rail crossing drop-arm gate
118	EXPNSN JNT	EXPANSION JOINT	Expansion joint
119	JERSEY BAR	JERSEY BARRIER	Jersey barrier
120	WIRE BAR	WIRE BARRIER	Wire or cable median barrier
121	FENCE	FENCE	Fence
123	OBJ IN VEH	LOOSE OBJ IN VEHICLE	Loose object in vehicle struck occupant
124	SLIPPERY	SLIPPERY SURFACE	Sliding or swerving due to wet, icy, slippery or loose surface (not gravel)
125	SHLDR	SHLDR GAVE	Shoulder gave way
126	BOULDER	ROCKS / BOULDER	Rock(s), boulder (not gravel; not rock slide)
127	LAND SLIDE	ROCK OR LAND SLIDE	Rock slide or land slide
128	CURVE INV	CURVE PRESENT	Curve present at crash location

EVENT CODES

Code	Short Description	Medium Description	Long Description
129	HILL INV	HILL PRESENT	Vertical grade / hill present at crash location
130	CURVE HID	CURVE OBSCURED VIEW	View obscured by curve
131	HILL HID	HILL OBSCURED VIEW	View obscured by vertical grade / hill
132	WINDOW HID	WINDOW VIEW OBSCURED	View obscured by vehicle window conditions
133	SPRAY HID	SPRAY OBSCURED VIEW	View obscured by water spray
134	TORRENTIAL	TORRENTIAL RAIN	Torrential Rain (exceptionally heavy rain)
135	RAIL OCC	RAIL/CABLE CAR OCC	Injured occupant of railway train, light rail, street car or cable car

Appendix D 2040 Background Operations

Tualatin Heights ZA-Existing Conditions

Vistro File: H:\...\26462_AM.vistro
Report File: H:\...\Future_AM_notrips.pdf

Scenario 3 Future Traffic Conditions_notrips
9/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SW 95th Ave/Tualatin-Sherwood Rd	Signalized	HCM 6th Edition	NB Right	0.672	19.6	B
2	SW 95th Ave/SW Sagert St	All-way stop	HCM 6th Edition	WB Right	0.605	15.1	C
3	Tualatin Heights West Dwy/SW 93rd Ave/SW Sagert St	Two-way stop	HCM 6th Edition	SB Left	0.056	14.1	B
4	Tualatin Heights East Dwy/SW Sagert St	Two-way stop	HCM 6th Edition	SB Left	0.084	13.3	B
5	SW Boones Ferry Rd/SW Sagert St	Signalized	HCM 6th Edition	NB Thru	1.094	102.8	F
6	SW 95th Ave/SW Avery St	Signalized	HCM 6th Edition	SB Left	0.639	7.2	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SW 95th Ave/Tualatin-Sherwood Rd

Control Type:	Signalized	Delay (sec / veh):	19.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.672

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	70.00	100.00	100.00	100.00	120.00	100.00	100.00	400.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	72	8	95	1	1	3	12	1104	108	176	1349	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	7.00	0.00	9.00	0.00	0.00	50.00	0.00	23.00	8.00	10.00	13.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	72	8	95	1	1	3	12	1104	108	176	1349	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	2	25	0	0	1	3	291	28	46	355	1
Total Analysis Volume [veh/h]	76	8	100	1	1	3	13	1162	114	185	1420	3
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	1			4			0			3		
v_di, Inbound Pedestrian Volume crossing major street [	0			3			1			4		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			1			1		
v_ci, Inbound Pedestrian Volume crossing minor street [	1			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			1			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	0	5	0	0	5	0	5	10	0	10	10	0
Maximum Green [s]	0	35	0	0	35	0	20	65	0	20	65	0
Amber [s]	0.0	3.5	0.0	0.0	3.5	0.0	3.0	4.5	0.0	3.0	4.5	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	0	41	0	0	41	0	25	74	0	25	74	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	21	0	0	17	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.5	0.0	0.0	3.5	0.0	3.0	4.5	0.0	3.0	4.5	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R	L	C	C	L	C	C
C, Cycle Length [s]	63	63	63	63	63	63	63	63	63	63
L, Total Lost Time per Cycle [s]	5.50	5.50	5.50	5.50	5.00	6.50	6.50	5.00	6.50	6.50
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.50	3.50	3.50	3.50	3.00	4.50	4.50	3.00	4.50	4.50
g_i, Effective Green Time [s]	6	6	6	6	9	30	30	10	30	30
g / C, Green / Cycle	0.10	0.10	0.10	0.10	0.15	0.48	0.48	0.15	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.05	0.07	0.00	0.00	0.01	0.42	0.42	0.11	0.42	0.42
s, saturation flow rate [veh/h]	1579	1496	1813	974	1810	1555	1500	1667	1705	1704
c, Capacity [veh/h]	270	152	270	99	272	739	713	255	815	814
d1, Uniform Delay [s]	26.65	27.22	25.43	25.48	22.90	14.84	14.92	25.42	14.73	14.73
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.65	4.74	0.01	0.12	0.07	3.48	3.81	3.93	3.12	3.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.66	0.01	0.03	0.05	0.88	0.88	0.73	0.87	0.87
d, Delay for Lane Group [s/veh]	27.31	31.96	25.44	25.61	22.98	18.32	18.73	29.35	17.84	17.86
Lane Group LOS	C	C	C	C	C	B	B	C	B	B
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.18	1.57	0.03	0.04	0.16	7.68	7.56	2.76	8.33	8.33
50th-Percentile Queue Length [ft/ln]	29.44	39.31	0.66	1.05	4.05	191.91	189.04	68.89	208.13	208.14
95th-Percentile Queue Length [veh/ln]	2.12	2.83	0.05	0.08	0.29	12.22	12.07	4.96	13.06	13.06
95th-Percentile Queue Length [ft/ln]	53.00	70.75	1.19	1.89	7.29	305.50	301.79	124.01	326.43	326.45

Movement, Approach, & Intersection Results

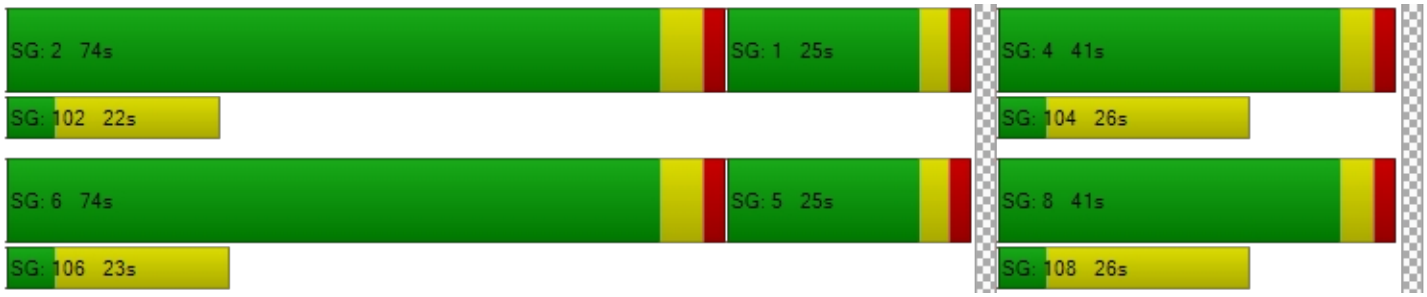
d_M, Delay for Movement [s/veh]	27.31	27.31	31.96	25.44	25.44	25.61	22.98	18.50	18.73	29.35	17.85	17.86
Movement LOS	C	C	C	C	C	C	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	29.83			25.54			18.57			19.17		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	19.57											
Intersection LOS	B											
Intersection V/C	0.672											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	6209.66	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	23.08	23.08	23.08	23.08
l_p,int, Pedestrian LOS Score for Intersection	2.081	1.933	2.935	2.844
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1129	1129	2147	2147
d_b, Bicycle Delay [s]	5.96	5.96	0.17	0.17
l_b,int, Bicycle LOS Score for Intersection	1.863	1.568	2.623	2.886
Bicycle LOS	A	A	B	C

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SW 95th Ave/SW Sagert St

Control Type:	All-way stop	Delay (sec / veh):	15.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.605

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	188	70	103	114	0	0	0	0	102	0	195
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	4.00	8.00	0.00	0.00	0.00	0.00	5.00	0.00	5.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	188	70	103	114	0	0	0	0	102	0	195
Peak Hour Factor	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	64	24	35	39	0	0	0	0	34	0	66
Total Analysis Volume [veh/h]	0	254	95	139	154	0	0	0	0	138	0	264
Pedestrian Volume [ped/h]	34			1			5			20		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	656	615	547	664
Degree of Utilization, x	0.53	0.48	0.00	0.61

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	3.15	2.57	0.00	4.09
95th-Percentile Queue Length [ft]	78.84	64.24	0.00	102.28
Approach Delay [s/veh]	14.56	14.08	0.00	16.38
Approach LOS	B	B	A	C
Intersection Delay [s/veh]	15.13			
Intersection LOS	C			

Intersection Level Of Service Report

Intersection 3: Tualatin Heights West Dwy/SW 93rd Ave/SW Sagert St

Control Type:	Two-way stop	Delay (sec / veh):	14.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.056

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	9	0	21	19	2	10	0	158	5	5	260	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	5.00	0.00	0.00	0.00	0.00	3.00	20.00	0.00	3.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	0	21	19	2	10	0	158	5	5	260	9
Peak Hour Factor	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	7	6	1	3	0	49	2	2	81	3
Total Analysis Volume [veh/h]	11	0	26	24	3	13	0	198	6	6	325	11
Pedestrian Volume [ped/h]	2			2			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.03	0.06	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.64	13.52	9.68	14.09	13.81	10.70	7.93	0.00	0.00	7.63	0.00	0.00
Movement LOS	B	B	A	B	B	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.18	0.18	0.18	0.26	0.26	0.26	0.00	0.00	0.00	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	4.50	4.50	4.50	6.61	6.61	6.61	0.00	0.00	0.00	0.33	0.33	0.33
d_A, Approach Delay [s/veh]	10.85			12.96			0.00			0.13		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	1.55											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 4: Tualatin Heights East Dwy/SW Sagert St

Control Type:	Two-way stop	Delay (sec / veh):	13.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.084

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	32	7	2	193	263	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	3.00	3.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	7	2	193	263	2
Peak Hour Factor	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	2	1	60	82	1
Total Analysis Volume [veh/h]	40	9	3	241	329	3
Pedestrian Volume [ped/h]	5		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.35	10.85	7.94	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.32	0.32	0.01	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	8.01	8.01	0.18	0.18	0.00	0.00
d_A, Approach Delay [s/veh]	12.89		0.10		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.05					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: SW Boones Ferry Rd/SW Sagert St

Control Type:	Signalized	Delay (sec / veh):	102.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.094

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	115.00	100.00	100.00	125.00	100.00	210.00	90.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	28	774	344	44	416	92	59	59	140	165	196	56
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	40.00	5.00	9.00	6.00	7.00	0.00	5.00	2.00	12.00	11.00	5.00	5.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	774	344	44	416	92	59	59	140	165	196	56
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	215	96	12	116	26	16	16	39	46	54	16
Total Analysis Volume [veh/h]	31	860	382	49	462	102	66	66	156	183	218	62
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			1			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			1		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			1			1		
v_ci, Inbound Pedestrian Volume crossing minor street [	1			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			1			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	14.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	6	0	5	6	0
Maximum Green [s]	15	60	0	15	60	0	15	20	0	15	20	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	3.5	0.0	3.5	3.5	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	65	0	20	65	0	20	25	0	20	25	0
Vehicle Extension [s]	2.0	4.5	0.0	2.0	4.5	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	22	0	0	24	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.0	0.0	2.5	3.0	0.0	2.5	2.5	0.0	2.5	2.5	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C
C, Cycle Length [s]	111	111	111	111	111	111	111	111	111
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	0.00	3.00	3.00	0.00	2.50	0.00	2.50
g_i, Effective Green Time [s]	68	60	68	61	61	33	17	33	24
g / C, Green / Cycle	0.62	0.54	0.62	0.55	0.55	0.30	0.15	0.30	0.22
(v / s)_i Volume / Saturation Flow Rate	0.04	0.72	0.09	0.26	0.06	0.05	0.13	0.14	0.16
s, saturation flow rate [veh/h]	695	1730	556	1795	1580	1214	1664	1325	1755
c, Capacity [veh/h]	410	934	204	982	864	297	252	350	380
d1, Uniform Delay [s]	9.94	25.58	25.56	15.35	12.17	29.78	46.20	31.91	40.57
k, delay calibration	0.19	0.50	0.10	0.19	0.19	0.04	0.19	0.39	0.31
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.13	155.74	0.53	0.60	0.10	0.14	15.49	4.28	7.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.08	1.33	0.24	0.47	0.12	0.22	0.88	0.52	0.74
d, Delay for Lane Group [s/veh]	10.08	181.32	26.08	15.95	12.27	29.92	61.69	36.18	48.15
Lane Group LOS	B	F	C	B	B	C	E	D	D
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.30	63.29	0.48	7.04	1.23	1.30	7.05	4.28	7.89
50th-Percentile Queue Length [ft/ln]	7.47	1582.24	12.00	175.91	30.69	32.48	176.24	106.96	197.15
95th-Percentile Queue Length [veh/ln]	0.54	93.19	0.86	11.39	2.21	2.34	11.40	7.67	12.49
95th-Percentile Queue Length [ft/ln]	13.45	2329.73	21.60	284.67	55.23	58.46	285.10	191.77	312.29

Movement, Approach, & Intersection Results

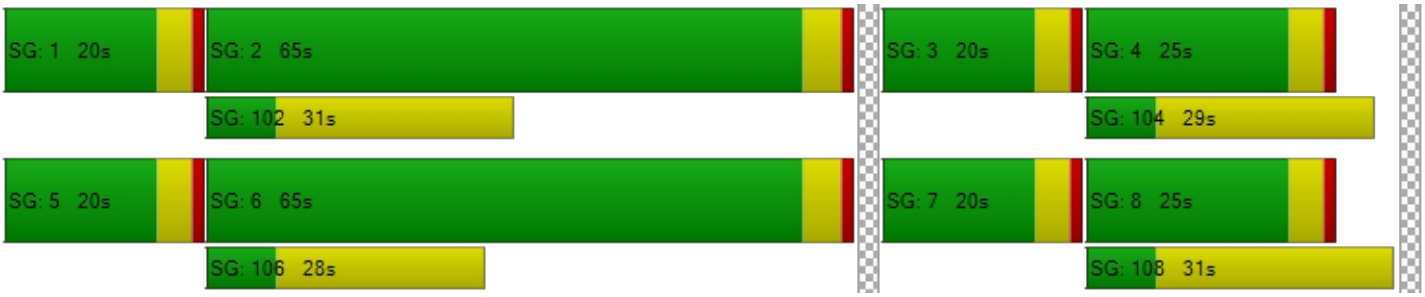
d_M, Delay for Movement [s/veh]	10.08	181.32	181.32	26.08	15.95	12.27	29.92	61.69	61.69	36.18	48.15	48.15
Movement LOS	B	F	F	C	B	B	C	E	E	D	D	D
d_A, Approach Delay [s/veh]	177.15			16.15			54.41			43.42		
Approach LOS	F			B			D			D		
d_I, Intersection Delay [s/veh]	102.84											
Intersection LOS	F											
Intersection V/C	1.094											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	45.03	45.03	45.03	45.03
I_p,int, Pedestrian LOS Score for Intersection	2.668	2.553	2.183	2.301
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1081	1081	369	369
d_b, Bicycle Delay [s]	11.70	11.71	36.88	36.88
I_b,int, Bicycle LOS Score for Intersection	3.660	2.571	2.035	2.324
Bicycle LOS	D	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: SW 95th Ave/SW Avery St

Control Type:	Signalized	Delay (sec / veh):	7.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.639

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	80.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	88	72	82	293	401	172
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	8.00	4.00	9.00	5.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	88	72	82	293	401	172
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	22	25	88	121	52
Total Analysis Volume [veh/h]	106	87	99	353	483	207
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	3		4		0	
v_di, Inbound Pedestrian Volume crossing major street [	4		3		0	
v_co, Outbound Pedestrian Volume crossing minor stree	2		0		2	
v_ci, Inbound Pedestrian Volume crossing minor street [	2		0		2	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	4	0	0	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	10	10	0
Maximum Green [s]	25	0	0	40	40	0
Amber [s]	3.5	0.0	0.0	4.0	4.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	0	7	0
Pedestrian Clearance [s]	14	0	0	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	0.0	3.0	3.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C
C, Cycle Length [s]	32	32	32	32
L, Total Lost Time per Cycle [s]	4.50	4.50	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	3.00	3.00
g_i, Effective Green Time [s]	5	5	18	18
g / C, Green / Cycle	0.14	0.14	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.44	0.40
s, saturation flow rate [veh/h]	1695	1476	1038	1719
c, Capacity [veh/h]	244	213	716	955
d1, Uniform Delay [s]	12.36	12.29	5.01	5.22
k, delay calibration	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.21	1.26	0.93	1.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.41	0.63	0.72
d, Delay for Lane Group [s/veh]	13.57	13.55	5.94	6.27
Lane Group LOS	B	B	A	A
Critical Lane Group	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.61	0.50	1.29	1.46
50th-Percentile Queue Length [ft/ln]	15.22	12.60	32.26	36.59
95th-Percentile Queue Length [veh/ln]	1.10	0.91	2.32	2.63
95th-Percentile Queue Length [ft/ln]	27.39	22.68	58.07	65.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.57	13.55	5.94	5.94	6.27	6.27
Movement LOS	B	B	A	A	A	A
d_A, Approach Delay [s/veh]	13.57		5.94		6.27	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	7.21					
Intersection LOS	A					
Intersection V/C	0.639					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	4848.67	3007.54	0.00
d_p, Pedestrian Delay [s]	6.77	6.77	6.77
l_p,int, Pedestrian LOS Score for Intersection	2.177	2.147	2.209
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1576	2522	2522
d_b, Bicycle Delay [s]	0.71	1.08	1.08
l_b,int, Bicycle LOS Score for Intersection	1.560	2.305	2.698
Bicycle LOS	A	B	B

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Tualatin Heights ZA-Existing Conditions

Vistro File: H:\...\26462_PM.vistro
Report File: H:\...\Future_PM_notrips.pdf

Scenario 3 Future Traffic Conditions_notrips
9/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SW 95th Ave/Tualatin-Sherwood Rd	Signalized	HCM 6th Edition	NB Right	0.655	21.4	C
2	SW 95th Ave/SW Sagert St	All-way stop	HCM 6th Edition	SB Left	0.411	9.9	A
3	Tualatin Heights West Dwy/SW 93rd Ave/SW Sagert St	Two-way stop	HCM 6th Edition	SB Left	0.038	13.9	B
4	Tualatin Heights East Dwy/SW Sagert St	Two-way stop	HCM 6th Edition	SB Left	0.062	12.5	B
5	SW Boones Ferry Rd/SW Sagert St	Signalized	HCM 6th Edition	NB Thru	0.907	45.1	D
6	SW 95th Ave/SW Avery St	Signalized	HCM 6th Edition	SB Right	0.638	6.7	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SW 95th Ave/Tualatin-Sherwood Rd

Control Type:	Signalized	Delay (sec / veh):	21.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.655

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	70.00	100.00	100.00	100.00	120.00	100.00	100.00	400.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	113	7	152	1	5	13	7	1304	154	100	1154	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	17.00	0.00	2.00	0.00	0.00	0.00	0.00	6.00	4.00	4.00	11.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	7	152	1	5	13	7	1304	154	100	1154	2
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	2	39	0	1	3	2	336	40	26	297	1
Total Analysis Volume [veh/h]	116	7	157	1	5	13	7	1344	159	103	1190	2
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			1			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			1		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			1			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	3			0			2			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	0	5	0	0	5	0	5	10	0	10	10	0
Maximum Green [s]	0	35	0	0	35	0	20	65	0	20	65	0
Amber [s]	0.0	3.5	0.0	0.0	3.5	0.0	3.0	4.5	0.0	3.0	4.5	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	0	41	0	0	41	0	25	74	0	25	74	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	21	0	0	17	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.5	0.0	0.0	3.5	0.0	3.0	4.5	0.0	3.0	4.5	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R	L	C	C	L	C	C
C, Cycle Length [s]	67	67	67	67	67	67	67	67	67	67
L, Total Lost Time per Cycle [s]	5.50	5.50	5.50	5.50	5.00	6.50	6.50	5.00	6.50	6.50
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.50	3.50	3.50	3.50	3.00	4.50	4.50	3.00	4.50	4.50
g_i, Effective Green Time [s]	9	9	9	9	15	33	33	9	27	27
g / C, Green / Cycle	0.13	0.13	0.13	0.13	0.22	0.49	0.49	0.13	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.08	0.10	0.00	0.01	0.00	0.42	0.43	0.06	0.34	0.34
s, saturation flow rate [veh/h]	1536	1563	1874	1611	1810	1810	1735	1752	1735	1734
c, Capacity [veh/h]	310	210	314	216	393	881	845	223	688	688
d1, Uniform Delay [s]	27.27	28.08	25.38	25.51	20.77	15.34	15.53	27.33	18.71	18.71
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.82	5.27	0.02	0.11	0.02	2.68	3.14	1.49	3.45	3.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.75	0.02	0.06	0.02	0.86	0.88	0.46	0.87	0.87
d, Delay for Lane Group [s/veh]	28.09	33.35	25.41	25.62	20.79	18.02	18.66	28.83	22.16	22.17
Lane Group LOS	C	C	C	C	C	B	B	C	C	C
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.84	2.63	0.08	0.18	0.08	9.49	9.45	1.56	8.30	8.30
50th-Percentile Queue Length [ft/ln]	46.05	65.72	2.06	4.54	2.12	237.35	236.32	39.12	207.54	207.48
95th-Percentile Queue Length [veh/ln]	3.32	4.73	0.15	0.33	0.15	14.55	14.49	2.82	13.03	13.02
95th-Percentile Queue Length [ft/ln]	82.89	118.29	3.70	8.17	3.81	363.68	362.37	70.42	325.68	325.59

Movement, Approach, & Intersection Results

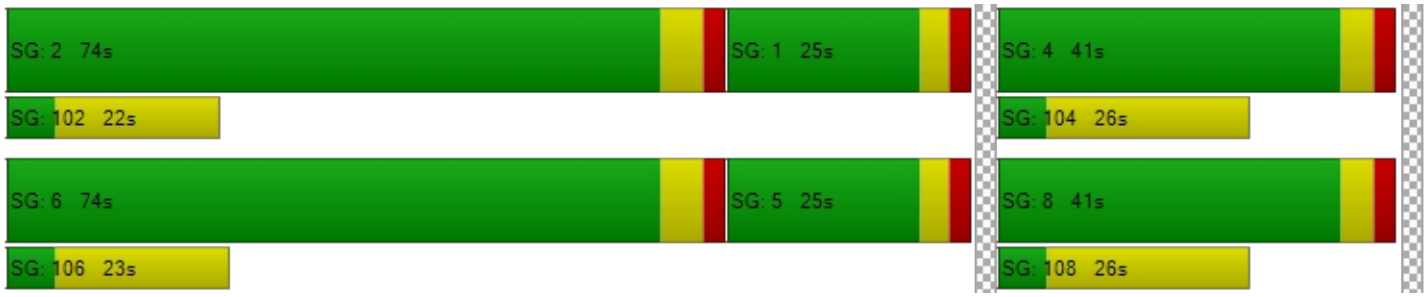
d_M, Delay for Movement [s/veh]	28.09	28.09	33.35	25.41	25.41	25.62	20.79	18.30	18.66	28.83	22.17	22.17
Movement LOS	C	C	C	C	C	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	31.04			25.56			18.35			22.70		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	21.35											
Intersection LOS	C											
Intersection V/C	0.655											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	25.30	25.30	25.30	25.30
I_p,int, Pedestrian LOS Score for Intersection	2.105	1.938	3.003	2.834
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1054	1054	2003	2003
d_b, Bicycle Delay [s]	7.56	7.55	0.00	0.00
I_b,int, Bicycle LOS Score for Intersection	2.022	1.591	2.805	2.628
Bicycle LOS	B	A	C	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SW 95th Ave/SW Sagert St

Control Type:	All-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.411

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	1	117	41	184	119	1	1	1	1	62	1	91
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	50.00	2.00	4.00	2.00	2.00	50.00	0.00	0.00	17.00	0.00	0.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	117	41	184	119	1	1	1	1	62	1	91
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	30	11	48	31	0	0	0	0	16	0	24
Total Analysis Volume [veh/h]	1	122	43	192	124	1	1	1	1	65	1	95
Pedestrian Volume [ped/h]	10			1			4			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	784	771	685	750
Degree of Utilization, x	0.21	0.41	0.00	0.21

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.80	2.02	0.01	0.81
95th-Percentile Queue Length [ft]	19.93	50.58	0.33	20.28
Approach Delay [s/veh]	8.82	10.89	8.28	9.11
Approach LOS	A	B	A	A
Intersection Delay [s/veh]	9.90			
Intersection LOS	A			

Intersection Level Of Service Report

Intersection 3: Tualatin Heights West Dwy/SW 93rd Ave/SW Sagert St

Control Type:	Two-way stop	Delay (sec / veh):	13.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.038

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	2	3	20	14	1	5	22	199	5	24	147	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	5.00	7.00	0.00	0.00	9.00	2.00	0.00	0.00	5.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	3	20	14	1	5	22	199	5	24	147	14
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	6	4	0	1	6	57	1	7	42	4
Total Analysis Volume [veh/h]	2	3	23	16	1	6	25	226	6	27	167	16
Pedestrian Volume [ped/h]	3			6			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.03	0.04	0.00	0.01	0.02	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	13.17	13.46	9.73	13.91	13.56	9.54	7.75	0.00	0.00	7.74	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.13	0.15	0.15	0.15	0.06	0.06	0.06	0.06	0.06	0.06
95th-Percentile Queue Length [ft/ln]	3.13	3.13	3.13	3.71	3.71	3.71	1.43	1.43	1.43	1.54	1.54	1.54
d_A, Approach Delay [s/veh]	10.38			12.75			0.75			1.00		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	1.90											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 4: Tualatin Heights East Dwy/SW Sagert St

Control Type:	Two-way stop	Delay (sec / veh):	12.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.062

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	28	11	20	213	174	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	5.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	11	20	213	174	28
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	3	6	61	49	8
Total Analysis Volume [veh/h]	32	13	23	242	198	32
Pedestrian Volume [ped/h]	4		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.02	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.48	9.89	7.73	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.25	0.25	0.05	0.05	0.00	0.00
95th-Percentile Queue Length [ft/ln]	6.29	6.29	1.31	1.31	0.00	0.00
d_A, Approach Delay [s/veh]	11.73		0.67		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.31					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: SW Boones Ferry Rd/SW Sagert St

Control Type:	Signalized	Delay (sec / veh):	45.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.907

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	115.00	100.00	100.00	125.00	100.00	210.00	90.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	21	569	362	110	883	76	44	151	15	235	106	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	3.00	4.00	5.00	4.00	2.00	0.00	2.00	17.00	5.00	5.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	569	362	110	883	76	44	151	15	235	106	55
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	145	92	28	225	19	11	39	4	60	27	14
Total Analysis Volume [veh/h]	21	581	369	112	901	78	45	154	15	240	108	56
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	4			1			4			0		
v_di, Inbound Pedestrian Volume crossing major street [	4			0			4			1		
v_co, Outbound Pedestrian Volume crossing minor stree	3			1			1			3		
v_ci, Inbound Pedestrian Volume crossing minor street [	3			1			1			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	4			6			4			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	14.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	6	0	5	6	0
Maximum Green [s]	15	60	0	15	60	0	15	20	0	15	20	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	3.5	0.0	3.5	3.5	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	65	0	20	65	0	20	25	0	20	25	0
Vehicle Extension [s]	2.0	4.5	0.0	2.0	4.5	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	22	0	0	24	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.0	0.0	2.5	3.0	0.0	2.5	2.5	0.0	2.5	2.5	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C
C, Cycle Length [s]	112	112	112	112	112	112	112	112	112
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	0.00	3.00	3.00	0.00	2.50	0.00	2.50
g_i, Effective Green Time [s]	69	60	69	62	62	33	14	33	25
g / C, Green / Cycle	0.62	0.53	0.62	0.56	0.56	0.30	0.13	0.30	0.22
(v / s)_i Volume / Saturation Flow Rate	0.03	0.55	0.16	0.49	0.05	0.03	0.09	0.16	0.10
s, saturation flow rate [veh/h]	668	1715	701	1840	1549	1350	1829	1471	1705
c, Capacity [veh/h]	250	915	222	1022	860	394	231	429	380
d1, Uniform Delay [s]	19.47	26.23	25.76	21.76	11.68	28.87	47.27	32.73	37.56
k, delay calibration	0.19	0.49	0.50	0.42	0.19	0.04	0.04	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.25	39.97	8.02	9.37	0.08	0.05	1.67	5.20	0.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.08	1.04	0.51	0.88	0.09	0.11	0.73	0.56	0.43
d, Delay for Lane Group [s/veh]	19.72	66.20	33.78	31.13	11.76	28.91	48.94	37.93	37.84
Lane Group LOS	B	F	C	C	B	C	D	D	D
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.21	32.99	1.57	22.00	0.92	0.88	4.65	5.92	3.91
50th-Percentile Queue Length [ft/ln]	5.22	824.72	39.34	550.03	22.93	22.10	116.15	148.04	97.63
95th-Percentile Queue Length [veh/ln]	0.38	43.75	2.83	29.69	1.65	1.59	8.18	9.91	7.03
95th-Percentile Queue Length [ft/ln]	9.40	1093.71	70.81	742.35	41.27	39.78	204.52	247.81	175.73

Movement, Approach, & Intersection Results

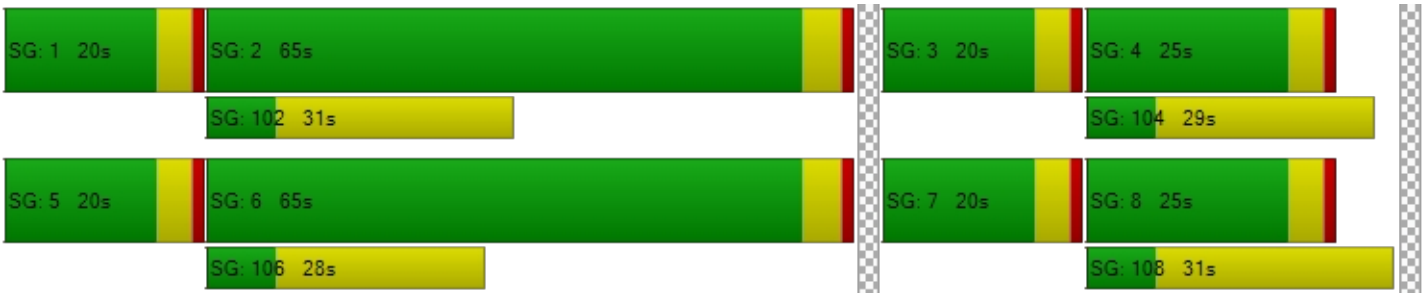
d_M, Delay for Movement [s/veh]	19.72	66.20	66.20	33.78	31.13	11.76	28.91	48.94	48.94	37.93	37.84	37.84
Movement LOS	B	E	E	C	C	B	C	D	D	D	D	D
d_A, Approach Delay [s/veh]	65.19			30.02			44.73			37.90		
Approach LOS	E			C			D			D		
d_I, Intersection Delay [s/veh]	45.13											
Intersection LOS	D											
Intersection V/C	0.907											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	45.68	45.68	45.68	45.68
l_p,int, Pedestrian LOS Score for Intersection	2.691	2.589	2.105	2.376
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1069	1069	365	365
d_b, Bicycle Delay [s]	12.20	12.21	37.59	37.53
l_b,int, Bicycle LOS Score for Intersection	3.162	3.360	1.913	2.226
Bicycle LOS	C	C	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: SW 95th Ave/SW Avery St

Control Type:	Signalized	Delay (sec / veh):	6.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.638

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	80.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	88	94	80	586	231	69
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	0.00	3.00	3.00	8.00	9.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	88	94	80	586	231	69
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	25	21	154	61	18
Total Analysis Volume [veh/h]	93	99	84	617	243	73
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street [	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor stree	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street [	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	4	0	0	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	10	10	0
Maximum Green [s]	25	0	0	40	40	0
Amber [s]	3.5	0.0	0.0	4.0	4.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	0	7	0
Pedestrian Clearance [s]	14	0	0	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	0.0	3.0	3.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C
C, Cycle Length [s]	26	26	26	26
L, Total Lost Time per Cycle [s]	4.50	4.50	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	3.00	3.00
g_i, Effective Green Time [s]	4	4	13	13
g / C, Green / Cycle	0.15	0.15	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.05	0.06	0.40	0.19
s, saturation flow rate [veh/h]	1767	1615	1738	1701
c, Capacity [veh/h]	260	238	998	824
d1, Uniform Delay [s]	9.90	9.99	5.62	4.21
k, delay calibration	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.83	1.16	0.91	0.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.42	0.70	0.38
d, Delay for Lane Group [s/veh]	10.73	11.15	6.54	4.50
Lane Group LOS	B	B	A	A
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.38	0.42	1.16	0.38
50th-Percentile Queue Length [ft/ln]	9.44	10.45	28.89	9.45
95th-Percentile Queue Length [veh/ln]	0.68	0.75	2.08	0.68
95th-Percentile Queue Length [ft/ln]	16.99	18.81	52.00	17.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.73	11.15	6.54	6.54	4.50	4.50
Movement LOS	B	B	A	A	A	A
d_A, Approach Delay [s/veh]	10.94		6.54		4.50	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	6.70					
Intersection LOS	A					
Intersection V/C	0.638					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	4.24	4.24	4.24
l_p,int, Pedestrian LOS Score for Intersection	2.088	2.139	2.130
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1938	3101	3101
d_b, Bicycle Delay [s]	0.01	3.91	3.91
l_b,int, Bicycle LOS Score for Intersection	1.560	2.716	2.081
Bicycle LOS	A	B	B

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix E 2040 Rezone Operations

Tualatin Heights ZA-Existing Conditions

Vistro File: H:\...\26462_AM.vistro
Report File: H:\...\Future_AM.pdf

Scenario 2 2 Future Traffic Conditions_scenario1
9/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SW 95th Ave/Tualatin-Sherwood Rd	Signalized	HCM 6th Edition	NB Right	0.678	19.9	B
2	SW 95th Ave/SW Sagert St	All-way stop	HCM 6th Edition	WB Right	0.639	16.0	C
3	Tualatin Heights West Dwy/SW 93rd Ave/SW Sagert St	Two-way stop	HCM 6th Edition	SB Left	0.109	15.0	C
4	Tualatin Heights East Dwy/SW Sagert St	Two-way stop	HCM 6th Edition	SB Left	0.088	13.7	B
5	SW Boones Ferry Rd/SW Sagert St	Signalized	HCM 6th Edition	NB Thru	1.100	104.9	F
6	SW 95th Ave/SW Avery St	Signalized	HCM 6th Edition	SB Right	0.642	7.2	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SW 95th Ave/Tualatin-Sherwood Rd

Control Type:	Signalized	Delay (sec / veh):	19.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.678

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	70.00	100.00	100.00	100.00	120.00	100.00	100.00	400.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	77	8	101	1	1	3	12	1104	110	178	1349	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	7.00	0.00	9.00	0.00	0.00	50.00	0.00	23.00	8.00	10.00	13.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	77	8	101	1	1	3	12	1104	110	178	1349	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	2	27	0	0	1	3	291	29	47	355	1
Total Analysis Volume [veh/h]	81	8	106	1	1	3	13	1162	116	187	1420	3
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	1			4			0			3		
v_di, Inbound Pedestrian Volume crossing major street [	0			3			1			4		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			1			1		
v_ci, Inbound Pedestrian Volume crossing minor street [	1			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			1			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	0	5	0	0	5	0	5	10	0	10	10	0
Maximum Green [s]	0	35	0	0	35	0	20	65	0	20	65	0
Amber [s]	0.0	3.5	0.0	0.0	3.5	0.0	3.0	4.5	0.0	3.0	4.5	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	0	41	0	0	41	0	25	74	0	25	74	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	21	0	0	17	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.5	0.0	0.0	3.5	0.0	3.0	4.5	0.0	3.0	4.5	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R	L	C	C	L	C	C
C, Cycle Length [s]	64	64	64	64	64	64	64	64	64	64
L, Total Lost Time per Cycle [s]	5.50	5.50	5.50	5.50	5.00	6.50	6.50	5.00	6.50	6.50
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.50	3.50	3.50	3.50	3.00	4.50	4.50	3.00	4.50	4.50
g_i, Effective Green Time [s]	7	7	7	7	10	30	30	10	30	30
g / C, Green / Cycle	0.11	0.11	0.11	0.11	0.15	0.48	0.48	0.15	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.06	0.07	0.00	0.00	0.01	0.42	0.42	0.11	0.42	0.42
s, saturation flow rate [veh/h]	1571	1496	1812	974	1810	1555	1499	1667	1705	1704
c, Capacity [veh/h]	275	159	277	104	271	740	713	252	814	813
d1, Uniform Delay [s]	26.81	27.40	25.50	25.55	23.22	15.03	15.12	25.87	14.95	14.95
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.68	4.73	0.01	0.11	0.07	3.50	3.85	4.26	3.15	3.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.67	0.01	0.03	0.05	0.88	0.88	0.74	0.87	0.87
d, Delay for Lane Group [s/veh]	27.49	32.14	25.51	25.66	23.30	18.54	18.97	30.12	18.10	18.11
Lane Group LOS	C	C	C	C	C	B	B	C	B	B
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.26	1.68	0.03	0.04	0.16	7.83	7.71	2.85	8.48	8.49
50th-Percentile Queue Length [ft/ln]	31.58	42.07	0.67	1.05	4.11	195.64	192.69	71.26	212.12	212.13
95th-Percentile Queue Length [veh/ln]	2.27	3.03	0.05	0.08	0.30	12.41	12.26	5.13	13.26	13.26
95th-Percentile Queue Length [ft/ln]	56.84	75.73	1.20	1.89	7.40	310.34	306.52	128.27	331.55	331.56

Movement, Approach, & Intersection Results

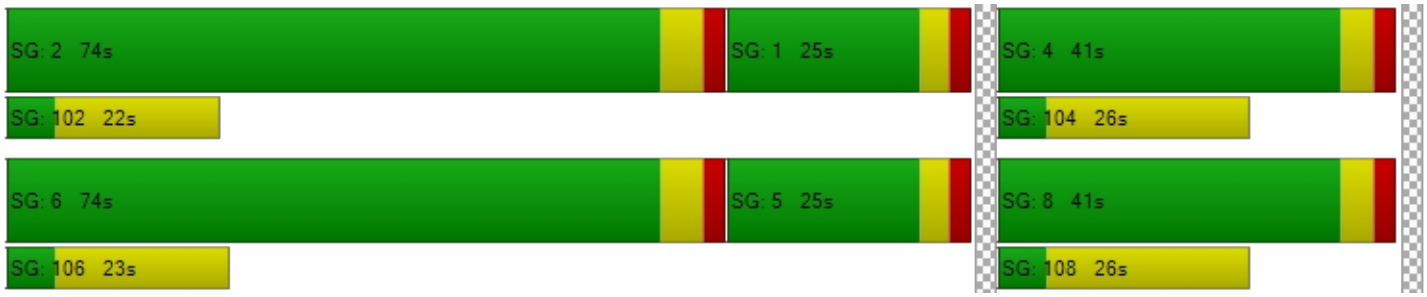
d_M, Delay for Movement [s/veh]	27.49	27.49	32.14	25.51	25.51	25.66	23.30	18.73	18.97	30.12	18.10	18.11
Movement LOS	C	C	C	C	C	C	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	30.02			25.60			18.79			19.50		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	19.88											
Intersection LOS	B											
Intersection V/C	0.678											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	6025.03	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	23.46	23.46	23.46	23.46
l_p,int, Pedestrian LOS Score for Intersection	2.086	1.933	2.944	2.847
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1116	1116	2121	2121
d_b, Bicycle Delay [s]	6.22	6.22	0.12	0.12
l_b,int, Bicycle LOS Score for Intersection	1.881	1.568	2.625	2.888
Bicycle LOS	A	A	B	C

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SW 95th Ave/SW Sagert St

Control Type:	All-way stop	Delay (sec / veh):	16.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.639

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	188	71	107	114	0	0	0	0	105	0	206
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	2.00	4.00	8.00	0.00	0.00	0.00	0.00	5.00	0.00	5.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	188	71	107	114	0	0	0	0	105	0	206
Peak Hour Factor	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400	0.7400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	64	24	36	39	0	0	0	0	35	0	70
Total Analysis Volume [veh/h]	0	254	96	145	154	0	0	0	0	142	0	278
Pedestrian Volume [ped/h]	34			1			5			20		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	644	604	536	658
Degree of Utilization, x	0.54	0.49	0.00	0.64

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	3.28	2.74	0.00	4.59
95th-Percentile Queue Length [ft]	82.01	68.53	0.00	114.79
Approach Delay [s/veh]	15.05	14.65	0.00	17.63
Approach LOS	C	B	A	C
Intersection Delay [s/veh]	15.95			
Intersection LOS	C			

Intersection Level Of Service Report

Intersection 3: Tualatin Heights West Dwy/SW 93rd Ave/SW Sagert St

Control Type:	Two-way stop	Delay (sec / veh):	15.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.109

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	9	0	21	36	2	24	5	158	5	5	260	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	5.00	0.00	0.00	0.00	0.00	3.00	20.00	0.00	3.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	0	21	36	2	24	5	158	5	5	260	15
Peak Hour Factor	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	7	11	1	8	2	49	2	2	81	5
Total Analysis Volume [veh/h]	11	0	26	45	3	30	6	198	6	6	325	19
Pedestrian Volume [ped/h]	2			2			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.03	0.11	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.23	13.80	9.70	15.05	14.74	11.44	7.96	0.00	0.00	7.63	0.00	0.00
Movement LOS	B	B	A	C	B	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.19	0.19	0.19	0.56	0.56	0.56	0.01	0.01	0.01	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	4.65	4.65	4.65	13.91	13.91	13.91	0.37	0.37	0.37	0.33	0.33	0.33
d_A, Approach Delay [s/veh]	11.05			13.65			0.23			0.13		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	2.32											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 4: Tualatin Heights East Dwy/SW Sagert St

Control Type:	Two-way stop	Delay (sec / veh):	13.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.088

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	32	7	2	210	269	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	3.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	7	2	210	269	2
Peak Hour Factor	0.8000	0.8000	0.8000	0.8000	0.8000	0.8000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	2	1	66	84	1
Total Analysis Volume [veh/h]	40	9	3	263	336	3
Pedestrian Volume [ped/h]	5		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.71	10.96	7.96	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.33	0.33	0.01	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	8.32	8.32	0.18	0.18	0.00	0.00
d_A, Approach Delay [s/veh]	13.20		0.09		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.03					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: SW Boones Ferry Rd/SW Sagert St

Control Type:	Signalized	Delay (sec / veh):	104.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.100

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	115.00	100.00	100.00	125.00	100.00	210.00	90.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	31	774	344	44	416	94	65	62	148	165	197	56
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	40.00	5.00	9.00	6.00	7.00	0.00	5.00	2.00	12.00	11.00	5.00	5.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	774	344	44	416	94	65	62	148	165	197	56
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	215	96	12	116	26	18	17	41	46	55	16
Total Analysis Volume [veh/h]	34	860	382	49	462	104	72	69	164	183	219	62
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			1			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			1		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			1			1		
v_ci, Inbound Pedestrian Volume crossing minor street [	1			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			1			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	14.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	6	0	5	6	0
Maximum Green [s]	15	60	0	15	60	0	15	20	0	15	20	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	3.5	0.0	3.5	3.5	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	65	0	20	65	0	20	25	0	20	25	0
Vehicle Extension [s]	2.0	4.5	0.0	2.0	4.5	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	22	0	0	24	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.0	0.0	2.5	3.0	0.0	2.5	2.5	0.0	2.5	2.5	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C
C, Cycle Length [s]	112	112	112	112	112	112	112	112	112
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	0.00	3.00	3.00	0.00	2.50	0.00	2.50
g_i, Effective Green Time [s]	68	60	68	61	61	34	18	34	24
g / C, Green / Cycle	0.61	0.54	0.61	0.54	0.54	0.30	0.16	0.30	0.22
(v / s)_i Volume / Saturation Flow Rate	0.05	0.72	0.09	0.26	0.07	0.06	0.14	0.14	0.16
s, saturation flow rate [veh/h]	697	1730	556	1795	1580	1218	1663	1312	1756
c, Capacity [veh/h]	406	927	203	972	856	304	262	347	384
d1, Uniform Delay [s]	10.28	26.00	25.69	15.85	12.58	29.70	46.22	31.82	40.66
k, delay calibration	0.19	0.50	0.10	0.19	0.19	0.04	0.22	0.40	0.31
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.15	160.16	0.56	0.62	0.11	0.15	18.00	4.56	7.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.08	1.34	0.24	0.48	0.12	0.24	0.89	0.53	0.73
d, Delay for Lane Group [s/veh]	10.43	186.16	26.25	16.47	12.69	29.85	64.23	36.38	48.16
Lane Group LOS	B	F	C	B	B	C	E	D	D
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.34	64.22	0.49	7.21	1.28	1.42	7.62	4.30	7.95
50th-Percentile Queue Length [ft/ln]	8.42	1605.60	12.33	180.37	32.12	35.56	190.56	107.56	198.83
95th-Percentile Queue Length [veh/ln]	0.61	94.79	0.89	11.62	2.31	2.56	12.15	7.70	12.58
95th-Percentile Queue Length [ft/ln]	15.16	2369.73	22.19	290.49	57.82	64.01	303.75	192.60	314.45

Movement, Approach, & Intersection Results

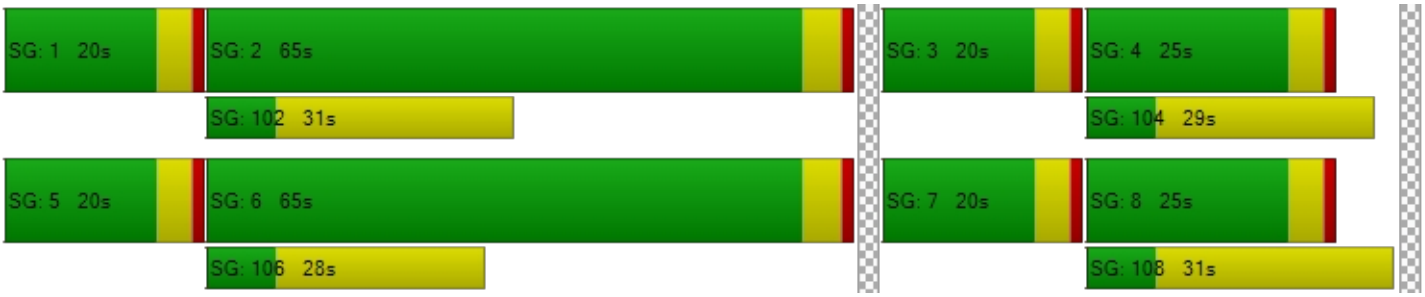
d_M, Delay for Movement [s/veh]	10.43	186.16	186.16	26.25	16.47	12.69	29.85	64.23	64.23	36.38	48.16	48.16
Movement LOS	B	F	F	C	B	B	C	E	E	D	D	D
d_A, Approach Delay [s/veh]	181.48			16.61			56.11			43.51		
Approach LOS	F			B			E			D		
d_I, Intersection Delay [s/veh]	104.92											
Intersection LOS	F											
Intersection V/C	1.100											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	45.44	45.44	45.44	45.44
I_p,int, Pedestrian LOS Score for Intersection	2.674	2.558	2.193	2.303
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1073	1073	367	367
d_b, Bicycle Delay [s]	12.00	12.01	37.28	37.28
I_b,int, Bicycle LOS Score for Intersection	3.665	2.574	2.063	2.325
Bicycle LOS	D	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: SW 95th Ave/SW Avery St

Control Type:	Signalized	Delay (sec / veh):	7.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.642

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	80.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	89	74	83	293	401	172
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	8.00	4.00	9.00	5.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	89	74	83	293	401	172
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	22	25	88	121	52
Total Analysis Volume [veh/h]	107	89	100	353	483	207
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	3		4		0	
v_di, Inbound Pedestrian Volume crossing major street [	4		3		0	
v_co, Outbound Pedestrian Volume crossing minor stree	2		0		2	
v_ci, Inbound Pedestrian Volume crossing minor street [	2		0		2	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	4	0	0	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	10	10	0
Maximum Green [s]	25	0	0	40	40	0
Amber [s]	3.5	0.0	0.0	4.0	4.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	0	7	0
Pedestrian Clearance [s]	14	0	0	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	0.0	3.0	3.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C
C, Cycle Length [s]	32	32	32	32
L, Total Lost Time per Cycle [s]	4.50	4.50	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	3.00	3.00
g_i, Effective Green Time [s]	5	5	18	18
g / C, Green / Cycle	0.14	0.14	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.44	0.40
s, saturation flow rate [veh/h]	1695	1476	1035	1719
c, Capacity [veh/h]	245	213	714	956
d1, Uniform Delay [s]	12.40	12.34	5.03	5.22
k, delay calibration	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.22	1.30	0.94	1.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.42	0.63	0.72
d, Delay for Lane Group [s/veh]	13.62	13.64	5.97	6.27
Lane Group LOS	B	B	A	A
Critical Lane Group	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.62	0.52	1.31	1.47
50th-Percentile Queue Length [ft/ln]	15.44	12.98	32.65	36.80
95th-Percentile Queue Length [veh/ln]	1.11	0.93	2.35	2.65
95th-Percentile Queue Length [ft/ln]	27.78	23.36	58.77	66.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.62	13.64	5.97	5.97	6.27	6.27
Movement LOS	B	B	A	A	A	A
d_A, Approach Delay [s/veh]	13.63		5.97		6.27	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	7.24					
Intersection LOS	A					
Intersection V/C	0.642					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	4819.85	2986.76	0.00
d_p, Pedestrian Delay [s]	6.82	6.82	6.82
l_p,int, Pedestrian LOS Score for Intersection	2.180	2.149	2.210
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1571	2513	2513
d_b, Bicycle Delay [s]	0.73	1.05	1.05
l_b,int, Bicycle LOS Score for Intersection	1.560	2.307	2.698
Bicycle LOS	A	B	B

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Tualatin Heights ZA-Existing Conditions

Vistro File: H:\...\26462_PM.vistro
Report File: H:\...\Future_PM_v2.pdf

Scenario 2 2 Future Traffic Conditions
9/15/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	SW 95th Ave/Tualatin-Sherwood Rd	Signalized	HCM 6th Edition	NB Right	0.662	21.7	C
2	SW 95th Ave/SW Sagert St	All-way stop	HCM 6th Edition	SB Left	0.429	10.1	B
3	Tualatin Heights West Dwy/SW 93rd Ave/SW Sagert St	Two-way stop	HCM 6th Edition	SB Left	0.071	14.9	B
4	Tualatin Heights East Dwy/SW Sagert St	Two-way stop	HCM 6th Edition	SB Left	0.065	12.8	B
5	SW Boones Ferry Rd/SW Sagert St	Signalized	HCM 6th Edition	NB Thru	0.911	46.3	D
6	SW 95th Ave/SW Avery St	Signalized	HCM 6th Edition	SB Right	0.635	6.7	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: SW 95th Ave/Tualatin-Sherwood Rd

Control Type:	Signalized	Delay (sec / veh):	21.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.662

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	70.00	100.00	100.00	100.00	120.00	100.00	100.00	400.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	116	7	156	1	5	13	7	1304	159	106	1154	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	17.00	0.00	2.00	0.00	0.00	0.00	0.00	6.00	4.00	4.00	11.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	116	7	156	1	5	13	7	1304	159	106	1154	2
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	2	40	0	1	3	2	336	41	27	297	1
Total Analysis Volume [veh/h]	120	7	161	1	5	13	7	1344	164	109	1190	2
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			1			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			1		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			1			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	3			0			2			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	0	5	0	0	5	0	5	10	0	10	10	0
Maximum Green [s]	0	35	0	0	35	0	20	65	0	20	65	0
Amber [s]	0.0	3.5	0.0	0.0	3.5	0.0	3.0	4.5	0.0	3.0	4.5	0.0
All red [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Split [s]	0	41	0	0	41	0	25	74	0	25	74	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	21	0	0	17	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.5	0.0	0.0	3.5	0.0	3.0	4.5	0.0	3.0	4.5	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	R	L	C	C	L	C	C
C, Cycle Length [s]	68	68	68	68	68	68	68	68	68	68
L, Total Lost Time per Cycle [s]	5.50	5.50	5.50	5.50	5.00	6.50	6.50	5.00	6.50	6.50
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.50	3.50	3.50	3.50	3.00	4.50	4.50	3.00	4.50	4.50
g_i, Effective Green Time [s]	9	9	9	9	15	33	33	9	27	27
g / C, Green / Cycle	0.14	0.14	0.14	0.14	0.22	0.49	0.49	0.13	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.08	0.10	0.00	0.01	0.00	0.42	0.43	0.06	0.34	0.34
s, saturation flow rate [veh/h]	1533	1563	1874	1611	1810	1810	1733	1752	1735	1734
c, Capacity [veh/h]	311	213	317	220	398	883	845	224	687	686
d1, Uniform Delay [s]	27.64	28.46	25.66	25.78	20.96	15.57	15.77	27.82	19.07	19.07
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.86	5.36	0.02	0.11	0.02	2.71	3.19	1.63	3.51	3.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.75	0.02	0.06	0.02	0.87	0.88	0.49	0.87	0.87
d, Delay for Lane Group [s/veh]	28.50	33.82	25.68	25.89	20.98	18.28	18.96	29.45	22.58	22.59
Lane Group LOS	C	C	C	C	C	B	B	C	C	C
Critical Lane Group	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.94	2.74	0.08	0.18	0.09	9.74	9.70	1.69	8.49	8.49
50th-Percentile Queue Length [ft/ln]	48.47	68.59	2.09	4.61	2.15	243.43	242.47	42.36	212.28	212.21
95th-Percentile Queue Length [veh/ln]	3.49	4.94	0.15	0.33	0.15	14.85	14.81	3.05	13.27	13.27
95th-Percentile Queue Length [ft/ln]	87.24	123.46	3.76	8.29	3.87	371.37	370.16	76.24	331.75	331.67

Movement, Approach, & Intersection Results

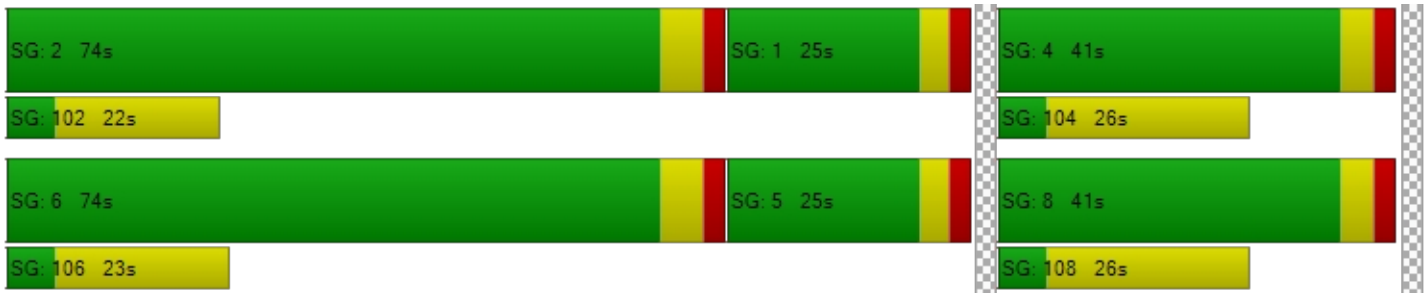
d_M, Delay for Movement [s/veh]	28.50	28.50	33.82	25.68	25.68	25.89	20.98	18.57	18.96	29.45	22.58	22.59
Movement LOS	C	C	C	C	C	C	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	31.47			25.83			18.62			23.16		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	21.74											
Intersection LOS	C											
Intersection V/C	0.662											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	25.83	25.83	25.83	25.83
l_p,int, Pedestrian LOS Score for Intersection	2.112	1.939	3.012	2.836
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1037	1037	1972	1972
d_b, Bicycle Delay [s]	7.95	7.94	0.01	0.01
l_b,int, Bicycle LOS Score for Intersection	2.035	1.591	2.809	2.633
Bicycle LOS	B	A	C	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SW 95th Ave/SW Sagert St

Control Type:	All-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.429

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	1	117	44	195	119	1	1	1	1	64	1	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	50.00	2.00	4.00	2.00	2.00	50.00	0.00	0.00	17.00	0.00	0.00	3.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	117	44	195	119	1	1	1	1	64	1	98
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	30	11	51	31	0	0	0	0	17	0	26
Total Analysis Volume [veh/h]	1	122	46	203	124	1	1	1	1	67	1	102
Pedestrian Volume [ped/h]	10			1			4			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	778	765	677	745
Degree of Utilization, x	0.22	0.43	0.00	0.23

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.82	2.16	0.01	0.88
95th-Percentile Queue Length [ft]	20.58	54.12	0.33	21.90
Approach Delay [s/veh]	8.90	11.19	8.34	9.25
Approach LOS	A	B	A	A
Intersection Delay [s/veh]	10.11			
Intersection LOS	B			

Intersection Level Of Service Report

Intersection 3: Tualatin Heights West Dwy/SW 93rd Ave/SW Sagert St

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.071

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	2	3	20	25	1	14	36	199	5	24	147	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	5.00	4.00	0.00	0.00	6.00	2.00	0.00	0.00	5.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	3	20	25	1	14	36	199	5	24	147	31
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	6	7	0	4	10	57	1	7	42	9
Total Analysis Volume [veh/h]	2	3	23	28	1	16	41	226	6	27	167	35
Pedestrian Volume [ped/h]	3			6			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.03	0.07	0.00	0.02	0.03	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	13.96	14.17	9.74	14.86	14.52	9.97	7.79	0.00	0.00	7.74	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.13	0.30	0.30	0.30	0.10	0.10	0.10	0.06	0.06	0.06
95th-Percentile Queue Length [ft/ln]	3.21	3.21	3.21	7.57	7.57	7.57	2.38	2.38	2.38	1.54	1.54	1.54
d_A, Approach Delay [s/veh]	10.52			13.12			1.17			0.91		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	2.46											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 4: Tualatin Heights East Dwy/SW Sagert St

Control Type:	Two-way stop	Delay (sec / veh):	12.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.065

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	28	11	20	224	191	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	2.00	4.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	11	20	224	191	28
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	3	6	64	54	8
Total Analysis Volume [veh/h]	32	13	23	255	217	32
Pedestrian Volume [ped/h]	4		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.02	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.83	10.05	7.78	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.26	0.26	0.05	0.05	0.00	0.00
95th-Percentile Queue Length [ft/ln]	6.56	6.56	1.33	1.33	0.00	0.00
d_A, Approach Delay [s/veh]	12.03		0.64		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.26					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: SW Boones Ferry Rd/SW Sagert St

Control Type:	Signalized	Delay (sec / veh):	46.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.911

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	115.00	100.00	100.00	125.00	100.00	210.00	90.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	29	569	362	110	883	82	48	153	20	235	109	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	3.00	4.00	5.00	4.00	2.00	0.00	2.00	17.00	5.00	5.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	569	362	110	883	82	48	153	20	235	109	55
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	145	92	28	225	21	12	39	5	60	28	14
Total Analysis Volume [veh/h]	30	581	369	112	901	84	49	156	20	240	111	56
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	4			1			4			0		
v_di, Inbound Pedestrian Volume crossing major street [	4			0			4			1		
v_co, Outbound Pedestrian Volume crossing minor stree	3			1			1			3		
v_ci, Inbound Pedestrian Volume crossing minor street [	3			1			1			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	4			6			4			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	14.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	6	0	5	6	0
Maximum Green [s]	15	60	0	15	60	0	15	20	0	15	20	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	3.5	0.0	3.5	3.5	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	65	0	20	65	0	20	25	0	20	25	0
Vehicle Extension [s]	2.0	4.5	0.0	2.0	4.5	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	22	0	0	24	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.0	0.0	2.5	3.0	0.0	2.5	2.5	0.0	2.5	2.5	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	L	C
C, Cycle Length [s]	113	113	113	113	113	113	113	113	113
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	0.00	3.00	3.00	0.00	2.50	0.00	2.50
g_i, Effective Green Time [s]	69	60	69	62	62	34	15	34	25
g / C, Green / Cycle	0.62	0.53	0.62	0.55	0.55	0.30	0.13	0.30	0.22
(v / s)_i Volume / Saturation Flow Rate	0.04	0.55	0.16	0.49	0.05	0.04	0.10	0.16	0.10
s, saturation flow rate [veh/h]	679	1715	702	1840	1548	1348	1818	1463	1707
c, Capacity [veh/h]	250	911	221	1008	848	395	237	426	384
d1, Uniform Delay [s]	20.27	26.49	25.84	22.66	12.21	28.84	47.31	32.67	37.61
k, delay calibration	0.19	0.50	0.50	0.42	0.19	0.04	0.04	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.36	41.61	8.08	10.48	0.09	0.05	1.74	5.32	0.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.12	1.04	0.51	0.89	0.10	0.12	0.74	0.56	0.43
d, Delay for Lane Group [s/veh]	20.64	68.10	33.92	33.14	12.29	28.89	49.05	37.98	37.90
Lane Group LOS	C	F	C	C	B	C	D	D	D
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.30	33.41	1.59	22.83	1.02	0.97	4.87	5.93	3.99
50th-Percentile Queue Length [ft/ln]	7.62	835.34	39.80	570.80	25.50	24.13	121.66	148.34	99.83
95th-Percentile Queue Length [veh/ln]	0.55	44.41	2.87	30.67	1.84	1.74	8.48	9.93	7.19
95th-Percentile Queue Length [ft/ln]	13.72	1110.35	71.64	766.70	45.90	43.43	212.10	248.22	179.69

Movement, Approach, & Intersection Results

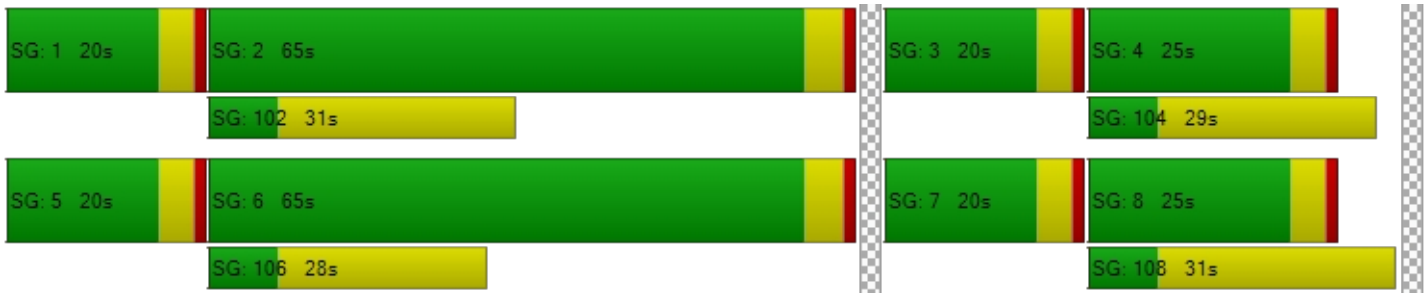
d_M, Delay for Movement [s/veh]	20.64	68.10	68.10	33.92	33.14	12.29	28.89	49.05	49.05	37.98	37.90	37.90
Movement LOS	C	E	E	C	C	B	C	D	D	D	D	D
d_A, Approach Delay [s/veh]	66.65			31.62			44.66			37.95		
Approach LOS	E			C			D			D		
d_I, Intersection Delay [s/veh]	46.32											
Intersection LOS	D											
Intersection V/C	0.911											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	45.95	45.95	45.95	45.95
I_p,int, Pedestrian LOS Score for Intersection	2.697	2.593	2.121	2.378
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1064	1064	363	363
d_b, Bicycle Delay [s]	12.39	12.40	37.85	37.79
I_b,int, Bicycle LOS Score for Intersection	3.177	3.370	1.931	2.231
Bicycle LOS	C	C	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: SW 95th Ave/SW Avery St

Control Type:	Signalized	Delay (sec / veh):	6.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.635

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	80.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	89	95	82	586	231	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	0.00	3.00	3.00	8.00	9.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	89	95	82	586	231	70
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	25	22	154	61	18
Total Analysis Volume [veh/h]	94	100	86	617	243	74
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street [	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor stree	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street [	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	4	0	0	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	10	10	0
Maximum Green [s]	25	0	0	40	40	0
Amber [s]	3.5	0.0	0.0	4.0	4.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	0	7	0
Pedestrian Clearance [s]	14	0	0	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	0.0	3.0	3.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C
C, Cycle Length [s]	26	26	26	26
L, Total Lost Time per Cycle [s]	4.50	4.50	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	3.00	3.00
g_i, Effective Green Time [s]	4	4	13	13
g / C, Green / Cycle	0.15	0.15	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.05	0.06	0.40	0.19
s, saturation flow rate [veh/h]	1767	1615	1750	1700
c, Capacity [veh/h]	262	240	1008	828
d1, Uniform Delay [s]	9.98	10.07	5.60	4.22
k, delay calibration	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.83	1.15	0.89	0.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.42	0.70	0.38
d, Delay for Lane Group [s/veh]	10.81	11.23	6.48	4.51
Lane Group LOS	B	B	A	A
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.38	0.42	1.17	0.39
50th-Percentile Queue Length [ft/ln]	9.58	10.60	29.30	9.63
95th-Percentile Queue Length [veh/ln]	0.69	0.76	2.11	0.69
95th-Percentile Queue Length [ft/ln]	17.25	19.08	52.74	17.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.81	11.23	6.48	6.48	4.51	4.51
Movement LOS	B	B	A	A	A	A
d_A, Approach Delay [s/veh]	11.02		6.48		4.51	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	6.69					
Intersection LOS	A					
Intersection V/C	0.635					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	4.30	4.30	4.30
l_p,int, Pedestrian LOS Score for Intersection	2.093	2.141	2.132
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1929	3086	3086
d_b, Bicycle Delay [s]	0.02	3.82	3.82
l_b,int, Bicycle LOS Score for Intersection	1.560	2.720	2.083
Bicycle LOS	A	B	B

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix F 2040 Mitigation Operations

Intersection Level Of Service Report
Intersection 5: SW Boones Ferry Rd/SW Sagert St

Control Type:	Signalized	Delay (sec / veh):	37.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.876

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	115.00	100.00	100.00	125.00	100.00	210.00	90.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	28	774	344	44	416	92	59	59	140	165	196	56
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	40.00	5.00	9.00	6.00	7.00	0.00	5.00	2.00	12.00	11.00	5.00	5.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	774	344	44	416	92	59	59	140	165	196	56
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	233	104	13	125	28	18	18	42	50	59	17
Total Analysis Volume [veh/h]	34	933	414	53	501	111	71	71	169	199	236	67
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	4			1			4			0		
v_di, Inbound Pedestrian Volume crossing major street [	4			0			4			1		
v_co, Outbound Pedestrian Volume crossing minor stree	3			1			1			3		
v_ci, Inbound Pedestrian Volume crossing minor street [	3			1			1			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			1			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	14.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	6	0	5	6	0
Maximum Green [s]	15	60	0	15	60	0	15	20	0	15	20	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	3.5	0.0	3.5	3.5	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	65	0	20	65	0	20	25	0	20	25	0
Vehicle Extension [s]	2.0	4.5	0.0	2.0	4.5	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	22	0	0	24	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.0	0.0	2.5	3.0	0.0	2.5	2.5	0.0	2.5	2.5	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	0.00	2.50	0.00	2.50
g_i, Effective Green Time [s]	69	60	60	69	61	61	37	20	37	28
g / C, Green / Cycle	0.60	0.52	0.52	0.60	0.53	0.53	0.32	0.17	0.32	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.51	0.28	0.08	0.28	0.07	0.06	0.15	0.15	0.17
s, saturation flow rate [veh/h]	676	1825	1495	692	1795	1579	1187	1635	1303	1755
c, Capacity [veh/h]	369	949	777	209	945	831	306	282	360	423
d1, Uniform Delay [s]	11.88	27.20	18.36	25.88	17.94	13.89	29.22	46.34	31.57	40.19
k, delay calibration	0.19	0.46	0.19	0.04	0.19	0.19	0.04	0.27	0.50	0.39
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	24.26	1.00	0.26	0.82	0.12	0.14	16.20	6.03	8.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.09	0.98	0.53	0.25	0.53	0.13	0.23	0.85	0.55	0.72
d, Delay for Lane Group [s/veh]	12.06	51.46	19.36	26.14	18.76	14.01	29.37	62.53	37.60	48.20
Lane Group LOS	B	D	B	C	B	B	C	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.37	30.19	7.34	0.57	8.73	1.49	1.41	7.91	4.86	8.78
50th-Percentile Queue Length [ft/ln]	9.27	754.67	183.54	14.14	218.27	37.22	35.13	197.77	121.49	219.59
95th-Percentile Queue Length [veh/ln]	0.67	39.20	11.79	1.02	13.58	2.68	2.53	12.52	8.47	13.64
95th-Percentile Queue Length [ft/ln]	16.68	979.93	294.64	25.45	339.41	67.00	63.23	313.09	211.87	341.11

Movement, Approach, & Intersection Results

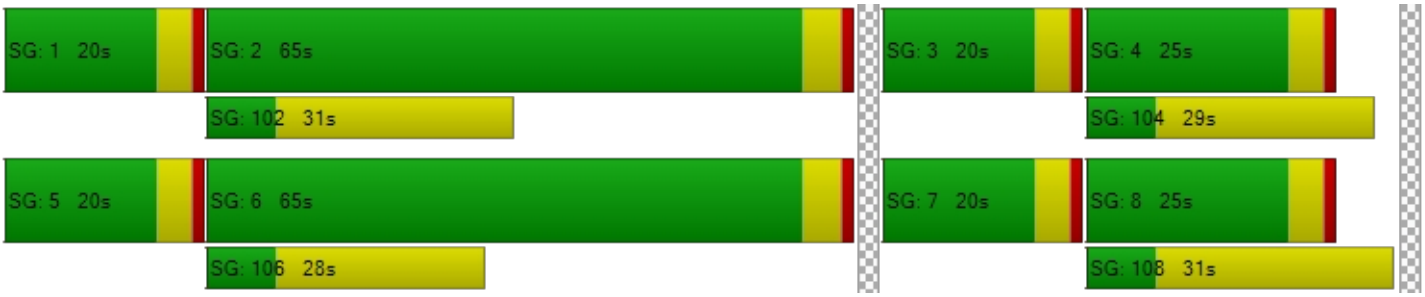
d_M, Delay for Movement [s/veh]	12.06	51.46	19.36	26.14	18.76	14.01	29.37	62.53	62.53	37.60	48.20	48.20
Movement LOS	B	D	B	C	B	B	C	E	E	D	D	D
d_A, Approach Delay [s/veh]	40.87			18.56			54.96			44.00		
Approach LOS	D			B			D			D		
d_I, Intersection Delay [s/veh]	37.76											
Intersection LOS	D											
Intersection V/C	0.876											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.15	47.15	47.15	47.15
I_p,int, Pedestrian LOS Score for Intersection	2.745	2.592	2.203	2.437
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1041	1041	356	356
d_b, Bicycle Delay [s]	13.24	13.25	38.95	38.95
I_b,int, Bicycle LOS Score for Intersection	3.838	2.657	2.073	2.388
Bicycle LOS	D	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: SW Boones Ferry Rd/SW Sagert St

Control Type:	Signalized	Delay (sec / veh):	38.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.885

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	115.00	100.00	100.00	125.00	100.00	210.00	90.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	31	774	344	44	416	94	65	62	148	165	197	56
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	40.00	5.00	9.00	6.00	7.00	0.00	5.00	2.00	12.00	11.00	5.00	5.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	774	344	44	416	94	65	62	148	165	197	56
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	233	104	13	125	28	20	19	45	50	59	17
Total Analysis Volume [veh/h]	37	933	414	53	501	113	78	75	178	199	237	67
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	4			1			4			0		
v_di, Inbound Pedestrian Volume crossing major street [	4			0			4			1		
v_co, Outbound Pedestrian Volume crossing minor stree	3			1			1			3		
v_ci, Inbound Pedestrian Volume crossing minor street [	3			1			1			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			1			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	14.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	6	0	5	6	0
Maximum Green [s]	15	60	0	15	60	0	15	20	0	15	20	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	3.5	0.0	3.5	3.5	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	65	0	20	65	0	20	25	0	20	25	0
Vehicle Extension [s]	2.0	4.5	0.0	2.0	4.5	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	22	0	0	24	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.0	0.0	2.5	3.0	0.0	2.5	2.5	0.0	2.5	2.5	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	0.00	2.50	0.00	2.50
g_i, Effective Green Time [s]	69	60	60	69	61	61	37	20	37	27
g / C, Green / Cycle	0.59	0.52	0.52	0.59	0.53	0.53	0.32	0.17	0.32	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.51	0.28	0.08	0.28	0.07	0.07	0.15	0.15	0.17
s, saturation flow rate [veh/h]	678	1825	1495	692	1795	1579	1194	1635	1294	1756
c, Capacity [veh/h]	369	948	777	209	942	828	308	283	350	418
d1, Uniform Delay [s]	11.97	27.29	18.42	25.92	18.10	14.03	29.35	46.72	31.74	40.57
k, delay calibration	0.19	0.46	0.19	0.05	0.19	0.19	0.04	0.31	0.50	0.40
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.20	24.52	1.00	0.27	0.83	0.13	0.16	22.59	6.57	8.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.10	0.98	0.53	0.25	0.53	0.14	0.25	0.89	0.57	0.73
d, Delay for Lane Group [s/veh]	12.17	51.82	19.43	26.18	18.94	14.16	29.51	69.31	38.32	49.14
Lane Group LOS	B	D	B	C	B	B	C	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.41	30.34	7.37	0.57	8.79	1.53	1.55	8.85	4.90	8.91
50th-Percentile Queue Length [ft/ln]	10.16	758.45	184.23	14.21	219.87	38.22	38.76	221.16	122.41	222.86
95th-Percentile Queue Length [veh/ln]	0.73	39.37	11.82	1.02	13.66	2.75	2.79	13.72	8.53	13.81
95th-Percentile Queue Length [ft/ln]	18.28	984.28	295.54	25.57	341.46	68.79	69.78	343.11	213.14	345.28

Movement, Approach, & Intersection Results

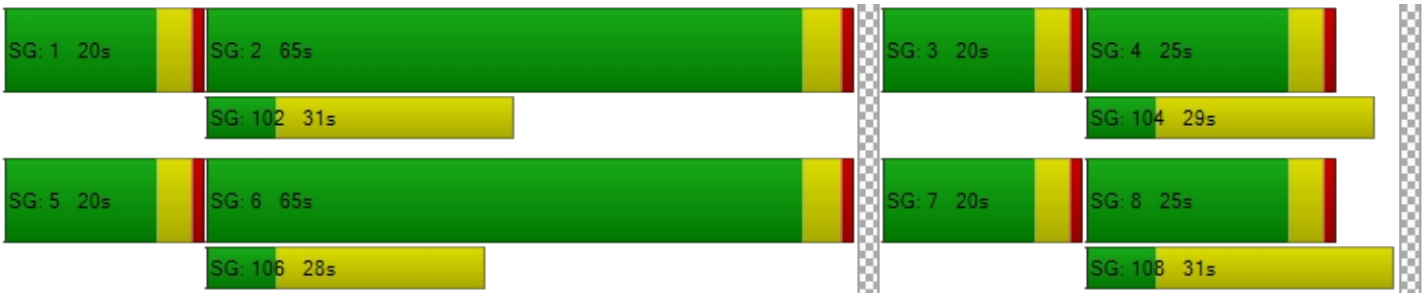
d_M, Delay for Movement [s/veh]	12.17	51.82	19.43	26.18	18.94	14.16	29.51	69.31	69.31	38.32	49.14	49.14
Movement LOS	B	D	B	C	B	B	C	E	E	D	D	D
d_A, Approach Delay [s/veh]	41.07			18.70			59.93			44.86		
Approach LOS	D			B			E			D		
d_I, Intersection Delay [s/veh]	38.72											
Intersection LOS	D											
Intersection V/C	0.885											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.23	47.23	47.23	47.23
I_p,int, Pedestrian LOS Score for Intersection	2.748	2.597	2.214	2.438
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1040	1040	355	355
d_b, Bicycle Delay [s]	13.30	13.31	39.03	39.03
I_b,int, Bicycle LOS Score for Intersection	3.843	2.660	2.106	2.390
Bicycle LOS	D	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: SW Boones Ferry Rd/SW Sagert St

Control Type:	Signalized	Delay (sec / veh):	26.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.822

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	115.00	100.00	100.00	125.00	100.00	210.00	90.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	21	569	362	110	883	76	44	151	15	235	106	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	3.00	4.00	5.00	4.00	2.00	0.00	2.00	17.00	5.00	5.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	569	362	110	883	76	44	151	15	235	106	55
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	145	92	28	225	19	11	39	4	60	27	14
Total Analysis Volume [veh/h]	21	581	369	112	901	78	45	154	15	240	108	56
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	4			1			4			0		
v_di, Inbound Pedestrian Volume crossing major street [	4			0			4			1		
v_co, Outbound Pedestrian Volume crossing minor stree	3			1			1			3		
v_ci, Inbound Pedestrian Volume crossing minor street [	3			1			1			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	4			6			4			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	14.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	6	0	5	6	0
Maximum Green [s]	15	60	0	15	60	0	15	20	0	15	20	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	3.5	0.0	3.5	3.5	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	65	0	20	65	0	20	25	0	20	25	0
Vehicle Extension [s]	2.0	4.5	0.0	2.0	4.5	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	22	0	0	24	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.0	0.0	2.5	3.0	0.0	2.5	2.5	0.0	2.5	2.5	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Cycle Length [s]	99	99	99	99	99	99	99	99	99	99
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	0.00	2.50	0.00	2.50
g_i, Effective Green Time [s]	59	50	50	59	52	52	30	13	30	22
g / C, Green / Cycle	0.60	0.50	0.50	0.60	0.53	0.53	0.31	0.13	0.31	0.23
(v / s)_i Volume / Saturation Flow Rate	0.03	0.31	0.24	0.12	0.49	0.05	0.03	0.09	0.16	0.10
s, saturation flow rate [veh/h]	677	1855	1537	927	1840	1548	1355	1829	1470	1705
c, Capacity [veh/h]	245	933	773	478	974	819	424	236	454	385
d1, Uniform Delay [s]	18.64	17.78	15.98	11.52	21.49	11.53	24.69	41.30	28.03	32.81
k, delay calibration	0.19	0.19	0.19	0.21	0.35	0.19	0.04	0.04	0.43	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	1.17	0.79	0.48	11.99	0.09	0.04	1.51	3.75	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.09	0.62	0.48	0.23	0.93	0.10	0.11	0.71	0.53	0.43
d, Delay for Lane Group [s/veh]	18.90	18.95	16.77	12.00	33.48	11.62	24.73	42.82	31.78	33.09
Lane Group LOS	B	B	B	B	C	B	C	D	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.19	9.40	5.36	1.04	20.96	0.84	0.75	4.01	4.96	3.36
50th-Percentile Queue Length [ft/ln]	4.78	234.94	134.01	26.06	524.02	21.07	18.72	100.24	124.07	84.04
95th-Percentile Queue Length [veh/ln]	0.34	14.43	9.16	1.88	28.47	1.52	1.35	7.22	8.62	6.05
95th-Percentile Queue Length [ft/ln]	8.60	360.63	228.93	46.90	711.73	37.92	33.70	180.43	215.40	151.27

Movement, Approach, & Intersection Results

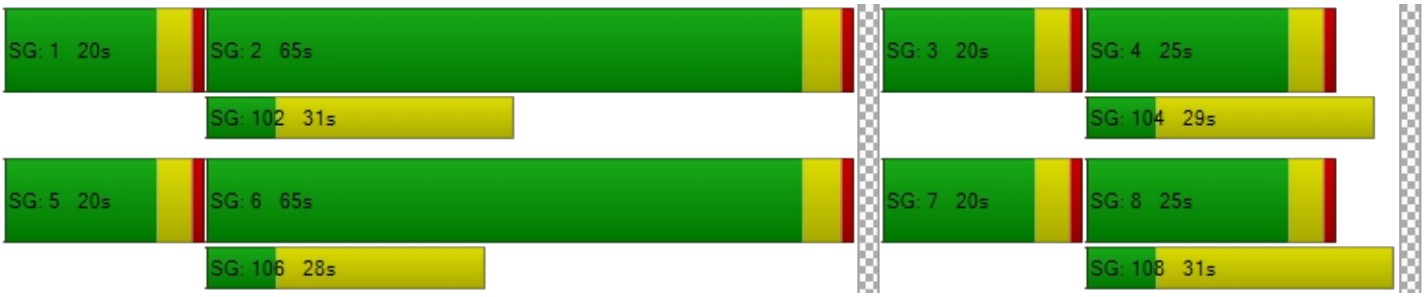
d_M, Delay for Movement [s/veh]	18.90	18.95	16.77	12.00	33.48	11.62	24.73	42.82	42.82	31.78	33.09	33.09
Movement LOS	B	B	B	B	C	B	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	18.12			29.71			39.01			32.31		
Approach LOS	B			C			D			C		
d_I, Intersection Delay [s/veh]	26.65											
Intersection LOS	C											
Intersection V/C	0.822											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	38.98	38.98	38.98	38.98
l_p,int, Pedestrian LOS Score for Intersection	2.705	2.583	2.098	2.472
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1215	1215	415	415
d_b, Bicycle Delay [s]	7.62	7.62	31.06	31.01
l_b,int, Bicycle LOS Score for Intersection	3.162	3.360	1.913	2.226
Bicycle LOS	C	C	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: SW Boones Ferry Rd/SW Sagert St

Control Type:	Signalized	Delay (sec / veh):	27.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.825

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	115.00	100.00	100.00	125.00	100.00	210.00	90.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	29	569	362	110	883	82	48	153	20	235	109	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	3.00	4.00	5.00	4.00	2.00	0.00	2.00	17.00	5.00	5.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	569	362	110	883	82	48	153	20	235	109	55
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	145	92	28	225	21	12	39	5	60	28	14
Total Analysis Volume [veh/h]	30	581	369	112	901	84	49	156	20	240	111	56
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	4			1			4			0		
v_di, Inbound Pedestrian Volume crossing major street [	4			0			4			1		
v_co, Outbound Pedestrian Volume crossing minor stree	3			1			1			3		
v_ci, Inbound Pedestrian Volume crossing minor street [	3			1			1			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	4			6			4			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	14.00

Phasing & Timing

Control Type	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis	ProtPer	Permis	Permis
Signal Group	5	2	0	1	6	0	7	4	0	3	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	6	0	5	6	0
Maximum Green [s]	15	60	0	15	60	0	15	20	0	15	20	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	3.5	0.0	3.5	3.5	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	65	0	20	65	0	20	25	0	20	25	0
Vehicle Extension [s]	2.0	4.5	0.0	2.0	4.5	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	22	0	0	24	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.0	0.0	2.5	3.0	0.0	2.5	2.5	0.0	2.5	2.5	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C
C, Cycle Length [s]	102	102	102	102	102	102	102	102	102	102
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.00	3.00	0.00	3.00	3.00	0.00	2.50	0.00	2.50
g_i, Effective Green Time [s]	61	52	52	61	53	53	31	13	31	23
g / C, Green / Cycle	0.60	0.51	0.51	0.60	0.53	0.53	0.31	0.13	0.31	0.23
(v / s)_i Volume / Saturation Flow Rate	0.04	0.31	0.24	0.12	0.49	0.05	0.04	0.10	0.16	0.10
s, saturation flow rate [veh/h]	686	1855	1537	924	1840	1548	1352	1818	1462	1707
c, Capacity [veh/h]	247	941	780	476	968	814	420	241	446	387
d1, Uniform Delay [s]	19.46	17.99	16.17	11.73	22.39	12.06	25.39	42.38	28.80	33.69
k, delay calibration	0.19	0.19	0.19	0.23	0.37	0.19	0.04	0.04	0.46	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	1.16	0.77	0.53	13.00	0.09	0.05	1.61	4.23	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.12	0.62	0.47	0.24	0.93	0.10	0.12	0.73	0.54	0.43
d, Delay for Lane Group [s/veh]	19.84	19.15	16.94	12.26	35.39	12.16	25.44	43.99	33.03	33.97
Lane Group LOS	B	B	B	B	D	B	C	D	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.28	9.63	5.49	1.08	22.02	0.95	0.84	4.32	5.16	3.54
50th-Percentile Queue Length [ft/ln]	7.09	240.79	137.29	27.03	550.49	23.79	21.09	107.90	128.94	88.38
95th-Percentile Queue Length [veh/ln]	0.51	14.72	9.33	1.95	29.72	1.71	1.52	7.72	8.88	6.36
95th-Percentile Queue Length [ft/ln]	12.76	368.04	233.37	48.66	742.88	42.83	37.96	193.08	222.05	159.09

Movement, Approach, & Intersection Results

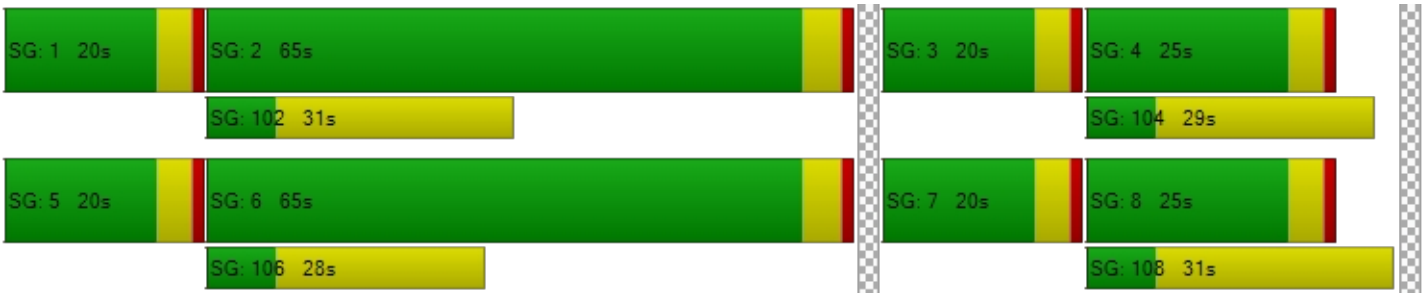
d_M, Delay for Movement [s/veh]	19.84	19.15	16.94	12.26	35.39	12.16	25.44	43.99	43.99	33.03	33.97	33.97
Movement LOS	B	B	B	B	D	B	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	18.34			31.25			39.95			33.42		
Approach LOS	B			C			D			C		
d_I, Intersection Delay [s/veh]	27.63											
Intersection LOS	C											
Intersection V/C	0.825											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	40.39	40.39	40.39	40.39
I_p,int, Pedestrian LOS Score for Intersection	2.711	2.588	2.115	2.475
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1181	1181	404	404
d_b, Bicycle Delay [s]	8.53	8.54	32.43	32.38
I_b,int, Bicycle LOS Score for Intersection	3.177	3.370	1.931	2.231
Bicycle LOS	C	C	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



KITTELSON & ASSOCIATES
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P 503.228.5230 F 503.273.8169

January 4, 2022 Project #: 26462

Steve Koper and Keith Leonard
City of Tualatin
10699 SW Herman Road
Tualatin, OR 97062-8233

RE: Tualatin Heights Plan Map Amendment– Response to December 23, 2021 Transportation Impact Analysis Comments

Dear Steve and Keith,

This letter provides supplemental transportation-related information and a response to comments provided in the City of Tualatin's technical review of our September 16, 2021 *Tualatin Heights Plan Map Amendment* traffic analysis (herein referred to as the "September report"). The details addressed herein respond specifically to comments provided by DKS on December 23, 2021, on behalf of City staff. For ease of review, the individual DKS comments are shown below in italics followed by our response to each.

Comment

The trip distribution estimate for the proposed project is stated that it is based on review of travel characteristics from the count data. However, no distribution percentages are described or presented in a figure. The analysis should include, at minimum, a description of the trip distribution percentages in the study area.

Response

The trip distribution and trip assignment figures were inadvertently left out when the September report was compiled. Figures showing the site-generated trips and their assignment onto the study area network as an attachment to this memo. In general, the overall trip distribution percentages were calculated based on existing travel patterns at the Terrace Heights site driveways and the location of regional destinations within the larger study area.

Comment

Regarding the distribution, no new trips are assigned to the eastern site driveway. The study states that the new trips are distributed between the two site accesses.

Response

The existing Tualatin Heights apartment complex has two full access site driveways within close proximity to one another along SW Sagert Street. Based on discussions with the Applicant, the site may expand with a higher number of units oriented closer to the western access; as such, all of the new site generated trips were assigned to the westernmost driveway for conservative purposes.

Comment

To obtain background volumes for horizon year 2040, the Metro travel demand models for 2015 and 2040 were used. The procedure used to forecast volumes was a bit vague on the methodology used. At minimum, a description of what equivalent annual percent growth is assumed at the study intersections would be appropriate.

Response

The year 2040 background traffic forecast volumes were developed primarily on travel forecasting data from the Metro Regional Travel Demand Model using model runs supplied by Washington County staff. The standard NCHRP 765 methodology was used to post-process future turning movement volumes at the study intersections using 2015 base year model volumes, forecast year 2040 model output, and 2019 and 2021 existing volume counts. A copy of the spreadsheet that follows the NCHRP 765 methodology is available upon request.

The resulting volumes used in the 2040 base year operations are reflective of annual growth rates ranging from 1.5% (SW 95th Avenue corridor) to 2.2% (SW Boones Ferry Road corridor).

Conclusions

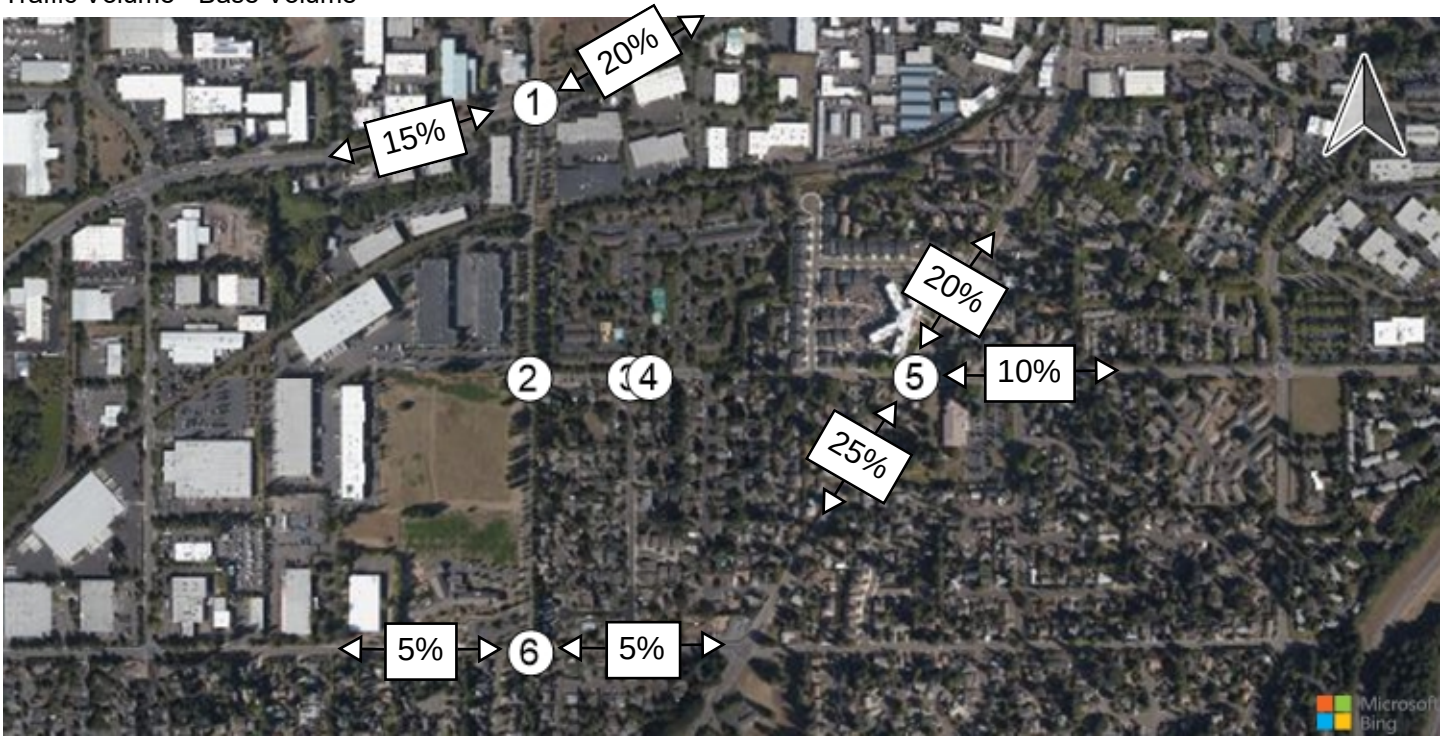
Based on our review, the comments provided by City staff clarify the findings of our September report but do not change any of the analyses nor the conclusions. Please let us know if you need any additional information as part of your review of the application.

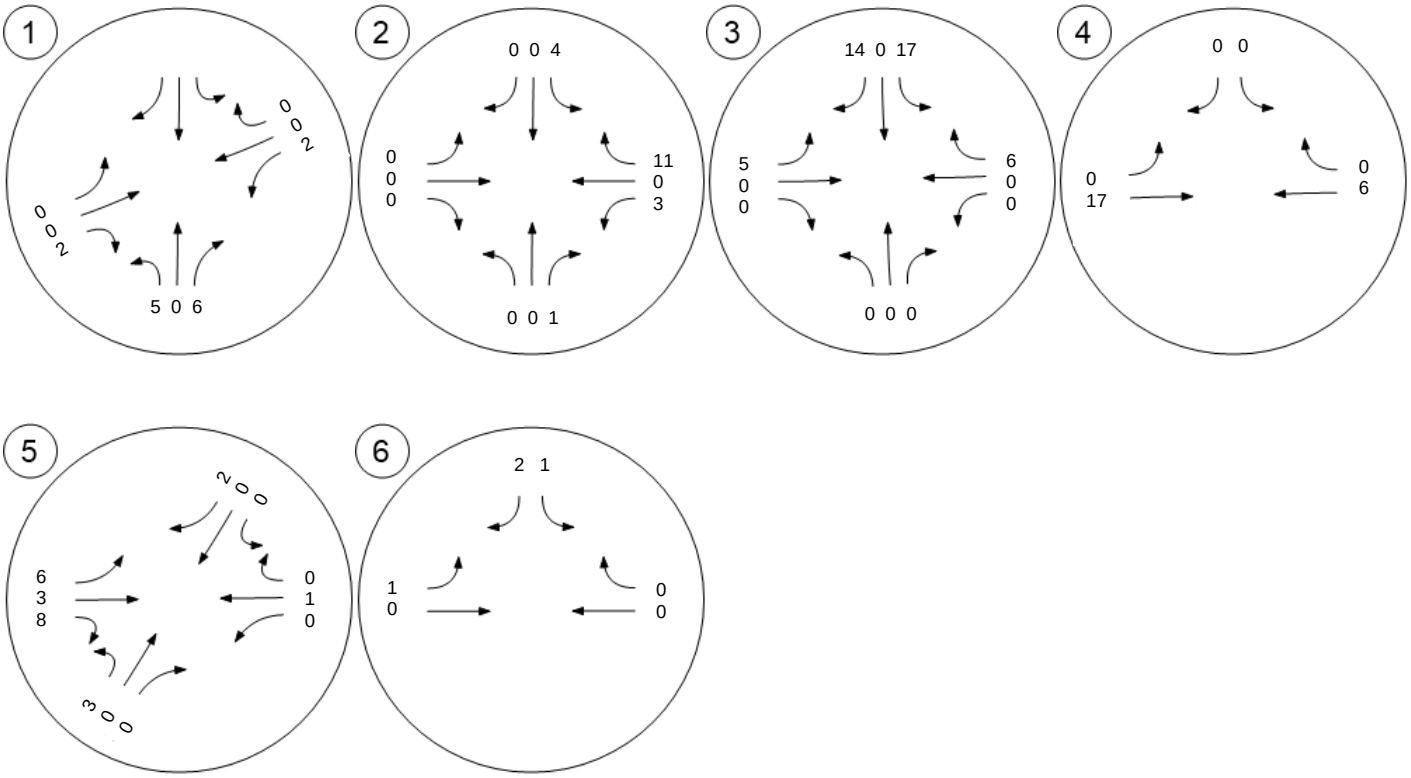
Sincerely,
KITTELSON & ASSOCIATES, INC.

Matt Hughart, AICP
Principal Planner

Julia Kuhn, P.E.
Senior Principal Engineer

Traffic Volume - Base Volume





Traffic Volume - Base Volume