UPDATED
TRANSPORTATION TECHNICAL REPORT

for

Issaquah Middle School No. 6

APPLICANT:

Issaquah School District

PREPARED BY:

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December 13, 2019

Updated Transportation Technical Report
for

Issaquah School District
Middle School No. 6

TALUS PARCEL 17-B
ISSAQUAH, WA 98027

APPLICATION # TIA19-00003

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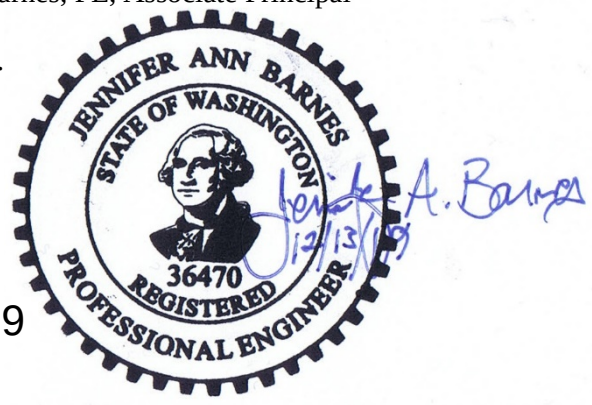

December 13, 2019

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EXECUTIVE SUMMARY

Proposal

The Issaquah School District (ISD) proposes to construct a new middle school (serving grades 6 through 8) on property located at the southeast corner of NW Talus Drive / Falcon Way NW (Talus Parcel 17-B), in the Talus community of Issaquah. The school is planned for an enrollment capacity of 850 students with about 75 faculty and staff. However, to ensure a conservative analysis, an enrollment of up to 900 students was evaluated to account for possible unanticipated fluctuations. The proposed school facilities include an athletic field, commons, and a gymnasium.

The project proposes to provide three access driveways. The main access driveway, proposed on NW Talus Drive, would serve the family-vehicle load/unload area as well as on-site staff and visitor parking. After extensive review of a range of access options, the project proposes traffic signal control at the main access driveway on NW Talus Drive. A separate access-controlled emergency-access/service driveway is also proposed on NW Talus Drive. A school-bus load/unload area is planned along the west side of the site with an access driveway on Falcon Way NW. On-site parking is planned to include 122 parking spaces (99 spaces within a garage, and 23 surface parking spaces), plus an additional 40 stalls in load/unload areas that would be available during off-peak hours, for a total of 162 parking stalls. The project would also construct a trail along the south side of the site that would provide connection between NW Talus Drive and Falcon Way NW.

Traffic Generation

With 900 students, the school is forecast to generate 1,920 vehicle trips per day (960 in, 960 out), with 630 occurring in the morning peak hour, 315 in the afternoon peak hour, and 153 in the commuter PM peak hour.

Traffic Operations, Queuing, & Travel Times

With the proposed signalized access, the main driveway intersection in NW Talus Drive is projected to operate at LOS C during the morning peak hour, and LOS A during the afternoon and commuter PM peak hours. As part of the project, signal timing optimization is recommended for the NW Talus Drive/SR 900 intersection. With optimization, that intersection is forecast to operate at LOS C during the morning peak hour and LOS B during the afternoon and commuter PM peak hours. The stop-controlled NW Talus Drive/Falcon Way NW intersection is forecast to operate at LOS A overall with all movements operating at LOS C or better during all peak hours with the project.

Analyses and simulations of circulation and queuing conditions were prepared. Peak off-site queuing conditions for schools tend to occur in the morning during arrival just prior to school start times. The analyses and simulations of the signalized access indicate the queue of westbound left turning vehicles into the site can be accommodated by the proposed storage lane. Peak on-site queuing conditions for schools typically occur in the afternoon just prior to dismissal. The proposed on-site storage capacity would accommodate more than 125 queued/parked vehicles, which is expected to be adequate for typical afternoon conditions.

The school project is expected to modestly increase travel times for background traffic using NW Talus Drive. The increases are expected because of the proposed new school zone (20 miles per hour) speed limit during morning arrival and afternoon dismissal periods, added delay from the new traffic signal at the main school access, and added delay from new school trips at the NW Talus Drive/SR 900 intersec-

tion. The largest travel time increase is expected in the eastbound direction during the morning peak hour of about a half-minute (28 seconds) is forecast to be added to the average travel time through the corridor. For eastbound travel during the other peak hours, and westbound travel during all peak hours, the project is expected to expected add between 5 and 22 seconds to average travel time through the corridor.

Traffic Safety

Historical collisions reported in the study area do not reflect unusual safety patterns. The project would meet the City's minimum sight distance requirements.

Although the traffic signal has been incorporated into the proposal to address traffic operational and queuing needs, its presence could also have some effect in slowing down traffic through the corridor. The introduction of a new signalized intersection at the main site access driveway is expected to reduce the likelihood of angle collisions, which can be more severe in terms of injury and property damage. However, signalization can result in increased numbers of less-severe rear-end collections.

Minimum spacing requirements for intersections and driveways are established in Section A of the City's street design standards. Because NW Talus Drive is a Collector Arterial, the minimum spacing for driveways is 600 feet. The steep grades at and adjacent to the site, combined with the horizontal curvature of the NW Talus Drive frontage and proximity to SR 900, severely constrain the feasible locations for site access. The proposed main driveway is located at approximately the same location as an existing temporary site access, about 200 feet east of Falcon Way NW. Because the proposed driveway spacing is less than 600 feet, a deviation from the City standard will be required. The deviation would meet safety and mobility objectives reflected in the three City criteria required to support a deviation request.

Transit & Non-Motorized Facilities and Service

The project is not expected to result in adverse impacts to transit, bicycle or pedestrian facilities.

Typical School-Day and Event Parking

Parking analysis completed in a separate report estimates typical school-day demand of 81 vehicles, which could be accommodated by the planned on-site supply of 122 spaces. On typical school days, an average of 41 spaces are expected to remain unused and would be available for occasional daytime events or for family drivers awaiting afternoon dismissal; during midday, the 40 spaces in the student loading area would also be available, for a total of 81 spaces. Events are expected to occur periodically at the school and would include scholastic events, performances, athletics, and business meetings. Parking demand would vary based on the type of event and attendance; most types of events could be accommodated by the proposed parking supply. For all events anticipated to have 300 or more attendees, it is recommended that the District and School implement parking management measures to ensure that parking overspill does not occur on nearby streets.

Construction

Project construction would generate truck trips, as well as construction employee commute trips. Construction truck traffic is expected to average between 3 to 4 trips per hour during a typical eight-hour construction work day, over a 21-week period. Although the volume of truck traffic would be noticeable to nearby residents, it is not expected to result in significant impacts to traffic operations in the site vicinity.

Mitigation and Recommendations

Based on the extensive analysis prepared for the proposed Middle School #6 project, the following physical measures have been incorporated into the proposal.

A. Traffic Signal at Main Driveway
B. Signage/Pavement Marking at NW Talus Drive/Falcon Way NW
C. NW Talus Drive/SR 900 Signal Re-optimization
D. School-Zone Speed Limit
E. Sight-Triangle Maintenance

In addition to the physical measures listed above that have been incorporated into the project proposal, the following operational measures are recommended to minimize the potential traffic-related impacts of the proposed Middle School #6 project.

F. Construction Management Plan (CMP)
G. Transportation Management Plan (TMP)
H. School-Event Management Plan
I. Annual Monitoring of Queuing and Event Parking

If neighbor complaints and/or follow-on monitoring by ISD or school staff indicates the above measures are not adequately addressing concerns, the school could consider the following additional measures:

J. Adjust Bus Schedules
K. Adjust School Hours
L. Increase School Bus Service
M. Additional Capital Improvements and/or Management Measures

2. INTRODUCTION

This report presents the transportation impact analyses for a new middle school proposed by the Issaquah School District (ISD) at a site located in the Talus community in Issaquah. It documents the existing transportation conditions in the site vicinity, presents estimates of project-related traffic, and evaluates the anticipated impacts to the surrounding transportation system, including traffic operations, site circulation and safety, parking, transit, and non-motorized facilities. The scope of this analysis was coordinated extensively between ISD and the City of Issaquah (City) and this report was prepared in accordance with the guidelines set forth by the City in its *Traffic Impact Analysis Guidelines*.[1]

3. DESCRIPTION OF PROPOSED DEVELOPMENT

3.1. Project Location

ISD proposes to construct a new middle school (serving grades 6 through 8) on property located at the southeast corner of NW Talus Drive / Falcon Way NW (Talus Parcel 17-B), west of the State Route (SR) 900 / NW Talus Drive intersection, in the Talus community of Issaquah. The site location is shown on **Figure 1**.

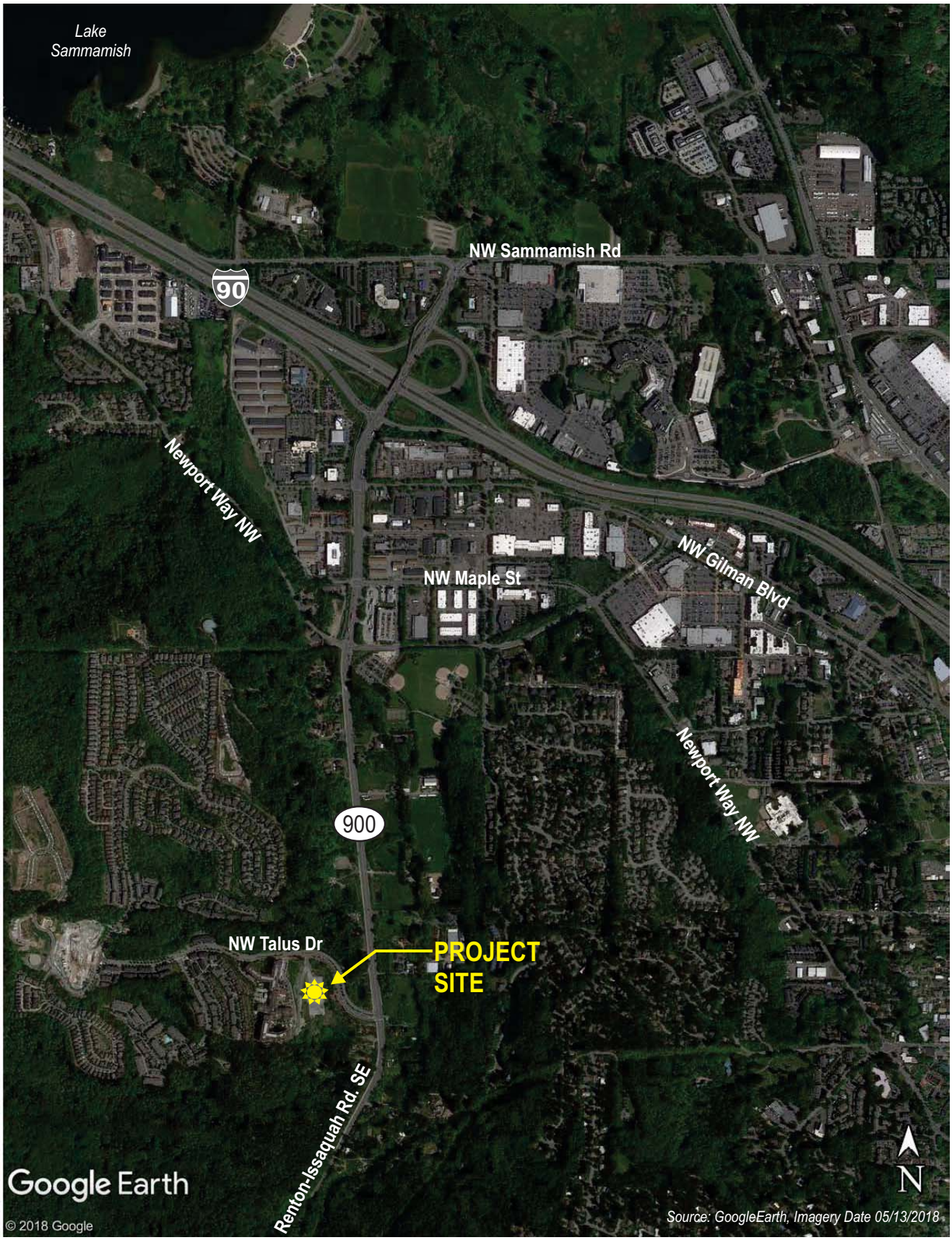
3.2. Project Description

The school is planned for an enrollment capacity of 850 students with about 75 faculty and staff. However, to ensure a conservative analysis, an enrollment of up to 900 students was evaluated to account for possible unanticipated fluctuations. (Note: Early analyses prepared for initial design concepts referenced a capacity range of 800 to 1,000 students; however, site constraints have resulted in a reduced number of classrooms and ISD has confirmed the planned capacity at 850 students). The proposed site plan for the school is shown on **Figure 2**; a site plan drawn to scale is provided in **Appendix A**. The proposed school facilities include an athletic field, commons, and a gymnasium.

The project proposes to provide three access driveways. The main access driveway is proposed on NW Talus Drive at about the location of an existing temporary site access; a new westbound left-turn lane would be constructed on NW Talus Drive at this driveway. The main driveway would provide access to the family-vehicle load/unload area as well as on-site staff and visitor parking. After extensive review of a range of access options, the project proposes traffic signal control at the main access driveway on NW Talus Drive. A separate emergency-access/service driveway connecting to the fire lane (east of the school building) is also proposed on NW Talus Drive, about 200 feet east of the main driveway. This access is planned for use only by emergency vehicles and occasional service vehicles, and is planned to have access control (e.g. gates and/or removable bollards). A school-bus load/unload area is planned along the west side of the site with an access driveway on Falcon Way NW. The project would also construct a trail along the south side of the site that would provide connection between NW Talus Drive and Falcon Way NW.

On-site parking is planned to include 122 parking spaces (99 spaces within a garage, and 23 surface parking spaces), plus an additional 40 stalls in load/unload areas that would be available for off-peak hours use, for a total of 162 parking stalls.

[1] City of Issaquah, Traffic Impact Analysis Guidelines, April 8, 2015.



MIDDLE SCHOOL #6

Issaquah School District

Figure 1

Site Location

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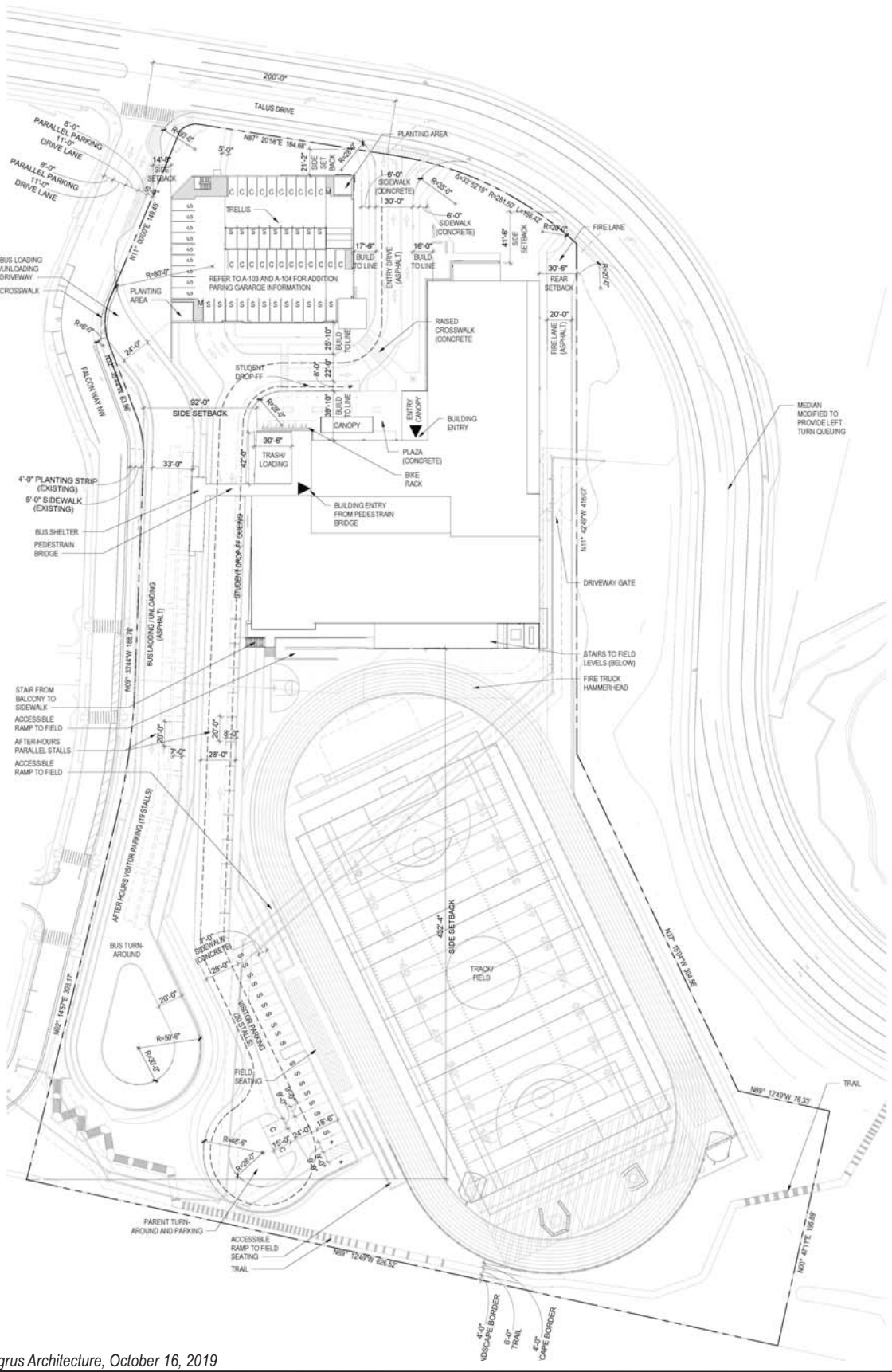

Source: Integrus Architecture, October 16, 2019

MIDDLE SCHOOL #6
Issaquah School District

Figure 2

Site Plan

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Project construction is planned to begin in spring 2020. The school is planned to be open for the 2021/2022 school year. To reflect future conditions with the school fully occupied, all future analyses in this report reflect year 2023 conditions.

The site is located at Talus Parcel 17B (Assessor's Parcel Number 8562730170), which is currently zoned as UV-O (Urban Village – Office) and is subject to the Talus Replacement Regulations (Issaquah Municipal Code [IMC] 18.19C). ISD is proposing rezone of the property to CF-F (Community Facilities – Facilities) as part of the next annual update docket for the City Comprehensive Plan. Per IMC 18.19C.130.D.2, a school, public and private, is allowable under the current UV-O zoning. The proposed re-zone would more specifically align the zoning regulations of the property to a school facility.

3.3. Study Area

The scope and study area for this analysis were coordinated extensively with City of Issaquah staff and its transportation review consultant.[2] The study area intersections identified by the City for analysis are those that would be affected by vehicle access to and from the school. The following intersections were identified for analysis:

- NW Talus Drive / Renton Issaquah Road SE (State Route [SR] 900);
- NW Talus Drive / Falcon Way NW;
- NW Talus Drive / School Access Driveway; and
- Falcon Way NW / School Access Driveway.

3.4. Analysis Periods

Analysis was completed for the peak morning (arrival) and afternoon (dismissal) periods, when school-generated trips are typically highest, and for commuter PM peak hour when traffic on the adjacent streets is typically highest. The specific times of each analysis area are described later in the report.

3.5. Other Approved Development in Vicinity

The analysis presented in this report evaluates cumulative conditions with traffic generated by other future planned development in the vicinity. Traffic generated by the following pipeline projects (permitted or under construction, but expected to be complete by the future analysis year) identified by the City[3] is reflected in the analysis.

- Talus Parcel 7 – 56 single family homes
- Talus Parcel 8 – 7 single family homes
- Talus Parcel 9 – 90 single family homes
- Forest Heights – 23 single family homes & 1 duplex
- Tibbetts Crossing – 20 single family homes

The locations of these pipeline development projects are shown on **Figure 3**. The method applied to estimate future background traffic is described in *Section 5.2.1. Future/Background Volumes Without Development*, later in this report.

[2] Initial meeting – October 18, 2018; *Traffic Scoping Memorandum* – Jake Traffic Engineering, November 2, 2018; *Revised Traffic Scoping Memorandum*, March 5, 2019; meeting May 28, 2019; meeting Aug. 12, 2019; and meeting Oct. 15, 2019.

[3] Pipeline projects were identified in an email from Doug Schlepp, City of Issaquah, August 22, 2019.

Source: City of Issaquah, August 23, 2019

MIDDLE SCHOOL #6
Issaquah School District

Figure 3
Location of Approved Development In Project Vicinity

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4. EXISTING CONDITIONS

4.1. Study Area Roadway System

The school site is bounded by NW Talus Drive to the north and east, and Falcon Way NW to the west. Cougar Mountain Regional Wildland Park is located to the south of the site. Regional access to and from the site is provided by SR 900, located about 500 feet to the east of the site and accessed via NW Talus Drive. Characteristics of the key study area roadways are described as follows.[4]

Renton Issaquah Road SE (SR 900) is a Principal Arterial that is designated as a Highway of Regional Significance. In the vicinity of the site, it has a north-south orientation with two travel lanes and a painted bike lane in each direction. It provides regional connection between Interstate-90 (I-90) to the north and I-405 to the southwest. Its intersection with NW Talus Drive is signalized with left-turn lanes in both directions and a southbound right-turn lane. It has signalized crosswalks across its west and south legs; signage at the north leg prohibits pedestrian crossing and directs pedestrians to the available crosswalks. There is curb, gutter, and sidewalk on the west side, and a paved shoulder on the east side. It has a posted speed limit of 40 miles per hour (mph) and no parking is allowed on either side of the street.

NW Talus Drive is a two-lane east-west Collector Arterial that provides access between SR 900 and the Talus development. It curves around the east and north sides of the project site. The proposed main school driveway and access-controlled service/emergency driveway would be located on this street. NW Talus Drive slopes upward from east (SR 900) to west (Talus), with a grade between 8% and 11% in the vicinity of the project site. It has curbs and gutters on both sides, and a sidewalk on the south/west side. In the site vicinity, it has two travel lanes and a painted bike lane in the westbound direction, and one travel lane and a painted bike lane in the eastbound direction. It has left-turn lanes at some intersections, including at Falcon Way NW, but otherwise has a landscaped center median. The roadway has a posted speed limit of 25 mph and no parking is allowed on either side of the street.

Falcon Way NW is a north-south local access street located about 200 feet west of the proposed main school driveway. The proposed driveway accessing the school-bus load/unload zone would be located on this street. It has one travel lane in each direction and a posted speed limit of 10 mph. It has curbs, gutters, sidewalks, and parking on both sides. Its approach to NW Talus Drive is stop-controlled. It has painted crosswalks at NW Talus Drive, on both sides of the Timber Ridge garage entrance, and across all legs of its intersection with NW Osprey Lane.

4.2. Existing Traffic Volumes

A combination of daily and peak period traffic counts was performed by Idax Data Solutions within the study area. A three-day machine count of volumes, speeds, and vehicle classifications was performed on NW Talus Drive east of Falcon Way NW from Tuesday, June 11 to Thursday, June 13, 2019. Video-recorded turning movement counts were performed at the two off-site analysis intersections on Tuesday, June 11, 2019 from 7:00 to 9:00 A.M. and from 2:00 to 6:00 P.M. The counts indicate that the existing AM peak hour of adjacent roadways occurs from 7:30 to 8:30 A.M.; the commuter PM peak hour occurs from 4:00 to 5:00 P.M.

In order to determine when the morning arrival and afternoon dismissal peak hours of the new school are likely to occur, counts were conducted at Pacific Cascade Middle School from Tuesday, June 11, through

[4] Street functional classifications and designations were obtained from the transportation element of the City of Issaquah Comprehensive Plan, adopted in 1995 and most recently amended March 27, 2019.

Thursday, June 13, 2019. This school was selected, after City consultation, as representative of the proposed new Middle School #6 based on its size, staffing, enrollment, school hours (8:10 A.M. to 2:35 P.M. with late start at 10:20 A.M. on Wednesdays), and access configuration. These counts were used to confirm trip generation estimates for the new school and to determine typical peaking characteristics for an Issaquah middle school (described in detail in *Section 5.2.2 Proposed Project Traffic*, later in this report). The counts were compiled and indicated the following morning arrival and afternoon dismissal peak hours would be expected for Middle School #6 at the Talus site.

- AM peak hour, corresponding to the schools' morning arrival period: 7:20 to 8:20 A.M.
- Afternoon peak hour, corresponding to the school's afternoon dismissal: 2:15 to 3:15 P.M.

The existing vehicle volumes in the project study area for the morning, afternoon, and commuter PM peak hours are shown on **Figure 4**. For this analysis, the school's morning peak hour was assumed to overlap with the existing 7:30 to 8:30 A.M. peak hour of the adjacent roadway system. Traffic counts conducted for this project are provided in **Appendix B**.

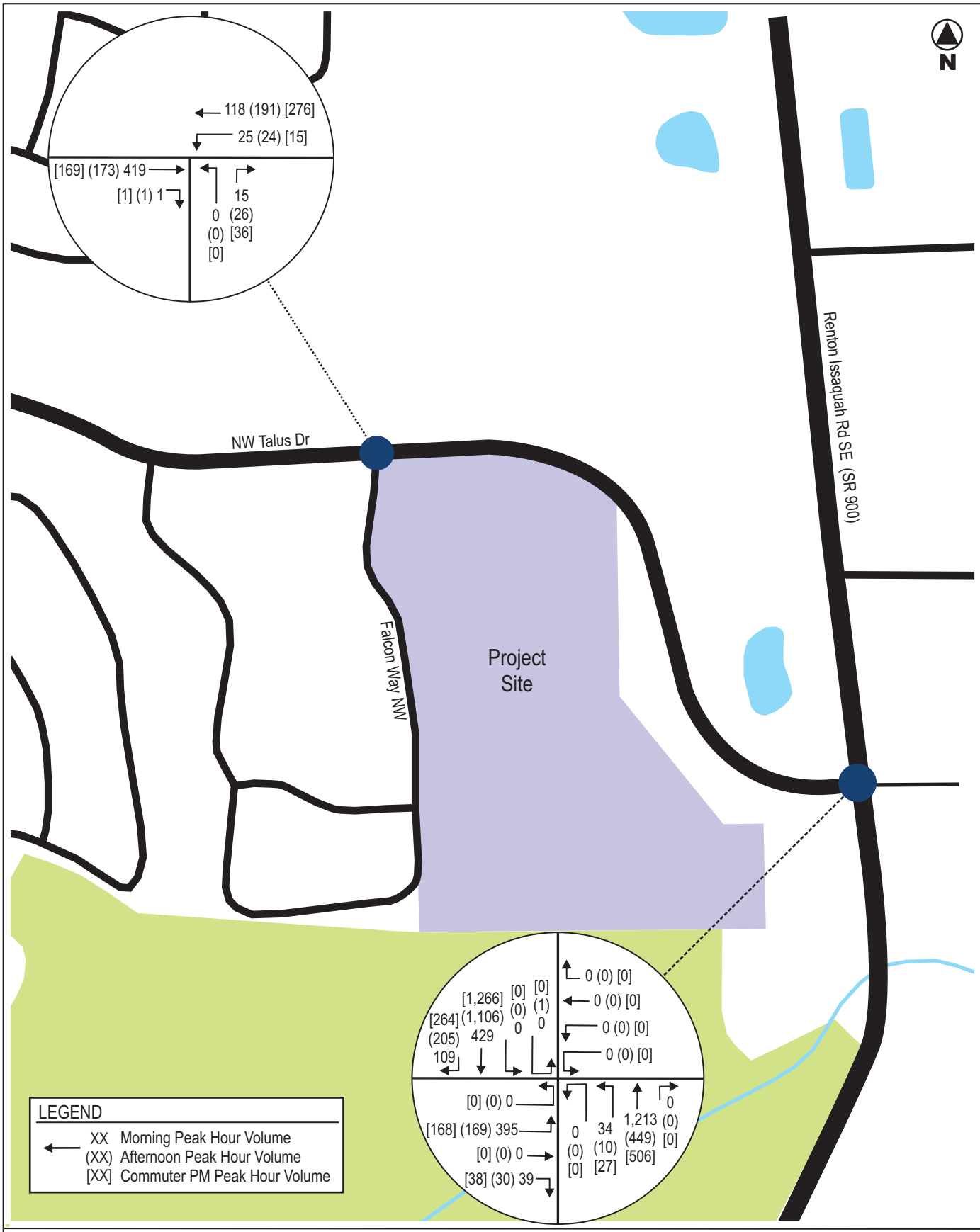
4.3. Transit Facilities and Service

The site is not directly served by public transit. The nearest transit stop is located at the Issaquah Transit Center, located approximately one mile to the north on SR 900.

4.4. Non-Motorized Transportation Facilities

As described above, the study area arterials (NW Talus Drive and SR 900) each have a sidewalk on one side. The NW Talus Drive/SR 900 intersection has crosswalks with pedestrian signals across its west and south legs. Falcon Way NW has sidewalks on both sides, and crosswalks at several locations along its length. There are painted bicycle lanes in each direction on NW Talus Drive.

IMC § *18.19C Talus Replacement Regulations, Subsequent to Development Agreement Termination* includes the Talus Trails Plan (Figure 4) which shows a potential future trail through the project site connecting Talus Drive NW on the east to Falcon Way NW on the west (identified as "to be determined with Land Use Permit").



MIDDLE SCHOOL #6
Issaquah School District

Figure 4
Existing (2019) Volumes
Morning, Afternoon, and PM Peak Hours

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5. FUTURE CONDITIONS

5.1. Programmed Roadway Improvements

The City's current *Capital Improvement Plan* (CIP)[5] was reviewed to determine if any transportation projects are planned that would affect the operation or capacity of the study area intersections. No projects were identified in the study area. Therefore, the analysis assumes existing traffic control and channelization would remain at the study area intersections for future conditions.

5.2. Projected Traffic Volumes

5.2.1. Future/Background Volumes Without Development

The future conditions analysis year was assumed to be 2023. To estimate year 2023 background traffic for the study area intersections, traffic expected to be generated by pipeline development projects (permitted or under construction, but expected to be complete by the future analysis year) in the vicinity of the site, as well as traffic resulting from regional development growth, was added to the existing volumes.

As previously discussed in *Section 3.5*, forecast traffic for the following pipeline projects was included in the future forecast volumes.

- Talus Parcel 7 – 56 single family homes
- Talus Parcel 8 – 7 single family homes
- Talus Parcel 9 – 90 single family homes
- Forest Heights (with access through Talus) – 23 single family homes & 1 duplex
- Tibbetts Crossing (located on the east side of the SR 900/NW Talus Drive intersection) – 20 single family homes

The location of the pipeline development projects was previously shown on Figure 3.

Trips generated by the Tibbetts Crossing development were obtained from the traffic impact analysis prepared for that project.[6]

For the remaining pipeline development, which is all located within the Talus subdivision, trips were estimated by applying standard trip equations published by the Institute of Transportation Engineers (ITE) for single family detached housing (ITE Land Use Code [LU] 210),[7] as summarized in **Table 1**. The distribution of the Talus pipeline trips was estimated based upon the traffic patterns of the existing Talus-generated trips reflected in the traffic counts conducted on Talus Drive NW and at SR 900.

5 City of Issaquah, 2020-2025 Capital Improvement Plan (CIP), Adopted through Resolution No. 2019-07, July 15, 2019.
6 TENW, Tibbitts Creek Cluster Subdivision, Limited Scope Traffic Analysis, September 5, 2018.
7 ITE, Trip Generation Manual, 10th Edition, 2017.

Table 1. Estimate of Trips Generated by Talus Pipeline Development

Time Period	Trip Rate [a]	Vehicle Trip Estimate		
		Inbound	Outbound	Total
Daily	Ln(T) = 0.92 Ln(X) + 2.71 (50% in, 50% out)	885	885	1,770
AM Peak Hour	T = 0.71(X) + 4.80 (25% in, 75% out)	33	98	131
Afternoon Peak Hour	76% of commuter PM peak hour trips [b]	85	50	135
Commuter PM Peak Hour	Ln(T) = 0.96 Ln(X) + 0.20 (63% in, 37% out)	112	65	177

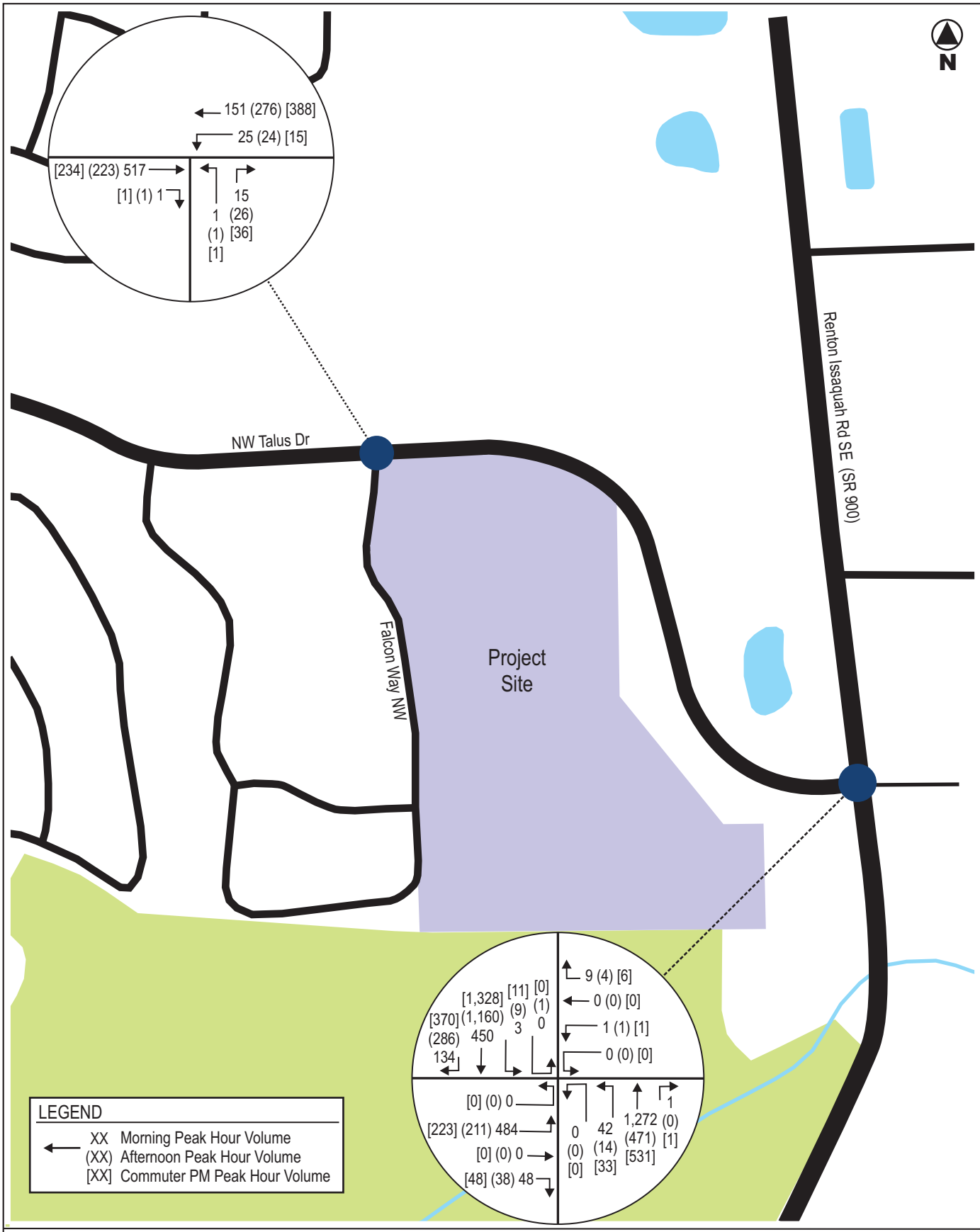
Source: Heffron Transportation, October 2019.

a. Institute of Transportation Engineers, 2017. Single Family Detached Housing (LU 210) rates applied to 178 dwelling units.

b. ITE does not provide afternoon trip rates for residential development. The afternoon peak hour rate was estimated based on the ratio of afternoon peak hour to commuter PM peak hour percent of daily traffic, as reflected in Single Family Detached Housing (LU 210) hourly trip distribution data, presented in the Trip Generation Manual, Appendix A (page 478).

In addition to the pipeline traffic described above, an annual background traffic growth rate of 1.2% was provided by the City and applied to the existing SR 900 traffic volumes, to account for possible traffic increases from regional development growth.

Figure 5 shows projected future (2023) traffic volumes for conditions without the project, for the morning, afternoon, and commuter PM peak hours.



MIDDLE SCHOOL #6
Issaquah School District

Figure 5
Future (2023) Without-Project Volumes
Morning, Afternoon and PM Peak Hours

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5.2.2. Proposed Project Traffic

Overview of Approach

Trip generation estimates for new school projects are typically developed using one of two methods. Commonly, rates published in the ITEs' *Trip Generation Manual*[8] are applied for new school developments, when little may be known about expected operational characteristics. In some cases, it is appropriate to derive trip generation rates and travel characteristics based on observed conditions at an existing school with similar or representative characteristics. Since the published ITE rates are based on data collected from sites across the country, rates and travel patterns derived from local schools can offer representative travel characteristics for a particular school within the subject school district.

As part of the analysis scoping discussions with City staff and its transportation review consultant,[9] it was agreed that collecting data and performing observations at a comparable representative Issaquah middle school would be valuable for the analysis of the proposed project. After examining all middle schools within the Issaquah School District and consulting with City staff,[10] Pacific Cascade Middle School (PCMS), was selected for this data collection and observation effort. This selection and the results of the effort are described in the following sections.

Characteristics of Comparable Middle School

PCMS is located at 24635–Issaquah-Fall City Road in Sammamish and was identified as a comparable school for several reasons. It is a middle school within the Issaquah School District of a similar (though somewhat larger) size in terms of enrollment and staffing with 1,014 students and 75 employees as of June 2019. It has a relatively small number of students living within the school walk area and a majority of students are eligible for District-provided transportation (school bus) as is expected of the proposed Middle School #6. As with the planned Middle School #6, the primary vehicle access is provided from a single driveway (located on Issaquah-Fall City Road) with a separate driveway (also on Issaquah-Fall City Road) for school buses and some staff parking. This access configuration and the surrounding land use and transportation facility conditions allowed for counts and observations (video and in-person) to capture all school-related trips to and from the school. Traffic control for the PCMS main access is signalized, and it is noted that traffic volumes on Issaquah-Fall City Road near PCMS are higher than on NW Talus Drive.

The location and site access configuration at PCMS are such that traffic counts and observations can relatively easily capture all trips generated by the school, including some that occur in the nearby residential neighborhood. This location and configuration are preferred over sites located near other schools or in residential areas where student load/unload may occur a block or more from the site. For those sites, it can be difficult to isolate a school's traffic generation.

Data Collection and Observations

The PCMS site is configured such that most trips enter and exit using the two school driveways, with some afternoon student pick-up also occurring in the residential neighborhood across the street (on 247th Place SE). The City requested that data be collected over two or three days. Traffic counts were conducted by Idax Data Solutions at the two school driveways and on 247th Place SE over three consecutive days: Tuesday, June 11 through Thursday, June 13, 2019. On Tuesday and Thursday, the morning counts were performed from 7:00 to 9:00 A.M.; on Wednesday (which has later start and dismissal times), the

8 ITE, 10th Edition, 2017.
9 Meeting May 28, 2019.
10 Email correspondence June 3, 6, & 7, 2019.

morning counts were performed from 8:45 to 10:45 A.M. The afternoon counts were conducted from 2:00 to 6:00 P.M. on all three days, which captured each day's respective dismissal period and also the commuter PM peak hour (the hour between 4:00 and 6:00 P.M. when traffic volumes are highest on adjacent streets). The counts were conducted in five-minute increments and the temporal distribution of school trips—accounting for the way school traffic is commonly compressed within a 20-to 30-minute portion of an hour—were used in the analysis of Middle School #6. The counts were used to derive peak hour factors (PHFs) for inbound and outbound school trips during each hour.

The counts results were relatively consistent over the three-day effort. The morning peak hour on Tuesday and Thursday occurred beginning at 7:25 and 7:20 A.M., respectively. Due to the late-start time on Wednesday, the peak hour began at 9:40 A.M. and was slightly lower, since some teacher trips would continue to occur in the earlier hour. The school's existing trip generation rates were determined by dividing the average trips for the peak hour within each count period by the student enrollment of 1,014 students. The peak observed rates (based on the highest observed one-day count) were also noted.

Table 2 summarizes the peak hour trip generation rates and peak hour factors derived for PCMS. The ITE rates for Middle/Junior High School (LU 522) are shown for comparison. As shown, the observed trip generation rates are lower than the published ITE rates for all three analysis periods. This is likely due to a higher number of PCMS students who take the school bus compared to the average of middle schools represented by the published data. ISD ridership data indicate that an average of 74% students travel to and/or from PCMS via school bus.[11] Based on the preliminary enrollment area for Middle School #6, about 10% of the expected population is likely to come from the Talus residential development, while the remaining 90% would be from areas farther from the site and would be eligible for transportation. As a result, the school-bus ridership at PCMS is likely similar to what can be expected for Middle School #6. Nevertheless, the published ITE rates were applied for Middle School #6 in order to provide a conservatively high worst-case analysis condition and to account for fluctuations that may occur with inclement weather or other unanticipated factors.

[11] Issaquah School District, July 3, 2019.

Table 2. Trip Generation Summary – Pacific Cascade Middle School

Vehicle Trip Counts	Morning Peak Hour [1]			Afternoon Peak Hour [2]			PM Peak Hour [3]		
	In	Out	Total	In	Out	Total	In	Out	Total
Tuesday, June 11, 2019	204	163	367	84	128	212	61	48	109
Wednesday, June 12, 2019	177	173	350	99	153	252	72	51	123
Thursday, June 13, 2019	203	157	360	99	122	221	24	24	48
Average Day	204	160	364	94	134	228	52	41	93
Average Day Peak Hour Factor [4]	0.53	0.49		0.55	0.51		0.59	0.58	
Observed Trip Rates (vehicle trips per student) [5]	**% In**	**% Out**	**Rate**	**% In**	**% Out**	**Rate**	**% In**	**% Out**	**Rate**
Average Rate	56%	44%	0.36	41%	59%	0.21	56%	44%	0.09
Peak Observed Rate	56%	44%	0.36	39%	61%	0.25	59%	41%	0.12
ITE Rates (vehicle trips per student) [6]	**% In**	**% Out**	**Rate [7]**	**% In**	**% Out**	**Rate**	**% In**	**% Out**	**Rate**
Middle School/Junior High (LU 522)	55%	45%	0.70	46%	54%	0.35	49%	51%	0.17

Source: Number of trips is based on turning movement counts performed at the school's driveways and on SE 247th Place across the street from the school, June 11 through 13, 2019.

1. *The school's morning peak hour began at 7:25 A.M. on Tuesday, 9:40 A.M. on Wednesday, and 7:20 A.M. on Thursday. Reported average is based on Tuesday and Thursday only.*
2. *The school Afternoon peak hour began at 2:15 A.M. on Tuesday, 3:15 P.M. on Wednesday, and 2:10 P.M. on Thursday.*
3. *The commuter PM peak hour on the adjacent street occurred from 4:50 to 5:50 P.M.*
4. *Peak Hour Factor accounts for variations in flow within the peak hour and is used to adjust the total hourly flow to reflect the highest 15-minute period.*
5. *Derived by dividing the observed trip counts by the total enrollment of 1,014 students.*
6. *ITE, Trip Generation Manual, 10th Edition, 2017.*
7. *Morning rate is for the peak hour of the generator.*

Trip Generation Estimates for Middle School #6

Table 3 summarizes the forecast trip generation for the proposed Middle School #6, based on the published ITE rates for middle schools described above and the assumed enrollment of 900 students. As shown, with 900 students, the school is forecast to generate 1,920 vehicle trips per day (960 in, 960 out), with 630 occurring in the morning peak hour, 315 in the afternoon peak hour, and 153 in the commuter PM peak hour.

Table 3. Middle School #6 – Trip Generation Summary

	Students	Daily Trips	Morning Peak Hour			Afternoon Peak Hour			Commuter PM Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
Vehicle Trips [2]	900	1,920	347	283	630	145	170	315	75	78	153
ITE Trip Rates – Trips per student (% in, % out) [2]	---	*2.13*	*0.70 (55% in, 45% out)*			*0.35 (46% in, 54% out)*			*0.17 (49% in, 51% out)*		

1. *Source: Heffron Transportation, Inc., July 2019.*
2. *Source: ITE, 2017.*

5.2.3. Project Trip Distribution and Assignment

The trip distribution patterns were developed based on a combination of the overall residential density within ISD's estimated enrollment area for Middle School #6,[12] shown on **Figure 6**, and traffic patterns observed within the study area.[13] ISD anticipates that about 10% of the student enrollment would come from within the Talus development, and 90% would come from areas primarily to the north, south, and west of the site. Due to the topography of the area and the presence of Cougar Mountain Regional Wildland Park to the west, all trips generated from outside of Talus would access the site from SR 900. Geographic Information System (GIS) data were used to determine the proportion of residences within neighborhoods in the estimated school boundary; Google Maps predictive travel times were utilized to estimate how trips would approach the site based on the respective travel times. Separate project trip distribution patterns and assignments were developed for each analysis hour and also account for typical patterns of some family drivers linking school drop-off and pick-up trips with work trips.

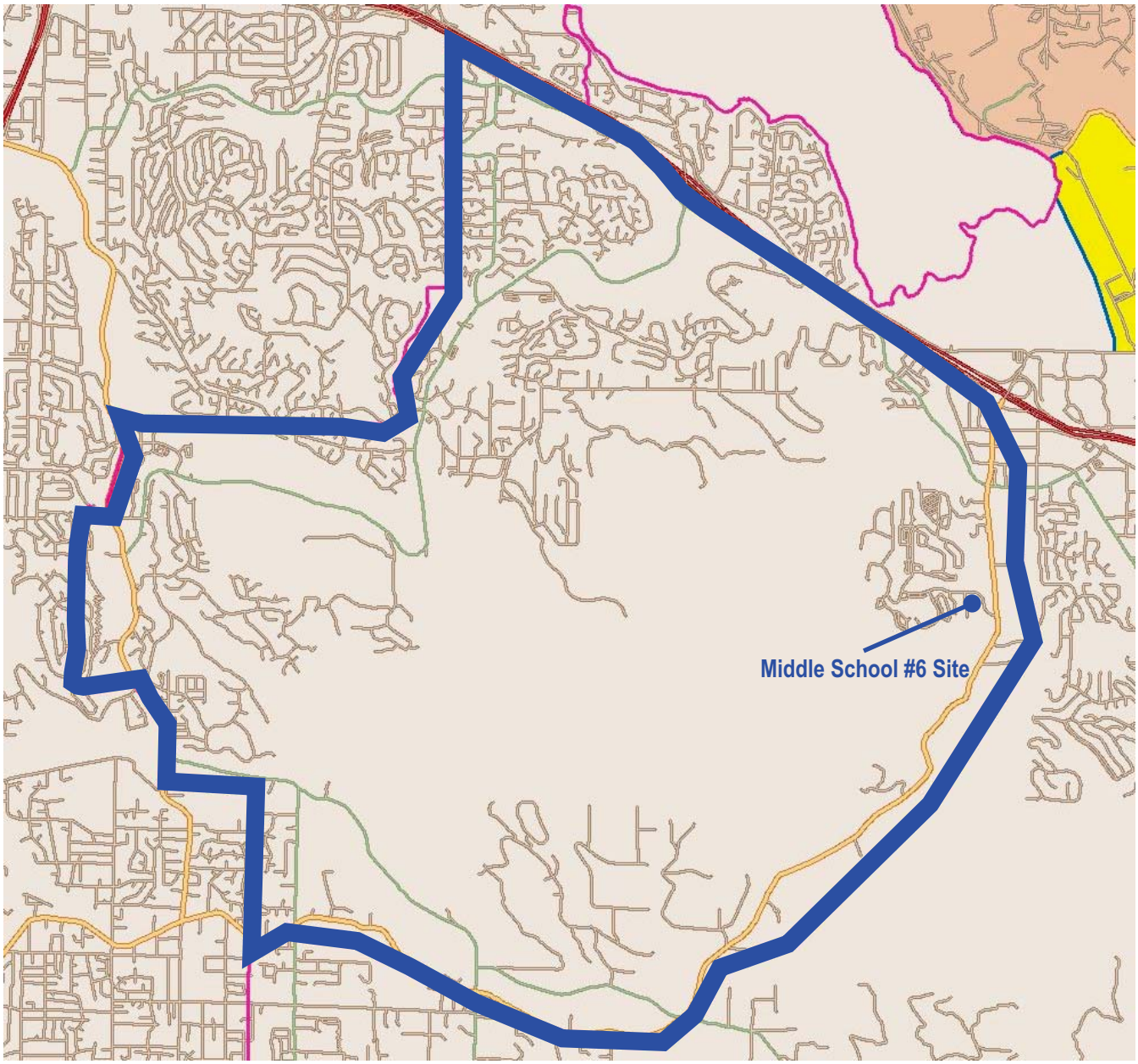
The project trip distribution patterns and net new trip assignments for each peak period are shown on **Figure 7**. ISD expects that the school will be served by 18 school buses. The distribution and assignment shown on Figure 7 assumes that these school buses would all serve the bus-eligible areas outside of the Talus community, and would enter and exit the site via SR 900. (Note, it is possible that the District would also provide bus transportation within the Talus community; this would likely consist of one or two buses traveling between the site and areas to the west, which would have a very small effect on intersection operation.)

5.2.4. Future Traffic Volumes with Development

The net new peak hour school trips were added to the forecast 2023-without-project traffic volumes to project future conditions with the proposed school. **Figure 8** shows the forecast 2023-with-project traffic volumes for the morning, afternoon, and commuter PM peak hours.

[12] ISD provided an estimated enrollment area for Middle School #6; the actual enrollment service area is subject to review and final approval by the School Board.

[13] Peak period turning movement counts were conducted by Idax Data Solutions at SR 900 / NW Talus Drive on Tuesday, June 11, 2019.



Source: Issaquah School District, July 2, 2019

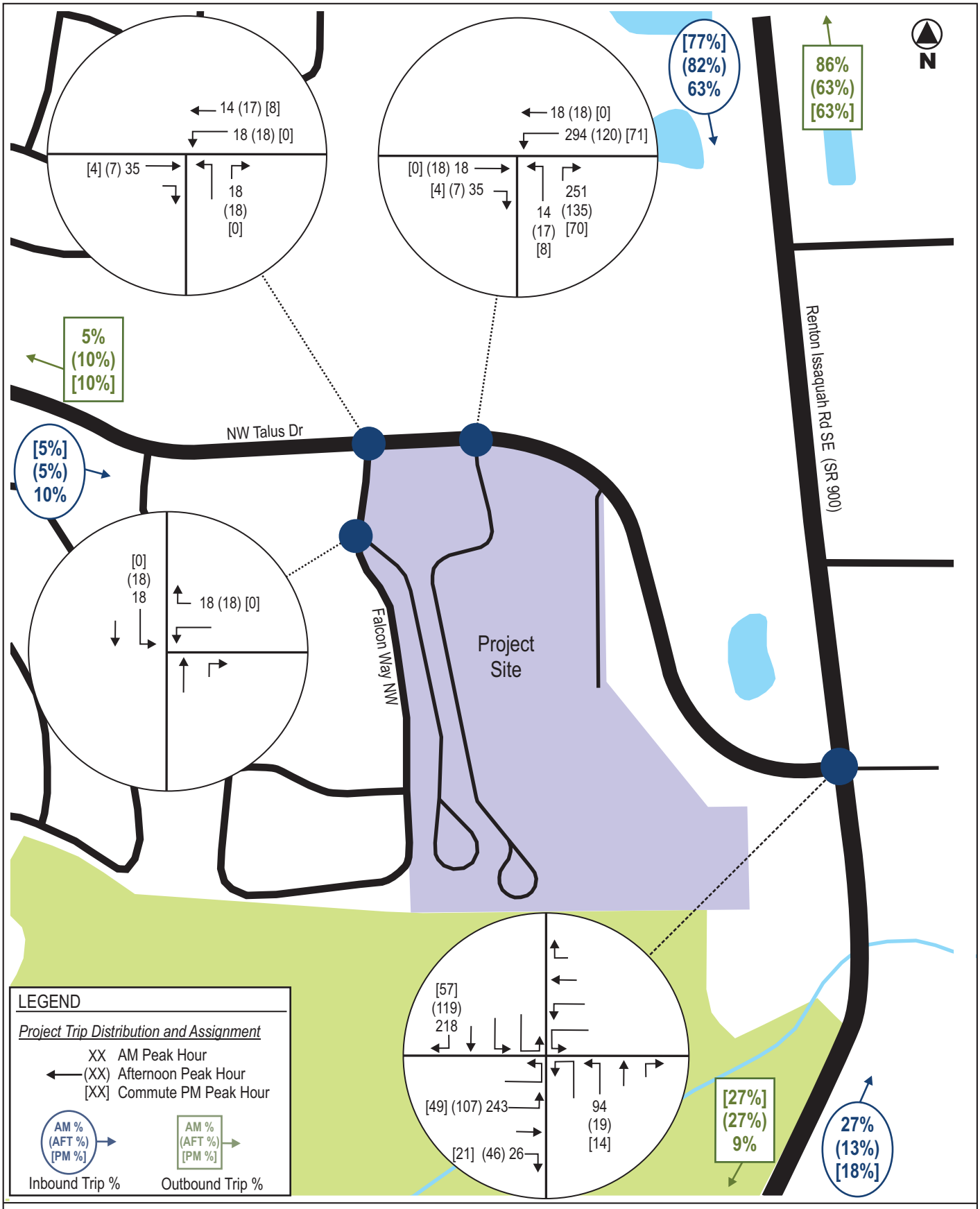
MIDDLE SCHOOL #6
Issaquah School District

Figure 6

Estimated Enrollment Area

heffron transportation inc

12.13.19

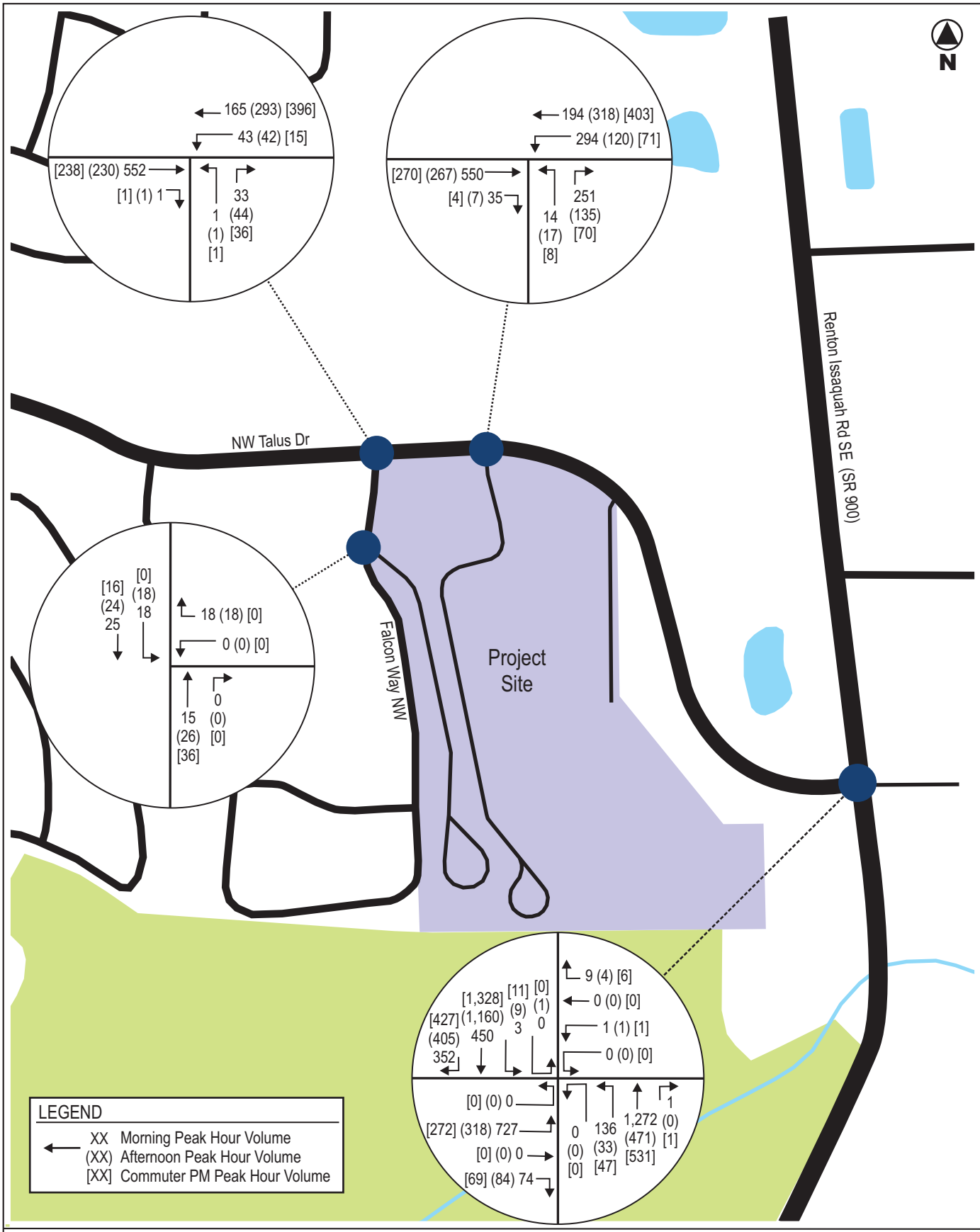


MIDDLE SCHOOL #6
Issaquah School District

Figure 7
Trip Distribution and Assignment
Morning, Afternoon, and PM Peak Hours

heffron transportation inc

12.13.19



MIDDLE SCHOOL #6
Issaquah School District

Figure 8
Future (2023) With-Project Volumes
Morning, Afternoon, and PM Peak Hours

heffron transportation inc

12.13.19

6. TRAFFIC ANALYSIS AND IMPACT

6.1. Operational/Capacity Analysis

Level of service (LOS) analysis was conducted for the study area intersections for the morning, afternoon, and commuter PM peak hour conditions. Level of service is a qualitative measure used to characterize traffic operating conditions. The quality of traffic conditions is graded into one of six LOS designations, "A" through "F". LOS A is the best and represents good traffic operations with little or no delay to motorists. LOS F is the worst and indicates poor traffic operations with long delays. The City has adopted a standard of LOS D for city street intersections. As a designated Highway of Regional Significance, SR 900 has a standard of LOS "E Mitigated."[14]

Levels of service for the study area intersections were analyzed using methodologies presented in the *Highway Capacity Manual (HCM) Sixth Edition.*[15] **Appendix C** includes level of service thresholds and definitions for signalized and unsignalized intersections. Delay calculations rely on complex equations that consider a number of variables. For example, delay at signalized intersections is determined based on a combination of variables including: the quality of progression, cycle length, green ratio, and a volume-to-capacity ratio for the lane group or approach in question. Delay at unsignalized intersections is determined for vehicles that must stop or yield for oncoming traffic. That delay is related to the availability of gaps in the main street's traffic flow and the ability of a driver to enter or pass through those gaps. All level-of-service calculations were performed using the *Synchro 10.3 (Build 122)* traffic operations analysis software coded according to *City Synchro Modeling Guidelines* (*Appendix C* of the referenced *Traffic Impact Analysis Guidelines*). Signal timing at the SR 900/Talus Drive NW intersection was based on the intersection timing card provided by the City. Input data for this analysis, including the signal timing and roadway geometric characteristics, were confirmed during field observations. The analyses consider pedestrian, bicycle, and heavy vehicle (trucks and buses) volumes based on counts.

6.1.1. Operations without the Project

Table 4 summarizes levels of service at the analysis intersections for existing (2019) and future (2023) conditions without the project; the level-of-service reports are provided in **Appendix C**. The table shows that the signalized NW Talus Drive/SR 900 intersection is currently operating at LOS C during the morning peak hour, and LOS B during the afternoon and evening peak hours. All movements at the stop-controlled NW Talus Drive/Falcon Way NW intersection are currently operating at LOS A or B. At the NW Talus Drive / SR 900 intersection, the v/c ratio (traffic volume divided by the lane capacity) for each movement through the intersection is calculated to be 0.78 or lower.

Additional traffic generated by future development growth by 2023 (unrelated to the project) would add delay at the study area intersections, but is not expected to change their overall levels of service, and the v/c ratio for all movements through the NW Talus Drive / SR 900 intersection are projected to remain at 0.81 or lower.

[14] City of Issaquah Comprehensive Plan, adopted in 1995 and most recently amended March 27, 2019.
[15] Transportation Research Board, 2016.

Table 4. Level of Service Summary – Existing and 2023 Without-Project

Intersection	Morning Peak Hour				Afternoon Peak Hour				Commuter PM Peak Hour			
	Existing (2019)		2023 w/o Project		Existing (2019)		2023 w/o Project		Existing (2019)		2023 w/o Project	
	LOS [a]	Delay [b]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Signalized												
NW Talus Dr / SR 900	C	21.1	C	23.9	B	11.1	B	12.2	B	13.3	B	15.5
Maximum v/c Ratio [c]		*0.78*		*0.81*		*0.59*		*0.61*		*0.61*		*0.67*
Stop-Controlled [d]												
NW Talus Drive / Falcon Way NW												
Overall	*A*	*0.7*	*A*	*0.7*	*A*	*1.3*	*A*	*1.0*	*A*	*1.1*	*A*	*0.9*
Northbound Turns	B	11.4	B	12.7	A	9.6	B	10.1	A	9.6	B	10.2
Westbound left turn	A	8.5	A	8.9	A	7.7	A	7.9	A	7.7	A	7.9

Source: Heffron Transportation, Inc., November 2019.

a. LOS = Level of service.

b. Delay = Average seconds of delay per vehicle.

c. Maximum volume-to-capacity (v/c) ratio among all movements through the intersection.

d. For intersections stop-controlled on the minor leg, results are reported for the average of all vehicles that travel through the intersection (overall), and for each movement that must yield to other vehicles that travel through the intersection.

6.2. Traffic Control Needs

Preliminary analyses and simulations of the main site access driveway on NW Talus Drive were conducted assuming stop-control for movements leaving the site. It was determined that the assumed configuration would be inadequate to accommodate peak conditions, which would occur during the school's morning arrival period. Those analyses and simulations found the access driveway would operate at LOS F, and that the queue of westbound vehicles yielding for gaps to turn into the school site could extend to SR 900. As a result, a range of alternative access scenarios, identified collectively with City, ISD, and review consultant input, was identified and evaluated for feasibility and possible effectiveness.

6.2.1. Review of Access Options

The range of access options considered for this review effort consisted of the following:

1. Stop-controlled main Middle School #6 driveway (assumed for initial testing)
2. Roundabout at main Middle School #6 driveway
3. All-way stop at NW Talus Drive / Falcon Way NW (to meter traffic)
4. All-way stop at main Middle School #6 driveway
5. Traffic signal at main Middle School #6 driveway
6. Revising site design to switching school-bus and family vehicle loading areas
7. Traffic signal at NW Talus Drive / Falcon Way NW
8. Ramp meter style control for eastbound NW Talus Drive
9. Direct access to site from SR 900
10. Grade-separated access for main Middle School #6 (underpass)
11. Off-site shuttle (aka, make everyone ride a school bus)
12. Widen eastbound NW Talus Drive to add second lane from west of Falcon Way NW
13. New passenger load/unload on SR 900 with pedestrian bridge and connection to site

Appendix E provides a summary of the 13 potential access options that were considered to best accommodate the projected traffic flows to and from Middle School #6. The options were qualitatively assessed according to the following five criteria: 1) Operational Effect, 2) Environmental Impact, 3) Physical Feasibility, 4) Policy/Standard Compliance, and 5) Cost. Operational analyses were performed for some of the options to support the assessment, as appropriate. A summary of the criteria evaluation is also provided in Appendix E.

Based upon the assessment of access options, it was determined that installation of a traffic signal at the NW Talus Drive/Middle School #6 driveway would best serve the expected traffic flows to and from the school given the available right-of-way, the site's topographical constraints, environmental challenges, and relative costs. Because a traffic signal would be timed to accommodate actual traffic conditions, it would address operational issues during the school's peak arrival and dismissal periods, but during most hours of the day (when little to no school-generated traffic would typically occur) it would have minimal effect on NW Talus Drive operations. However, in order for signalization to meet policy requirements, it would need to meet federally-established traffic signal warrants. The traffic signal warrant analysis is provided in the following section.

6.2.2. Traffic Signal Warrant Analysis

The traffic signal warrant analysis was performed according to guidelines published in the *Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways.*[16] Hourly traffic volumes for a full day, needed to complete the signal warrant analysis, were estimated as follows.

1. Existing volumes on NW Talus Drive were obtained from the three-day 24-hour machine count conducted by Idax Data Solutions from Tuesday, June 11, through Thursday, June 13, 2019.
2. The daily vehicle trips forecast for the pipeline Talus development (summarized previously in Table 1) were distributed in similar hourly proportion to the existing Talus-generated traffic, and added to the existing volumes, to estimate future volumes without the project.
3. School-generated trips (summarized previously in Table 3) were distributed between hours based first upon the peaking characteristics reflected in the peak hour trip estimates and observations at Pacific Cascade Middle School. School-generated trips during off-peak hours were estimated based upon the percent of daily traffic per hour reflected in Middle School/Junior High School (LU 522) hourly trip distribution data, presented in the *Trip Generation Manual*,[17] Appendix A. The school-generated trips were added to the "without project" volumes, to estimate future volumes with the project.

The MUTCD states, "*A traffic control signal should not be installed unless one or more of the factors described in this section are met.*" The nine warrants for traffic signal installation are listed as follows:

- Warrant 1 – Eight-Hour Vehicular Volume (minimum volumes over eight hours)
- Warrant 2 – Four-Hour Vehicular Volume (minimum volumes over four hours)
- Warrant 3 – Peak Hour (minimum volume over a one-hour period)
- Warrant 4 – Pedestrian Volume
- Warrant 5 – School Crossing (adequacy of gaps near school crossing location)
- Warrant 6 – Coordinated Signal System (platooning for one-way or two-way streets)

[16] US Department of Transportation, Federal Highway Administration, 2009.
[17] ITE, September 2017.

- Warrant 6 – Coordinated Signal System (platooning for one-way or two-way streets)
- Warrant 7 – Crash Experience (number and type of accidents)
- Warrant 8 – Roadway Network (for organized traffic flow networks)
- Warrant 9 – Intersection Near a Grade Crossing

If the speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the MUTCD allows a "70% factor" to be applied to Warrants 1 and 2, which reduces the warrant thresholds to 70% of the volumes that are otherwise applied to an intersection. Speed data collected on NW Talus Drive indicate that, while speeding does occur, the 85th-percentile speed does not exceed 40 mph (described in *Section 6.4*, later in this report). However, since NW Talus Drive provides the only route into/out of the Talus community, it is appropriate to consider the intersection as serving an isolated community. Therefore, the 70% factor was applied.

The volumes to assess the three warrants for 2023 "with-project" conditions are summarized in **Table 5**. As shown, both Warrants 2 and 3 are expected to be met for conditions with the project. It should be noted that the MUTCD states for Warrant 3, "*This signal warrant shall be applied only in unusual cases. Such cases include but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time*." Staff confirmed that the City considers school-generated peak hour traffic patterns to meet this definition.[18] Based on operational analyses of the main access driveway with the initially assumed stop-control, the total stopped time delay experienced by the driveway approach would exceed five vehicle hours during the morning peak hour (predicted 47.5 vehicles hours of delay). None of the remaining warrants were determined to be applicable to the intersection for the following reasons.

- Warrant 4 (Pedestrian Volume) and Warrant 5 (School Crossing) are not expected to be met. Although some pedestrian trips would be generated by the school, due to its location, size of enrollment area, and topography of the Talus community, it is expected that most trips to and from the site would occur by vehicle. Pedestrian trips that occur to and from the site are expected to use the sidewalk on the south side of NW Talus Drive and would not need to cross NW Talus Drive at the main site access.
- Warrant 6 (Coordinated Signal System) is not applicable in this location, since the signal is not needed to maintain platooning of vehicles from adjacent signals.
- Warrant 7 (Crash Experience) is not met, based upon historical collision data at the intersection. Historical collision data were obtained from WSDOT and are presented in Table 9, later in this report. The warrant states that five or more reported collisions must have occurred over a 12-month period. The data indicated were a total of 5 collisions recorded in the vicinity of intersection over a 3.5-year period which equates to an average of about 1.4 collisions per year. Therefore, the collision history does not meet the threshold for Warrant 7.
- Warrant 8 (Roadway Network) is not applicable, since the intersecting roadways do not have the characteristics of a "major route" as defined by the warrant.
- Warrant 9 (Intersection Near a Grade Crossing) is not applicable.

[18] The approach to the traffic signal warrant analysis, including consideration as an isolated community and the applicability of the peak hour warrant, was confirmed with City staff at a meeting held on October 15, 2019.

Table 5. Signal Warrant Analysis Summary – 2023 Conditions With Project

Hour Beginning	Major Street Volume (both directions) [a]	Minor Street Volume [a]	Vehicle Volume Warrant Requirements Met? [b]			
	NW Talus Drive	MS 6 Driveway	1A	1B	2	3
12:00 A.M.	37	0	N	N	N	N
1:00 A.M.	15	0	N	N	N	N
2:00 A.M.	16	0	N	N	N	N
3:00 A.M.	11	0	N	N	N	N
4:00 A.M.	42	0	N	N	N	N
5:00 A.M.	113	2	N	N	N	N
6:00 A.M.	422	13	N	N	N	N
7:00 A.M.	925	156	Y	Y	Y	Y
8:00 A.M.	864	166	Y	Y	Y	N
9:00 A.M.	575	13	N	N	N	N
10:00 A.M.	491	10	N	N	N	N
11:00 A.M.	526	13	N	N	N	N
12:00 P.M.	516	9	N	N	N	N
1:00 P.M.	492	12	N	N	N	N
2:00 P.M.	664	152	Y	Y	Y	N
3:00 P.M.	622	70	N	N	N	N
4:00 P.M.	695	61	N	Y	N	N
5:00 P.M.	812	78	N	Y	Y	N
6:00 P.M.	767	64	N	Y	N	N
7:00 P.M.	575	48	N	N	N	N
8:00 P.M.	465	40	N	N	N	N
9:00 P.M.	348	13	N	N	N	N
10:00 P.M.	197	4	N	N	N	N
11:00 P.M.	96	0	N	N	N	N
		Hours Met?	3	6	4	1
		Hours Required	8	8	4	1
		Warrant Met?	No	No	Yes	Yes

Source: Heffron Transportation, Inc., October 2019.

a. Volumes are average of three days of counts conducted June 11 through 13, 2019, with background growth added for pipeline development within the Talus community (178 houses), plus estimated trips generated by the school at its enrollment capacity.

b. Since the NW Talus Drive provides the only route in to/out of the Talus community, the intersection would be considered as serving an isolated community; therefore, MUTCD's 70% factor was applied to the warrant volume requirements.

Based upon the results of the access options assessment, combined with the results of the signal warrant analysis, installation of a traffic signal at the NW Talus Drive/Middle School #6 driveway is recommended and has been incorporated into the proposal. The operational effects of the project with this recommended access configuration are described in the following section.

6.2.3. Signal Operation Parameters

Operational analysis of the recommended mitigation included the effect on level of service, queuing, and travel time through the corridor. The recommended signalization project assumes the following elements.

- The new traffic signal at NW Talus Drive/Middle School #6 driveway would be fully actuated, with green time provided to westbound left-turn traffic (inbound to school) or northbound traffic (outbound from school) only when vehicles are present. During periods with no school-generated traffic, the signal would remain green for traffic on NW Talus Drive.
- The signal would have an overlap phase that would allow westbound left-turn movements (into the site) and northbound right-turn movements (out of the site)—the two heaviest school-generated traffic movements during all peak hours—to occur concurrently.
- The intersection of NW Talus Drive/Falcon Way NW would have "Do Not Block" signage and pavement marking, to reduce the potential for the eastbound queue at the signalized intersection to extend past Falcon Way NW and block entering or exiting vehicles at that location. Although there could be occasional violators, it is expected that signage and pavement marking would be effective in maintaining clearances for the small volume of traffic that utilizes Falcon Way NW.

In addition to installation of a new traffic signal at NW Talus Drive/Middle School #6 driveway, the analysis assumed that the timing for the existing traffic signal at NW Talus Drive/SR 900 would be reoptimized to better accommodate conditions with the school-generated traffic.

6.2.4. Operations with the Project

For future conditions with the project, the potential increases in pedestrian crossing activity as well as the added school bus trips and the peaking characteristics of school traffic (applying the calculated PHFs summarized in Table 2) were accounted for in the operations analyses. **Table 6** summarize 2023 "with-project" levels of service for the study area intersections with the recommended access control configuration. The without-project results are shown for comparison; the level-of-service reports are provided in **Appendix C**

As shown, with installation of a traffic signal, the NW Talus Drive/Middle School #6 driveway intersection would operate at LOS C during the morning peak hour, with a maximum v/c ratio of 0.84. During the afternoon and commuter PM peak hours, the intersection is expected to operate at LOS A.

Although school-generated traffic would increase average delay, the NW Talus Drive/SR 900 intersection is projected to continue to operate at LOS C in the morning peak hour. The v/c for the eastbound left-turn movement is expected to be 0.90; all other movements are projected have v/c ratios below 0.85. During the afternoon and commuter PM peak hours, the intersection is forecast to operate at LOS B, with all movements through the intersection projected to have v/c ratios of 0.72 or lower.

At the NW Talus Drive/Falcon Way NW intersection, project-generated trips would include school buses traveling to and from the bus loading area, and vehicles traveling between the school and the Talus community. The additional school generated trips are projected to increase delay at the intersection. During the morning peak hour, the additional trips are projected to degrade operations of turns from Falcon Drive NW from LOS B to LOS C, but the intersection would still meet the City's standard of LOS D. The Falcon Way NW/ Bus Loop driveway intersection is forecast to operate at LOS A overall and all movements are projected to operate at LOS A during all three peak hours.

Overall, the analysis indicates that the study-area intersections would meet City and WSDOT operational standards with the project.

Table 6. Level of Service Summary – 2023 Conditions With-Project

Intersection	Morning Peak Hour				Afternoon Peak Hour				Commuter PM Peak Hour			
	Without Project		With Project		Without Project		With Project		Without Project		With Project-	
	LOS [a]	Delay [b]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Signalized												
NW Talus Dr / SR 900	C	23.9	C	31.0	B	12.2	B	17.7	B	15.5	B	18.0
Maximum v/c Ratio [c]		*0.81*		*0.90* [d]		*0.61*		*0.72*		*0.67*		*0.71*
NW Talus Dr / MS 6 Dwy	---	---	C	22.1	---	---	A	4.1	---	---	A	3.7
Maximum v/c Ratio	---	---		*0.84*	---	---		*0.33*	---	---		*0.36*
Stop-Controlled [e]												
NW Talus Drive / Falcon Way NW												
Overall	*A*	*0.7*	*A*	*1.6*	*A*	*1.0*	*A*	*1.7*	*A*	*0.9*	*A*	*0.9*
Northbound	B	12.7	C	17.1	B	10.1	B	12.0	B	10.2	B	10.4
Westbound left turn	A	8.9	B	10.2	A	7.9	A	8.7	A	7.9	A	7.9
Falcon Way NW / School Driveway												
Overall	---	---	*A*	*5.2*	---	---	*A*	*4.1*	---	---	*A*	*0.0*
Westbound	---	---	A	9.5	---	---	A	8.6	---	---	A	0.0
Southbound left turn	---	---	A	8.3	---	---	A	8.3	---	---	A	0.0

Source: Heffron Transportation, Inc., December 2019.

a. LOS = Level of service.

b. Delay = Average seconds of delay per vehicle.

c. Maximum volume-to-capacity (v/c) ratio among all movements through the intersection.

d. The maximum v/c (traffic volume divided by the lane capacity) of 0.90 is reported for the eastbound left-turn movement. All other movements have v/c below 0.85.

e. For intersections stop-controlled on the minor leg, results are reported for the average of all vehicles that travel through the intersection (overall), and for each movement that must yield to other vehicles that travel through the intersection.

6.3. Circulation and Queuing

6.3.1. Queuing

Planning research and guidance from several sources suggest providing on-site queue stacking of between 1.2 and 2.0 feet per student[19] (roughly 1,080 to 1,800 feet or 54 to 90 vehicles for this site with up to 900 students). The planned on-site circulation patterns for the proposed school are shown on **Figure 9**. The proposed middle school would have about 1,700 feet of on-site queuing capacity, including a curbside load/unload area about 500 feet in length (which would accommodate 25 vehicles at a time), and 1,200 of additional queuing area (accommodating about 60 additional vehicles) within the entry/exit loop. Overall, this results in an estimated on-site queuing capacity of about 85 vehicles. In addition, the main visitor lot would be expected to have over 40 parking spaces available in the late afternoon (those not used by staff), where family drivers can park and wait for students or walk students from the building to the cars. Combined, the site can accommodate

[19] Keith B. Higgins, PE, TE – Hatch Mott MacDonald, *Retooling School Drop-off/Pick-up Zones to Meet Demand*, WesternITE Meeting Paper 9C, 2010.

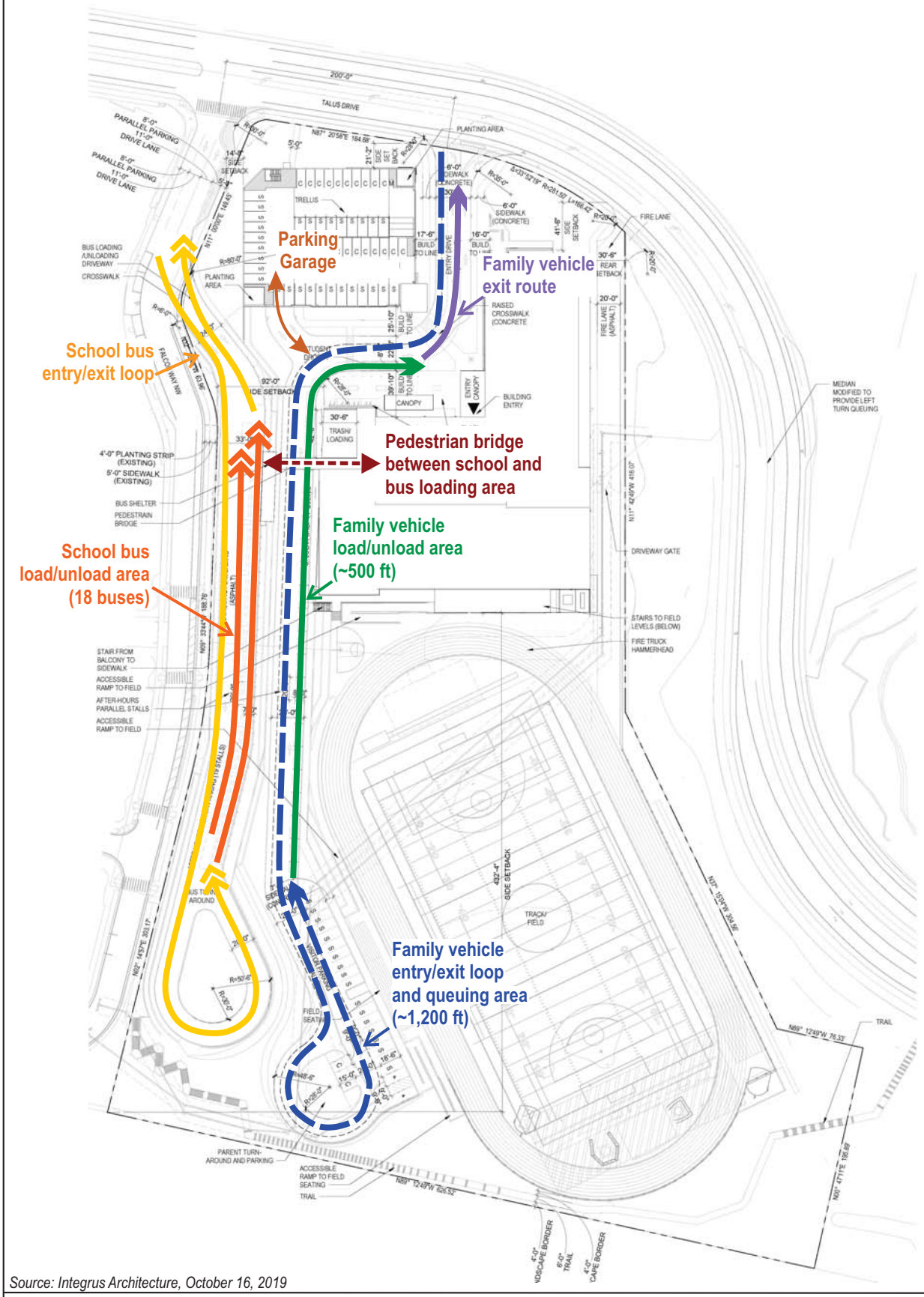
over 125 vehicles without extending beyond the site and spilling onto the adjacent roadway, which is well above the upper end of the referenced guidance. There would be an additional 250 feet to accommodate 10 to 12 departing vehicles between the loading area and NW Talus Drive.

Circulation and queuing for the site—both on-site and off-site)—were evaluated using PTV's Vissim traffic micro-simulation software. Vissim can be applied to simulate complex vehicle interactions on a microscopic level. It allows detailed representation of geometry and individual vehicle behavior to represent realistic localized conditions with animated simulations. Conditions were modeled applying the forecast "with-project" traffic volumes presented in Figure 8, as well as arrival patterns, student load/unload service times, and departure patterns recorded in the detailed counts and observations conducted at Pacific Cascade Middle School (described previously in *Section 5.2.2*).

It is important to note that Synchro models, as described in the previous section, are deterministic; this means that they apply formulas for capacity analysis that result in one specific answer or result. The formulas are based on years of research on driving conditions, and are established in the *Highway Capacity Manual*.[20] The thresholds to determine levels of service (LOS A through LOS F) described in the previous section are based upon these formulas—as are the LOS standards adopted by the City and State—so Synchro models provide the appropriate means to determine intersection level of service and potential project impacts to those operating conditions.

The Synchro analysis is differentiated from Vissim models, which are stochastic. This means that they include a random element that simulates driver behavior. Multiple model runs performed with a defined set of conditions generally produce similar results over the course of an analysis period (e.g. a peak hour); however, they will not necessarily match either other exactly, since individual vehicles react differently under a given set of conditions. Vissim simulation models are most appropriate for evaluating the *interaction* of different elements in a transportation system. For the Middle School #6 analysis, Vissim models were developed to evaluate the vehicle queues that would be generated at and near the school site during the peak morning arrival and afternoon dismissal periods, including interactions between queues generated at the school driveways, and vehicle flow on NW Talus Drive, Falcon Way NW, and SR 900. Vissim model summary reports are provided in **Appendix D**. In addition to producing the queuing analysis measures presented in this report, video animations of traffic flows were developed that illustrate operational and queuing patterns for peak conditions with the school project.

[20] Transportation Research Board, 2016.



Source: Integrus Architecture, October 16, 2019

MIDDLE SCHOOL #6
Issaquah School District

Figure 9

Proposed On-Site Circulation

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12.13.19

Table 7 summarizes the average and 95th-percentile queues (meaning the queue length that has only a 5% probability of being exceeded during the analysis time period (15 minutes for this analysis) resulting from the Vissim simulation analyses for critical movements with the proposed signalized access control configuration. The 95th percentile queue is a useful parameter for determining the appropriate length of turn pockets, but it is not typical of what an average driver would experience.[21] Results are presented for "with-project" conditions for the peak 15-minute period within each of morning and afternoon peak hours.

Table 7. Peak Hour Queuing Conditions With Project

		Projected Queue Length (feet)				
		Morning – Peak 15 Minutes		Afternoon – Peak 15 minutes		
Intersection	Movement	Average	95th Percentile	Average	95th Percentile	Available Storage Length (feet)
NW Talus Dr / SR 900	Eastbound Left-Turn	262	335	126	262	215 – 320 [a]
	Eastbound Right-Turn	263	336	129	265	320 [a]
	Northbound Left-Turn	143	205	33	65	220 [b]
	Southbound Right-Turn	93	154	26	92	400
NW Talus Dr / MS 6 Dwy	Westbound Left-Turn	234	342	85	202	350 [c]
	Northbound	274	495	1,479 [d]	1,846 [d]	1,950 [e]
NW Talus Dr / Falcon Wy NW	Westbound Left-Turn	15	60	10	41	120
	Northbound	247	371 [f]	51	222 [f]	120

Source: Concord Engineering, December 2019.

a. The range of left-turn storage reflects the length of the respective double left-turn lanes. For the right-turn storage, it reflects the point at which the one-lane eastbound approach begins to widen into the three lanes (double left, and one thru-right lane).

b. The marked northbound left-turn lane is about 100 feet in length; however, there is more than 120 feet of additional length, including some within the beginning of the taper, that is of sufficient width to accommodate queued vehicles without blocking northbound through movement. This total is considered as available storage length.

c. The length of the westbound left-turn lane was assumed in the simulation model to be 350 feet in length. However, the actual length would be determined as part of the intersection and signal design.

d. The afternoon northbound queue on the Middle School #6 is projected to occur right around school dismissal when family vehicles are lined up on site waiting for students, and includes the combination of vehicles waiting to pick-up students and vehicles waiting to exit the site after pick-up. It is estimated that the on-site storage capacity would be adequate to accommodate at least 125 vehicles waiting to load/unload plus 10 to 12 vehicles waiting to depart the site. Based upon counts conducted at Pacific Cascade Middle School (with student enrollment of 1,014) which found a maximum afternoon queue of 45 vehicles (equivalent to about 900 linear feet) over three days of observations, and the results of the afternoon simulation modeling, it is expected that the on-site queuing capacity would be adequate for typical afternoon conditions.

e. Includes about 1,700 feet loading/queuing space, and about 250 feet between Talus Drive and the loading area for vehicles waiting to depart the site after drop-off or pick-up.

f. The northbound queue is expected to primarily be generated by exiting school buses; the peak queuing condition would result in buses waiting in the bus loop area until there is space to enter Falcon Way NW.

Based on the simulation results, the proposed access control configuration (with a traffic signal at the NW Talus Drive/Middle School #6 driveway intersection) is expected to accommodate queuing demand during the morning peak hour, when it would be highest. The simulations indicate that the typical queue would be accommodated by the modeled westbound left-turn lane storage lane (assumed in the simulation

[21] TRB & National Cooperative Highway Research Program (NCHRP), *Highway Capacity Manual Applications Guidebook, 2003.*

model to be 350 feet long) during all peak hours. However, it should be noted that the actual length of the westbound left-turn lane would be determined as part of the intersection and signal design; it would be designed to accommodate the expected 95th percentile queue.

Transportation mitigation proposed by the project includes optimization of the timing and phasing of both the proposed new traffic signal and the signal at the NW Talus Drive / SR 900 intersection. With optimization of the signal timings, the 95th-percentile queues are projected to be accommodated within the available lane storage lengths.

In the afternoon, the largest queue on the Middle School #6 site is projected to occur right at school dismissal when family vehicles are lined up on site waiting for students. It is estimated that the on-site storage capacity would be adequate to accommodate at least 125 queued/waiting vehicles, plus an additional 10 to 12 vehicles waiting to depart the site after pick-up. Counts and observations (video and in-person) conducted at Pacific Cascade Middle School (with student enrollment of 1,014) found a maximum afternoon queue of 45 vehicles over three days of observations (June 11 through 13, 2019). Based on these results, and the results of the afternoon simulation modeling, it is expected that the on-site queuing capacity would be adequate for typical afternoon conditions.

During both peak periods, the northbound queue is expected to primarily be generated by exiting school buses; the peak queuing condition would result in buses waiting in the bus loop area until there is space to enter Falcon Way NW.

6.3.2. Travel Time Effect

Travel time through the eastern Talus development was estimated for future conditions without the proposed project, and future conditions with the project and recommended access control configuration. The following approach was applied.

1. Travel time was estimated in both directions between Timber Ridge Way NW (located about 440 feet west of Falcon Way NW) and SR 900, a distance of about 1,700 feet (0.32 mile).
2. Travel time along the street segment was estimated based upon the posted speed limit. For conditions without the project, the segment speed was assumed to be 25 mph. For conditions with the project, the segment speed was assumed to be at the school zone speed limit of 20 mph.
3. Average delay at the signalized intersection(s) was added for the eastbound and westbound movements and account for slowing that may be related to turns at the school access driveway as well as at Falcon Way NW. At SR 900, the westbound delay was estimated based upon the weighted average of the northbound left-turn and southbound right-turn movements.

Travel time increases through the corridor resulting from the school project would be due to: 1) implementation of a school zone speed limit—reducing the speed limit from 25 to 20 mph during school hours would increase travel time through the study segment by about 12 seconds, 2) increases in delay resulting from installation of a traffic signal at the Middle School #6 driveway, and 3) increases in delay resulting from the added school-generated trips through the NW Talus Drive/SR 900 intersection.

The results of the corridor travel time analysis are summarized in **Table 8**. The table shows that the largest travel time increase is expected in the eastbound direction during the morning peak hour, adding about a half-minute (28 seconds) to the average travel time through the corridor. It is noted that while some project features such as the proposed new traffic signal would increase average travel time, re-optimization of the NW Talus Drive/SR 900 is projected to decrease average delay for some movements. For eastbound travel during the other peak hours, and westbound travel during all peak hours, the project is expected to add between 5 and 22 seconds to average travel time through the corridor. It should be noted that these estimates

reflect only peak arrival and dismissal conditions; during most other hours of the day there would be little to no school-generated traffic and the effect of the project on corridor travel time would be minimal.

Table 8. NW Talus Drive Corridor Travel Time Esimate – With and Without Project

Eastbound	Average Segment Travel Time / Intersection Delay (seconds)				Total Travel Time (seconds)
	Talus Drive – Timber Ridge Way to MS 6 Driveway	Talus Drive / MS 6 Driveway intersection	Talus Drive – MS 6 Driveway to SR 900	Talus Drive / SR 900 intersection	
Morning Peak Hour					
With Project [a]	22	27	36	44	129
Without Project	18	---	29	54	101
Estimated Change	4	27	7	-10 [b]	28
Afternoon Peak Hour					
With Project	22	9	36	33	100
Without Project	18	---	29	31	78
Estimated Change	4	9	7	2	22
Commuter PM Peak Hour					
With Project	18	8	29	52	107
Without Project	18	---	29	55	102
Estimated Change	0	9	0	-3 [b]	5
Westbound	**Average Segment Travel Time / Intersection Delay (seconds)**				**Total Travel Time (seconds)**
	Talus Drive / SR 900 intersection	Talus Drive – SR 900 to MS 6 Driveway	Talus Drive / MS 6 Driveway intersection	Talus Drive – MS 6 Driveway to Timber Ridge Way	
Morning Peak Hour					
With Project	18	36	1	22	77
Without Project	19	29	---	18	66
Estimated Change	-1 [b]	7	1	4	11
Afternoon Peak Hour					
With Project	5	36	2	22	65
Without Project	3	29	---	18	50
Estimated Change	2	7	2	4	16
Commuter PM Peak Hour					
With Project	11	29	1	18	58
Without Project	7	29	---	18	48
Estimated Change	4	0	1	0	10

Source: Heffron Transportation, Inc., December 2019.

a. "With Project" estimate based upon conditions with recommended mitigation.

b. Travel time improvements under "with project" conditions reflect reductions in delay for some movements resulting from optimization of the Talus Drive / SR 900 traffic signal.

6.4. Safety Analysis

6.4.1. Historical Collisions in Study Area

Collision data for the study area intersections and roadway segment along the school frontage were obtained from WSDOT and are summarized in **Table 9**. The data reflect the period between January 1, 2016, and June 28, 2019 (about 3.5 years), and are provided in **Appendix F**.

Table 9. Collision Summary

Intersection	Rear-End	Side-Swipe	Right Turn	Left Turn	Right Angle	Ped / Cycle	Other [a]	Total for 3.5 Years	Average/ Year
NW Talus Dr / SR 900	5	0	0	0	1	1	0	7	2.0
NW Talus Dr / Falcon Way NW	0	0	0	0	0	0	0	0	0.0
Roadway Segment	**Rear-End**	**Side-Swipe**	**Right Turn**	**Left Turn**	**Right Angle**	**Ped / Cycle**	**Other [a]**	**Total for 3.5 Years**	**Average/ Year**
NW Talus Dr between Falcon Wy NW and SR 900	0	0	0	0	0	0	5	5	1.4

Source: WSDOT, July 2019. *Reflects collision data reported for the 3.5-year time period from January 1, 2016 through June 28, 2019.*

a. Other collision types consist of vehicle striking a tree, stump, or light pole.

As shown, seven collisions (an average of 2.0 collisions per year) were reported at the NW Talus Drive/SR 900 intersection during the study period. Although the highest number were rear end collisions, they occurred in all directions, and were identified with varying contributing factors (driver distraction, inattention, following too closely, exceeding a reasonable safe speed). One collision involved a pedestrian. No collisions resulted in a fatality. The reported collisions are characteristic of a high-volume arterial intersection and do not reflect unusual safety patterns. No collisions were reported at the NW Talus Drive/Falcon Way NW intersection during the study period.

Five collisions (an average of 1.4 collisions per year) were reported on NW Talus Drive between Falcon Way NW and SR 900. All five collisions occurred in wet or icy conditions, involved a vehicle striking a stationary object (e.g., tree or light pole), and were attributed to exceeding a reasonable safe speed. Four were recorded as resulting in no apparent injury and one recorded as resulting in a possible injury.

The three-day machine counts referenced previously (conducted on NW Talus Drive east of Falcon Way NW, from Tuesday, June 11 through Thursday, June 13, 2019, and provided in Appendix B) also collected speed data. The data indicated an average speed of 29.5 miles per hour (mph) in the eastbound direction and 29.3 mph in the westbound direction, which is between 4 and 5 mph above the posted speed limit of 25 mph. The 85th percentile speeds (meaning that 85% of drivers travel at that speed or lower) are between 8 and 9 mph above the speed limit in each direction—recorded as 33.2 mph in each direction. The data indicate that drivers traveling into and out of the Talus development regularly exceed the posted speed limit of 25 mph.

It is recommended that with the school project, that ISD work with the City to implement a school zone speed limit of 20 mph, with flashing beacons when in effect, along the segment of NW Talus Drive adjacent to and approaching the school. This would improve safety conditions on NW Talus Drive, and also provide traffic calming during periods of peak school activity that would help meet the Talus community's goal of lowering vehicle speeds through this segment of the corridor.

Although the traffic signal has been incorporated into the proposal to address traffic operational and queuing needs, its presence could also have some effect in slowing down traffic through the corridor. The introduction of a new signalized intersection at the main site access driveway is expected to reduce the likelihood of angle collisions, which can be more severe in terms of injury and property damage. However, signalization can result in increased numbers of less-severe rear-end collections.

6.4.2. Sight Distance Analysis

Entering and stopping sight distances at the access driveways were reviewed. Sight distance is the distance along a roadway throughout which an object of specified height or another vehicle is continuously visible to a driver. The sight distance area should be clear of obstructions that might block a driver's view of an obstruction in the road or potentially conflicting vehicles.

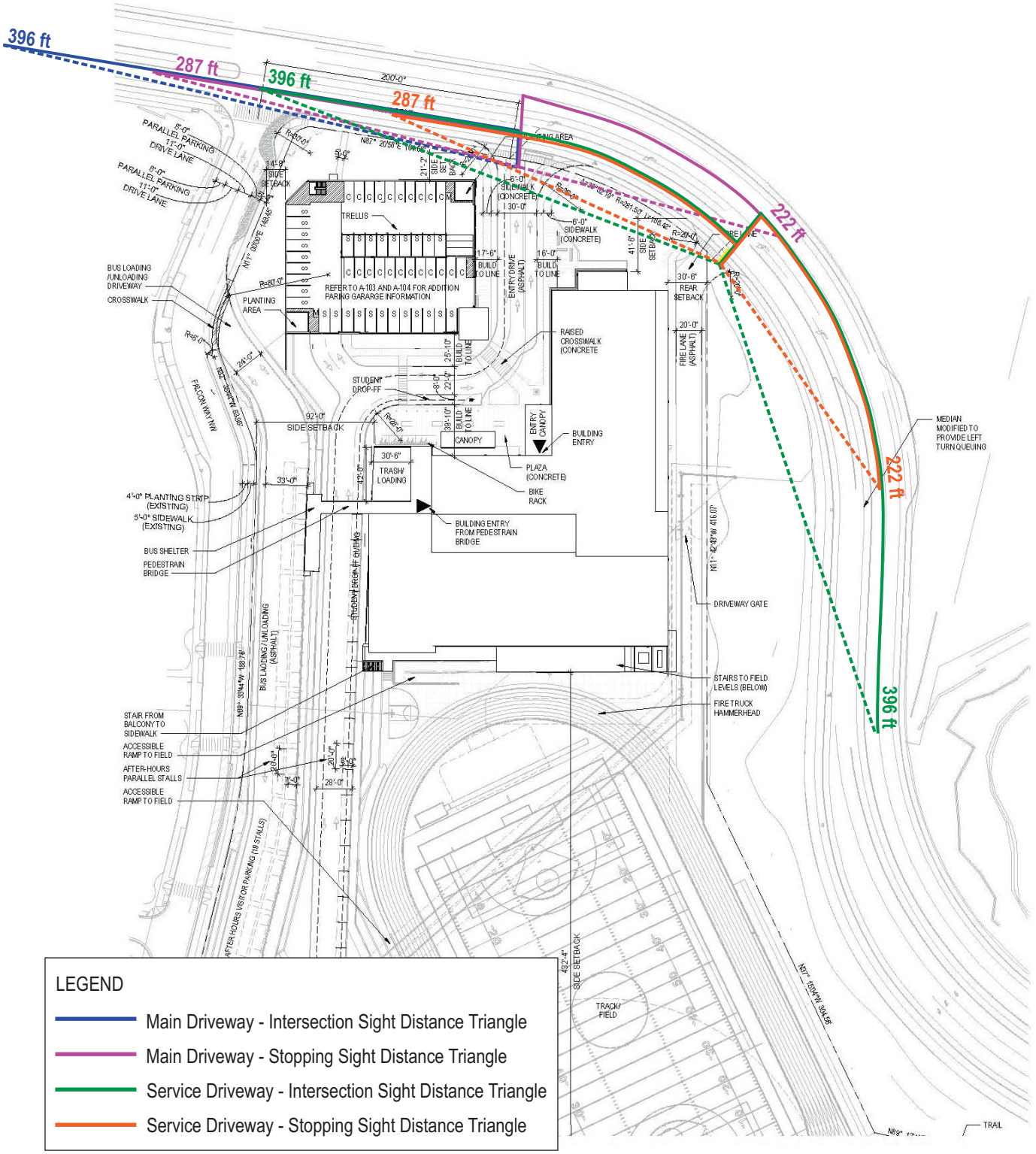
Section A of the Design chapter of the *City of Issaquah Street Standards (Transportation)*[22] requires that all sight distances at intersections be in accordance with the latest edition of the Washington State Department of Transportation's *Design Manual*.[23] The requirements in the *Design Manual* are based on roadway design speeds. Section G of the City's *Street Standards* list the design speed for Collector Arterials (the designation of NW Talus Drive) as 35 mph. Therefore, the minimum required sight distance values were determined based on the 35-mph design speed and considered the grade of NW Talus Drive at the access points (which is about 9%--negative or downhill for eastbound travel and positive or uphill for westbound travel). Minimum stopping sight distance values are presented in Exhibit 1260-2 of the *Design Manual*, which lists a minimum of 287 feet for a 35-mph roadway (design speed) with a 9% downgrade (to the west) and 222 feet for a 35-mph roadway with a 9% upgrade (to the east).

For intersection sight distance, the driver of a vehicle that is stopped and waiting to cross or enter a through roadway needs obstruction-free sight triangles in order to see enough of the through roadway to complete all legal maneuvers before an approaching vehicle on the through roadway can reach the intersection. WSDOT *Design Manual* Exhibit 1310-19a is used to determine minimum intersection sight distance along the through roadway. Both references indicate that at intersections controlled by traffic signals, minimum sight distance (and sightline setback) is required for right-turning vehicles (left-viewing sightline). Based on the published equation, design speed, and adjust time-gap value, the minimum required intersection sight distance is 396 feet (the City's minimum left-viewing sightline from the Table in Section C-1 is 390 feet).

To evaluate sight distance for the proposed main site access, sight triangle guidance from the *Design Manual* and the City's *Street Standards* was applied. A sight triangle is an area that should be free of obstructions that might block a driver's view of potentially conflicting oncoming vehicles at an intersection. The dimensions of the legs of the sight triangle should allow for a stopped driver on a driveway to enter the main roadway, without causing oncoming vehicles to slow down or stop. Adequate sight triangles are an operational consideration because they would allow vehicles to enter the traffic stream on NW Talus Drive without impeding or slowing other vehicles on the roadway.

According to City standards, sight-line setbacks are lines joining a point in the center of the minor street approach lane, 14.5 feet back from the edge of the through-street traveled way to points in the centers of through-street approach lanes, which are back from the center of the intersection at prescribed distances. The stopping sight distance and intersection sight distances for the proposed new main (signalized) driveway and access-controlled emergency/service driveway on NW Talus Drive are shown on **Figure 10**.

[22] City of Issaquah, Department of Public Works, October 15, 2010
[23] WSDOT, M 22-01.17, September 2019.



MIDDLE SCHOOL #6
Issaquah School District

Figure 10
Sight Distance Triangles at Proposed School Driveways

heffron transportation inc

12.13.19

The figure shows that no project elements would obscure sight distance at either driveway intersection. The emergency/service driveway would remain closed to vehicle traffic except for occasional use by emergency vehicles or maintenance vehicles. Turns are generally expected to be limited to left in and right out. The District should commit to periodically checking vegetation within the sight triangles and trim or remove any obstructions.

6.5. Driveway Spacing

Minimum spacing requirements for intersections and driveways are established in Section A of the City's *Street Standards*.[24] Because NW Talus Drive is a Collector Arterial, the minimum spacing for driveways is 600 feet.

The steep grades at and adjacent to the site, combined with the horizontal curvature of the NW Talus Drive frontage and proximity to SR 900, severely constrain the feasible locations for site access. If the main driveway were located to meet a minimum 600-foot spacing with Falcon Way NW, it would be located on a steep slope within a horizontal curve, with very limited sight distance. Additionally, the site does not have adequate frontage length to support provision of a main access driveway and emergency access driveway at the City's desired spacing. The proposed main driveway is located at approximately the same location as an existing temporary site access, about 200 feet east of Falcon Way NW. Because the proposed driveway spacing is less than 600 feet, a deviation from the City standard will be required.

Guidelines for standard deviations are provided in Section O of the Standards/Requirements section of the City's *Street Standards*.[25] These guidelines state that the decision to grant, deny, or modify the proposed deviation shall be documented and be based upon evidence that the request can meet three criteria, described and evaluated as follows.

1. *The deviation will achieve the intended result in equivalent or superior design.*

   The proposed main driveway location would intersect with a section of NW Talus Drive with minimum horizontal curvature and adequate sight distance. Aside from the deviation from spacing requirements, it would be constructed to meet all other City design standards for width, slope, and curb radii.

   Standard practice for school design encourages separating school bus and passenger vehicle access as much as possible. Since Falcon Way NW is a local access street with low traffic volumes (peak hour volumes are projected to range between 75 and 90 vehicles per hour or an average of 1 vehicle per one to two minutes), it is best suited for the lower-volume school-bus access.

   A separate emergency-access/service driveway for the fire lane (east of the school building) is proposed on NW Talus Drive, about 200 feet east of the main driveway. This access is planned for use only by emergency vehicles and occasional service vehicles, and is planned to have access control (e.g. gates and/or removable bollards), so would have little to no traffic on a typical day. The Middle School #6 main driveway is expected to experience higher traffic volumes during the peak morning arrival and afternoon dismissal periods, it would typically have lower volumes during the other hours of the day.

   Although the approximate 200-foot spacing of the three access points (Falcon Way NW, Middle School #6 main driveway, Middle School #6 emergency access road) would be less than the City guidelines, their respective lower volumes (Middle School #6 during off-peak hours and the other two facilities during all hours of the day) would result in minimal potential conflict among them. Addi-

[24] City of Issaquah, October 15, 2010
[25] Ibid.

tionally, the area across NW Talus Drive from the access points is undeveloped, so there are no driveways across the street, which further minimizes the potential for conflicts between driveways. With adherence to City design standards combined with the low potential for conflicts with adjacent driveways, the deviation will achieve and equivalent driveway design to a driveway that meets the City spacing standards.

2. *The deviation addresses public safety and operation.*

   Analysis presented in this report demonstrates that with recommended and proposed traffic signal in place, the proposed main access driveway would address operational and safety needs. As summarized in Table 6, the driveway intersection is projected to operate at LOS C during the morning peak hour and LOS A during the afternoon and commuter PM peak hours; operations would be better than the City's adopted LOS standard. Additionally, as summarized in Table 7, estimated vehicle queues generated at the driveway intersection could be accommodated with planned lane storage capacity and are not expected to impede operations on NW Talus Drive. As shown on Figure 11, the driveway would meet minimum sight distance requirements. The presence of the proposed traffic signal at the driveway, combined with the recommended school zone speed limit of 20 mph, would help calm traffic through the corridor during the hours of school operation. For these reasons, the deviation would address public safety and operation.

3. *The deviation will not adversely affect how well the surrounding nearby public facilities can be maintained.*

   There is a City of Issaquah Pump Station located on the north/east side of NW Talus Drive across from the project site with a pull-out access area. Other than the pump station and the public street system, there are no other public facilities near the site. The proposed access (if approved with the requested deviation) would not change access to the pump station and would not adversely affect how any other public facilities can be maintained.

The analysis completed for the proposed Middle School No. 6 project, as described above, indicates that the proposed driveway spacing would result in an equivalent design that address public safety and operation, and would not adversely affect nearby public facilities, and therefore would meet City requirements for the proposed deviation from standards.

6.6. Evaluation of Transit, Bicycle and Pedestrian Facilities

As described previously, the site is not directly served by public transit. The nearest transit stop is located at the Issaquah Transit Center, located approximately one mile to the north on SR 900. However, the school would be served by an estimated 18 yellow school buses. A pedestrian bridge would be provided between the bus loading area and the school building, so students would not need to cross vehicle drive aisles.

The study-area arterials (NW Talus Drive and SR 900) have a sidewalk on one side. The NW Talus Drive/SR 900 intersection has crosswalks with pedestrian signals across its west and south legs. Falcon Way NW has sidewalks on both sides, and crosswalks at several locations along its length. Design of the new traffic signal at NW Talus Drive/Middle School #6 driveway would meet Americans with Disabilities Act (ADA) standards, and would provide signalized pedestrian crossing of the school driveway. There is a painted bicycle lane in each direction on NW Talus Drive. Although some pedestrian trips would be generated by the school, due to its location, size of enrollment area, and topography of the Talus community, it is expected that most trips to and from the site would occur by vehicle. However, there are pedestrian and bicycle facilities in place to accommodate non-motorized trips. The project also proposes to construct a

trail along the south side of the site that would provide connection between NW Talus Drive and Falcon Way NW, consistent with the objective identified in the Talus Trails Plan (IMC § 18.19C, Figure 4). The project is not expected to result in adverse impacts to transit, bicycle or pedestrian facilities.

6.7. Parking Analysis

The proposal would provide on-site parking with 122 spaces (99 spaces within a garage, and 23 surface parking spaces), plus an additional 40 stalls in load/unload areas that would be available for off-peak hours use, for a total of 162 parking stalls.

The *Central Issaquah Development and Design Standards* (CIDDS)[26] require a parking supply of 187 stalls for the proposed school (this total includes an allowed reduction for providing electric vehicle charging stations). Since the project proposes to provide 162 parking spaces, an Administrative Adjustment to Standards (AAS) will be required. At the direction of the City, parking analysis to support the AAS was prepared under a separate cover.[27] It is provided in **Appendix G**. The analysis found an estimated demand of 81 vehicles for Middle School #6, which could be accommodated by the planned on-site supply of 122 spaces. On typical school days, an average of 41 spaces are expected to remain unused and would be available for occasional daytime events or for family drivers awaiting afternoon dismissal; during midday, the additional 40 spaces in the student loading areas would also be available, for a total of 81 spaces.

The types and ranges of expected events at the school were detailed in the referenced AAS Parking Analysis and would include scholastic events, performances, athletics, and business meetings. Parking demand would vary depending on the events, and the parking analysis found that most types of events could be accommodated by the proposed parking supply. For all events anticipated to have 300 or more attendees, it is recommended that the District and School implement parking management measures to ensure that parking overspill does not occur on nearby streets.

6.8. Short-Term Impacts from Construction

Construction of the new building is planned to begin in spring 2020. The new school is planned to be complete for occupancy by fall 2021. The proposed project site is a balanced cut and fill site. The estimated cut is 110,000 cubic yards (cy) and the estimated fill is 105,000 cy. On-site soils will be used for fill material to the extent feasible significantly reducing the need to import or export material. Assuming some on-site material may not be suitable for use, it is estimated that approximately 18,000 cy of material would be removed from the site and 8,900 cy would be delivered. Assuming an average of 20-cubic yards per truck (truck/trailer combination), the excavation and fill would generate about 2,690 truckloads (1,345 trucks in and 1,345 trucks out). This activity is expected to occur over about 21 weeks (105 work days). This would correspond to about 26 truck trips per day and an average of 3 to 4 trips per hour during a typical eight-hour construction work day. This volume of truck traffic would be noticeable to nearby residents, but is not expected to result in significant impacts to traffic operations in the site vicinity.

The construction of the project would also generate employee and equipment trips to and from the site. It is anticipated that construction workers would arrive at the construction site before the morning peak traffic period on local area streets and depart the site prior to the commuter PM peak hour; construction work shifts for schools are usually from 7:00 A.M. to 3:30 P.M., with workers arriving between 6:30 and 6:45 A.M. The number of workers at the project site at any one time would vary depending upon the construction element being implemented. Parking for construction personnel would be provided within the site.

[26] City of Issaquah, CIDDS, Section 8.0 Parking Standards, Table 8.10-1, last updated 10-25-17 (Ordinance 2809).
[27] Heffron Transportation, Inc., Issaquah Middle School #6, Parking Analysis, October 21, 2019.

It is recommended that the school require the selected contractor to develop a construction management plan (CMP) that addresses traffic and pedestrian control as well as construction employee parking during the entire school construction effort.

7. MITIGATION AND RECOMMENDATIONS

Based on the extensive analysis prepared for the proposed Middle School #6 project, the following physical measures have been incorporated into the proposal.

A. **Traffic Signal at Main Driveway** – The project would design and install a traffic signal at the NW Talus Drive/Middle School #6 main driveway intersection. The traffic signal is planned to be fully actuated, with green time provided to westbound left-turn traffic (inbound to school) or northbound traffic (outbound from school) only when vehicles are present. During periods with no school-generated traffic, the signal would remain green for traffic on NW Talus Drive. The signal is planned to have an overlap phase that would allow westbound left-turn movements and northbound right-turn movements (the two heaviest school-generated traffic movements during all peak hours) to occur concurrently. Signal design and channelization requirements will be coordinated with the City if Issaquah. The length of the westbound left-turn lane would be determined as part of the intersection and signal design; it would be designed to accommodate the expected 95th percentile queue for the highest volume period. Construction of the traffic signal would include infrastructure needed to provide interconnection with the signal at NW Talus Drive/SR 900, either at the time of installation or in the future if warranted by traffic conditions.

B. **Signage/Pavement Marking at NW Talus Drive/Falcon Way NW** – The project would install "Do Not Block" signage and pavement markings at the NW Talus Drive/Falcon Way NW intersection, to reduce the potential for the eastbound queue at the signalized intersection to extend past Falcon Way NW and block entering or exiting vehicles at that location.

C. **NW Talus Drive/SR 900 Signal Re-optimization** – As part of the signal design effort, the NW Talus Drive/SR 900 signal timing would be optimized to account for school-generated traffic.

D. **School-Zone Speed Limit** – ISD would work with the City to implement a school zone speed limit of 20 mph, with flashing beacons when in effect, along the segment of NW Talus Drive adjacent to and approaching the school. This would improve safety conditions on NW Talus Drive, and also provide traffic calming during periods of peak school activity that would help meet the goal of lowering vehicle speeds through this segment of the corridor.

E. **Sight-Triangle Maintenance** – The District would commit to periodically checking vegetation within the sight triangles and trim or remove any obstructions.

In addition to the physical measures listed above that have been incorporated into the project proposal, the following operational measures have been identified to minimize the potential traffic-related impacts of the proposed Middle School #6 project.

F. **Construction Management Plan (CMP)** – The school would require the selected contractor to develop a construction management plan (CMP) that addresses traffic and pedestrian control during school construction. The CMP should define truck routes, lane closures, walkway closures, and parking disruptions, as necessary. To the extent possible, the CMP should direct trucks along the shortest route to arterials and away from residential streets to avoid unnecessary conflicts with resident and pedestrian activity. The CMP may also include measures to keep adjacent streets clean on a daily basis at the truck exit points (such as street sweeping or on-site truck wheel cleaning) to reduce tracking dirt offsite. The CMP should identify parking locations for the con-

struction staff; to the extent possible, construction employee parking should be contained on-site or at an off-site location with worker shuttles.

G. **Transportation Management Plan (TMP)** – Prior to the school opening, the District and school principal would develop and establish a Transportation Management Plan (TMP) to educate families about transportation options as well as the access and load/unload procedures for the site layout. A component of the TMP should identify the walk area for the school and show the safe walk routes within that area. The TMP should communicate to families and staff the constrained neighborhood conditions that offer no off-site load/unload or parking locations. It should educate families on the ways to reduce congestion at and around the school including reduced automobile demand and encourage school bus ridership and carpooling.

   The plan would define clear procedures and travel routes for family vehicles and instruct family drivers not to fully or partially block travel lanes with queued or waiting vehicles.

   The TMP would be provided via all typical school communication methods and provide consistent information across each. These may consist of a school website, PTA social media outlets, student mail, parent e-mail lists, and paper reminders as appropriate.

   The plan would include parking guidelines, as well as reminders about observing speed limits and the parking only on the school site or in designated off-site locations during special events.

   The TMP would be provided to the City for review prior to issuance of either the building permit or certificate of occupancy. The actual timeline of delivery would be determined by the City.

H. **School-Event Management Plan** – The school would develop a school event management plan for medium and large event conditions. The plan would identify, in advance, the number and frequency of large-attendance events expected each school year and include a neighborhood communication component to inform nearby neighbors of large events. The plan would be updated annually (or as events are scheduled) and would provide information about the dates, times, and rough magnitude of attendance. The communication would be intended to allow neighbors to plan for the occasional increase in site activity that would occur with large events. The communication plan would also provide contact information for a school or ISD official to whom residents can directly report concerns related to neighborhood traffic circulation, parking, or other transportation-related issues.

   Parking management measures are expected to be needed for evening events with expected attendance of more than 300 persons. ISD and the school would develop and implement an event-parking management plan to minimize or avoid parking impacts associated with large events. The following measures or combinations of measures could be incorporated into the event parking management plan.

   1. ***Identify an off-site parking location for large events.*** The District could potentially work with Sound Transit to utilize parking at the Issaquah Transit Center, located less than one mile to the north of the school site at SR 900/Newport Way NW, or lease parking from a vicinity business that is closed in the evening and has parking supply available.
   2. ***Provide a shuttle*** between the off-site parking and the school during large events. This would likely be provided using District yellow school buses.
   3. ***Develop a parking permit system*** for each large event that would identify who would be allowed to park on site and who would be required to park off site. No more than 162 on-site permits should be issued for each event (including parking for attendees and staff,

and accounting for accessible stalls). The priority for on-site parking could be rotated (e.g., by grade or alphabetically) between events. In addition to managing the number of vehicles accessing the school campus to park, this type of system could incentivize car-pools between the campus priority and non-priority permit holders for a given event.

4. ***Provide staff enforcement of permit restrictions*** at on-site parking entry points. (Vehicles entering to drop students off without parking would be allowed, regardless of their permit group).
5. ***Develop a parking communication plan*** that would be distributed to all school faculty, staff, and families prior to the start of the school year, and would be available to the school population and other community members via the school's web site. In addition to detailing the parking procedures for larger events, the plan should emphasize the school's "good neighbor" policies by which all school-generated parking would occur on campus or at the designated off-site location. The plan should also provide contact information for a school official to whom any questions or complaints related to parking can be directed.
6. ***Separate large events between different evenings*** to the extent feasible (e.g. separate by one or more grade level) to reduce the number of events for which permit management and shuttle service would be required.
7. ***Hold 8th Grade Promotion off-site or in the evening*** instead of the school day; this would reduce overall parking demand by separating it from school-day parking demand, and could allow higher vehicle occupancies with more family members traveling from home instead of work places. There would also be more off-site parking options in the evening compared to a weekday. Alternatively, the District could consider holding the ceremony at an off-site facility that has capacity to accommodate the anticipated size.
8. ISD and the school could also explore potential use of the athletic field to accommodate overspill parking for some large events that do not use the field. This would require management measures, including use of flaggers for traffic control on the field and at the Talus Drive access, which would be determined in coordination with the City if the option were to be pursued.

The School-Event Management Plan would be provided to the City for review prior to issuance of either the building permit or certificate of occupancy. The actual timeline of delivery would be determined by the City.

I. **Annual Monitoring of Queuing and Event Parking** – The ISD would develop and implement a traffic queuing and event parking monitoring plan that would include driveway traffic counts, queuing counts, and parking counts on typical school days and during events. This effort would also include an assessment of the effectiveness of the current TMP and Event-Management Plan. A report would be provided to the City for review annually in the spring, allowing City staff the time to review the findings prior to the start of the following school year. The queuing monitoring would be conducted using video-camera data collection at the site access driveways and along the site frontages combined with in-person observations. The monitoring would capture the morning arrival and afternoon dismissal periods (estimated at up to one hour each day) over the course of three school days during spring for two consecutive years. The event-parking monitoring effort would consist of in-person parking demand counts at the identified school-event parking locations as well as all on-street parking in the area surrounding the school within an 800-foot walking distance of the site. The event-night observations would be conducted for a minimum of three evening events planned for the school year that are expected to draw the largest after-school audiences. In addition to the event-night parking counts, parking demand counts would be performed

at on-street locations on two non-event nights in order to provide a comparison and to determine school-related demand, if any.

If the monitoring report identifies off-site impacts due to parking, queuing, or other transportation issues, additional strategies the ISD would implement to address those issue would also be identified. If neighbor complaints and/or monitoring by ISD or school staff indicates the above measures are not adequately addressing concerns, additional measures could include one or more of the following.

J. **Stagger Morning School Bus Departures** – Schedule morning school buses, or encourage school bus drivers to stagger their departures after unloading students, to reduce the occurrence of departing school bus queues extending from Falcon Way NW into the school bus loading area.

K. **Later School Start Times** – Implement the later school start time every day instead of just Wednesdays, to minimize the overlap of the school's morning peak hour and the commuter morning peak hour traffic.

L. **Additional School Buses** – Increase the number of school buses utilized to transport students to and from school, if added routes or service areas could reduce auto trips.

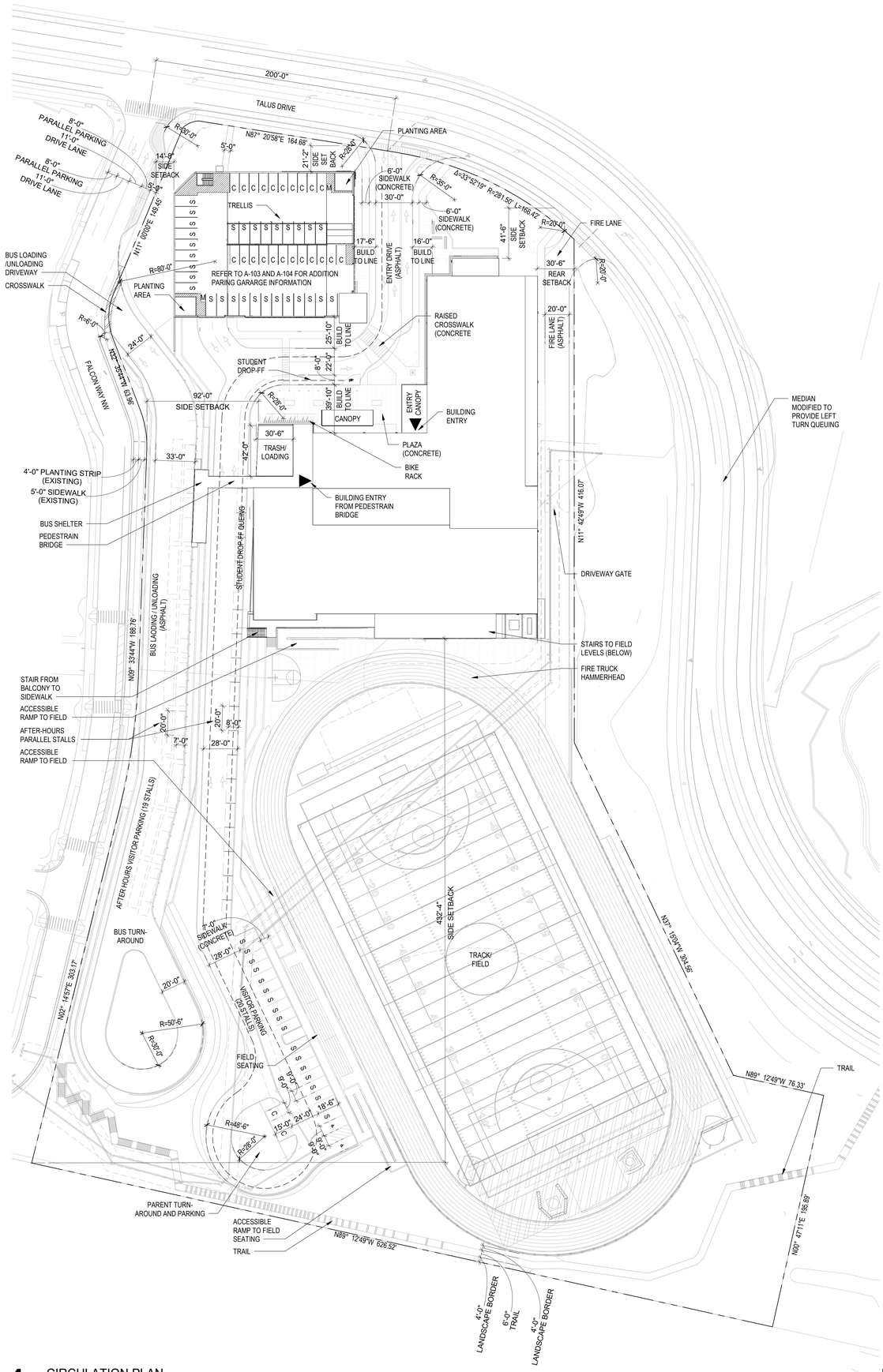
M. **Additional Capital Improvements and/or Management Measures** – Explore, evaluate and implement other physical or operational measures, in coordination with the City, if any of the prior measures do not adequately address off-site traffic or parking impacts caused by the school.

The actual additional measures would depend on the type of impact that would need to be addressed, and would be determined in coordination with the City.

APPENDIX A

SITE PLAN DRAWN TO SCALE

December 13, 2019



1 CIRCULATION PLAN
SCALE: 1" = 40'-0"

SITE DEVELOPMENT PERMIT

integrus ARCHITECTURE
117 SOUTH MAIN STREET, SUITE 105, SEATTLE, WA 98104
TELEPHONE (206)623-3137 FAX (206)623-3139

ISSAQUAH SCHOOL DISTRICT
MIDDLE SCHOOL NO. 6

Talus Parcel 17-B
Issaquah, WA 98027

Date:	03/27/2019
Job No.:	21811.00
Drawn By:	Author
Checked by:	Checker

Revisions

#	Date	Description

CIRCULATION SITE PLAN

A-001A

APPENDIX B

TRAFFIC COUNTS

December 13, 2019

Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 - 6/17/2019
Site Code: 01

	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday					
	6/11/2019			6/12/2019			6/13/2019			6/14/2019			6/15/2019			6/16/2019			6/17/2019			Mid-Week Average		
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	9	20	29	14	13	27	14	21	35	-	-	-	-	-	-	-	-	-	-	-	-	12	18	30
1:00 AM	4	7	11	2	11	13	2	8	10	-	-	-	-	-	-	-	-	-	-	-	-	3	9	11
2:00 AM	4	7	11	9	5	14	4	9	13	-	-	-	-	-	-	-	-	-	-	-	-	6	7	13
3:00 AM	5	4	9	6	4	10	3	4	7	-	-	-	-	-	-	-	-	-	-	-	-	5	4	9
4:00 AM	27	2	29	30	5	35	27	4	31	-	-	-	-	-	-	-	-	-	-	-	-	28	4	32
5:00 AM	69	21	90	75	17	92	62	15	77	-	-	-	-	-	-	-	-	-	-	-	-	69	18	86
6:00 AM	253	88	341	246	83	329	231	64	295	-	-	-	-	-	-	-	-	-	-	-	-	243	78	322
7:00 AM	427	109	536	396	118	514	413	127	540	-	-	-	-	-	-	-	-	-	-	-	-	412	118	530
8:00 AM	399	161	560	433	150	583	412	148	560	-	-	-	-	-	-	-	-	-	-	-	-	415	153	568
9:00 AM	316	150	466	320	154	474	278	140	418	-	-	-	-	-	-	-	-	-	-	-	-	305	148	453
10:00 AM	215	138	353	227	166	393	250	169	419	-	-	-	-	-	-	-	-	-	-	-	-	231	158	388
11:00 AM	198	203	401	229	222	451	192	197	389	-	-	-	-	-	-	-	-	-	-	-	-	206	207	414
12:00 PM	186	226	412	176	213	389	201	223	424	-	-	-	-	-	-	-	-	-	-	-	-	188	221	408
1:00 PM	192	190	382	170	217	387	187	207	394	-	-	-	-	-	-	-	-	-	-	-	-	183	205	388
2:00 PM	196	209	405	197	213	410	188	205	393	-	-	-	-	-	-	-	-	-	-	-	-	194	209	403
3:00 PM	211	245	456	185	227	412	229	251	480	-	-	-	-	-	-	-	-	-	-	-	-	208	241	449
4:00 PM	202	287	489	209	323	532	223	297	520	-	-	-	-	-	-	-	-	-	-	-	-	211	302	514
5:00 PM	194	391	585	244	367	611	218	360	578	-	-	-	-	-	-	-	-	-	-	-	-	219	373	591
6:00 PM	188	378	566	216	404	620	182	357	539	-	-	-	-	-	-	-	-	-	-	-	-	195	380	575
7:00 PM	155	289	444	148	265	413	149	284	433	-	-	-	-	-	-	-	-	-	-	-	-	151	279	430
8:00 PM	108	240	348	123	248	371	125	237	362	-	-	-	-	-	-	-	-	-	-	-	-	119	242	360
9:00 PM	82	185	267	82	188	270	83	211	294	-	-	-	-	-	-	-	-	-	-	-	-	82	195	277
10:00 PM	40	92	132	41	106	147	62	133	195	-	-	-	-	-	-	-	-	-	-	-	-	48	110	158
11:00 PM	26	45	71	22	47	69	33	61	94	-	-	-	-	-	-	-	-	-	-	-	-	27	51	78
Total	**3,706**	**3,687**	**7,393**	**3,800**	**3,766**	**7,566**	**3,768**	**3,732**	**7,500**	-	-	-	-	-	-	-	-	-	-	-	-	**3,758**	**3,728**	**7,486**
Percent	**50%**	**50%**	-	**50%**	**50%**	-	**50%**	**50%**	-	-	-	-	-	-	-	-	-	-	-	-	-	**50%**	**50%**	-

1. Mid-week average includes data between Tuesday and Thursday.

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mark.skaggs@idaxdata.com

Vehicle Speed Report Summary

Location: NW TALUS DR E/O FALCON WY NW

Count Direction: Eastbound / Westbound

Date Range: 6/11/2019 to 6/13/2019

Site Code: 01

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	8	25	132	1,044	4,838	4,500	683	39	5	0	0	0	0	0	0	0	0	11,274
Percent	0.1%	0.2%	1.2%	9.3%	42.9%	39.9%	6.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Westbound	5	14	172	1,307	4,877	4,061	669	62	14	3	1	0	0	0	0	0	0	11,185
Percent	0.0%	0.1%	1.5%	11.7%	43.6%	36.3%	6.0%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Total	13	39	304	2,351	9,715	8,561	1,352	101	19	3	1	0	0	0	0	0	0	22,459
Percent	0.1%	0.2%	1.4%	10.5%	43.3%	38.1%	6.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Eastbound			**Eastbound**		
50th Percentile (Median)	29.7	mph	Mean (Average) Speed	29.5	mph
85th Percentile	33.2	mph	10 mph Pace	24.5 - 34.5	mph
95th Percentile	35.5	mph	Percent in Pace	83.3	%
Westbound			**Westbound**		
50th Percentile (Median)	29.4	mph	Mean (Average) Speed	29.3	mph
85th Percentile	33.2	mph	10 mph Pace	24.4 - 34.4	mph
95th Percentile	35.6	mph	Percent in Pace	80.6	%

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Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

Tuesday, June 11, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	2	4	2	1	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	0	2	0	2	0	1	0	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	0	0	0	15	9	3	0	0	0	0	0	0	0	0	0	0	**27**
5:00 AM	0	0	0	4	32	28	4	1	0	0	0	0	0	0	0	0	0	**69**
6:00 AM	0	0	0	24	91	126	11	1	0	0	0	0	0	0	0	0	0	**253**
7:00 AM	0	0	0	25	193	185	22	1	1	0	0	0	0	0	0	0	0	**427**
8:00 AM	0	0	20	62	162	139	16	0	0	0	0	0	0	0	0	0	0	**399**
9:00 AM	0	3	11	51	139	101	11	0	0	0	0	0	0	0	0	0	0	**316**
10:00 AM	0	7	17	43	84	53	9	2	0	0	0	0	0	0	0	0	0	**215**
11:00 AM	1	3	12	37	87	47	11	0	0	0	0	0	0	0	0	0	0	**198**
12:00 PM	0	0	8	37	71	60	9	1	0	0	0	0	0	0	0	0	0	**186**
1:00 PM	1	1	12	37	67	52	21	1	0	0	0	0	0	0	0	0	0	**192**
2:00 PM	1	1	3	16	80	84	11	0	0	0	0	0	0	0	0	0	0	**196**
3:00 PM	0	1	0	17	108	71	14	0	0	0	0	0	0	0	0	0	0	**211**
4:00 PM	1	0	1	9	98	76	16	1	0	0	0	0	0	0	0	0	0	**202**
5:00 PM	0	0	2	15	68	85	23	1	0	0	0	0	0	0	0	0	0	**194**
6:00 PM	0	0	1	5	73	85	20	4	0	0	0	0	0	0	0	0	0	**188**
7:00 PM	0	1	0	13	78	54	7	1	1	0	0	0	0	0	0	0	0	**155**
8:00 PM	0	0	0	9	54	39	5	1	0	0	0	0	0	0	0	0	0	**108**
9:00 PM	0	0	0	12	47	19	4	0	0	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	0	0	4	13	18	5	0	0	0	0	0	0	0	0	0	0	**40**
11:00 PM	0	0	0	3	14	7	2	0	0	0	0	0	0	0	0	0	0	**26**
Total	**4**	**17**	**87**	**428**	**1,579**	**1,346**	**227**	**16**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,706**
Percent	**0.1%**	**0.5%**	**2.3%**	**11.5%**	**42.6%**	**36.3%**	**6.1%**	**0.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	29.4	mph	Mean (Average) Speed	29.1	mph
85th Percentile	33.2	mph	10 mph Pace	24.5 - 34.5	mph
95th Percentile	35.5	mph	Percent in Pace	79.3	%

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Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

Tuesday, June 11, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	3	11	3	2	1	0	0	0	0	0	0	0	0	0	**20**
1:00 AM	0	0	0	1	4	2	0	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	0	0	1	5	0	1	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	0	2	3	8	8	0	0	0	0	0	0	0	0	0	0	0	**21**
6:00 AM	0	0	3	10	39	32	4	0	0	0	0	0	0	0	0	0	0	**88**
7:00 AM	0	0	6	34	47	20	2	0	0	0	0	0	0	0	0	0	0	**109**
8:00 AM	2	1	3	19	84	42	10	0	0	0	0	0	0	0	0	0	0	**161**
9:00 AM	0	1	7	26	59	48	9	0	0	0	0	0	0	0	0	0	0	**150**
10:00 AM	1	1	4	23	61	40	8	0	0	0	0	0	0	0	0	0	0	**138**
11:00 AM	1	2	6	35	84	61	10	4	0	0	0	0	0	0	0	0	0	**203**
12:00 PM	0	2	9	37	91	70	16	1	0	0	0	0	0	0	0	0	0	**226**
1:00 PM	0	1	5	32	85	58	8	1	0	0	0	0	0	0	0	0	0	**190**
2:00 PM	0	0	5	18	79	87	19	1	0	0	0	0	0	0	0	0	0	**209**
3:00 PM	0	0	3	29	106	87	16	1	2	1	0	0	0	0	0	0	0	**245**
4:00 PM	0	0	1	31	111	122	21	0	1	0	0	0	0	0	0	0	0	**287**
5:00 PM	0	0	2	23	148	192	25	1	0	0	0	0	0	0	0	0	0	**391**
6:00 PM	0	0	1	35	157	159	25	0	1	0	0	0	0	0	0	0	0	**378**
7:00 PM	0	0	0	16	131	123	15	4	0	0	0	0	0	0	0	0	0	**289**
8:00 PM	0	0	1	12	96	117	14	0	0	0	0	0	0	0	0	0	0	**240**
9:00 PM	0	0	4	19	75	70	15	1	1	0	0	0	0	0	0	0	0	**185**
10:00 PM	0	0	0	10	38	39	3	1	1	0	0	0	0	0	0	0	0	**92**
11:00 PM	0	0	0	7	18	16	2	2	0	0	0	0	0	0	0	0	0	**45**
Total	**4**	**8**	**63**	**424**	**1,542**	**1,396**	**225**	**18**	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,687**
Percent	**0.1%**	**0.2%**	**1.7%**	**11.5%**	**41.8%**	**37.9%**	**6.1%**	**0.5%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	29.5	mph	Mean (Average) Speed	29.3	mph
85th Percentile	33.3	mph	10 mph Pace	24.4 - 34.4	mph
95th Percentile	35.6	mph	Percent in Pace	80.15	%

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Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

Wednesday, June 12, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	2	2	4	3	3	0	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	1	1	4	1	2	0	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	0	0	0	3	2	0	1	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	0	0	2	15	11	2	0	0	0	0	0	0	0	0	0	0	**30**
5:00 AM	0	0	0	5	36	26	8	0	0	0	0	0	0	0	0	0	0	**75**
6:00 AM	0	0	0	21	98	115	11	1	0	0	0	0	0	0	0	0	0	**246**
7:00 AM	0	0	0	8	158	204	26	0	0	0	0	0	0	0	0	0	0	**396**
8:00 AM	0	0	4	33	182	200	14	0	0	0	0	0	0	0	0	0	0	**433**
9:00 AM	0	1	2	25	153	121	16	2	0	0	0	0	0	0	0	0	0	**320**
10:00 AM	0	0	0	20	106	87	14	0	0	0	0	0	0	0	0	0	0	**227**
11:00 AM	0	0	2	21	113	86	7	0	0	0	0	0	0	0	0	0	0	**229**
12:00 PM	2	0	2	17	74	68	13	0	0	0	0	0	0	0	0	0	0	**176**
1:00 PM	0	1	1	17	72	70	9	0	0	0	0	0	0	0	0	0	0	**170**
2:00 PM	0	0	3	16	83	72	23	0	0	0	0	0	0	0	0	0	0	**197**
3:00 PM	1	1	0	19	99	58	6	0	1	0	0	0	0	0	0	0	0	**185**
4:00 PM	0	0	0	13	97	84	15	0	0	0	0	0	0	0	0	0	0	**209**
5:00 PM	0	1	2	10	97	123	10	0	1	0	0	0	0	0	0	0	0	**244**
6:00 PM	0	0	1	11	105	90	8	1	0	0	0	0	0	0	0	0	0	**216**
7:00 PM	0	0	0	4	72	63	8	1	0	0	0	0	0	0	0	0	0	**148**
8:00 PM	0	0	1	17	51	48	5	1	0	0	0	0	0	0	0	0	0	**123**
9:00 PM	0	0	0	7	40	31	4	0	0	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	0	0	10	14	17	0	0	0	0	0	0	0	0	0	0	0	**41**
11:00 PM	0	0	1	3	8	9	1	0	0	0	0	0	0	0	0	0	0	**22**
Total	**3**	**6**	**22**	**284**	**1,683**	**1,591**	**202**	**7**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,800**
Percent	**0.1%**	**0.2%**	**0.6%**	**7.5%**	**44.3%**	**41.9%**	**5.3%**	**0.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	29.8	mph	Mean (Average) Speed	29.7	mph
85th Percentile	33.2	mph	10 mph Pace	24.4 - 34.4	mph
95th Percentile	35.2	mph	Percent in Pace	86.5	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

Wednesday, June 12, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	0	5	5	1	1	0	0	0	0	0	0	0	0	0	**13**
1:00 AM	0	0	0	1	8	2	0	0	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	0	0	1	3	1	0	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	0	1	2	0	1	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	0	1	1	2	0	1	0	0	0	0	0	0	0	0	0	**5**
5:00 AM	0	0	0	1	8	8	0	0	0	0	0	0	0	0	0	0	0	**17**
6:00 AM	0	0	0	12	45	23	3	0	0	0	0	0	0	0	0	0	0	**83**
7:00 AM	0	0	3	17	59	31	7	0	1	0	0	0	0	0	0	0	0	**118**
8:00 AM	0	0	4	19	73	46	7	1	0	0	0	0	0	0	0	0	0	**150**
9:00 AM	0	0	1	22	85	43	3	0	0	0	0	0	0	0	0	0	0	**154**
10:00 AM	0	0	0	27	85	45	8	1	0	0	0	0	0	0	0	0	0	**166**
11:00 AM	0	0	6	39	92	71	13	1	0	0	0	0	0	0	0	0	0	**222**
12:00 PM	0	0	4	22	79	82	25	1	0	0	0	0	0	0	0	0	0	**213**
1:00 PM	0	0	3	52	87	62	10	3	0	0	0	0	0	0	0	0	0	**217**
2:00 PM	0	0	6	28	85	82	12	0	0	0	0	0	0	0	0	0	0	**213**
3:00 PM	0	0	3	30	97	83	13	1	0	0	0	0	0	0	0	0	0	**227**
4:00 PM	0	1	2	22	153	119	24	2	0	0	0	0	0	0	0	0	0	**323**
5:00 PM	0	0	2	26	172	138	27	2	0	0	0	0	0	0	0	0	0	**367**
6:00 PM	0	0	0	29	186	161	25	3	0	0	0	0	0	0	0	0	0	**404**
7:00 PM	0	0	1	14	121	105	20	4	0	0	0	0	0	0	0	0	0	**265**
8:00 PM	0	0	1	15	117	96	17	1	0	1	0	0	0	0	0	0	0	**248**
9:00 PM	0	0	3	10	88	73	13	1	0	0	0	0	0	0	0	0	0	**188**
10:00 PM	0	0	1	16	46	35	8	0	0	0	0	0	0	0	0	0	0	**106**
11:00 PM	0	0	0	7	26	11	3	0	0	0	0	0	0	0	0	0	0	**47**
Total	**0**	**1**	**41**	**412**	**1,723**	**1,324**	**240**	**23**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,766**
Percent	**0.0%**	**0.0%**	**1.1%**	**10.9%**	**45.8%**	**35.2%**	**6.4%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	29.3	mph	Mean (Average) Speed	29.3	mph
85th Percentile	33.2	mph	10 mph Pace	24.4 - 34.4	mph
95th Percentile	35.7	mph	Percent in Pace	81.86	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

Thursday, June 13, 2019
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	0	1	7	4	1	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	0	3	6	14	4	0	0	0	0	0	0	0	0	0	0	**27**
5:00 AM	0	0	0	5	25	30	2	0	0	0	0	0	0	0	0	0	0	**62**
6:00 AM	0	0	0	12	99	106	13	1	0	0	0	0	0	0	0	0	0	**231**
7:00 AM	0	0	0	14	167	203	24	4	1	0	0	0	0	0	0	0	0	**413**
8:00 AM	0	0	0	33	183	183	12	1	0	0	0	0	0	0	0	0	0	**412**
9:00 AM	0	0	3	36	133	96	10	0	0	0	0	0	0	0	0	0	0	**278**
10:00 AM	0	0	2	39	125	76	8	0	0	0	0	0	0	0	0	0	0	**250**
11:00 AM	0	1	4	26	73	67	21	0	0	0	0	0	0	0	0	0	0	**192**
12:00 PM	0	0	0	20	83	72	23	3	0	0	0	0	0	0	0	0	0	**201**
1:00 PM	0	0	3	13	53	94	22	2	0	0	0	0	0	0	0	0	0	**187**
2:00 PM	0	0	1	23	67	86	11	0	0	0	0	0	0	0	0	0	0	**188**
3:00 PM	0	0	1	17	99	94	16	2	0	0	0	0	0	0	0	0	0	**229**
4:00 PM	0	0	0	21	104	82	16	0	0	0	0	0	0	0	0	0	0	**223**
5:00 PM	0	0	2	16	94	88	18	0	0	0	0	0	0	0	0	0	0	**218**
6:00 PM	1	0	1	7	52	96	23	2	0	0	0	0	0	0	0	0	0	**182**
7:00 PM	0	0	2	10	58	73	6	0	0	0	0	0	0	0	0	0	0	**149**
8:00 PM	0	0	1	10	70	36	8	0	0	0	0	0	0	0	0	0	0	**125**
9:00 PM	0	0	1	10	37	27	8	0	0	0	0	0	0	0	0	0	0	**83**
10:00 PM	0	0	2	10	24	19	6	1	0	0	0	0	0	0	0	0	0	**62**
11:00 PM	0	0	0	6	13	12	2	0	0	0	0	0	0	0	0	0	0	**33**
Total	**1**	**2**	**23**	**332**	**1,576**	**1,563**	**254**	**16**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,768**
Percent	**0.0%**	**0.1%**	**0.6%**	**8.8%**	**41.8%**	**41.5%**	**6.7%**	**0.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	29.9	mph	Mean (Average) Speed	29.8	mph
85th Percentile	33.3	mph	10 mph Pace	24.6 - 34.6	mph
95th Percentile	35.6	mph	Percent in Pace	84.1	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

Thursday, June 13, 2019
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	3	6	8	3	0	0	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	0	1	2	4	1	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	0	0	2	5	1	0	1	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	0	0	2	6	6	1	0	0	0	0	0	0	0	0	0	0	**15**
6:00 AM	0	0	1	11	28	23	1	0	0	0	0	0	0	0	0	0	0	**64**
7:00 AM	0	2	3	21	57	37	5	2	0	0	0	0	0	0	0	0	0	**127**
8:00 AM	0	1	4	31	80	31	1	0	0	0	0	0	0	0	0	0	0	**148**
9:00 AM	0	0	12	42	71	14	1	0	0	0	0	0	0	0	0	0	0	**140**
10:00 AM	0	0	5	62	81	19	2	0	0	0	0	0	0	0	0	0	0	**169**
11:00 AM	0	0	9	28	78	68	10	2	2	0	0	0	0	0	0	0	0	**197**
12:00 PM	0	0	1	32	115	62	10	3	0	0	0	0	0	0	0	0	0	**223**
1:00 PM	0	0	5	27	80	79	15	0	0	1	0	0	0	0	0	0	0	**207**
2:00 PM	0	0	2	28	88	72	15	0	0	0	0	0	0	0	0	0	0	**205**
3:00 PM	0	0	4	29	100	98	20	0	0	0	0	0	0	0	0	0	0	**251**
4:00 PM	0	1	5	30	114	123	20	2	2	0	0	0	0	0	0	0	0	**297**
5:00 PM	0	0	0	26	133	177	21	3	0	0	0	0	0	0	0	0	0	**360**
6:00 PM	0	1	0	29	146	161	17	1	2	0	0	0	0	0	0	0	0	**357**
7:00 PM	0	0	0	13	123	125	20	3	0	0	0	0	0	0	0	0	0	**284**
8:00 PM	0	0	6	18	95	96	21	1	0	0	0	0	0	0	0	0	0	**237**
9:00 PM	0	0	3	13	92	91	7	3	1	0	1	0	0	0	0	0	0	**211**
10:00 PM	1	0	4	11	74	33	10	0	0	0	0	0	0	0	0	0	0	**133**
11:00 PM	0	0	1	10	32	14	4	0	0	0	0	0	0	0	0	0	0	**61**
Total	**1**	**5**	**68**	**471**	**1,612**	**1,341**	**204**	**21**	**7**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3,732**
Percent	**0.0%**	**0.1%**	**1.8%**	**12.6%**	**43.2%**	**35.9%**	**5.5%**	**0.6%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	29.2	mph	Mean (Average) Speed	29.1	mph
85th Percentile	33.1	mph	10 mph Pace	23.8 - 33.8	mph
95th Percentile	35.5	mph	Percent in Pace	80.12	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	1	1	2	5	3	1	0	0	0	0	0	0	0	0	0	0	**13**
1:00 AM	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	0	0	1	2	2	0	1	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	0	0	2	12	11	3	0	0	0	0	0	0	0	0	0	0	**28**
5:00 AM	0	0	0	5	31	28	5	0	0	0	0	0	0	0	0	0	0	**69**
6:00 AM	0	0	0	19	96	116	12	1	0	0	0	0	0	0	0	0	0	**244**
7:00 AM	0	0	0	16	173	197	24	2	1	0	0	0	0	0	0	0	0	**413**
8:00 AM	0	0	8	43	176	174	14	0	0	0	0	0	0	0	0	0	0	**415**
9:00 AM	0	1	5	37	142	106	12	1	0	0	0	0	0	0	0	0	0	**304**
10:00 AM	0	2	6	34	105	72	10	1	0	0	0	0	0	0	0	0	0	**230**
11:00 AM	0	1	6	28	91	67	13	0	0	0	0	0	0	0	0	0	0	**206**
12:00 PM	1	0	3	25	76	67	15	1	0	0	0	0	0	0	0	0	0	**188**
1:00 PM	0	1	5	22	64	72	17	1	0	0	0	0	0	0	0	0	0	**182**
2:00 PM	0	0	2	18	77	81	15	0	0	0	0	0	0	0	0	0	0	**193**
3:00 PM	0	1	0	18	102	74	12	1	0	0	0	0	0	0	0	0	0	**208**
4:00 PM	0	0	0	14	100	81	16	0	0	0	0	0	0	0	0	0	0	**211**
5:00 PM	0	0	2	14	86	99	17	0	0	0	0	0	0	0	0	0	0	**218**
6:00 PM	0	0	1	8	77	90	17	2	0	0	0	0	0	0	0	0	0	**195**
7:00 PM	0	0	1	9	69	63	7	1	0	0	0	0	0	0	0	0	0	**150**
8:00 PM	0	0	1	12	58	41	6	1	0	0	0	0	0	0	0	0	0	**119**
9:00 PM	0	0	0	10	41	26	5	0	0	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	0	1	8	17	18	4	0	0	0	0	0	0	0	0	0	0	**48**
11:00 PM	0	0	0	4	12	9	2	0	0	0	0	0	0	0	0	0	0	**27**
Total	**1**	**7**	**42**	**349**	**1,615**	**1,501**	**228**	**13**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,757**
Percent	**0.0%**	**0.2%**	**1.1%**	**9.3%**	**43.0%**	**40.0%**	**6.1%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	29.7	mph	Mean (Average) Speed	29.5	mph
85th Percentile	33.2	mph	10 mph Pace	24.5 - 34.5	mph
95th Percentile	35.5	mph	Percent in Pace	83.3	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	2	7	5	2	1	0	0	0	0	0	0	0	0	0	**18**
1:00 AM	0	0	0	1	5	2	0	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	0	0	1	4	1	0	0	0	0	0	0	0	0	0	0	0	**6**
3:00 AM	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	0	1	2	7	7	0	0	0	0	0	0	0	0	0	0	0	**17**
6:00 AM	0	0	1	11	37	26	3	0	0	0	0	0	0	0	0	0	0	**78**
7:00 AM	0	1	4	24	54	29	5	1	0	0	0	0	0	0	0	0	0	**118**
8:00 AM	1	1	4	23	79	40	6	0	0	0	0	0	0	0	0	0	0	**154**
9:00 AM	0	0	7	30	72	35	4	0	0	0	0	0	0	0	0	0	0	**148**
10:00 AM	0	0	3	37	76	35	6	0	0	0	0	0	0	0	0	0	0	**157**
11:00 AM	0	1	7	34	85	67	11	2	1	0	0	0	0	0	0	0	0	**208**
12:00 PM	0	1	5	30	95	71	17	2	0	0	0	0	0	0	0	0	0	**221**
1:00 PM	0	0	4	37	84	66	11	1	0	0	0	0	0	0	0	0	0	**203**
2:00 PM	0	0	4	25	84	80	15	0	0	0	0	0	0	0	0	0	0	**208**
3:00 PM	0	0	3	29	101	89	16	1	1	0	0	0	0	0	0	0	0	**240**
4:00 PM	0	1	3	28	126	121	22	1	1	0	0	0	0	0	0	0	0	**303**
5:00 PM	0	0	1	25	151	169	24	2	0	0	0	0	0	0	0	0	0	**372**
6:00 PM	0	0	0	31	163	160	22	1	1	0	0	0	0	0	0	0	0	**378**
7:00 PM	0	0	0	14	125	118	18	4	0	0	0	0	0	0	0	0	0	**279**
8:00 PM	0	0	3	15	103	103	17	1	0	0	0	0	0	0	0	0	0	**242**
9:00 PM	0	0	3	14	85	78	12	2	1	0	0	0	0	0	0	0	0	**195**
10:00 PM	0	0	2	12	53	36	7	0	0	0	0	0	0	0	0	0	0	**110**
11:00 PM	0	0	0	8	25	14	3	1	0	0	0	0	0	0	0	0	0	**51**
Total	**1**	**5**	**57**	**434**	**1,625**	**1,353**	**221**	**20**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,721**
Percent	**0.0%**	**0.1%**	**1.5%**	**11.7%**	**43.7%**	**36.4%**	**5.9%**	**0.5%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	29.4	mph	Mean (Average) Speed	29.3	mph
85th Percentile	33.2	mph	10 mph Pace	24.4 - 34.4	mph
95th Percentile	35.6	mph	Percent in Pace	80.6	%

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Vehicle Classification Report Summary

Location: NW TALUS DR E/O FALCON WY NW

Count Direction: Eastbound / Westbound

Date Range: 6/11/2019 to 6/13/2019

Site Code: 01

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	37	10,057	801	1	309	8	0	2	0	5	0	0	54	11,274
Percent	0.3%	89.2%	7.1%	0.0%	2.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	100%
Westbound	25	9,802	966	1	322	11	0	3	0	52	0	0	3	11,185
Percent	0.2%	87.6%	8.6%	0.0%	2.9%	0.1%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	100%
Total	62	19,859	1,767	2	631	19	0	5	0	57	0	0	57	22,459
Percent	0.3%	88.4%	7.9%	0.0%	2.8%	0.1%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.3%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

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Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

Tuesday, June 11, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	8	1	0	0	0	0	0	0	0	0	0	0	**9**
1:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
2:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	24	3	0	0	0	0	0	0	0	0	0	0	**27**
5:00 AM	0	62	5	0	2	0	0	0	0	0	0	0	0	**69**
6:00 AM	1	226	21	0	4	0	0	0	0	1	0	0	0	**253**
7:00 AM	1	394	18	0	11	0	0	0	0	0	0	0	3	**427**
8:00 AM	1	368	14	0	7	0	0	0	0	0	0	0	9	**399**
9:00 AM	0	277	20	0	9	0	0	0	0	1	0	0	9	**316**
10:00 AM	2	181	15	0	7	0	0	0	0	1	0	0	9	**215**
11:00 AM	3	162	18	0	6	0	0	0	0	0	0	0	9	**198**
12:00 PM	0	144	23	0	9	1	0	0	0	1	0	0	8	**186**
1:00 PM	0	163	14	1	6	1	0	0	0	1	0	0	6	**192**
2:00 PM	0	177	16	0	2	0	0	0	0	0	0	0	1	**196**
3:00 PM	1	185	13	0	12	0	0	0	0	0	0	0	0	**211**
4:00 PM	0	170	18	0	13	0	0	1	0	0	0	0	0	**202**
5:00 PM	1	172	18	0	3	0	0	0	0	0	0	0	0	**194**
6:00 PM	1	170	13	0	4	0	0	0	0	0	0	0	0	**188**
7:00 PM	0	142	10	0	3	0	0	0	0	0	0	0	0	**155**
8:00 PM	0	100	7	0	1	0	0	0	0	0	0	0	0	**108**
9:00 PM	1	76	4	0	1	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	36	4	0	0	0	0	0	0	0	0	0	0	**40**
11:00 PM	0	26	0	0	0	0	0	0	0	0	0	0	0	**26**
Total	**12**	**3,274**	**256**	**1**	**101**	**2**	**0**	**1**	**0**	**5**	**0**	**0**	**54**	**3,706**
Percent	**0.3%**	**88.3%**	**6.9%**	**0.0%**	**2.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**1.5%**	

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Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

Tuesday, June 11, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	18	2	0	0	0	0	0	0	0	0	0	0	**20**
1:00 AM	0	5	1	0	1	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
5:00 AM	0	18	1	0	1	0	0	0	0	1	0	0	0	**21**
6:00 AM	0	73	11	0	4	0	0	0	0	0	0	0	0	**88**
7:00 AM	0	83	12	0	8	0	0	0	0	5	0	0	1	**109**
8:00 AM	0	129	14	1	10	1	0	0	0	6	0	0	0	**161**
9:00 AM	0	111	22	0	7	0	0	0	0	9	0	0	1	**150**
10:00 AM	0	99	19	0	8	0	0	0	0	11	0	0	1	**138**
11:00 AM	0	168	21	0	6	0	0	0	0	8	0	0	0	**203**
12:00 PM	0	179	26	0	11	1	0	0	0	9	0	0	0	**226**
1:00 PM	0	165	14	0	6	2	0	0	0	3	0	0	0	**190**
2:00 PM	2	179	21	0	7	0	0	0	0	0	0	0	0	**209**
3:00 PM	0	216	19	0	9	0	0	1	0	0	0	0	0	**245**
4:00 PM	1	251	23	0	12	0	0	0	0	0	0	0	0	**287**
5:00 PM	1	355	30	0	5	0	0	0	0	0	0	0	0	**391**
6:00 PM	2	346	22	0	8	0	0	0	0	0	0	0	0	**378**
7:00 PM	1	260	22	0	5	0	0	1	0	0	0	0	0	**289**
8:00 PM	0	217	19	0	4	0	0	0	0	0	0	0	0	**240**
9:00 PM	1	176	8	0	0	0	0	0	0	0	0	0	0	**185**
10:00 PM	0	82	9	0	1	0	0	0	0	0	0	0	0	**92**
11:00 PM	0	44	1	0	0	0	0	0	0	0	0	0	0	**45**
Total	**8**	**3,186**	**318**	**1**	**113**	**4**	**0**	**2**	**0**	**52**	**0**	**0**	**3**	**3,687**
Percent	**0.2%**	**86.4%**	**8.6%**	**0.0%**	**3.1%**	**0.1%**	**0.0%**	**0.1%**	**0.0%**	**1.4%**	**0.0%**	**0.0%**	**0.1%**	

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Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

Wednesday, June 12, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	1	0	0	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	8	0	0	1	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
4:00 AM	0	24	3	0	3	0	0	0	0	0	0	0	0	**30**
5:00 AM	1	67	6	0	1	0	0	0	0	0	0	0	0	**75**
6:00 AM	1	223	18	0	4	0	0	0	0	0	0	0	0	**246**
7:00 AM	0	372	22	0	2	0	0	0	0	0	0	0	0	**396**
8:00 AM	1	398	19	0	15	0	0	0	0	0	0	0	0	**433**
9:00 AM	1	292	18	0	9	0	0	0	0	0	0	0	0	**320**
10:00 AM	1	200	19	0	7	0	0	0	0	0	0	0	0	**227**
11:00 AM	1	200	19	0	8	1	0	0	0	0	0	0	0	**229**
12:00 PM	0	147	23	0	4	2	0	0	0	0	0	0	0	**176**
1:00 PM	0	148	14	0	8	0	0	0	0	0	0	0	0	**170**
2:00 PM	4	165	22	0	6	0	0	0	0	0	0	0	0	**197**
3:00 PM	1	171	10	0	3	0	0	0	0	0	0	0	0	**185**
4:00 PM	0	179	18	0	12	0	0	0	0	0	0	0	0	**209**
5:00 PM	1	215	22	0	6	0	0	0	0	0	0	0	0	**244**
6:00 PM	1	187	23	0	4	0	0	1	0	0	0	0	0	**216**
7:00 PM	0	132	12	0	4	0	0	0	0	0	0	0	0	**148**
8:00 PM	1	113	9	0	0	0	0	0	0	0	0	0	0	**123**
9:00 PM	0	70	9	0	3	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	34	5	0	2	0	0	0	0	0	0	0	0	**41**
11:00 PM	0	20	2	0	0	0	0	0	0	0	0	0	0	**22**
Total	**14**	**3,386**	**294**	**0**	**102**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3,800**
Percent	**0.4%**	**89.1%**	**7.7%**	**0.0%**	**2.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

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Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

DATA SOLUTIONS

Wednesday, June 12, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	12	1	0	0	0	0	0	0	0	0	0	0	**13**
1:00 AM	0	10	1	0	0	0	0	0	0	0	0	0	0	**11**
2:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
5:00 AM	1	16	0	0	0	0	0	0	0	0	0	0	0	**17**
6:00 AM	0	69	12	0	2	0	0	0	0	0	0	0	0	**83**
7:00 AM	0	98	14	0	6	0	0	0	0	0	0	0	0	**118**
8:00 AM	1	116	23	0	10	0	0	0	0	0	0	0	0	**150**
9:00 AM	0	126	25	0	3	0	0	0	0	0	0	0	0	**154**
10:00 AM	0	136	17	0	13	0	0	0	0	0	0	0	0	**166**
11:00 AM	0	194	21	0	6	1	0	0	0	0	0	0	0	**222**
12:00 PM	1	178	26	0	5	2	0	1	0	0	0	0	0	**213**
1:00 PM	0	185	22	0	10	0	0	0	0	0	0	0	0	**217**
2:00 PM	0	186	22	0	5	0	0	0	0	0	0	0	0	**213**
3:00 PM	2	204	15	0	6	0	0	0	0	0	0	0	0	**227**
4:00 PM	1	275	38	0	9	0	0	0	0	0	0	0	0	**323**
5:00 PM	1	338	20	0	8	0	0	0	0	0	0	0	0	**367**
6:00 PM	0	362	34	0	8	0	0	0	0	0	0	0	0	**404**
7:00 PM	1	244	18	0	2	0	0	0	0	0	0	0	0	**265**
8:00 PM	1	231	14	0	2	0	0	0	0	0	0	0	0	**248**
9:00 PM	0	169	16	0	3	0	0	0	0	0	0	0	0	**188**
10:00 PM	0	94	9	0	3	0	0	0	0	0	0	0	0	**106**
11:00 PM	0	42	5	0	0	0	0	0	0	0	0	0	0	**47**
Total	**9**	**3,298**	**354**	**0**	**101**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3,766**
Percent	**0.2%**	**87.6%**	**9.4%**	**0.0%**	**2.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

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Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

Thursday, June 13, 2019
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	0	0	1	0	0	0	0	0	0	0	0	**14**
1:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
3:00 AM	0	2	0	0	1	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	23	4	0	0	0	0	0	0	0	0	0	0	**27**
5:00 AM	0	55	6	0	1	0	0	0	0	0	0	0	0	**62**
6:00 AM	2	203	20	0	6	0	0	0	0	0	0	0	0	**231**
7:00 AM	1	387	18	0	6	1	0	0	0	0	0	0	0	**413**
8:00 AM	0	389	17	0	5	1	0	0	0	0	0	0	0	**412**
9:00 AM	0	255	16	0	6	1	0	0	0	0	0	0	0	**278**
10:00 AM	1	227	12	0	10	0	0	0	0	0	0	0	0	**250**
11:00 AM	0	160	19	0	13	0	0	0	0	0	0	0	0	**192**
12:00 PM	0	165	23	0	13	0	0	0	0	0	0	0	0	**201**
1:00 PM	0	170	15	0	2	0	0	0	0	0	0	0	0	**187**
2:00 PM	0	166	13	0	9	0	0	0	0	0	0	0	0	**188**
3:00 PM	0	199	16	0	14	0	0	0	0	0	0	0	0	**229**
4:00 PM	3	197	17	0	6	0	0	0	0	0	0	0	0	**223**
5:00 PM	1	197	15	0	5	0	0	0	0	0	0	0	0	**218**
6:00 PM	2	167	12	0	1	0	0	0	0	0	0	0	0	**182**
7:00 PM	0	134	11	0	4	0	0	0	0	0	0	0	0	**149**
8:00 PM	1	116	8	0	0	0	0	0	0	0	0	0	0	**125**
9:00 PM	0	76	6	0	1	0	0	0	0	0	0	0	0	**83**
10:00 PM	0	58	2	0	2	0	0	0	0	0	0	0	0	**62**
11:00 PM	0	33	0	0	0	0	0	0	0	0	0	0	0	**33**
Total	**11**	**3,397**	**251**	**0**	**106**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,768**
Percent	**0.3%**	**90.2%**	**6.7%**	**0.0%**	**2.8%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

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Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

Thursday, June 13, 2019
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	19	1	0	1	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	**9**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	**4**
5:00 AM	0	12	3	0	0	0	0	0	0	0	0	0	0	**15**
6:00 AM	1	54	7	0	2	0	0	0	0	0	0	0	0	**64**
7:00 AM	0	109	11	0	5	2	0	0	0	0	0	0	0	**127**
8:00 AM	0	126	12	0	10	0	0	0	0	0	0	0	0	**148**
9:00 AM	0	125	10	0	4	1	0	0	0	0	0	0	0	**140**
10:00 AM	0	139	16	0	14	0	0	0	0	0	0	0	0	**169**
11:00 AM	0	159	22	0	16	0	0	0	0	0	0	0	0	**197**
12:00 PM	0	190	20	0	13	0	0	0	0	0	0	0	0	**223**
1:00 PM	0	182	22	0	3	0	0	0	0	0	0	0	0	**207**
2:00 PM	1	177	18	0	9	0	0	0	0	0	0	0	0	**205**
3:00 PM	0	222	22	0	7	0	0	0	0	0	0	0	0	**251**
4:00 PM	2	261	25	0	8	1	0	0	0	0	0	0	0	**297**
5:00 PM	1	334	21	0	4	0	0	0	0	0	0	0	0	**360**
6:00 PM	1	327	25	0	4	0	0	0	0	0	0	0	0	**357**
7:00 PM	0	265	17	0	2	0	0	0	0	0	0	0	0	**284**
8:00 PM	1	217	17	0	2	0	0	0	0	0	0	0	0	**237**
9:00 PM	1	200	8	0	2	0	0	0	0	0	0	0	0	**211**
10:00 PM	0	123	8	0	2	0	0	0	0	0	0	0	0	**133**
11:00 PM	0	54	7	0	0	0	0	0	0	0	0	0	0	**61**
Total	**8**	**3,318**	**294**	**0**	**108**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,732**
Percent	**0.2%**	**88.9%**	**7.9%**	**0.0%**	**2.9%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	11	1	0	0	0	0	0	0	0	0	0	0	**12**
1:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	24	3	0	1	0	0	0	0	0	0	0	0	**28**
5:00 AM	0	61	6	0	1	0	0	0	0	0	0	0	0	**68**
6:00 AM	1	217	20	0	5	0	0	0	0	0	0	0	0	**243**
7:00 AM	1	384	19	0	6	0	0	0	0	0	0	0	1	**411**
8:00 AM	1	385	17	0	9	0	0	0	0	0	0	0	3	**415**
9:00 AM	0	275	18	0	8	0	0	0	0	0	0	0	3	**304**
10:00 AM	1	203	15	0	8	0	0	0	0	0	0	0	3	**230**
11:00 AM	1	174	19	0	9	0	0	0	0	0	0	0	3	**206**
12:00 PM	0	152	23	0	9	1	0	0	0	0	0	0	3	**188**
1:00 PM	0	160	14	0	5	0	0	0	0	0	0	0	2	**181**
2:00 PM	1	169	17	0	6	0	0	0	0	0	0	0	0	**193**
3:00 PM	1	185	13	0	10	0	0	0	0	0	0	0	0	**209**
4:00 PM	1	182	18	0	10	0	0	0	0	0	0	0	0	**211**
5:00 PM	1	195	18	0	5	0	0	0	0	0	0	0	0	**219**
6:00 PM	1	175	16	0	3	0	0	0	0	0	0	0	0	**195**
7:00 PM	0	136	11	0	4	0	0	0	0	0	0	0	0	**151**
8:00 PM	1	110	8	0	0	0	0	0	0	0	0	0	0	**119**
9:00 PM	0	74	6	0	2	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	43	4	0	1	0	0	0	0	0	0	0	0	**48**
11:00 PM	0	26	1	0	0	0	0	0	0	0	0	0	0	**27**
Total	**11**	**3,352**	**267**	**0**	**103**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	**3,752**
Percent	**0.3%**	**89.3%**	**7.1%**	**0.0%**	**2.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.5%**	

Note: Average only condsidered on days with 24-hours of data.

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

Total Study Average
Westbound

	FHWA Vehicle Classification													Total
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
12:00 AM	0	16	1	0	0	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	15	1	0	0	0	0	0	0	0	0	0	0	**16**
6:00 AM	0	65	10	0	3	0	0	0	0	0	0	0	0	**78**
7:00 AM	0	97	12	0	6	1	0	0	0	2	0	0	0	**118**
8:00 AM	0	124	16	0	10	0	0	0	0	2	0	0	0	**152**
9:00 AM	0	121	19	0	5	0	0	0	0	3	0	0	0	**148**
10:00 AM	0	125	17	0	12	0	0	0	0	4	0	0	0	**158**
11:00 AM	0	174	21	0	9	0	0	0	0	3	0	0	0	**207**
12:00 PM	0	182	24	0	10	1	0	0	0	3	0	0	0	**220**
1:00 PM	0	177	19	0	6	1	0	0	0	1	0	0	0	**204**
2:00 PM	1	181	20	0	7	0	0	0	0	0	0	0	0	**209**
3:00 PM	1	214	19	0	7	0	0	0	0	0	0	0	0	**241**
4:00 PM	1	262	29	0	10	0	0	0	0	0	0	0	0	**302**
5:00 PM	1	342	24	0	6	0	0	0	0	0	0	0	0	**373**
6:00 PM	1	345	27	0	7	0	0	0	0	0	0	0	0	**380**
7:00 PM	1	256	19	0	3	0	0	0	0	0	0	0	0	**279**
8:00 PM	1	222	17	0	3	0	0	0	0	0	0	0	0	**243**
9:00 PM	1	182	11	0	2	0	0	0	0	0	0	0	0	**196**
10:00 PM	0	100	9	0	2	0	0	0	0	0	0	0	0	**111**
11:00 PM	0	47	4	0	0	0	0	0	0	0	0	0	0	**51**
Total	**8**	**3,267**	**321**	**0**	**108**	**3**	**0**	**0**	**0**	**18**	**0**	**0**	**0**	**3,725**
Percent	**0.2%**	**87.7%**	**8.6%**	**0.0%**	**2.9%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	11	1	0	0	0	0	0	0	0	0	0	0	**12**
1:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	**2**
2:00 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
3:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	**5**
4:00 AM	0	24	3	0	1	0	0	0	0	0	0	0	0	**28**
5:00 AM	0	61	6	0	1	0	0	0	0	0	0	0	0	**68**
6:00 AM	1	217	20	0	5	0	0	0	0	0	0	0	0	**243**
7:00 AM	1	384	19	0	6	0	0	0	0	0	0	0	1	**411**
8:00 AM	1	385	17	0	9	0	0	0	0	0	0	0	3	**415**
9:00 AM	0	275	18	0	8	0	0	0	0	0	0	0	3	**304**
10:00 AM	1	203	15	0	8	0	0	0	0	0	0	0	3	**230**
11:00 AM	1	174	19	0	9	0	0	0	0	0	0	0	3	**206**
12:00 PM	0	152	23	0	9	1	0	0	0	0	0	0	3	**188**
1:00 PM	0	160	14	0	5	0	0	0	0	0	0	0	2	**181**
2:00 PM	1	169	17	0	6	0	0	0	0	0	0	0	0	**193**
3:00 PM	1	185	13	0	10	0	0	0	0	0	0	0	0	**209**
4:00 PM	1	182	18	0	10	0	0	0	0	0	0	0	0	**211**
5:00 PM	1	195	18	0	5	0	0	0	0	0	0	0	0	**219**
6:00 PM	1	175	16	0	3	0	0	0	0	0	0	0	0	**195**
7:00 PM	0	136	11	0	4	0	0	0	0	0	0	0	0	**151**
8:00 PM	1	110	8	0	0	0	0	0	0	0	0	0	0	**119**
9:00 PM	0	74	6	0	2	0	0	0	0	0	0	0	0	**82**
10:00 PM	0	43	4	0	1	0	0	0	0	0	0	0	0	**48**
11:00 PM	0	26	1	0	0	0	0	0	0	0	0	0	0	**27**
Total	**11**	**3,352**	**267**	**0**	**103**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	**3,752**
Percent	**0.3%**	**89.3%**	**7.1%**	**0.0%**	**2.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.5%**	

Mark Skaggs:425-250-0777
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Location: NW TALUS DR E/O FALCON WY NW
Date Range: 6/11/2019 to 6/13/2019
Site Code: 01

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	16	1	0	0	0	0	0	0	0	0	0	0	**17**
1:00 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	**8**
2:00 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
3:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
4:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	**3**
5:00 AM	0	15	1	0	0	0	0	0	0	0	0	0	0	**16**
6:00 AM	0	65	10	0	3	0	0	0	0	0	0	0	0	**78**
7:00 AM	0	97	12	0	6	1	0	0	0	2	0	0	0	**118**
8:00 AM	0	124	16	0	10	0	0	0	0	2	0	0	0	**152**
9:00 AM	0	121	19	0	5	0	0	0	0	3	0	0	0	**148**
10:00 AM	0	125	17	0	12	0	0	0	0	4	0	0	0	**158**
11:00 AM	0	174	21	0	9	0	0	0	0	3	0	0	0	**207**
12:00 PM	0	182	24	0	10	1	0	0	0	3	0	0	0	**220**
1:00 PM	0	177	19	0	6	1	0	0	0	1	0	0	0	**204**
2:00 PM	1	181	20	0	7	0	0	0	0	0	0	0	0	**209**
3:00 PM	1	214	19	0	7	0	0	0	0	0	0	0	0	**241**
4:00 PM	1	262	29	0	10	0	0	0	0	0	0	0	0	**302**
5:00 PM	1	342	24	0	6	0	0	0	0	0	0	0	0	**373**
6:00 PM	1	345	27	0	7	0	0	0	0	0	0	0	0	**380**
7:00 PM	1	256	19	0	3	0	0	0	0	0	0	0	0	**279**
8:00 PM	1	222	17	0	3	0	0	0	0	0	0	0	0	**243**
9:00 PM	1	182	11	0	2	0	0	0	0	0	0	0	0	**196**
10:00 PM	0	100	9	0	2	0	0	0	0	0	0	0	0	**111**
11:00 PM	0	47	4	0	0	0	0	0	0	0	0	0	0	**51**
Total	**8**	**3,267**	**321**	**0**	**108**	**3**	**0**	**0**	**0**	**18**	**0**	**0**	**0**	**3,725**
Percent	**0.2%**	**87.7%**	**8.6%**	**0.0%**	**2.9%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	

Mark Skaggs:425-250-0777
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Site 3
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Lights

	RENTON-ISSAQUAH RD SE			RENTON-ISSAQUAH RD SE			NW TALUS DR		
	Southbound			Northbound			Eastbound		
Start Time	Thru	Right	U-Turn	Left	Thru	U-Turn	Left	Right	U-Turn
7:00 AM	12	0	0	1	94	0	24	5	0
7:05 AM	20	7	0	0	83	0	38	10	0
7:10 AM	15	5	0	3	109	0	26	1	0
7:15 AM	39	6	0	0	89	0	25	4	0
7:20 AM	25	7	0	4	90	0	33	4	0
7:25 AM	54	2	0	0	85	0	21	3	0
7:30 AM	33	10	0	2	88	0	33	4	0
7:35 AM	34	6	0	4	102	0	29	4	0
7:40 AM	31	1	0	3	92	0	46	1	0
7:45 AM	25	14	0	3	93	0	43	2	0
7:50 AM	48	8	0	2	103	0	29	1	0
7:55 AM	32	7	0	3	98	0	26	1	0
8:00 AM	28	9	0	2	92	0	45	1	0
8:05 AM	35	8	0	3	104	0	31	6	0
8:10 AM	27	6	0	3	80	0	32	3	0
8:15 AM	37	8	0	2	89	0	32	1	0
8:20 AM	39	11	0	0	115	0	14	3	0
8:25 AM	32	12	0	3	105	0	27	1	0
8:30 AM	24	7	0	1	84	0	24	2	0
8:35 AM	37	5	0	4	105	0	20	2	0
8:40 AM	31	16	0	2	102	0	24	0	0
8:45 AM	28	8	0	5	92	0	28	3	0
8:50 AM	42	12	0	2	81	0	30	4	0
8:55 AM	25	14	0	0	89	0	33	4	1

Site 3
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Lights

	RENTON-ISSAQUAH RD SE			RENTON-ISSAQUAH RD SE			NW TALUS DR		
	Southbound			Northbound			Eastbound		
Start Time	Thru	Right	U-Turn	Left	Thru	U-Turn	Left	Right	U-Turn
2:00 PM	46	19	0	0	23	0	13	1	0
2:05 PM	68	13	0	0	41	0	14	1	0
2:10 PM	66	18	0	0	25	0	9	2	0
2:15 PM	61	21	0	3	39	0	13	1	0
2:20 PM	77	20	0	0	30	0	18	3	0
2:25 PM	75	17	0	1	36	0	19	1	0
2:30 PM	65	13	0	1	32	0	14	1	0
2:35 PM	75	20	0	0	38	0	17	2	0
2:40 PM	94	12	1	0	35	0	11	3	0
2:45 PM	101	13	0	2	35	0	11	5	0
2:50 PM	103	18	0	0	44	0	15	3	0
2:55 PM	94	16	0	1	35	0	13	3	0
3:00 PM	95	11	0	2	29	0	7	0	0
3:05 PM	102	12	0	0	29	0	21	4	0
3:10 PM	108	20	0	0	38	0	8	2	0
3:15 PM	120	26	0	2	38	0	13	1	0
3:20 PM	165	11	0	4	48	0	18	4	0
3:25 PM	156	17	0	0	32	0	14	1	0
3:30 PM	92	14	0	4	49	0	16	1	0
3:35 PM	88	15	0	0	41	0	23	5	0
3:40 PM	110	16	0	3	40	0	16	1	0
3:45 PM	108	19	0	1	15	0	8	3	0
3:50 PM	84	17	0	2	37	0	37	3	0
3:55 PM	103	25	0	1	29	0	9	5	0
4:00 PM	97	21	0	0	46	0	16	5	0
4:05 PM	95	27	0	4	40	0	8	4	0
4:10 PM	105	17	0	4	40	0	13	1	0
4:15 PM	114	15	0	2	42	0	15	1	0
4:20 PM	116	13	0	2	36	0	12	4	0
4:25 PM	94	13	0	3	33	0	11	6	0
4:30 PM	97	17	0	1	53	0	15	4	0
4:35 PM	109	16	0	2	35	0	11	2	0
4:40 PM	104	36	0	4	37	0	16	2	0
4:45 PM	110	18	0	0	53	0	16	3	0
4:50 PM	98	14	0	2	36	0	14	2	0
4:55 PM	103	16	0	1	39	0	15	3	0
5:00 PM	93	18	0	1	22	0	17	1	0
5:05 PM	102	22	0	3	45	0	12	2	0
5:10 PM	109	28	0	1	13	0	10	4	0
5:15 PM	98	18	0	1	37	0	17	5	0
5:20 PM	112	26	0	8	48	0	12	2	0
5:25 PM	95	22	0	2	39	0	10	1	0

Site 3
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Lights

	RENTON-ISSAQUAH RD SE			RENTON-ISSAQUAH RD SE			NW TALUS DR		
	Southbound			Northbound			Eastbound		
Start Time	Thru	Right	U-Turn	Left	Thru	U-Turn	Left	Right	U-Turn
5:30 PM	107	25	0	2	32	1	25	0	0
5:35 PM	102	21	0	2	23	0	15	1	0
5:40 PM	97	23	0	1	30	0	13	2	0
5:45 PM	104	21	0	3	37	0	16	2	0
5:50 PM	99	19	0	1	33	0	11	1	0
5:55 PM	96	17	0	1	34	0	11	3	0

Site 3
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Heavy Vehicles

	RENTON-ISSAQUAH RD SE Southbound			RENTON-ISSAQUAH RD SE Northbound			NW TALUS DR Eastbound		
Start Time	Thru	Right	U-Turn	Left	Thru	U-Turn	Left	Right	U-Turn
7:00 AM	2	0	0	0	2	0	0	0	0
7:05 AM	4	0	0	0	6	0	0	0	0
7:10 AM	0	0	0	0	3	0	0	0	0
7:15 AM	4	0	0	1	4	0	0	0	0
7:20 AM	2	0	0	1	8	0	1	0	0
7:25 AM	0	0	0	0	9	0	0	0	0
7:30 AM	2	0	0	0	5	0	2	0	0
7:35 AM	0	2	0	1	2	0	0	0	0
7:40 AM	1	0	0	2	3	0	1	1	0
7:45 AM	2	2	0	0	6	0	2	0	0
7:50 AM	1	0	0	0	3	0	0	1	0
7:55 AM	1	2	0	0	5	0	0	1	0
8:00 AM	3	0	0	0	5	0	0	1	0
8:05 AM	2	3	0	0	4	0	0	1	0
8:10 AM	4	0	0	0	6	0	0	1	0
8:15 AM	5	0	0	1	4	0	0	1	0
8:20 AM	5	0	0	0	6	0	0	2	0
8:25 AM	2	0	0	0	3	0	0	2	0
8:30 AM	5	0	0	0	4	0	0	0	0
8:35 AM	5	0	0	1	6	0	0	0	0
8:40 AM	3	2	0	0	2	0	0	0	0
8:45 AM	3	1	0	3	3	0	0	1	0
8:50 AM	3	1	0	0	3	0	0	0	0
8:55 AM	4	1	0	2	2	0	2	1	0

Site 3
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Heavy Vehicles

	RENTON-ISSAQUAH RD SE Southbound			RENTON-ISSAQUAH RD SE Northbound			NW TALUS DR Eastbound		
Start Time	Thru	Right	U-Turn	Left	Thru	U-Turn	Left	Right	U-Turn
2:00 PM	3	0	0	0	4	0	0	0	0
2:05 PM	4	0	0	0	1	0	0	0	0
2:10 PM	6	0	0	0	1	0	0	0	0
2:15 PM	10	0	0	0	2	0	0	0	0
2:20 PM	3	1	0	0	4	0	0	0	0
2:25 PM	5	0	0	0	6	0	0	0	0
2:30 PM	4	0	0	0	1	0	0	0	0
2:35 PM	3	0	0	0	3	0	0	1	0
2:40 PM	4	0	0	0	2	0	0	0	0
2:45 PM	3	0	0	0	3	0	1	0	0
2:50 PM	7	0	0	0	1	0	1	0	0
2:55 PM	2	1	0	0	3	0	0	0	0
3:00 PM	7	0	0	0	2	0	0	0	0
3:05 PM	2	1	0	0	2	0	0	1	0
3:10 PM	6	0	0	0	0	0	0	0	0
3:15 PM	4	0	0	1	2	0	0	0	0
3:20 PM	10	0	0	1	1	0	2	1	0
3:25 PM	4	0	0	0	2	0	1	1	0
3:30 PM	4	0	0	0	3	0	0	1	0
3:35 PM	7	0	0	0	3	0	0	1	0
3:40 PM	2	0	0	0	1	0	0	0	0
3:45 PM	5	0	0	0	2	0	0	0	0
3:50 PM	5	0	0	0	0	0	0	0	0
3:55 PM	4	0	0	0	0	0	0	0	0
4:00 PM	2	2	0	0	2	0	1	1	0
4:05 PM	4	0	0	0	0	0	0	0	0
4:10 PM	3	0	0	0	1	0	4	0	0
4:15 PM	3	0	0	0	1	0	0	0	0
4:20 PM	1	0	0	0	4	0	0	0	0
4:25 PM	2	0	0	0	3	0	0	0	0
4:30 PM	1	0	0	0	1	0	0	0	0
4:35 PM	0	1	0	0	2	0	0	0	0
4:40 PM	1	0	0	0	1	0	0	0	0
4:45 PM	2	0	0	0	1	0	0	0	0
4:50 PM	2	0	0	0	0	0	0	0	0
4:55 PM	3	0	0	0	0	0	1	0	0
5:00 PM	1	0	0	0	0	0	0	0	0
5:05 PM	1	0	0	0	0	0	0	0	0
5:10 PM	2	1	0	0	1	0	0	0	0
5:15 PM	2	0	0	0	0	0	0	0	0
5:20 PM	0	0	0	0	1	0	1	0	0
5:25 PM	3	0	0	0	1	0	0	0	0

Site 3
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Heavy Vehicles

	RENTON-ISSAQUAH RD SE Southbound			RENTON-ISSAQUAH RD SE Northbound			NW TALUS DR Eastbound		
Start Time	Thru	Right	U-Turn	Left	Thru	U-Turn	Left	Right	U-Turn
5:30 PM	5	0	0	0	0	0	0	0	0
5:35 PM	2	0	0	0	0	0	0	0	0
5:40 PM	3	0	0	0	0	0	0	0	0
5:45 PM	2	0	0	0	1	0	0	0	0
5:50 PM	1	0	0	0	0	0	0	0	0
5:55 PM	0	0	0	0	1	0	0	0	0

Site 3
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Bicycles on Road

	RENTON-ISSAQUAH RD SE Southbound			RENTON-ISSAQUAH RD SE Northbound			NW TALUS DR Eastbound		
Start Time	Thru	Right	U-Turn	Left	Thru	U-Turn	Left	Right	U-Turn
7:00 AM	0	0	0	0	0	0	0	0	0
7:05 AM	0	0	0	0	0	0	0	0	0
7:10 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:20 AM	0	0	0	0	0	0	0	0	0
7:25 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:35 AM	0	0	0	0	0	0	0	0	0
7:40 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
7:50 AM	0	0	0	0	0	0	0	0	0
7:55 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:05 AM	0	0	0	0	0	0	0	0	0
8:10 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:20 AM	0	0	0	0	0	0	0	0	0
8:25 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:35 AM	0	0	0	0	0	0	0	0	0
8:40 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
8:50 AM	0	0	0	0	0	0	0	0	0
8:55 AM	0	0	0	0	0	0	0	0	0

Site 3
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Bicycles on Road

	RENTON-ISSAQUAH RD SE Southbound			RENTON-ISSAQUAH RD SE Northbound			NW TALUS DR Eastbound		
Start Time	Thru	Right	U-Turn	Left	Thru	U-Turn	Left	Right	U-Turn
2:00 PM	0	0	0	0	0	0	0	0	0
2:05 PM	0	0	0	0	0	0	0	0	0
2:10 PM	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0
2:20 PM	0	0	0	0	0	0	0	0	0
2:25 PM	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0
2:35 PM	0	0	0	0	0	0	0	0	0
2:40 PM	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0
2:50 PM	0	0	0	0	0	0	0	0	0
2:55 PM	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0
3:05 PM	0	0	0	0	0	0	0	0	0
3:10 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:20 PM	0	0	0	0	0	0	0	0	0
3:25 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:35 PM	0	0	0	0	0	0	1	0	0
3:40 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
3:50 PM	0	0	0	0	0	0	0	0	0
3:55 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:05 PM	0	0	0	0	0	0	0	0	0
4:10 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:20 PM	0	0	0	0	0	0	0	0	0
4:25 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:35 PM	0	0	0	0	0	0	0	0	0
4:40 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
4:50 PM	0	0	0	0	0	0	0	0	0
4:55 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	0	0	0	0	0	0	0
5:10 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:20 PM	0	0	0	0	0	0	0	0	0
5:25 PM	0	0	0	0	0	0	0	0	0

Site 3
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Bicycles on Road

	RENTON-ISSAQUAH RD SE Southbound			RENTON-ISSAQUAH RD SE Northbound			NW TALUS DR Eastbound		
Start Time	Thru	Right	U-Turn	Left	Thru	U-Turn	Left	Right	U-Turn
5:30 PM	0	0	0	0	0	0	0	0	0
5:35 PM	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
5:50 PM	0	0	0	0	0	0	0	0	0
5:55 PM	0	0	0	0	0	0	0	0	0

Site 3
Date 06-11-2019
Time 7-9AM;2-6PM

Type Crosswalk
Classification Bicycles on Crosswalk

	RENTON-ISSAQUAH RD SE Southbound			n/a Westbound			RENTON-ISSAQUAH RD SE Northbound			NW TALUS DR Eastbound		
Start Time	EB	WB	TOTAL	SB	NB	TOTAL	WB	EB	TOTAL	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:10 AM	0	0	0	0	0	0	0	0	0	1	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:35 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	1
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	0

Site 3
Date 06-11-2019
Time 7-9AM;2-6PM

Type Crosswalk
Classification Bicycles on Crosswalk

	RENTON-ISSAQUAH RD SE Southbound			n/a Westbound			RENTON-ISSAQUAH RD SE Northbound			NW TALUS DR Eastbound		
Start Time	EB	WB	TOTAL	SB	NB	TOTAL	WB	EB	TOTAL	NB	SB	TOTAL
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:05 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:10 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:20 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:25 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:35 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:40 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:50 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:55 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:05 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:10 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:20 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:25 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:35 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:40 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:50 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:55 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0

Site 3
Date 06-11-2019
Time 7-9AM;2-6PM

Type Crosswalk
Classification Pedestrians

	RENTON-ISSAQUAH RD SE Southbound			n/a Westbound			RENTON-ISSAQUAH RD SE Northbound			NW TALUS DR Eastbound		
Start Time	EB	WB	TOTAL	SB	NB	TOTAL	WB	EB	TOTAL	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:35 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:55 AM	0	0	0	0	0	0	0	2	2	2	0	2

Site 3
Date 06-11-2019
Time 7-9AM;2-6PM

Type Crosswalk
Classification Pedestrians

	RENTON-ISSAQUAH RD SE Southbound			n/a Westbound			RENTON-ISSAQUAH RD SE Northbound			NW TALUS DR Eastbound		
Start Time	EB	WB	TOTAL	SB	NB	TOTAL	WB	EB	TOTAL	NB	SB	TOTAL
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:05 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:10 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:20 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:25 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:35 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:40 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:50 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:55 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:05 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:10 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:20 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:25 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:35 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:40 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:50 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:55 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:20 PM	0	0	0	0	0	0	0	0	0	1	1	2
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0

Site 4
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Lights

	NW TALUS DR			FALCON WY NW			NW TALUS DR		
	Westbound			Northbound			Eastbound		
Start Time	Left	Thru	U-Turn	Left	Right	U-Turn	Thru	Right	U-Turn
7:00 AM	1	1	0	0	2	0	27	0	0
7:05 AM	3	5	0	0	2	0	42	0	0
7:10 AM	3	4	0	0	1	0	30	0	0
7:15 AM	1	7	0	0	0	0	26	0	0
7:20 AM	3	5	0	0	0	0	36	0	0
7:25 AM	1	3	0	0	0	0	37	0	0
7:30 AM	3	9	0	0	2	0	29	0	0
7:35 AM	1	8	0	0	2	0	40	0	0
7:40 AM	1	5	0	0	1	0	40	0	0
7:45 AM	4	11	0	0	1	0	38	0	0
7:50 AM	1	10	0	0	0	0	33	0	0
7:55 AM	2	9	0	0	0	0	34	0	0
8:00 AM	2	7	0	0	3	0	33	0	0
8:05 AM	4	8	0	0	0	0	41	0	0
8:10 AM	0	10	0	0	2	0	38	0	0
8:15 AM	0	8	0	0	1	0	25	0	0
8:20 AM	4	8	0	0	1	0	19	0	0
8:25 AM	2	11	0	0	1	0	34	1	0
8:30 AM	0	11	0	1	1	0	28	0	0
8:35 AM	2	7	0	0	2	0	22	0	0
8:40 AM	3	12	0	0	2	0	30	0	0
8:45 AM	2	13	0	0	1	0	23	0	0
8:50 AM	3	9	0	0	0	0	38	0	0
8:55 AM	2	14	0	0	4	0	27	0	0

Site 4
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Lights

	NW TALUS DR			FALCON WY NW			NW TALUS DR		
	Westbound			Northbound			Eastbound		
Start Time	Left	Thru	U-Turn	Left	Right	U-Turn	Thru	Right	U-Turn
2:00 PM	3	14	0	0	4	0	12	0	0
2:05 PM	1	13	0	0	1	0	11	1	0
2:10 PM	0	15	0	0	4	0	9	0	0
2:15 PM	2	24	0	0	2	0	16	0	0
2:20 PM	1	21	0	0	1	0	20	0	0
2:25 PM	1	14	0	0	1	0	14	0	0
2:30 PM	4	11	0	0	2	0	15	0	0
2:35 PM	3	19	0	0	7	0	12	0	0
2:40 PM	0	6	0	0	2	0	10	0	0
2:45 PM	3	17	0	0	3	0	11	0	0
2:50 PM	1	19	0	0	0	0	19	0	0
2:55 PM	3	15	0	0	1	0	15	0	0
3:00 PM	4	10	0	0	1	0	12	1	0
3:05 PM	0	13	0	0	4	0	18	0	0
3:10 PM	1	19	0	0	2	0	6	0	0
3:15 PM	7	22	0	0	1	0	15	1	0
3:20 PM	4	14	0	0	2	0	14	0	0
3:25 PM	3	15	0	0	3	0	15	0	0
3:30 PM	3	22	0	0	2	0	12	0	0
3:35 PM	0	17	0	0	7	0	23	0	0
3:40 PM	1	21	0	0	4	0	13	0	0
3:45 PM	1	19	0	0	0	0	13	0	0
3:50 PM	2	21	0	0	6	0	14	0	0
3:55 PM	1	24	0	0	7	0	11	0	0
4:00 PM	0	20	0	0	1	0	16	0	0
4:05 PM	2	32	0	0	4	0	13	0	0
4:10 PM	0	24	0	0	2	0	9	0	0
4:15 PM	2	15	0	0	0	0	18	0	0
4:20 PM	2	17	0	0	1	0	13	0	0
4:25 PM	2	17	0	0	8	0	6	0	0
4:30 PM	2	20	0	0	7	0	13	0	0
4:35 PM	1	21	0	0	2	0	12	0	0
4:40 PM	1	40	1	0	5	0	10	0	0
4:45 PM	2	18	0	0	3	0	19	0	0
4:50 PM	1	21	0	0	1	0	16	0	0
4:55 PM	0	19	0	0	2	0	13	0	0
5:00 PM	0	26	0	0	1	0	18	0	0
5:05 PM	2	27	0	0	1	0	17	0	0
5:10 PM	2	26	0	0	1	0	18	0	0
5:15 PM	0	23	0	0	1	0	12	0	0
5:20 PM	2	40	0	0	3	0	11	0	0
5:25 PM	0	36	0	0	2	0	12	1	0

Site 4
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Lights

	NW TALUS DR			FALCON WY NW			NW TALUS DR		
	Westbound			Northbound			Eastbound		
Start Time	Left	Thru	U-Turn	Left	Right	U-Turn	Thru	Right	U-Turn
5:30 PM	0	41	1	0	1	0	22	0	0
5:35 PM	1	24	0	0	2	0	17	0	0
5:40 PM	0	29	0	0	2	0	15	0	0
5:45 PM	0	37	0	0	3	0	9	0	0
5:50 PM	1	31	0	0	1	0	10	0	0
5:55 PM	2	21	0	0	0	0	12	0	0

Site 4
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Heavy Vehicles

	NW TALUS DR Westbound			FALCON WY NW Northbound			NW TALUS DR Eastbound		
Start Time	Left	Thru	U-Turn	Left	Right	U-Turn	Thru	Right	U-Turn
7:00 AM	0	0	0	0	0	0	0	0	0
7:05 AM	0	0	0	0	0	0	0	0	0
7:10 AM	0	1	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	0	0
7:20 AM	0	1	0	0	0	0	1	0	0
7:25 AM	0	1	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	2	0	0
7:35 AM	0	3	0	0	0	0	0	0	0
7:40 AM	0	2	0	0	0	0	2	0	0
7:45 AM	0	2	0	0	0	0	2	0	0
7:50 AM	0	0	0	0	0	0	2	0	0
7:55 AM	0	2	0	0	0	0	1	0	0
8:00 AM	0	0	0	0	0	0	1	0	0
8:05 AM	0	1	0	0	0	0	1	0	0
8:10 AM	0	2	0	0	0	0	1	0	0
8:15 AM	1	0	0	0	0	0	1	0	0
8:20 AM	0	0	0	0	1	0	1	0	0
8:25 AM	0	0	0	0	0	0	1	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:35 AM	0	1	0	0	0	0	1	0	0
8:40 AM	0	2	0	0	0	0	0	0	0
8:45 AM	0	4	0	0	0	0	1	0	0
8:50 AM	1	0	0	0	0	0	1	0	0
8:55 AM	0	2	0	0	0	0	3	0	0

Site 4
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Heavy Vehicles

	NW TALUS DR Westbound			FALCON WY NW Northbound			NW TALUS DR Eastbound		
Start Time	Left	Thru	U-Turn	Left	Right	U-Turn	Thru	Right	U-Turn
2:00 PM	0	0	0	0	0	0	0	0	0
2:05 PM	0	0	0	0	0	0	0	0	0
2:10 PM	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0
2:20 PM	1	0	0	0	0	0	0	0	0
2:25 PM	0	0	0	0	0	0	0	0	0
2:30 PM	0	1	0	0	0	0	0	0	0
2:35 PM	0	0	0	0	0	0	2	0	0
2:40 PM	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	1	0	0
2:50 PM	0	0	0	0	0	0	0	0	0
2:55 PM	0	1	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0
3:05 PM	0	1	0	0	0	0	1	0	0
3:10 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	2	0	0	0	0	1	0	0
3:20 PM	0	2	0	0	0	0	1	0	0
3:25 PM	0	0	0	0	0	0	2	0	0
3:30 PM	0	1	0	0	0	0	0	0	0
3:35 PM	0	0	0	0	0	0	1	0	0
3:40 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	1	0	0
3:50 PM	0	0	0	0	0	0	0	0	0
3:55 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	4	0	0	0	0	2	0	0
4:05 PM	0	0	0	0	0	0	1	0	0
4:10 PM	0	0	0	0	0	0	3	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:20 PM	0	0	0	0	0	0	0	0	0
4:25 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:35 PM	0	1	0	0	0	0	0	0	0
4:40 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0	0
4:50 PM	0	0	0	0	0	0	0	0	0
4:55 PM	0	0	0	0	0	0	1	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	0	0	0	0	0	0	0
5:10 PM	0	1	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:20 PM	0	0	0	0	0	0	1	0	0
5:25 PM	0	0	0	0	0	0	0	0	0

Site 4
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Heavy Vehicles

	NW TALUS DR Westbound			FALCON WY NW Northbound			NW TALUS DR Eastbound		
Start Time	Left	Thru	U-Turn	Left	Right	U-Turn	Thru	Right	U-Turn
5:30 PM	0	0	0	0	0	0	0	0	0
5:35 PM	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
5:50 PM	0	0	0	0	0	0	0	0	0
5:55 PM	0	0	0	0	0	0	0	0	0

Site 4
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Bicycles on Road

	NW TALUS DR Westbound			FALCON WY NW Northbound			NW TALUS DR Eastbound		
Start Time	Left	Thru	U-Turn	Left	Right	U-Turn	Thru	Right	U-Turn
7:00 AM	0	0	0	0	0	0	0	0	0
7:05 AM	0	0	0	0	0	0	0	0	0
7:10 AM	0	0	0	0	0	0	1	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:20 AM	0	0	0	0	0	0	0	0	0
7:25 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:35 AM	0	0	0	0	0	0	0	0	0
7:40 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
7:50 AM	0	0	0	0	0	0	0	0	0
7:55 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:05 AM	0	0	0	0	0	0	0	0	0
8:10 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:20 AM	0	0	0	0	0	0	0	0	0
8:25 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:35 AM	0	0	0	0	0	0	0	0	0
8:40 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	1	0	0
8:50 AM	0	0	0	0	0	0	0	0	0
8:55 AM	0	0	0	0	0	0	0	0	0

Site 4
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Bicycles on Road

	NW TALUS DR Westbound			FALCON WY NW Northbound			NW TALUS DR Eastbound		
Start Time	Left	Thru	U-Turn	Left	Right	U-Turn	Thru	Right	U-Turn
2:00 PM	0	0	0	0	0	0	0	0	0
2:05 PM	0	0	0	0	0	0	0	0	0
2:10 PM	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0
2:20 PM	0	0	0	0	0	0	0	0	0
2:25 PM	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0
2:35 PM	0	0	0	0	0	0	0	0	0
2:40 PM	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0
2:50 PM	0	0	0	0	0	0	0	0	0
2:55 PM	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0
3:05 PM	0	0	0	0	0	0	0	0	0
3:10 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:20 PM	0	0	0	0	0	0	0	0	0
3:25 PM	0	1	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:35 PM	0	0	0	0	0	0	1	0	0
3:40 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
3:50 PM	0	0	0	0	0	0	0	0	0
3:55 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:05 PM	0	0	0	0	0	0	0	0	0
4:10 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:20 PM	0	0	0	0	0	0	0	0	0
4:25 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:35 PM	0	0	0	0	0	0	0	0	0
4:40 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
4:50 PM	0	0	0	0	0	0	0	0	0
4:55 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	0	0	0	0	0	0	0
5:10 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:20 PM	0	0	0	0	0	0	0	0	0
5:25 PM	0	0	0	0	0	0	0	0	0

Site 4
Date 06-11-2019
Time 7-9AM;2-6PM

Type Road
Classification Bicycles on Road

	NW TALUS DR Westbound			FALCON WY NW Northbound			NW TALUS DR Eastbound		
Start Time	Left	Thru	U-Turn	Left	Right	U-Turn	Thru	Right	U-Turn
5:30 PM	0	0	0	0	0	0	0	0	0
5:35 PM	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
5:50 PM	0	0	0	0	0	0	0	0	0
5:55 PM	0	0	0	0	0	0	0	0	0

Site 4
Date 06-11-2019
Time 7-9AM;2-6PM

Type Crosswalk
Classification Bicycles on Crosswalk

	n/a Southbound			NW TALUS DR Westbound			FALCON WY NW Northbound			NW TALUS DR Eastbound		
Start Time	EB	WB	TOTAL	SB	NB	TOTAL	WB	EB	TOTAL	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:35 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	0

Site 4
Date 06-11-2019
Time 7-9AM;2-6PM

Type Crosswalk
Classification Bicycles on Crosswalk

	n/a Southbound			NW TALUS DR Westbound			FALCON WY NW Northbound			NW TALUS DR Eastbound		
Start Time	EB	WB	TOTAL	SB	NB	TOTAL	WB	EB	TOTAL	NB	SB	TOTAL
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:05 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:10 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:20 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:25 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:35 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:40 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:50 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:55 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:05 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:10 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:20 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:25 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:35 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:40 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:50 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:55 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0

Site 4
Date 06-11-2019
Time 7-9AM;2-6PM

Type Crosswalk
Classification Pedestrians

	n/a Southbound			NW TALUS DR Westbound			FALCON WY NW Northbound			NW TALUS DR Eastbound		
Start Time	EB	WB	TOTAL	SB	NB	TOTAL	WB	EB	TOTAL	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:05 AM	0	0	0	0	0	0	1	0	1	0	0	0
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:35 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:55 AM	0	0	0	0	0	0	1	0	1	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:10 AM	0	0	0	0	0	0	0	1	1	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:50 AM	0	0	0	0	0	0	0	1	1	0	0	0
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	0

Site 4
Date 06-11-2019
Time 7-9AM;2-6PM

Type Crosswalk
Classification Pedestrians

	n/a Southbound			NW TALUS DR Westbound			FALCON WY NW Northbound			NW TALUS DR Eastbound		
Start Time	EB	WB	TOTAL	SB	NB	TOTAL	WB	EB	TOTAL	NB	SB	TOTAL
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:05 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:10 PM	0	0	0	0	0	0	1	0	1	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:20 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:25 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:35 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:40 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:50 PM	0	0	0	0	0	0	0	0	0	0	0	0
2:55 PM	0	0	0	0	0	0	1	0	1	0	0	0
3:00 PM	0	0	0	0	0	0	0	1	1	0	0	0
3:05 PM	0	0	0	0	0	0	0	1	1	0	0	0
3:10 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:20 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:25 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:35 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:40 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	1	1	0	0	0
3:50 PM	0	0	0	0	0	0	0	0	0	0	0	0
3:55 PM	0	0	0	0	0	0	1	0	1	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:10 PM	0	0	0	0	0	0	0	1	1	0	0	0
4:15 PM	0	0	0	0	0	0	2	0	2	0	0	0
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:10 PM	0	0	0	0	0	0	1	0	1	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	1	1	2	0	0	0
5:50 PM	0	0	0	0	0	0	0	1	1	0	0	0
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX C

LEVEL OF SERVICE DEFINITIONS & REPORTS

December 13, 2019

Levels of service (LOS) are qualitative descriptions of traffic operating conditions. These levels of service are designated with letters ranging from LOS A, which is indicative of good operating conditions with little or no delay, to LOS F, which is indicative of stop-and-go conditions with frequent and lengthy delays. Levels of service for this analysis were developed using procedures presented in the *Highway Capacity Manual, Sixth Edition* (Transportation Research Board, 2016).

Signalized Intersections

Level of service for signalized intersections is defined in terms of average delay for all vehicles that travel through the intersection. Delay can be a cause of driver discomfort, frustration, inefficient fuel consumption, and lost travel time. Specifically, level-of-service criteria are stated in terms of the average delay per vehicle in seconds. Delay is a complex measure and is dependent on a number of variables including: number and type of vehicles by movement, intersection lane geometry, signal phasing, the amount of green time allocated to each phase, transit stops and parking maneuvers. Table A-1 shows the level of service criteria for signalized intersections from the *Highway Capacity Manual, Sixth Edition.*

Table A-1. Level of Service for Signalized Intersections

Level of Service	Average Control Delay Per Vehicle
A	≤ 10 seconds
B	> 10 – 20 seconds
C	> 20 – 35 seconds
D	> 35 – 55 seconds
E	> 55 – 80 seconds
F	> 80 seconds

Source: Transportation Research Board, Highway Capacity Manual, Exhibit 19.8, 2016.

Unsignalized Intersections

For unsignalized intersections, level of service is based on the average delay per vehicle for each turning movement. The level of service for all-way stop or roundabout-controlled intersections is based upon the average delay for all vehicles that travel through the intersection. The level of service for a one- or two-way, stop-controlled intersection, delay is related to the availability of gaps in the main street's traffic flow, and the ability of a driver to enter or pass through those gaps. Table A-2 shows the level of service criteria for unsignalized intersections from the *Highway Capacity Manual, Sixth Edition*.

Table A-2. Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay per Vehicle
A	0 – 10 seconds
B	> 10 – 15 seconds
C	> 15 – 25 seconds
D	> 25 – 35 seconds
E	> 35 – 50 seconds
F	> 50 seconds

Source: Transportation Research Board, Highway Capacity Manual, Exhibit 20.2, 2016.

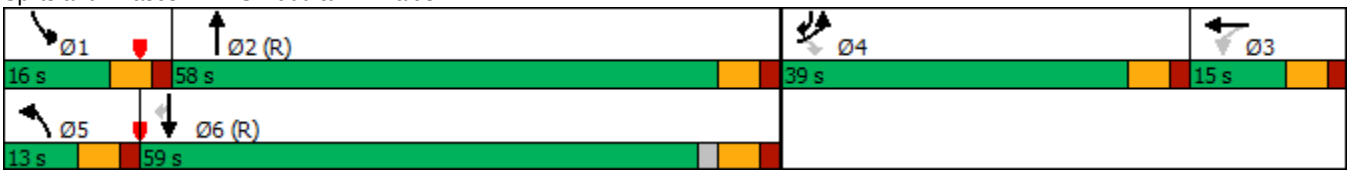
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	395	0	39	1	0	0	34	1213	0	1	429	109
Future Volume (vph)	395	0	39	1	0	0	34	1213	0	1	429	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	11	11	12	12	10	10
Grade (%)		9%			0%			-4%			4%	
Storage Length (ft)	330		270	0		0	250		0	230		450
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	75			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850									0.850
Flt Protected	0.950				0.950		0.950			0.950		
Satd. Flow (prot)	3001	0	1384	0	1805	0	1695	3390	0	1653	3086	1381
Flt Permitted	0.950				0.950		0.950			0.950		
Satd. Flow (perm)	3001	0	1384	0	1805	0	1695	3390	0	1653	3086	1381
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			128									111
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		640			284			982			1618	
Travel Time (s)		17.5			7.7			16.7			27.6	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	4%	4%	0%	0%	0%	5%	5%	5%	7%	7%	7%
Adj. Flow (vph)	403	0	40	1	0	0	35	1238	0	1	438	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	403	0	40	0	1	0	35	1238	0	1	438	111
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		30			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		12			12			12			12	
Two way Left Turn Lane											Yes	
Headway Factor	1.16	1.06	1.16	1.00	1.00	1.00	1.02	1.02	0.97	1.03	1.12	1.12
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1	1	2		1	2		1	2	1
Detector Template	Left		Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20		20	20	100		20	100		20	100	20
Trailing Detector (ft)	0		0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0		0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20		20	20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	4				3		5	2		1	6	4
Permitted Phases			4	3								6
Detector Phase	4		4	3	3		5	2		1	6	4
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0		3.0	7.0		3.0	7.0	5.0
Minimum Split (s)	38.0		38.0	11.0	11.0		9.0	13.0		9.0	41.0	38.0
Total Split (s)	39.0		39.0	15.0	15.0		13.0	58.0		16.0	59.0	39.0
Total Split (%)	30.5%		30.5%	11.7%	11.7%		10.2%	45.3%		12.5%	46.1%	30.5%
Maximum Green (s)	33.0		33.0	9.0	9.0		7.0	52.0		10.0	53.0	33.0
Yellow Time (s)	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0		6.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead		Lead	Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.5		2.5	2.5	2.5		2.5	4.5		2.5	4.5	2.5
Recall Mode	None		None	None	None		None	C-Min		None	C-Min	None
Walk Time (s)	7.0		7.0								7.0	7.0
Flash Dont Walk (s)	25.0		25.0								28.0	25.0
Pedestrian Calls (#/hr)	0		0								0	0
Act Effct Green (s)	22.1		22.1		5.1		6.5	89.3		5.2	83.8	114.3
Actuated g/C Ratio	0.17		0.17		0.04		0.05	0.70		0.04	0.65	0.89
v/c Ratio	0.78		0.12		0.01		0.41	0.52		0.02	0.22	0.09
Control Delay	61.3		0.7		59.0		73.1	12.4		59.0	11.3	0.7
Queue Delay	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	61.3		0.7		59.0		73.1	12.4		59.0	11.3	0.7
LOS	E		A		E		E	B		E	B	A
Approach Delay		55.8			59.0			14.1			9.3	
Approach LOS		E			E			B			A	

Intersection Summary

Area Type: Other
Cycle Length: 128
Actuated Cycle Length: 128
Offset: 25 (20%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 21.1 Intersection LOS: C
Intersection Capacity Utilization 53.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: SR 900 & NW Talus Dr



Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	419	1	25	118	0	15
Future Vol, veh/h	419	1	25	118	0	15
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-11	-	-	9	1	-
Peak Hour Factor	91	91	86	86	75	75
Heavy Vehicles, %	4	4	9	9	7	7
Mvmt Flow	460	1	29	137	0	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	462	0	589	462
Stage 1	-	-	-	-	462	-
Stage 2	-	-	-	-	127	-
Critical Hdwy	-	-	4.235	-	6.905	6.405
Critical Hdwy Stg 1	-	-	-	-	5.705	-
Critical Hdwy Stg 2	-	-	-	-	6.105	-
Follow-up Hdwy	-	-	2.2855	-	3.5665	3.3665
Pot Cap-1 Maneuver	-	-	1055	-	431	579
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	866	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1054	-	419	579
Mov Cap-2 Maneuver	-	-	-	-	419	-
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	842	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	579	-	-	1054	-
HCM Lane V/C Ratio	0.035	-	-	0.028	-
HCM Control Delay (s)	11.4	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	169	0	30	1	0	0	10	449	0	1	0	1106
Future Volume (vph)	169	0	30	1	0	0	10	449	0	1	0	1106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	11	11	12	12	12	10
Grade (%)		9%			0%			-4%				4%
Storage Length (ft)	330		270	0		0	250		0		230	
Storage Lanes	1		1	0		0	1		0		1	
Taper Length (ft)	75			50			50				50	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt			0.850									
Flt Protected	0.950				0.950		0.950				0.950	
Satd. Flow (prot)	3060	0	1411	0	1805	0	1679	3358	0	0	1685	3145
Flt Permitted	0.950				0.950		0.950				0.950	
Satd. Flow (perm)	3060	0	1411	0	1805	0	1679	3358	0	0	1685	3145
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)			171									
Link Speed (mph)		25			25			40				40
Link Distance (ft)		640			284			982				1618
Travel Time (s)		17.5			7.7			16.7				27.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	6%	6%	6%	5%	5%	5%
Adj. Flow (vph)	184	0	33	1	0	0	11	488	0	1	0	1202
Shared Lane Traffic (%)												
Lane Group Flow (vph)	184	0	33	0	1	0	11	488	0	0	1	1202
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	R NA	Left	Left
Median Width(ft)		30			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		12			12			12				12
Two way Left Turn Lane												Yes
Headway Factor	1.16	1.06	1.16	1.00	1.00	1.00	1.02	1.02	0.97	1.03	1.03	1.12
Turning Speed (mph)	15		9	15		9	15		9	9	15	
Number of Detectors	1		1	1	2		1	2		1	1	2
Detector Template	Left		Right	Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (ft)	20		20	20	100		20	100		20	20	100
Trailing Detector (ft)	0		0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0		0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20		20	20	6		20	6		20	20	6
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)					94			94				94
Detector 2 Size(ft)					6			6				6
Detector 2 Type					Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0				0.0

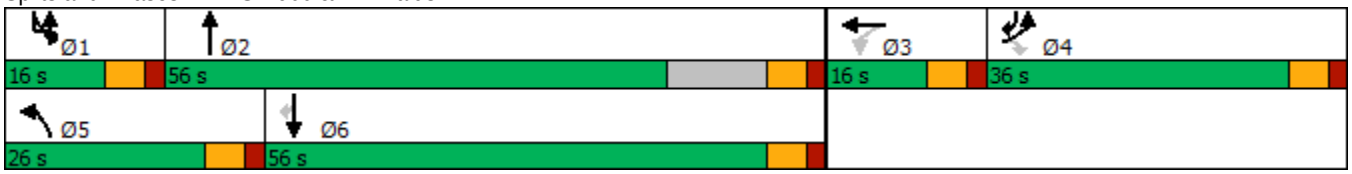
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	205
Future Volume (vph)	205
Ideal Flow (vphpl)	1900
Lane Width (ft)	10
Grade (%)	
Storage Length (ft)	450
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1407
Flt Permitted	
Satd. Flow (perm)	1407
Right Turn on Red	Yes
Satd. Flow (RTOR)	223
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Heavy Vehicles (%)	5%
Adj. Flow (vph)	223
Shared Lane Traffic (%)	
Lane Group Flow (vph)	223
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.12
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Turn Type	Prot		Perm	Perm	NA		Prot	NA		Prot	Prot	NA
Protected Phases	4				3		5	2		1	1	6
Permitted Phases			4	3								
Detector Phase	4		4	3	3		5	2		1	1	6
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0		3.0	7.0		3.0	3.0	7.0
Minimum Split (s)	38.0		38.0	11.0	11.0		9.0	13.0		9.0	9.0	41.0
Total Split (s)	36.0		36.0	16.0	16.0		26.0	56.0		16.0	16.0	56.0
Total Split (%)	26.9%		26.9%	11.9%	11.9%		19.4%	41.8%		11.9%	11.9%	41.8%
Maximum Green (s)	30.0		30.0	10.0	10.0		20.0	50.0		10.0	10.0	50.0
Yellow Time (s)	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0		6.0		6.0		6.0	6.0			6.0	6.0
Lead/Lag	Lag		Lag	Lead	Lead		Lead	Lag		Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.5		2.5	2.5	2.5		2.5	4.5		2.5	2.5	4.5
Recall Mode	None		None	None	None		None	Min		None	None	Min
Walk Time (s)	7.0		7.0									7.0
Flash Dont Walk (s)	25.0		25.0									28.0
Pedestrian Calls (#/hr)	0		0									0
Act Effct Green (s)	9.6		9.6		5.2		5.7	46.0			5.2	45.8
Actuated g/C Ratio	0.13		0.13		0.07		0.08	0.65			0.07	0.64
v/c Ratio	0.45		0.10		0.01		0.08	0.23			0.01	0.59
Control Delay	33.8		0.6		38.0		37.3	7.1			38.0	11.1
Queue Delay	0.0		0.0		0.0		0.0	0.0			0.0	0.0
Total Delay	33.8		0.6		38.0		37.3	7.1			38.0	11.1
LOS	C		A		D		D	A			D	B
Approach Delay		28.8			38.0			7.8				9.5
Approach LOS		C			D			A				A

Intersection Summary

Area Type: Other
Cycle Length: 134
Actuated Cycle Length: 71.2
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 11.1 Intersection LOS: B
Intersection Capacity Utilization 53.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: SR 900 & NW Talus Dr



Lane Group	SBR
Turn Type	pm+ov
Protected Phases	4
Permitted Phases	6
Detector Phase	4
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	38.0
Total Split (s)	36.0
Total Split (%)	26.9%
Maximum Green (s)	30.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.5
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	25.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	66.0
Actuated g/C Ratio	0.93
v/c Ratio	0.17
Control Delay	0.7
Queue Delay	0.0
Total Delay	0.7
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	173	1	24	191	0	26
Future Vol, veh/h	173	1	24	191	0	26
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-11	-	-	9	1	-
Peak Hour Factor	87	87	84	84	59	59
Heavy Vehicles, %	8	8	5	5	4	4
Mvmt Flow	199	1	29	227	0	44

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	203	0	375	203
Stage 1	-	-	-	-	203	-
Stage 2	-	-	-	-	172	-
Critical Hdwy	-	-	4.175	-	6.86	6.36
Critical Hdwy Stg 1	-	-	-	-	5.66	-
Critical Hdwy Stg 2	-	-	-	-	6.06	-
Follow-up Hdwy	-	-	2.2475	-	3.538	3.338
Pot Cap-1 Maneuver	-	-	1348	-	595	827
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	828	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1345	-	581	825
Mov Cap-2 Maneuver	-	-	-	-	581	-
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	810	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	825	-	-	1345	-
HCM Lane V/C Ratio	0.053	-	-	0.021	-
HCM Control Delay (s)	9.6	-	-	7.7	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	0	38	1	0	0	27	506	0	1	1266	264
Future Volume (vph)	168	0	38	1	0	0	27	506	0	1	1266	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	11	11	12	12	10	10
Grade (%)		9%			0%			-4%			4%	
Storage Length (ft)	330		270	0		0	250		0	230		450
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	75			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor							1.00					0.99
Frt			0.850									0.850
Flt Protected	0.950				0.950		0.950			0.950		
Satd. Flow (prot)	3030	0	1398	0	1805	0	1728	3456	0	1734	3237	1448
Flt Permitted	0.950				0.950		0.950			0.950		
Satd. Flow (perm)	3030	0	1398	0	1805	0	1727	3456	0	1734	3237	1427
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			172									272
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		640			284			982			1618	
Travel Time (s)		17.5			7.7			16.7			27.6	
Confl. Peds. (#/hr)							2					2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	173	0	39	1	0	0	28	522	0	1	1305	272
Shared Lane Traffic (%)												
Lane Group Flow (vph)	173	0	39	0	1	0	28	522	0	1	1305	272
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		30			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		12			12			12			12	
Two way Left Turn Lane											Yes	
Headway Factor	1.16	1.06	1.16	1.00	1.00	1.00	1.02	1.02	0.97	1.03	1.12	1.12
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1	1	2		1	2		1	2	1
Detector Template	Left		Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20		20	20	100		20	100		20	100	20
Trailing Detector (ft)	0		0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0		0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20		20	20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		Perm	Perm	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	4				3		5	2		1	6	4
Permitted Phases			4	3								6
Detector Phase	4		4	3	3		5	2		1	6	4
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0		3.0	7.0		3.0	7.0	5.0
Minimum Split (s)	38.0		38.0	11.0	11.0		9.0	13.0		9.0	41.0	38.0
Total Split (s)	31.0		31.0	12.0	12.0		15.0	65.0		22.0	75.0	31.0
Total Split (%)	23.3%		23.3%	9.0%	9.0%		11.3%	48.9%		16.5%	56.4%	23.3%
Maximum Green (s)	25.0		25.0	6.0	6.0		9.0	59.0		16.0	69.0	25.0
Yellow Time (s)	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0		6.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead		Lead	Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.5		2.5	2.5	2.5		2.5	4.5		2.5	4.5	2.5
Recall Mode	None		None	None	None		None	C-Min		None	C-Min	None
Walk Time (s)	7.0		7.0								7.0	7.0
Flash Dont Walk (s)	25.0		25.0								28.0	25.0
Pedestrian Calls (#/hr)	0		0								2	0
Act Effct Green (s)	12.5		12.5		5.1		7.0	103.9		5.2	97.8	110.3
Actuated g/C Ratio	0.09		0.09		0.04		0.05	0.78		0.04	0.74	0.83
v/c Ratio	0.61		0.14		0.01		0.31	0.19		0.01	0.55	0.22
Control Delay	66.9		1.0		62.0		68.8	5.2		62.0	11.1	0.8
Queue Delay	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	66.9		1.0		62.0		68.8	5.2		62.0	11.1	0.8
LOS	E		A		E		E	A		E	B	A
Approach Delay		54.8			62.0			8.4			9.3	
Approach LOS		D			E			A			A	

Intersection Summary

Area Type: Other
Cycle Length: 133
Actuated Cycle Length: 133
Offset: 10 (8%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 13.3 Intersection LOS: B
Intersection Capacity Utilization 58.3% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: SR 900 & NW Talus Dr

Intersection						
Int Delay, s/veh	1.1					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	169	1	15	276	0	36
Future Vol, veh/h	169	1	15	276	0	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-11	-	-	9	1	-
Peak Hour Factor	84	84	82	82	64	64
Heavy Vehicles, %	2	2	4	4	0	0
Mvmt Flow	201	1	18	337	0	56

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	202	0	407	202
Stage 1	-	-	-	-	202	-
Stage 2	-	-	-	-	205	-
Critical Hdwy	-	-	4.16	-	6.8	6.3
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	-	-	2.238	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1355	-	577	839
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	806	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1355	-	569	839
Mov Cap-2 Maneuver	-	-	-	-	569	-
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	796	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	839	-	-	1355	-
HCM Lane V/C Ratio	0.067	-	-	0.014	-
HCM Control Delay (s)	9.6	-	-	7.7	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

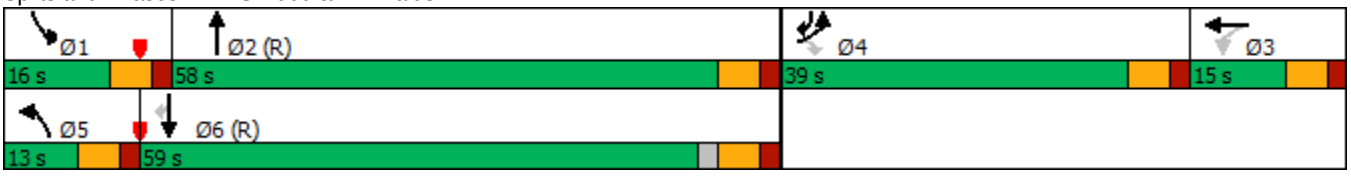
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	484	0	48	1	0	9	42	1272	1	3	450	134
Future Volume (vph)	484	0	48	1	0	9	42	1272	1	3	450	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	11	11	12	12	10	10
Grade (%)		9%			0%			-4%			4%	
Storage Length (ft)	330		270	0		0	250		0	230		450
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	75			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.878							0.850
Flt Protected	0.950				0.995		0.950			0.950		
Satd. Flow (prot)	3001	0	1384	0	1660	0	1695	3390	0	1653	3086	1381
Flt Permitted	0.950				0.995		0.950			0.950		
Satd. Flow (perm)	3001	0	1384	0	1660	0	1695	3390	0	1653	3086	1381
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			128		128							137
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		640			284			982			1618	
Travel Time (s)		17.5			7.7			16.7			27.6	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	4%	4%	0%	0%	0%	5%	5%	5%	7%	7%	7%
Adj. Flow (vph)	494	0	49	1	0	9	43	1298	1	3	459	137
Shared Lane Traffic (%)												
Lane Group Flow (vph)	494	0	49	0	10	0	43	1299	0	3	459	137
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		30			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		12			12			12			12	
Two way Left Turn Lane											Yes	
Headway Factor	1.16	1.06	1.16	1.00	1.00	1.00	1.02	1.02	0.97	1.03	1.12	1.12
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1	1	2		1	2		1	2	1
Detector Template	Left		Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20		20	20	100		20	100		20	100	20
Trailing Detector (ft)	0		0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0		0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20		20	20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm	Perm	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	4				3		5	2		1	6	4
Permitted Phases			4	3								6
Detector Phase	4		4	3	3		5	2		1	6	4
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0		3.0	7.0		3.0	7.0	5.0
Minimum Split (s)	38.0		38.0	11.0	11.0		9.0	13.0		9.0	41.0	38.0
Total Split (s)	39.0		39.0	15.0	15.0		13.0	58.0		16.0	59.0	39.0
Total Split (%)	30.5%		30.5%	11.7%	11.7%		10.2%	45.3%		12.5%	46.1%	30.5%
Maximum Green (s)	33.0		33.0	9.0	9.0		7.0	52.0		10.0	53.0	33.0
Yellow Time (s)	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0		6.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead		Lead	Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.5		2.5	2.5	2.5		2.5	4.5		2.5	4.5	2.5
Recall Mode	None		None	None	None		None	C-Min		None	C-Min	None
Walk Time (s)	7.0		7.0								7.0	7.0
Flash Dont Walk (s)	25.0		25.0								28.0	25.0
Pedestrian Calls (#/hr)	0		0								0	0
Act Effct Green (s)	26.0		26.0		5.0		6.6	85.4		5.4	77.4	110.6
Actuated g/C Ratio	0.20		0.20		0.04		0.05	0.67		0.04	0.60	0.86
v/c Ratio	0.81		0.13		0.05		0.50	0.57		0.04	0.25	0.11
Control Delay	59.3		0.7		0.5		78.5	15.4		60.0	14.2	0.7
Queue Delay	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	59.3		0.7		0.5		78.5	15.4		60.0	14.2	0.7
LOS	E		A		A		E	B		E	B	A
Approach Delay		54.0			0.5			17.4			11.3	
Approach LOS		D			A			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 128
Actuated Cycle Length: 128
Offset: 25 (20%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 23.9 Intersection LOS: C
Intersection Capacity Utilization 64.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: SR 900 & NW Talus Dr



Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	517	1	25	151	1	15
Future Vol, veh/h	517	1	25	151	1	15
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-11	-	-	9	1	-
Peak Hour Factor	91	91	86	86	75	75
Heavy Vehicles, %	4	4	9	9	7	7
Mvmt Flow	568	1	29	176	1	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	570	0	716	570
Stage 1	-	-	-	-	570	-
Stage 2	-	-	-	-	146	-
Critical Hdwy	-	-	4.235	-	6.905	6.405
Critical Hdwy Stg 1	-	-	-	-	5.705	-
Critical Hdwy Stg 2	-	-	-	-	6.105	-
Follow-up Hdwy	-	-	2.2855	-	3.5665	3.3665
Pot Cap-1 Maneuver	-	-	960	-	357	500
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	846	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	959	-	346	500
Mov Cap-2 Maneuver	-	-	-	-	346	-
Stage 1	-	-	-	-	534	-
Stage 2	-	-	-	-	821	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	486	-	-	959	-
HCM Lane V/C Ratio	0.044	-	-	0.03	-
HCM Control Delay (s)	12.7	-	-	8.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	211	0	38	1	0	4	14	471	0	1	9	1160
Future Volume (vph)	211	0	38	1	0	4	14	471	0	1	9	1160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	11	11	12	12	12	10
Grade (%)		9%			0%			-4%				4%
Storage Length (ft)	330		270	0		0	250		0		230	
Storage Lanes	1		1	0		0	1		0		1	
Taper Length (ft)	75			50			50				50	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt			0.850		0.892							
Flt Protected	0.950				0.990		0.950				0.950	
Satd. Flow (prot)	3060	0	1411	0	1678	0	1679	3358	0	0	1685	3145
Flt Permitted	0.950				0.990		0.950				0.950	
Satd. Flow (perm)	3060	0	1411	0	1678	0	1679	3358	0	0	1685	3145
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)			171		171							
Link Speed (mph)		25			25			40				40
Link Distance (ft)		640			284			982				1618
Travel Time (s)		17.5			7.7			16.7				27.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	6%	6%	6%	5%	5%	5%
Adj. Flow (vph)	229	0	41	1	0	4	15	512	0	1	10	1261
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	0	41	0	5	0	15	512	0	0	11	1261
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	R NA	Left	Left
Median Width(ft)		30			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		12			12			12				12
Two way Left Turn Lane												Yes
Headway Factor	1.16	1.06	1.16	1.00	1.00	1.00	1.02	1.02	0.97	1.03	1.03	1.12
Turning Speed (mph)	15		9	15		9	15		9	9	15	
Number of Detectors	1		1	1	2		1	2		1	1	2
Detector Template	Left		Right	Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (ft)	20		20	20	100		20	100		20	20	100
Trailing Detector (ft)	0		0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0		0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20		20	20	6		20	6		20	20	6
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)					94			94				94
Detector 2 Size(ft)					6			6				6
Detector 2 Type					Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0				0.0

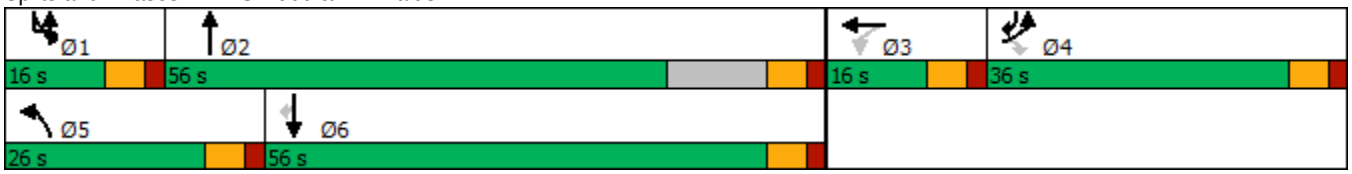
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	286
Future Volume (vph)	286
Ideal Flow (vphpl)	1900
Lane Width (ft)	10
Grade (%)	
Storage Length (ft)	450
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1407
Flt Permitted	
Satd. Flow (perm)	1407
Right Turn on Red	Yes
Satd. Flow (RTOR)	311
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Heavy Vehicles (%)	5%
Adj. Flow (vph)	311
Shared Lane Traffic (%)	
Lane Group Flow (vph)	311
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.12
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Turn Type	Prot		Perm	Perm	NA		Prot	NA		Prot	Prot	NA
Protected Phases	4				3		5	2		1	1	6
Permitted Phases			4	3								
Detector Phase	4		4	3	3		5	2		1	1	6
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0		3.0	7.0		3.0	3.0	7.0
Minimum Split (s)	38.0		38.0	11.0	11.0		9.0	13.0		9.0	9.0	41.0
Total Split (s)	36.0		36.0	16.0	16.0		26.0	56.0		16.0	16.0	56.0
Total Split (%)	26.9%		26.9%	11.9%	11.9%		19.4%	41.8%		11.9%	11.9%	41.8%
Maximum Green (s)	30.0		30.0	10.0	10.0		20.0	50.0		10.0	10.0	50.0
Yellow Time (s)	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0		6.0		6.0		6.0	6.0			6.0	6.0
Lead/Lag	Lag		Lag	Lead	Lead		Lead	Lag		Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.5		2.5	2.5	2.5		2.5	4.5		2.5	2.5	4.5
Recall Mode	None		None	None	None		None	Min		None	None	Min
Walk Time (s)	7.0		7.0									7.0
Flash Dont Walk (s)	25.0		25.0									28.0
Pedestrian Calls (#/hr)	0		0									0
Act Effct Green (s)	11.1		11.1		5.1		5.9	51.1			5.7	51.0
Actuated g/C Ratio	0.14		0.14		0.07		0.08	0.65			0.07	0.65
v/c Ratio	0.53		0.12		0.02		0.12	0.23			0.09	0.61
Control Delay	36.8		0.7		0.2		40.3	7.8			40.4	12.2
Queue Delay	0.0		0.0		0.0		0.0	0.0			0.0	0.0
Total Delay	36.8		0.7		0.2		40.3	7.8			40.4	12.2
LOS	D		A		A		D	A			D	B
Approach Delay		31.3			0.2			8.7				10.1
Approach LOS		C			A			A				B

Intersection Summary

Area Type: Other
Cycle Length: 134
Actuated Cycle Length: 78.1
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 12.2 Intersection LOS: B
Intersection Capacity Utilization 55.4% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: SR 900 & NW Talus Dr



Lane Group	SBR
Turn Type	pm+ov
Protected Phases	4
Permitted Phases	6
Detector Phase	4
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	38.0
Total Split (s)	36.0
Total Split (%)	26.9%
Maximum Green (s)	30.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.5
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	25.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	72.6
Actuated g/C Ratio	0.93
v/c Ratio	0.23
Control Delay	0.7
Queue Delay	0.0
Total Delay	0.7
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	223	1	24	276	1	26
Future Vol, veh/h	223	1	24	276	1	26
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-11	-	-	9	1	-
Peak Hour Factor	87	87	84	84	59	59
Heavy Vehicles, %	8	8	5	5	4	4
Mvmt Flow	256	1	29	329	2	44

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	260	0	483	260
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	223	-
Critical Hdwy	-	-	4.175	-	6.86	6.36
Critical Hdwy Stg 1	-	-	-	-	5.66	-
Critical Hdwy Stg 2	-	-	-	-	6.06	-
Follow-up Hdwy	-	-	2.2475	-	3.538	3.338
Pot Cap-1 Maneuver	-	-	1284	-	509	767
Stage 1	-	-	-	-	766	-
Stage 2	-	-	-	-	778	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1281	-	496	765
Mov Cap-2 Maneuver	-	-	-	-	496	-
Stage 1	-	-	-	-	764	-
Stage 2	-	-	-	-	760	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	750	-	-	1281	-
HCM Lane V/C Ratio	0.061	-	-	0.022	-
HCM Control Delay (s)	10.1	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	223	0	48	1	0	6	33	531	1	11	1328	370
Future Volume (vph)	223	0	48	1	0	6	33	531	1	11	1328	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	11	11	12	12	10	10
Grade (%)		9%			0%			-4%			4%	
Storage Length (ft)	330		270	0		0	250		0	230		450
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	75			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor							1.00					0.99
Frt			0.850		0.884							0.850
Flt Protected	0.950				0.993		0.950			0.950		
Satd. Flow (prot)	3030	0	1398	0	1668	0	1728	3456	0	1734	3237	1448
Flt Permitted	0.950				0.993		0.950			0.950		
Satd. Flow (perm)	3030	0	1398	0	1668	0	1727	3456	0	1734	3237	1427
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			172		172							381
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		640			284			982			1618	
Travel Time (s)		17.5			7.7			16.7			27.6	
Confl. Peds. (#/hr)							2					2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	230	0	49	1	0	6	34	547	1	11	1369	381
Shared Lane Traffic (%)												
Lane Group Flow (vph)	230	0	49	0	7	0	34	548	0	11	1369	381
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		30			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		12			12			12			12	
Two way Left Turn Lane											Yes	
Headway Factor	1.16	1.06	1.16	1.00	1.00	1.00	1.02	1.02	0.97	1.03	1.12	1.12
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1	1	2		1	2		1	2	1
Detector Template	Left		Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20		20	20	100		20	100		20	100	20
Trailing Detector (ft)	0		0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0		0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20		20	20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		Perm	Perm	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	4				3		5	2		1	6	4
Permitted Phases			4	3								6
Detector Phase	4		4	3	3		5	2		1	6	4
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0		3.0	7.0		3.0	7.0	5.0
Minimum Split (s)	38.0		38.0	11.0	11.0		9.0	13.0		9.0	41.0	38.0
Total Split (s)	31.0		31.0	12.0	12.0		15.0	65.0		22.0	75.0	31.0
Total Split (%)	23.3%		23.3%	9.0%	9.0%		11.3%	48.9%		16.5%	56.4%	23.3%
Maximum Green (s)	25.0		25.0	6.0	6.0		9.0	59.0		16.0	69.0	25.0
Yellow Time (s)	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0		6.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead		Lead	Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.5		2.5	2.5	2.5		2.5	4.5		2.5	4.5	2.5
Recall Mode	None		None	None	None		None	C-Min		None	C-Min	None
Walk Time (s)	7.0		7.0								7.0	7.0
Flash Dont Walk (s)	25.0		25.0								28.0	25.0
Pedestrian Calls (#/hr)	0		0								2	0
Act Effct Green (s)	15.1		15.1		5.0		7.3	98.5		6.0	95.1	110.2
Actuated g/C Ratio	0.11		0.11		0.04		0.05	0.74		0.05	0.72	0.83
v/c Ratio	0.67		0.16		0.03		0.36	0.21		0.14	0.59	0.31
Control Delay	66.0		1.1		0.3		70.7	7.2		64.5	13.2	1.0
Queue Delay	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	66.0		1.1		0.3		70.7	7.2		64.5	13.2	1.0
LOS	E		A		A		E	A		E	B	A
Approach Delay		54.6			0.3			10.9			10.9	
Approach LOS		D			A			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 133
Actuated Cycle Length: 133
Offset: 10 (8%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 15.5 Intersection LOS: B
Intersection Capacity Utilization 60.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: SR 900 & NW Talus Dr

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	234	1	15	388	1	36
Future Vol, veh/h	234	1	15	388	1	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-11	-	-	9	1	-
Peak Hour Factor	84	84	82	82	64	64
Heavy Vehicles, %	2	2	4	4	0	0
Mvmt Flow	279	1	18	473	2	56

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	280	0	553	280
Stage 1	-	-	-	-	280	-
Stage 2	-	-	-	-	273	-
Critical Hdwy	-	-	4.16	-	6.8	6.3
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	-	-	2.238	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1268	-	468	758
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	743	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1268	-	461	758
Mov Cap-2 Maneuver	-	-	-	-	461	-
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	733	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	745	-	-	1268	-
HCM Lane V/C Ratio	0.078	-	-	0.014	-
HCM Control Delay (s)	10.2	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

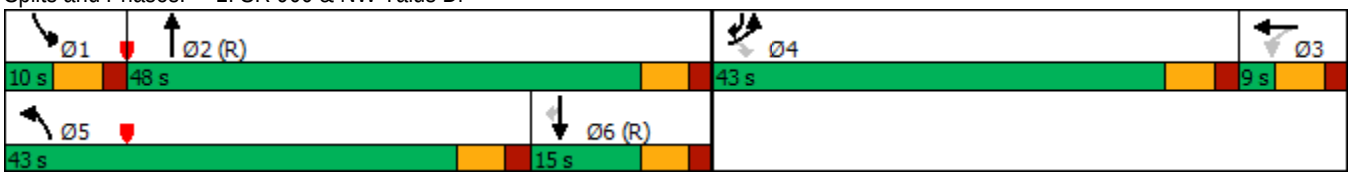
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	727	0	74	1	0	9	136	1272	1	3	450	352
Future Volume (vph)	727	0	74	1	0	9	136	1272	1	3	450	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	11	11	12	12	10	10
Grade (%)		9%			0%			-4%			4%	
Storage Length (ft)	330		270	0		0	250		0	230		450
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	75			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.876							0.850
Flt Protected	0.950				0.996		0.950			0.950		
Satd. Flow (prot)	2973	0	1384	0	1658	0	1695	3390	0	1653	3086	1394
Flt Permitted	0.950				0.996		0.950			0.950		
Satd. Flow (perm)	2973	0	1384	0	1658	0	1695	3390	0	1653	3086	1394
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			208		208							414
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		640			284			982			1618	
Travel Time (s)		17.5			7.7			16.7			27.6	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	5%	4%	4%	0%	0%	0%	5%	5%	5%	7%	7%	6%
Adj. Flow (vph)	855	0	87	1	0	11	160	1496	1	4	529	414
Shared Lane Traffic (%)												
Lane Group Flow (vph)	855	0	87	0	12	0	160	1497	0	4	529	414
Turn Type	Prot		Perm	Perm	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	4				3		5	2		1	6	4
Permitted Phases			4	3								6
Detector Phase	4		4	3	3		5	2		1	6	4
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0		3.0	7.0		3.0	7.0	5.0
Minimum Split (s)	38.0		38.0	11.0	11.0		9.0	13.0		9.0	41.0	38.0
Total Split (s)	43.0		43.0	9.0	9.0		43.0	48.0		10.0	15.0	43.0
Total Split (%)	39.1%		39.1%	8.2%	8.2%		39.1%	43.6%		9.1%	13.6%	39.1%
Maximum Green (s)	37.0		37.0	3.0	3.0		37.0	42.0		4.0	9.0	37.0
Yellow Time (s)	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0		6.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead		Lead	Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.5		2.5	2.5	2.5		2.5	4.5		2.5	4.5	2.5
Recall Mode	None		None	None	None		None	C-Min		None	C-Min	None
Walk Time (s)	7.0		7.0								7.0	7.0
Flash Dont Walk (s)	25.0		25.0								28.0	25.0
Pedestrian Calls (#/hr)	0		0								0	0
Act Effct Green (s)	35.2		35.2		3.0		15.3	59.0		4.0	39.6	80.9
Actuated g/C Ratio	0.32		0.32		0.03		0.14	0.54		0.04	0.36	0.74
v/c Ratio	0.90		0.15		0.05		0.68	0.82		0.07	0.48	0.37

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	48.8		0.5		0.4		58.7	27.7		53.7	31.3	1.7
Queue Delay	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	48.8		0.5		0.4		58.7	27.7		53.7	31.3	1.7
LOS	D		A		A		E	C		D	C	A
Approach Delay		44.3			0.4			30.7			18.5	
Approach LOS		D			A			C			B	
Queue Length 50th (ft)	287		0		0		109	421		3	150	0
Queue Length 95th (ft)	340		0		0		158	#724		14	231	27
Internal Link Dist (ft)		560			204			902			1538	
Turn Bay Length (ft)	330		270				250			230		450
Base Capacity (vph)	1000		603		247		570	1816		60	1111	1149
Starvation Cap Reductn	0		0		0		0	0		0	0	0
Spillback Cap Reductn	0		0		0		0	0		0	0	0
Storage Cap Reductn	0		0		0		0	0		0	0	0
Reduced v/c Ratio	0.85		0.14		0.05		0.28	0.82		0.07	0.48	0.36

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 25 (23%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 31.0 Intersection LOS: C
Intersection Capacity Utilization 79.3% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: SR 900 & NW Talus Dr



Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	552	1	43	165	1	33
Future Vol, veh/h	552	1	43	165	1	33
Conflicting Peds, #/hr	0	10	10	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-11	-	-	8	1	-
Peak Hour Factor	87	87	89	89	56	56
Heavy Vehicles, %	4	4	42	9	7	55
Mvmt Flow	634	1	48	185	2	59

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	645	0	834	645
Stage 1	-	-	-	-	645	-
Stage 2	-	-	-	-	189	-
Critical Hdwy	-	-	4.73	-	6.905	7.125
Critical Hdwy Stg 1	-	-	-	-	5.705	-
Critical Hdwy Stg 2	-	-	-	-	6.105	-
Follow-up Hdwy	-	-	2.599	-	3.5665	3.8225
Pot Cap-1 Maneuver	-	-	742	-	300	363
Stage 1	-	-	-	-	492	-
Stage 2	-	-	-	-	803	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	736	-	278	360
Mov Cap-2 Maneuver	-	-	-	-	278	-
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	751	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	17.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	357	-	-	736	-
HCM Lane V/C Ratio	0.17	-	-	0.066	-
HCM Control Delay (s)	17.1	-	-	10.2	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.6	-	-	0.2	-

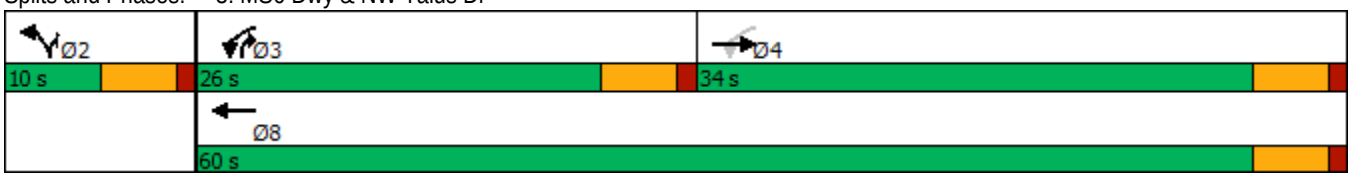
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	550	35	294	194	14	251
Future Volume (vph)	550	35	294	194	14	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	11	10	10
Grade (%)	-8%			9%	1%	
Storage Length (ft)		0	300		0	130
Storage Lanes		0	1		1	1
Taper Length (ft)			50		50	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00					
Frt	0.987					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1889	0	1724	2848	1676	1500
Flt Permitted			0.159		0.950	
Satd. Flow (perm)	1889	0	289	2848	1676	1500
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	9					140
Link Speed (mph)	25			25	20	
Link Distance (ft)	199			460	217	
Travel Time (s)	5.4			12.5	7.4	
Confl. Peds. (#/hr)		10	10			
Peak Hour Factor	0.88	0.53	0.53	0.86	0.49	0.49
Heavy Vehicles (%)	7%	0%	0%	17%	0%	0%
Adj. Flow (vph)	625	66	555	226	29	512
Shared Lane Traffic (%)						
Lane Group Flow (vph)	691	0	555	226	29	512
Turn Type	NA		D.P+P	NA	Prot	pt+ov
Protected Phases	4		3	8	2	2 3
Permitted Phases			4			
Detector Phase	4		3	8	2	3
Switch Phase						
Minimum Initial (s)	7.0		5.0	7.0	5.0	
Minimum Split (s)	25.0		10.0	12.0	10.0	
Total Split (s)	34.0		26.0	60.0	10.0	
Total Split (%)	48.6%		37.1%	85.7%	14.3%	
Maximum Green (s)	29.0		21.0	55.0	5.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	None	None	
Walk Time (s)	7.0					
Flash Dont Walk (s)	13.0					
Pedestrian Calls (#/hr)	20					
Act Effct Green (s)	24.8		43.3	52.2	5.3	21.7

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Actuated g/C Ratio	0.43		0.76	0.91	0.09	0.38
v/c Ratio	0.84		0.81	0.09	0.19	0.78
Control Delay	27.3		25.0	1.2	32.6	20.7
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	27.3		25.0	1.2	32.6	20.7
LOS	C		C	A	C	C
Approach Delay	27.3			18.1	21.3	
Approach LOS	C			B	C	
Queue Length 50th (ft)	186		97	0	10	114
Queue Length 95th (ft)	#447		99	13	19	67
Internal Link Dist (ft)	119			380	137	
Turn Bay Length (ft)			300			130
Base Capacity (vph)	1019		789	2570	155	747
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.68		0.70	0.09	0.19	0.69

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 57.1
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 22.1 Intersection LOS: C
Intersection Capacity Utilization 64.1% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: MS6 Dwy & NW Talus Dr



Intersection	
Int Delay, s/veh	5.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	18	15	0	18	25
Future Vol, veh/h	0	18	15	0	18	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	1	-	-	1
Peak Hour Factor	92	49	75	75	53	86
Heavy Vehicles, %	0	100	7	2	100	7
Mvmt Flow	0	37	20	0	34	29

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	117	20	0	0	20	0
Stage 1	20	-	-	-	-	-
Stage 2	97	-	-	-	-	-
Critical Hdwy	6.4	7.2	-	-	5.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	4.2	-	-	3.1	-
Pot Cap-1 Maneuver	884	833	-	-	1139	-
Stage 1	1008	-	-	-	-	-
Stage 2	932	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	857	833	-	-	1139	-
Mov Cap-2 Maneuver	857	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	904	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	4.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	833	1139	-
HCM Lane V/C Ratio	-	-	0.044	0.03	-
HCM Control Delay (s)	-	-	9.5	8.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	318	0	84	1	0	4	33	471	0	1	9	1160
Future Volume (vph)	318	0	84	1	0	4	33	471	0	1	9	1160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	11	11	12	12	12	10
Grade (%)		9%			0%			-4%				4%
Storage Length (ft)	330		270	0		0	250		0		230	
Storage Lanes	1		1	0		0	1		0		1	
Taper Length (ft)	75			50			50				50	
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Frt			0.850		0.892							
Flt Protected	0.950				0.990		0.950				0.950	
Satd. Flow (prot)	2973	0	1345	0	1678	0	1679	3358	0	0	1685	3145
Flt Permitted	0.950				0.990		0.950				0.950	
Satd. Flow (perm)	2973	0	1345	0	1678	0	1679	3358	0	0	1685	3145
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)			128		128							
Link Speed (mph)		25			25			40				40
Link Distance (ft)		640			284			982				1618
Travel Time (s)		17.5			7.7			16.7				27.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	7%	0%	0%	0%	6%	6%	6%	5%	5%	5%
Adj. Flow (vph)	353	0	93	1	0	4	37	523	0	1	10	1289
Shared Lane Traffic (%)												
Lane Group Flow (vph)	353	0	93	0	5	0	37	523	0	0	11	1289
Turn Type	Prot		Perm	Perm	NA		Prot	NA		Prot	Prot	NA
Protected Phases	4				3		5	2		1	1	6
Permitted Phases			4	3								
Detector Phase	4		4	3	3		5	2		1	1	6
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0		3.0	7.0		3.0	3.0	7.0
Minimum Split (s)	38.0		38.0	11.0	11.0		9.0	13.0		9.0	9.0	41.0
Total Split (s)	39.0		39.0	15.0	15.0		15.0	58.0		16.0	16.0	59.0
Total Split (%)	30.5%		30.5%	11.7%	11.7%		11.7%	45.3%		12.5%	12.5%	46.1%
Maximum Green (s)	33.0		33.0	9.0	9.0		9.0	52.0		10.0	10.0	53.0
Yellow Time (s)	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0		6.0		6.0		6.0	6.0			6.0	6.0
Lead/Lag	Lag		Lag	Lead	Lead		Lead	Lag		Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.5		2.5	2.5	2.5		2.5	4.5		2.5	2.5	4.5
Recall Mode	None		None	None	None		None	Min		None	None	Min
Walk Time (s)	7.0		7.0									7.0
Flash Dont Walk (s)	25.0		25.0									28.0
Pedestrian Calls (#/hr)	0		0									0
Act Effct Green (s)	16.5		16.5		5.3		7.0	55.3			5.9	50.1
Actuated g/C Ratio	0.19		0.19		0.06		0.08	0.63			0.07	0.57
v/c Ratio	0.63		0.26		0.02		0.28	0.25			0.10	0.72

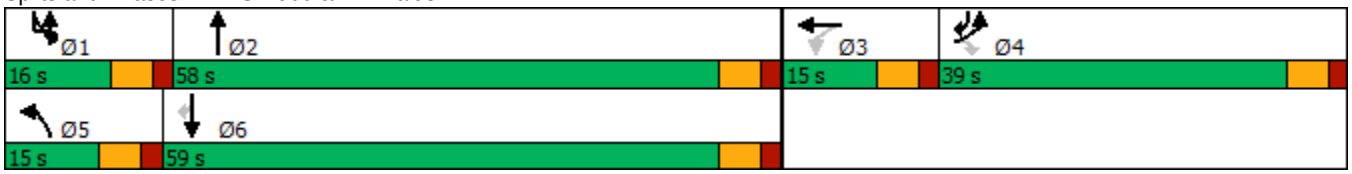
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	405
Future Volume (vph)	405
Ideal Flow (vphpl)	1900
Lane Width (ft)	10
Grade (%)	
Storage Length (ft)	450
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1368
Flt Permitted	
Satd. Flow (perm)	1368
Right Turn on Red	Yes
Satd. Flow (RTOR)	450
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	8%
Adj. Flow (vph)	450
Shared Lane Traffic (%)	
Lane Group Flow (vph)	450
Turn Type	pm+ov
Protected Phases	4
Permitted Phases	6
Detector Phase	4
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	38.0
Total Split (s)	39.0
Total Split (%)	30.5%
Maximum Green (s)	33.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.5
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	25.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	75.3
Actuated g/C Ratio	0.85
v/c Ratio	0.36

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Control Delay	40.7		4.6		0.2		50.5	9.6			49.4	20.2
Queue Delay	0.0		0.0		0.0		0.0	0.0			0.0	0.0
Total Delay	40.7		4.6		0.2		50.5	9.6			49.4	20.2
LOS	D		A		A		D	A			D	C
Approach Delay		33.1			0.3			12.3				15.5
Approach LOS		C			A			B				B
Queue Length 50th (ft)	103		0		0		22	52			6	286
Queue Length 95th (ft)	171		21		0		62	165			27	#579
Internal Link Dist (ft)		560			204			902				1538
Turn Bay Length (ft)	330		270				250				230	
Base Capacity (vph)	1173		608		294		180	2307			201	1994
Starvation Cap Reductn	0		0		0		0	0			0	0
Spillback Cap Reductn	0		0		0		0	0			0	0
Storage Cap Reductn	0		0		0		0	0			0	0
Reduced v/c Ratio	0.30		0.15		0.02		0.21	0.23			0.05	0.65

Intersection Summary

Area Type: Other
Cycle Length: 128
Actuated Cycle Length: 88.2
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 17.7 Intersection LOS: B
Intersection Capacity Utilization 56.4% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: SR 900 & NW Talus Dr



Lane Group	SBR
Control Delay	1.2
Queue Delay	0.0
Total Delay	1.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	0
Queue Length 95th (ft)	15
Internal Link Dist (ft)	
Turn Bay Length (ft)	450
Base Capacity (vph)	1303
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.35

Intersection Summary

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	230	1	42	293	1	44
Future Vol, veh/h	230	1	42	293	1	44
Conflicting Peds, #/hr	0	10	10	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-11	-	-	8	1	-
Peak Hour Factor	85	85	84	84	69	69
Heavy Vehicles, %	8	8	46	5	4	73
Mvmt Flow	271	1	50	349	1	64

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	282	0	557	282
Stage 1	-	-	-	-	282	-
Stage 2	-	-	-	-	275	-
Critical Hdwy	-	-	4.79	-	6.86	7.395
Critical Hdwy Stg 1	-	-	-	-	5.66	-
Critical Hdwy Stg 2	-	-	-	-	6.06	-
Follow-up Hdwy	-	-	2.637	-	3.538	3.9935
Pot Cap-1 Maneuver	-	-	1038	-	457	588
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	731	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1029	-	430	583
Mov Cap-2 Maneuver	-	-	-	-	430	-
Stage 1	-	-	-	-	741	-
Stage 2	-	-	-	-	695	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	578	-	-	1029	-
HCM Lane V/C Ratio	0.113	-	-	0.049	-
HCM Control Delay (s)	12	-	-	8.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-

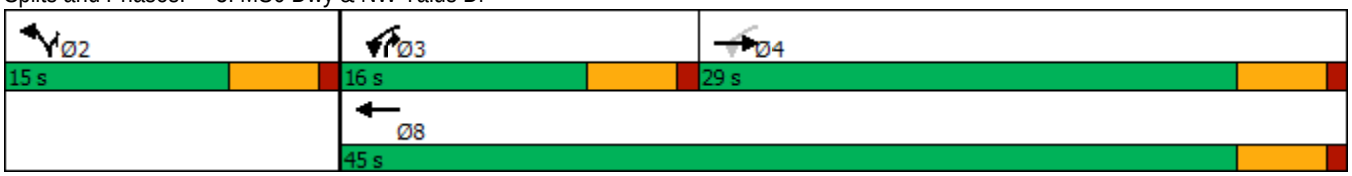
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	267	7	120	318	17	135
Future Volume (vph)	267	7	120	318	17	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	11	10	12
Grade (%)	-8%			9%	1%	
Storage Length (ft)		0	300		0	130
Storage Lanes		0	1		1	1
Taper Length (ft)			50		50	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00		0.99			
Frt	0.994					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1866	0	1724	3030	1676	1607
Flt Permitted			0.575		0.950	
Satd. Flow (perm)	1866	0	1034	3030	1676	1607
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4					265
Link Speed (mph)	25			25	20	
Link Distance (ft)	199			450	217	
Travel Time (s)	5.4			12.3	7.4	
Confl. Peds. (#/hr)		10	10			
Peak Hour Factor	0.92	0.55	0.55	0.81	0.51	0.51
Heavy Vehicles (%)	9%	0%	0%	10%	0%	0%
Adj. Flow (vph)	290	13	218	393	33	265
Shared Lane Traffic (%)						
Lane Group Flow (vph)	303	0	218	393	33	265
Turn Type	NA		D.P+P	NA	Prot	pt+ov
Protected Phases	4		3	8	2	2 3
Permitted Phases			4			
Detector Phase	4		3	8	2	3
Switch Phase						
Minimum Initial (s)	7.0		5.0	7.0	5.0	
Minimum Split (s)	25.0		10.0	12.0	10.0	
Total Split (s)	29.0		16.0	45.0	15.0	
Total Split (%)	48.3%		26.7%	75.0%	25.0%	
Maximum Green (s)	24.0		11.0	40.0	10.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	None	None	
Walk Time (s)	7.0					
Flash Dont Walk (s)	13.0					
Pedestrian Calls (#/hr)	20					
Act Effct Green (s)	13.5		18.2	25.5	6.6	11.4

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Actuated g/C Ratio	0.49		0.67	0.93	0.24	0.42
v/c Ratio	0.33		0.23	0.14	0.08	0.32
Control Delay	8.7		2.7	1.2	14.6	3.0
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	8.7		2.7	1.2	14.6	3.0
LOS	A		A	A	B	A
Approach Delay	8.7			1.8	4.2	
Approach LOS	A			A	A	
Queue Length 50th (ft)	23		0	0	3	0
Queue Length 95th (ft)	114		21	26	16	0
Internal Link Dist (ft)	119			370	137	
Turn Bay Length (ft)			300			130
Base Capacity (vph)	1608		1148	2898	760	998
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.19		0.19	0.14	0.04	0.27

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 27.3
Natural Cycle: 45
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.33
Intersection Signal Delay: 4.1 Intersection LOS: A
Intersection Capacity Utilization 38.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: MS6 Dwy & NW Talus Dr



Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	18	26	0	18	24
Future Vol, veh/h	0	18	26	0	18	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	1	-	-	1
Peak Hour Factor	51	51	59	59	55	84
Heavy Vehicles, %	2	2	4	4	100	5
Mvmt Flow	0	35	44	0	33	29

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	139	44	0	0	44	0
Stage 1	44	-	-	-	-	-
Stage 2	95	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	5.1	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	3.1	-
Pot Cap-1 Maneuver	854	1026	-	-	1112	-
Stage 1	978	-	-	-	-	-
Stage 2	929	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	828	1026	-	-	1112	-
Mov Cap-2 Maneuver	828	-	-	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	901	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	4.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1026	1112	-
HCM Lane V/C Ratio	-	-	0.034	0.029	-
HCM Control Delay (s)	-	-	8.6	8.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	272	0	69	1	0	6	47	531	1	11	1328	427
Future Volume (vph)	272	0	69	1	0	6	47	531	1	11	1328	427
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	10	12	12	12	11	11	12	12	10	10
Grade (%)		9%			0%			-4%			4%	
Storage Length (ft)	330		270	0		0	250		0	230		450
Storage Lanes	1		1	0		0	1		0	1		1
Taper Length (ft)	75			50			50			50		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor							1.00					0.99
Frt			0.850		0.884							0.850
Flt Protected	0.950				0.993		0.950			0.950		
Satd. Flow (prot)	3030	0	1398	0	1668	0	1728	3456	0	1734	3237	1448
Flt Permitted	0.950				0.993		0.950			0.950		
Satd. Flow (perm)	3030	0	1398	0	1668	0	1727	3456	0	1734	3237	1427
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			123		123							459
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		640			284			982			1618	
Travel Time (s)		17.5			7.7			16.7			27.6	
Confl. Peds. (#/hr)							2					2
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	292	0	74	1	0	6	51	571	1	12	1428	459
Shared Lane Traffic (%)												
Lane Group Flow (vph)	292	0	74	0	7	0	51	572	0	12	1428	459
Turn Type	Prot		Perm	Perm	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	4				3		5	2		1	6	4
Permitted Phases			4	3								6
Detector Phase	4		4	3	3		5	2		1	6	4
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0		3.0	7.0		3.0	7.0	5.0
Minimum Split (s)	38.0		38.0	11.0	11.0		9.0	13.0		9.0	41.0	38.0
Total Split (s)	38.0		38.0	11.0	11.0		12.0	75.0		9.0	72.0	38.0
Total Split (%)	28.6%		28.6%	8.3%	8.3%		9.0%	56.4%		6.8%	54.1%	28.6%
Maximum Green (s)	32.0		32.0	5.0	5.0		6.0	69.0		3.0	66.0	32.0
Yellow Time (s)	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0		6.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead		Lead	Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.5		2.5	2.5	2.5		2.5	4.5		2.5	4.5	2.5
Recall Mode	None		None	None	None		None	C-Min		None	C-Min	None
Walk Time (s)	7.0		7.0								7.0	7.0
Flash Dont Walk (s)	25.0		25.0								28.0	25.0
Pedestrian Calls (#/hr)	0		0								2	0
Act Effct Green (s)	18.0		18.0		5.0		5.9	97.2		3.0	91.2	109.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.14		0.14		0.04		0.04	0.73		0.02	0.69	0.82
v/c Ratio	0.71		0.25		0.04		0.67	0.23		0.31	0.64	0.37
Control Delay	64.5		3.0		0.4		101.0	7.5		83.8	15.6	1.1
Queue Delay	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	64.5		3.0		0.4		101.0	7.5		83.8	15.6	1.1
LOS	E		A		A		F	A		F	B	A
Approach Delay		52.1			0.4			15.2			12.5	
Approach LOS		D			A			B			B	
Queue Length 50th (ft)	126		0		0		44	59		10	333	0
Queue Length 95th (ft)	168		7		0		#111	158		34	590	21
Internal Link Dist (ft)		560			204			902			1538	
Turn Bay Length (ft)	330		270				250			230		450
Base Capacity (vph)	729		429		181		77	2525		39	2219	1341
Starvation Cap Reductn	0		0		0		0	0		0	0	0
Spillback Cap Reductn	0		0		0		0	0		0	0	0
Storage Cap Reductn	0		0		0		0	0		0	0	0
Reduced v/c Ratio	0.40		0.17		0.04		0.66	0.23		0.31	0.64	0.34

Intersection Summary

Area Type: Other
Cycle Length: 133
Actuated Cycle Length: 133
Offset: 10 (8%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 18.0 Intersection LOS: B
Intersection Capacity Utilization 61.8% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: SR 900 & NW Talus Dr

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	238	1	15	396	1	36
Future Vol, veh/h	238	1	15	396	1	36
Conflicting Peds, #/hr	0	10	10	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	110	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-11	-	-	8	1	-
Peak Hour Factor	84	84	81	81	64	64
Heavy Vehicles, %	2	2	4	4	0	0
Mvmt Flow	283	1	19	489	2	56

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	294	0	577	294
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	283	-
Critical Hdwy	-	-	4.16	-	6.8	6.3
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	-	-	2.238	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1253	-	452	744
Stage 1	-	-	-	-	749	-
Stage 2	-	-	-	-	734	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1242	-	441	738
Mov Cap-2 Maneuver	-	-	-	-	441	-
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	723	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	725	-	-	1242	-
HCM Lane V/C Ratio	0.08	-	-	0.015	-
HCM Control Delay (s)	10.4	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

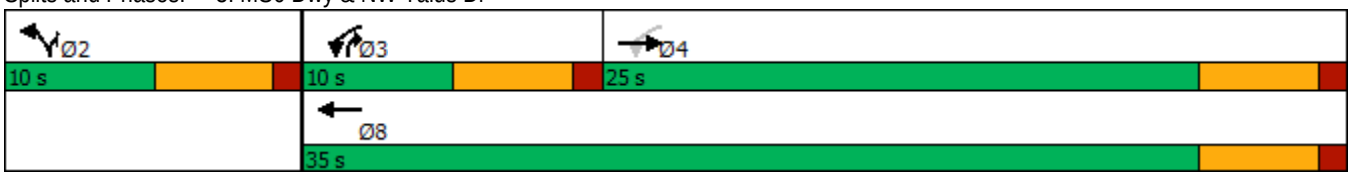
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	270	4	71	403	8	70
Future Volume (vph)	270	4	71	403	8	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	11	10	12
Grade (%)	-8%			9%	1%	
Storage Length (ft)		0	300		0	130
Storage Lanes		0	1		1	1
Taper Length (ft)			50		50	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00		0.99			
Frt	0.997					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1976	0	1724	3204	1676	1607
Flt Permitted			0.573		0.950	
Satd. Flow (perm)	1976	0	1032	3204	1676	1607
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	3					121
Link Speed (mph)	25			25	20	
Link Distance (ft)	199			452	217	
Travel Time (s)	5.4			12.3	7.4	
Confl. Peds. (#/hr)		10	10			
Peak Hour Factor	0.90	0.59	0.59	0.82	0.58	0.58
Heavy Vehicles (%)	3%	0%	0%	4%	0%	0%
Adj. Flow (vph)	300	7	120	491	14	121
Shared Lane Traffic (%)						
Lane Group Flow (vph)	307	0	120	491	14	121
Turn Type	NA		D.P+P	NA	Prot	pt+ov
Protected Phases	4		3	8	2	2 3
Permitted Phases			4			
Detector Phase	4		3	8	2	3
Switch Phase						
Minimum Initial (s)	7.0		5.0	7.0	5.0	
Minimum Split (s)	25.0		10.0	12.0	10.0	
Total Split (s)	25.0		10.0	35.0	10.0	
Total Split (%)	55.6%		22.2%	77.8%	22.2%	
Maximum Green (s)	20.0		5.0	30.0	5.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	None	None	
Walk Time (s)	7.0					
Flash Dont Walk (s)	13.0					
Pedestrian Calls (#/hr)	20					
Act Effct Green (s)	10.7		16.0	21.6	8.7	9.8

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Actuated g/C Ratio	0.43		0.65	0.87	0.35	0.40
v/c Ratio	0.36		0.13	0.18	0.02	0.17
Control Delay	7.8		2.3	1.2	13.5	3.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	7.8		2.3	1.2	13.5	3.5
LOS	A		A	A	B	A
Approach Delay	7.8			1.4	4.5	
Approach LOS	A			A	A	
Queue Length 50th (ft)	22		0	0	1	0
Queue Length 95th (ft)	90		12	27	10	7
Internal Link Dist (ft)	119			372	137	
Turn Bay Length (ft)			300			130
Base Capacity (vph)	1613		913	2990	593	713
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.19		0.13	0.16	0.02	0.17

Intersection Summary

Area Type: Other
Cycle Length: 45
Actuated Cycle Length: 24.7
Natural Cycle: 45
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.36
Intersection Signal Delay: 3.7 Intersection LOS: A
Intersection Capacity Utilization 35.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: MS6 Dwy & NW Talus Dr



Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	36	0	0	16
Future Vol, veh/h	0	0	36	0	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	1	-	-	1
Peak Hour Factor	92	92	64	64	81	81
Heavy Vehicles, %	2	2	0	0	0	0
Mvmt Flow	0	0	56	0	0	20

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	76	56	0	0	56	0
Stage 1	56	-	-	-	-	-
Stage 2	20	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.1	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.2	-
Pot Cap-1 Maneuver	927	1011	-	-	1562	-
Stage 1	967	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	927	1011	-	-	1562	-
Mov Cap-2 Maneuver	927	-	-	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	1003	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1562	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

APPENDIX D

VISSIM SUMMARY REPORTS

December 13, 2019

Issaquah Middle School # 6 Traffic Analysis - VISSIM Queueing Results

Table D1. Key Movement Queue Length (feet) - 2023 Baseline (Without Project)

2023 AM Peak Analysis

			Hourly Average									*Max 15 Minutes Demand*					
			7:25 am - 8:25 am			7:25 am - 7:40 am			7:40 am - 7:55 am			7:55 am - 8:10am			8:10 am - 8:25am		
Intx No	**Intersection**	**Movement**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**
1	Talus & SR 900	NBR	151	256	302	156	273	302	168	254	256	136	227	240	145	239	249
1	Talus & SR 900	NBT	159	266	311	164	282	311	175	264	266	143	237	250	153	249	258
1	Talus & SR 900	NBL	44	77	80	48	72	78	41	66	77	45	67	80	42	65	67
1	Talus & SR 900	EBR	188	248	258	192	246	255	193	251	258	182	233	237	184	226	235
1	Talus & SR 900	EBL	186	246	257	190	245	253	192	250	257	181	232	236	182	224	234
1	Talus & SR 900	SBR	7	26	32	9	26	27	7	19	19	6	19	21	8	20	32
1	Talus & SR 900	SBT	69	122	137	75	124	134	68	127	137	65	112	114	67	103	107
1	Talus & SR 900	SBL	3	12	13	4	12	13	3	10	10	2	8	12	2	7	8
1	Talus & SR 900	WBR	11	25	35	12	24	35	12	24	28	8	16	21	11	20	25
1	Talus & SR 900	WBL	7	17	22	8	15	22	8	17	20	6	12	14	7	14	17
2	Talus & School Access	NBR	N/A			N/A			N/A			N/A			N/A		
2	Talus & School Access	NBL															
2	Talus & School Access	EBR															
2	Talus & School Access	EBT															
2	Talus & School Access	WBT															
2	Talus & School Access	WBL															
3	Talus & Falcon	NBR	11	23	25	14	22	22	9	17	22	11	22	25	11	23	23
3	Talus & Falcon	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Talus & Falcon	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Talus & Falcon	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Talus & Falcon	WBL	5	13	16	5	10	14	4	12	16	5	11	13	4	11	11

Source: Concord Engineering, 12/11/2019

Issaquah Middle School # 6 Traffic Analysis - VISSIM Queueing Results

Table D2. Key Movement Queue Length (feet) - 2023 With Project - Signalized Driveway

2023 AM Peak Analysis

			Hourly Average									*Max 15 Minutes Demand*					
			7:25 am - 8:25 am			7:25 am - 7:40 am			7:40 am - 7:55 am			7:55 am - 8:10am			8:10 am - 8:25am		
Intx No	**Intersection**	**Movement**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**
1	Talus & SR 900	NBR	212	314	324	196	295	324	213	293	303	233	316	319	206	299	299
1	Talus & SR 900	NBT	212	314	324	196	295	324	214	293	303	233	316	319	207	299	299
1	Talus & SR 900	NBL	93	187	249	62	86	93	98	148	158	143	206	249	67	125	209
1	Talus & SR 900	EBR	230	337	370	187	250	268	228	279	289	263	336	337	243	358	370
1	Talus & SR 900	EBL	229	336	370	186	249	268	227	278	288	262	335	336	243	357	370
1	Talus & SR 900	SBR	53	184	290	18	40	46	78	262	290	93	154	155	25	69	145
1	Talus & SR 900	SBT	103	139	164	94	135	137	111	144	156	106	145	164	100	136	139
1	Talus & SR 900	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Talus & SR 900	WBR	8	16	25	9	17	25	9	17	22	7	14	16	8	16	16
1	Talus & SR 900	WBL	9	19	25	9	18	23	10	19	25	7	16	19	9	16	18
2	Talus & School Access	NBR	158	627	635	36	79	80	77	118	121	274	494	526	247	634	635
2	Talus & School Access	NBL	159	627	636	36	78	81	77	119	121	274	495	527	247	634	636
2	Talus & School Access	EBR	144	217	223	100	157	169	144	176	195	205	221	223	126	209	215
2	Talus & School Access	EBT	146	220	225	102	160	171	146	179	197	208	223	225	128	212	217
2	Talus & School Access	WBT	5	17	20	2	8	13	5	14	15	7	18	20	5	17	17
2	Talus & School Access	WBL	103	337	346	37	60	64	74	125	170	234	342	346	66	278	278
3	Talus & Falcon	NBR	95	326	385	24	49	68	35	146	147	247	371	385	74	172	183
3	Talus & Falcon	EBR	102	320	331	23	59	65	52	104	114	205	326	331	128	304	321
3	Talus & Falcon	EBT	103	320	331	24	61	66	53	104	114	205	326	331	128	305	321
3	Talus & Falcon	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Talus & Falcon	WBL	15	71	139	10	35	42	29	101	139	15	60	70	7	12	13

Source: Concord Engineering, 12/11/2019

Issaquah Middle School # 6 Traffic Analysis - VISSIM Delay Results

Table D3.Intersection Delay & LOS - 2023 Baseline (Without Project)

2023 AM Peak Analysis

			Hourly Average						*Max 15 Minutes Demand*			
			7:25 am - 8:25 am		7:25 am - 7:40 am		7:40 am - 7:55 am		7:55 am - 8:10am		8:10 am - 8:25am	
Intx No	**Intersection**	**Movement**	**Delay (Sec/Veh)**	**LOS**	**Delay (Sec/Veh)**	**LOS**	**Delay (Sec/Veh)**	**LOS**	**Delay (Sec/Veh)**	**LOS**	**Delay (Sec/Veh)**	**LOS**
1	Talus & SR 900	NBR	10	B	14	B	9	A	15	B	3	A
1	Talus & SR 900	NBT	9	A	10	A	10	B	9	A	9	A
1	Talus & SR 900	NBL	73	E	75	E	72	E	75	E	71	E
1	Talus & SR 900	EBR	5	A	5	A	5	A	6	A	6	A
1	Talus & SR 900	EBL	49	D	48	D	50	D	49	D	50	D
1	Talus & SR 900	SBR	1	A	1	A	1	A	1	A	1	A
1	Talus & SR 900	SBT	11	B	12	B	12	B	10	B	11	B
1	Talus & SR 900	SBL	76	E	87	F	99	F	50	D	66	E
1	Talus & SR 900	WBR	11	B	8	A	10	B	17	B	8	A
1	Talus & SR 900	WBL	82	F	76	E	84	F	67	E	101	F
1	**Talus & SR 900**	**Intersection**	**18**	**B**	**18**	**B**	**19**	**B**	**18**	**B**	**18**	**B**
2	Talus & School Access	NBR	N/A		N/A		N/A		N/A		N/A	
2	Talus & School Access	NBL										
2	Talus & School Access	EBR										
2	Talus & School Access	EBT										
2	Talus & School Access	WBT										
2	Talus & School Access	WBL										
2	**Talus & School Access**	**Intersection**										
3	Talus & Falcon	NBR	10	B	9	A	9	A	11	B	11	B
3	Talus & Falcon	EBR	0	A	1	A	0	A	0	A	0	A
3	Talus & Falcon	EBT	0	A	0	A	0	A	0	A	0	A
3	Talus & Falcon	WBT	0	A	0	A	0	A	0	A	0	A
3	Talus & Falcon	WBL	6	A	7	A	4	A	5	A	6	A
3	**Talus & Falcon**	**Intersection**	**6**	**A**	**7**	**A**	**4**	**A**	**11**	**B**	**11**	**B**

Source: Concord Engineering, 12/11/2019

Issaquah Middle School # 6 Traffic Analysis - VISSIM Delay Results

Table D4.Intersection Delay & LOS - 2023 With Project - Signalized Driveway

2023 AM Peak Analysis

			Hourly Average						*Max 15 Minutes Demand*			
			7:25 am - 8:25 am		7:25 am - 7:40 am		7:40 am - 7:55 am		7:55 am - 8:10am		8:10 am - 8:25am	
Intx No	**Intersection**	**Movement**	**Delay (Sec/Veh)**	**LOS**	**Delay (Sec/Veh)**	**LOS**	**Delay (Sec/Veh)**	**LOS**	**Delay (Sec/Veh)**	**LOS**	**Delay (Sec/Veh)**	**LOS**
1	Talus & SR 900	NBR	15	B	19	B	22	C	1	A	16	B
1	Talus & SR 900	NBT	14	B	12	B	14	B	15	B	14	B
1	Talus & SR 900	NBL	51	D	51	D	53	D	50	D	51	D
1	Talus & SR 900	EBR	5	A	6	A	5	A	5	A	5	A
1	Talus & SR 900	EBL	36	D	38	D	37	D	34	C	37	D
1	Talus & SR 900	SBR	6	A	3	A	8	A	9	A	5	A
1	Talus & SR 900	SBT	22	C	18	B	23	C	27	C	21	C
1	Talus & SR 900	SBL	1	A	0	A	2	A	0	A	0	A
1	Talus & SR 900	WBR	13	B	10	B	10	A	21	C	12	B
1	Talus & SR 900	WBL	57	E	39	D	54	D	80	F	55	D
1	**Talus & SR 900**	**Intersection**	**21**	**C**	**19**	**B**	**21**	**C**	**22**	**C**	**21**	**C**
2	Talus & School Access	NBR	40	D	36	D	34	C	37	D	55	E
2	Talus & School Access	NBL	60	E	50	D	55	E	62	E	74	E
2	Talus & School Access	EBR	11	B	5	A	9	A	16	B	15	B
2	Talus & School Access	EBT	9	A	5	A	9	A	15	B	9	A
2	Talus & School Access	WBT	0	A	0	A	0	A	0	A	0	A
2	Talus & School Access	WBL	18	B	10	A	12	B	28	C	22	C
2	**Talus & School Access**	**Intersection**	**16**	**B**	**8**	**A**	**13**	**B**	**23**	**C**	**19**	**B**
3	Talus & Falcon	NBR	117	F	24	C	27	D	184	F	234	F
3	Talus & Falcon	EBR	1	A	3	A	1	A	0	A	0	A
3	Talus & Falcon	EBT	9	A	2	A	4	A	18	C	12	B
3	Talus & Falcon	WBT	0	A	0	A	0	A	0	A	0	A
3	Talus & Falcon	WBL	6	A	7	A	7	A	5	A	7	A
3	**Talus & Falcon**	**Intersection**	**9**	**A**	**7**	**A**	**7**	**A**	**184**	**F**	**234**	**F**

Source: Concord Engineering, 12/11/2019

Issaquah Middle School # 6 Traffic Analysis - VISSIM Queueing Results

Table D5. Key Movement Queue Length (feet) - 2023 Baseline (Without Project)

2023 Afternoon Peak Analysis

			Hourly Average			*Max 15 Minutes Demand*											
			2:10pm-3:10pm			2:10pm-2:25pm			2:25pm-2:40pm			2:40pm-2:55pm			2:55pm-3:10pm		
Intx No	**Intersection**	**Movement**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**
1	Talus & SR 900	NBR	39	80	93	40	70	89	32	67	69	38	65	78	46	84	93
1	Talus & SR 900	NBT	48	95	107	51	85	104	40	82	84	47	80	92	55	99	107
1	Talus & SR 900	NBL	14	24	25	9	15	16	14	22	23	14	23	25	17	24	24
1	Talus & SR 900	EBR	95	132	143	88	113	115	92	115	121	100	133	133	99	135	143
1	Talus & SR 900	EBL	90	127	138	84	108	110	87	110	117	95	128	129	94	130	138
1	Talus & SR 900	SBR	52	73	80	47	56	61	50	63	80	55	71	73	55	71	73
1	Talus & SR 900	SBT	107	207	226	100	158	171	87	169	172	118	211	226	124	208	209
1	Talus & SR 900	SBL	8	14	19	8	13	13	8	15	19	8	14	16	6	13	13
1	Talus & SR 900	WBR	4	10	15	3	10	10	5	10	10	3	9	15	4	9	9
1	Talus & SR 900	WBL	3	9	14	2	7	8	4	9	9	3	8	14	3	8	8
2	Talus & School Access	NBR	N/A			N/A			N/A			N/A			N/A		
2	Talus & School Access	NBL															
2	Talus & School Access	EBR															
2	Talus & School Access	EBT															
2	Talus & School Access	WBT															
2	Talus & School Access	WBL															
3	Talus & Falcon	NBR	15	32	33	14	24	25	10	19	21	18	29	30	17	32	33
3	Talus & Falcon	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Talus & Falcon	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Talus & Falcon	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Talus & Falcon	WBL	29	43	59	24	36	41	28	41	41	32	46	52	31	47	59

Source: Concord Engineering, 12/11/2019

Issaquah Middle School # 6 Traffic Analysis - VISSIM Queueing Results

Table D6. Key Movement Queue Length (feet) - 2023 With Project - Signalized Driveway

2023 Afternoon Peak Analysis

			Hourly Average			*Max 15 Minutes Demand*											
			2:10pm-3:10pm			2:10pm-2:25pm			2:25pm-2:40pm			2:40pm-2:55pm			2:55pm-3:10pm		
Intx No	**Intersection**	**Movement**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**
1	Talus & SR 900	NBR	39	80	111	37	64	70	42	76	80	43	92	111	37	66	68
1	Talus & SR 900	NBT	42	83	115	39	68	73	44	79	83	45	95	115	39	70	70
1	Talus & SR 900	NBL	25	50	68	28	46	51	33	65	68	22	38	40	16	29	35
1	Talus & SR 900	EBR	152	411	534	94	125	125	129	265	351	269	486	534	118	154	165
1	Talus & SR 900	EBL	149	408	531	91	121	122	126	262	348	265	483	531	115	151	162
1	Talus & SR 900	SBR	16	54	187	18	57	64	26	92	187	12	43	47	9	32	32
1	Talus & SR 900	SBT	166	328	384	148	265	329	197	377	384	183	276	307	136	207	223
1	Talus & SR 900	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Talus & SR 900	WBR	4	14	14	3	11	14	6	14	14	4	10	12	4	14	14
1	Talus & SR 900	WBL	3	8	9	2	7	9	4	8	9	2	7	8	3	8	8
2	Talus & School Access	NBR	556	1795	1853	324	868	933	1479	1846	1853	362	1130	1249	57	82	93
2	Talus & School Access	NBL	556	1795	1853	324	868	933	1479	1846	1853	363	1131	1249	58	83	93
2	Talus & School Access	EBR	68	178	187	47	72	77	87	170	187	94	180	184	43	60	60
2	Talus & School Access	EBT	79	191	200	58	86	91	99	183	200	107	193	197	54	73	74
2	Talus & School Access	WBT	18	43	61	0	0	0	13	40	41	37	53	61	24	40	41
2	Talus & School Access	WBL	36	180	219	26	56	60	85	202	219	28	60	72	6	11	15
3	Talus & Falcon	NBR	50	353	413	27	37	38	51	222	299	110	377	413	13	23	25
3	Talus & Falcon	EBR	13	93	131	0	0	0	34	124	131	19	67	75	0	2	7
3	Talus & Falcon	EBT	14	91	134	0	1	4	34	125	134	22	71	72	0	2	6
3	Talus & Falcon	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Talus & Falcon	WBL	9	49	67	16	57	67	10	41	45	3	7	8	7	13	14

Source: Concord Engineering, 12/11/2019

Issaquah Middle School # 6 Traffic Analysis - VISSIM Delay Results

Table D7.Intersection Delay & LOS - 2023 Baseline (Without Project)

2023 Afternoon Peak Analysis

			Hourly Average				*Max 15 Minutes Demand*					
			2:10pm-3:10pm		2:10pm-2:25pm		2:25pm-2:40pm		2:40pm-2:55pm		2:55pm-3:10pm	
Intx No	**Intersection**	**Movement**	**Delay (Sec/Veh)**	**LOS**	**Delay (Sec/Veh)**	**LOS**	**Delay (Sec/Veh)**	**LOS**	**Delay (Sec/Veh)**	**LOS**	**Delay (Sec/Veh)**	**LOS**
1	Talus & SR 900	NBR	0	A	0	A	0	A	0	A	0	A
1	Talus & SR 900	NBT	5	A	5	A	5	A	6	A	6	A
1	Talus & SR 900	NBL	72	E	74	E	60	E	68	E	87	F
1	Talus & SR 900	EBR	10	B	10	A	9	A	12	B	10	B
1	Talus & SR 900	EBL	54	D	55	D	54	D	54	D	52	D
1	Talus & SR 900	SBR	7	A	6	A	6	A	7	A	7	A
1	Talus & SR 900	SBT	7	A	6	A	6	A	8	A	9	A
1	Talus & SR 900	SBL	64	E	64	E	76	E	56	E	61	E
1	Talus & SR 900	WBR	8	A	9	A	8	A	7	A	8	A
1	Talus & SR 900	WBL	70	E	0	A	104	F	55	E	120	F
1	**Talus & SR 900**	**Intersection**	**12**	**B**	**11**	**B**	**12**	**B**	**12**	**B**	**14**	**B**
2	Talus & School Access	NBR	N/A		N/A		N/A		N/A		N/A	
2	Talus & School Access	NBL										
2	Talus & School Access	EBR										
2	Talus & School Access	EBT										
2	Talus & School Access	WBT										
2	Talus & School Access	WBL										
2	**Talus & School Access**	**Intersection**										
3	Talus & Falcon	NBR	5	A	5	A	5	A	5	A	6	A
3	Talus & Falcon	EBR	1	A	1	A	2	A	1	A	1	A
3	Talus & Falcon	EBT	0	A	0	A	0	A	0	A	0	A
3	Talus & Falcon	WBT	0	A	0	A	0	A	0	A	0	A
3	Talus & Falcon	WBL	4	A	3	A	3	A	4	A	4	A
3	**Talus & Falcon**	**Intersection**	**4**	**A**	**5**	**A**	**5**	**A**	**5**	**A**	**6**	**A**

Source: Concord Engineering, 12/11/2019

Issaquah Middle School # 6 Traffic Analysis - VISSIM Delay Results

Table D8. Intersection Delay & LOS - 2023 With Project - Signalized Driveway

2023 Afternoon Peak Analysis

			Hourly Average				*Max 15 Minutes Demand*					
			2:10pm-3:10pm		2:10pm-2:25pm		2:25pm-2:40pm		2:40pm-2:55pm		2:55pm-3:10pm	
Intx No	**Intersection**	**Movement**	**Delay (Sec/Veh)**	**LOS**	**Delay (Sec/Veh)**	**LOS**	**Delay (Sec/Veh)**	**LOS**	**Delay (Sec/Veh)**	**LOS**	**Delay (Sec/Veh)**	**LOS**
1	Talus & SR 900	NBR	0	A	0	A	0	A	0	A	0	A
1	Talus & SR 900	NBT	6	A	5	A	6	A	8	A	5	A
1	Talus & SR 900	NBL	65	E	66	E	60	E	68	E	65	E
1	Talus & SR 900	EBR	13	B	8	A	13	B	18	B	11	B
1	Talus & SR 900	EBL	50	D	50	D	50	D	50	D	48	D
1	Talus & SR 900	SBR	3	A	3	A	4	A	2	A	2	A
1	Talus & SR 900	SBT	12	B	10	B	13	B	13	B	10	B
1	Talus & SR 900	SBL	2	A	1	A	4	A	1	A	1	A
1	Talus & SR 900	WBR	9	A	6	A	7	A	15	B	7	A
1	Talus & SR 900	WBL	46	D	0	A	50	D	63	E	72	E
1	**Talus & SR 900**	**Intersection**	**15**	**B**	**12**	**B**	**15**	**B**	**18**	**B**	**14**	**B**
2	Talus & School Access	NBR	56	E	0	A	170	F	38	D	17	B
2	Talus & School Access	NBL	74	E	0	A	238	F	38	D	18	B
2	Talus & School Access	EBR	21	C	4	A	68	E	10	B	2	A
2	Talus & School Access	EBT	8	A	4	A	13	B	10	A	4	A
2	Talus & School Access	WBT	2	A	0	A	1	A	4	A	2	A
2	Talus & School Access	WBL	17	B	5	A	45	D	17	B	3	A
2	**Talus & School Access**	**Intersection**	**17**	**B**	**3**	**A**	**42**	**D**	**17**	**B**	**5**	**A**
3	Talus & Falcon	NBR	14	B	6	A	15	B	28	D	9	A
3	Talus & Falcon	EBR	2	A	1	A	5	A	4	A	0	A
3	Talus & Falcon	EBT	4	A	0	A	10	B	4	A	0	A
3	Talus & Falcon	WBT	0	A	0	A	0	A	0	A	0	A
3	Talus & Falcon	WBL	4	A	3	A	6	A	2	A	3	A
3	**Talus & Falcon**	**Intersection**	**4**	**A**	**3**	**A**	**10**	**B**	**28**	**D**	**9**	**A**

Source: Concord Engineering, 12/11/2019

APPENDIX E

SITE ACCESS OPTIONS ASSESSMENT

December 13, 2019

Assessment Summary

Option	Criteria				
	Operational Effect	Physical Feasibility	Environmental Impact	Policy/Standard Compliance	Cost
1. Stop-controlled MS 6 driveway					
2. Roundabout at MS 6 driveway					
3. All-way stop at NW Talus Drive / Falcon Way NW					
4. All-way stop at NW Talus Drive / MS 6 driveway					
5. Traffic signal at NW Talus Drive / MS 6 driveway (RECOMMENDED)					
6. Switch bus and family vehicle loading areas					
7. Traffic signal at NW Talus Drive / Falcon Way NW					
8. Ramp meter for Talus Drive					
9. Direct vehicle access to SR 900					
10. Grade-separated access for MS 6 driveway (flyover or underpass)					
11. Off-site shuttle (e.g., all student required to ride school bus)					
12. Add second EB lane on Talus between MS 6 and SR 900					
13. Student load/unload on SR 900 with pedestrian bridge to school site					

Criteria Rating Descriptions:

 Favorable

 Mixed Favorable / Unfavorable

 Unfavorable

 Fatal Flaw / Not Feasible

ASSESSMENT DETAIL FOR EACH OPTION IS PROVIDED ON THE FOLLOWING PAGES.

Option	1. Stop-controlled MS 6 driveway	
Description	Provide northbound (minor leg) stop-sign control at the NW Talus Drive	
Criteria	Rating	Assessment
Operational Effect		MS 6 driveway would operate at LOS F (see attached LOS report) in the morning and peak westbound queue of vehicles waiting to turn left into school is projected to extend to SR 900, causing bottleneck on westbound Talus Drive at merge points (see attached queuing summary and Figure E-1). Failing operations could lead to undesirable U-turn maneuvers, more trips spilling into neighborhood, or other safety issues resulting from driver frustration and poor decisions.
Physical Feasibility		Small project footprint, could be implemented within existing right-of-way
Environmental Impact		No disturbed area that would occur within the right-of-way. Increased traffic delays, fuel consumption, and air pollution.
Policy/Standard Compliance		Would not meet City's traffic operational standards or queuing objectives on Talus Drive
Cost		Minimal cost (<$1K)

Criteria Rating Description:

 Favorable

 Mixed Favorable / Unfavorable

 Unfavorable

 Fatal Flaw / Not Feasible

Attachments: Synchro Level of Service Reports

Vissim Queuing Summary

Figure E-1. Maximum Queue Conditions with Stop-Controlled Driveway

Intersection	
Int Delay, s/veh	40.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	550	35	294	194	14	251
Future Vol, veh/h	550	35	294	194	14	251
Conflicting Peds, #/hr	0	10	10	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-8	-	-	9	1	-
Peak Hour Factor	88	53	53	86	49	49
Heavy Vehicles, %	7	0	0	17	0	0
Mvmt Flow	625	66	555	226	29	512

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	701	0	1891	668
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	1223	-
Critical Hdwy	-	-	4.1	-	6.8	6.3
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	905	-	63	~ 453
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	229	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	898	-	~ 24	~ 449
Mov Cap-2 Maneuver	-	-	-	-	~ 24	-
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	87	-

Approach	EB	WB	NB
HCM Control Delay, s	0	10.8	135.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	24	449	-	-	898	-
HCM Lane V/C Ratio	1.19	1.141	-	-	0.618	-
HCM Control Delay (s)	$ 484.6	116.3	-	-	15.3	-
HCM Lane LOS	F	F	-	-	C	-
HCM 95th %tile Q(veh)	3.6	18.4	-	-	4.4	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	267	7	120	318	17	135
Future Vol, veh/h	267	7	120	318	17	135
Conflicting Peds, #/hr	0	10	10	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-8	-	-	9	1	-
Peak Hour Factor	92	55	55	81	51	51
Heavy Vehicles, %	9	0	0	10	0	0
Mvmt Flow	290	13	218	393	33	265

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	313	0	940	307
Stage 1	-	-	-	-	307	-
Stage 2	-	-	-	-	633	-
Critical Hdwy	-	-	4.1	-	6.8	6.3
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1259	-	266	731
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	480	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1249	-	218	725
Mov Cap-2 Maneuver	-	-	-	-	218	-
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	396	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3	14.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	218	725	-	-	1249	-
HCM Lane V/C Ratio	0.153	0.365	-	-	0.175	-
HCM Control Delay (s)	24.5	12.8	-	-	8.5	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	1.7	-	-	0.6	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	270	4	71	403	8	70
Future Vol, veh/h	270	4	71	403	8	70
Conflicting Peds, #/hr	0	10	10	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	160	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-8	-	-	9	1	-
Peak Hour Factor	90	59	59	82	58	58
Heavy Vehicles, %	3	0	0	4	0	0
Mvmt Flow	300	7	120	491	14	121

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	317	0	800	314
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	486	-
Critical Hdwy	-	-	4.1	-	6.8	6.3
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1255	-	327	725
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	574	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1245	-	293	719
Mov Cap-2 Maneuver	-	-	-	-	293	-
Stage 1	-	-	-	-	726	-
Stage 2	-	-	-	-	519	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	293	719	-	-	1245	-
HCM Lane V/C Ratio	0.047	0.168	-	-	0.097	-
HCM Control Delay (s)	17.9	11	-	-	8.2	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.6	-	-	0.3	-

Issaquah Middle School # 6 Traffic Analysis - Vissim Queuing Results

Table E1. Key Movement Queue Length (feet) - 2023 With Project - Stop Sign Control at MS 6 Dwy

2023 AM Peak Analysis

			Hourly Average									*Max 15 Minutes Demand*					
			7:25 am - 8:25 am			7:25 am - 7:40 am			7:40 am - 7:55 am			7:55 am - 8:10am			8:10 am - 8:25am		
Intx No	**Intersection**	**Movement**	**Average**	**85th Percentile**	**Maximum**	**Average**	**85th Percentile**	**Maximum**	**Average**	**85th Percentile**	**Maximum**	**Average**	**85th Percentile**	**Maximum**	**Average**	**85th Percentile**	**Maximum**
1	Talus & SR 900	NBR	247	404	648	136	243	269	232	366	409	318	424	470	301	515	648
1	Talus & SR 900	NBT	247	404	649	136	244	269	232	366	410	319	424	470	301	516	649
1	Talus & SR 900	NBL	180	353	461	71	96	122	153	318	392	285	356	357	211	429	461
1	Talus & SR 900	EBR	212	282	339	192	275	320	202	262	294	234	296	339	221	272	291
1	Talus & SR 900	EBL	212	281	339	191	274	319	202	261	293	234	296	339	220	271	290
1	Talus & SR 900	SBR	102	355	520	13	28	34	23	54	93	257	515	520	117	419	494
1	Talus & SR 900	SBT	93	130	161	74	117	124	99	143	156	113	156	161	86	123	155
1	Talus & SR 900	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Talus & SR 900	WBR	7	16	26	8	20	24	7	15	26	7	17	18	8	16	24
1	Talus & SR 900	WBL	8	17	30	9	23	23	9	18	30	7	16	21	8	19	28
2	Talus & School Access	NBR	389	896	1163	42	74	81	78	98	124	464	658	741	971	1149	1163
2	Talus & School Access	NBL	389	896	1164	42	74	81	79	98	125	465	658	741	971	1149	1164
2	Talus & School Access	EBR	0	0	3	0	0	0	0	0	0	0	0	3	0	0	0
2	Talus & School Access	EBT	0	0	3	0	0	0	0	0	0	0	0	3	0	0	0
2	Talus & School Access	WBT	0	0	9	0	0	0	1	3	9	0	0	0	0	0	0
2	Talus & School Access	WBL	353	978	1028	41	59	88	90	188	267	862	1022	1028	420	952	1007
3	Talus & Falcon	NBR	63	133	386	17	35	79	27	72	105	187	339	386	22	58	61
3	Talus & Falcon	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Talus & Falcon	EBT	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
3	Talus & Falcon	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Talus & Falcon	WBL	16	25	162	11	25	42	32	89	162	13	30	41	8	19	25

Source: Concord Engineering, 11/07/2019

Source: Concord Engineering, September 2019

MIDDLE SCHOOL #6
Issaquah School District

Figure E-1
Maximum Queue Condition
Stop Sign Control at MS 6 Driveway
Morning Peak Hour

heffron transportation inc

11.08.19

Option	2. Roundabout at MS 6 driveway	
Description	Construct roundabout at the NW Talus Drive / MS 6 driveway intersection, with 1-lane approach in EB and NB directions, and 2-lane approach in WB direction (consistent with existing road configuration)	
Criteria	**Rating**	**Assessment**
Operational Effect		Preferred for locations with more balanced flows than would occur at subject location. Projected to operate at LOS B or better, but would result in long queues in the eastbound direction (vehicles departing Talus) in the morning (see attached SIDRA report). Safety benefit from reduced risk of severe angle collisions (side-swipe are more common).
Physical Feasibility		Inscribed diameter for single-lane roundabout ranges from 80 feet to 150 feet (typical 120 feet); multilane require 120 feet. Severe topographical constraints would require excessive excavation and construction of retaining walls. Acquisition of additional right-of-way would be required.
Environmental Impact		Footprint and preferred grades are likely to result in extensive area of disturbance required to construct this option, which in turn would have a high level of environmental impacts (slopes, stormwater).
Policy/Standard Compliance		Washington State Department of Transportation (WSDOT) *Design Manual M 22-01.17*, (September 2019) provides guidance on grades for roundabout intersections in section 1320.04, including recommending circulatory grade in the roundabout as 4 percent or flatter. The NW Talus Drive corridor has an 8 to 10 percent slope. Terrain may require benching the roundabout (and substantial retaining wall structures) to fit conditions.
Cost		Excavation, structural, and right-of-way requirements would have a prohibitively high cost. (>$1 million)

Criteria Rating Description:

Favorable

Mixed Favorable / Unfavorable

Unfavorable

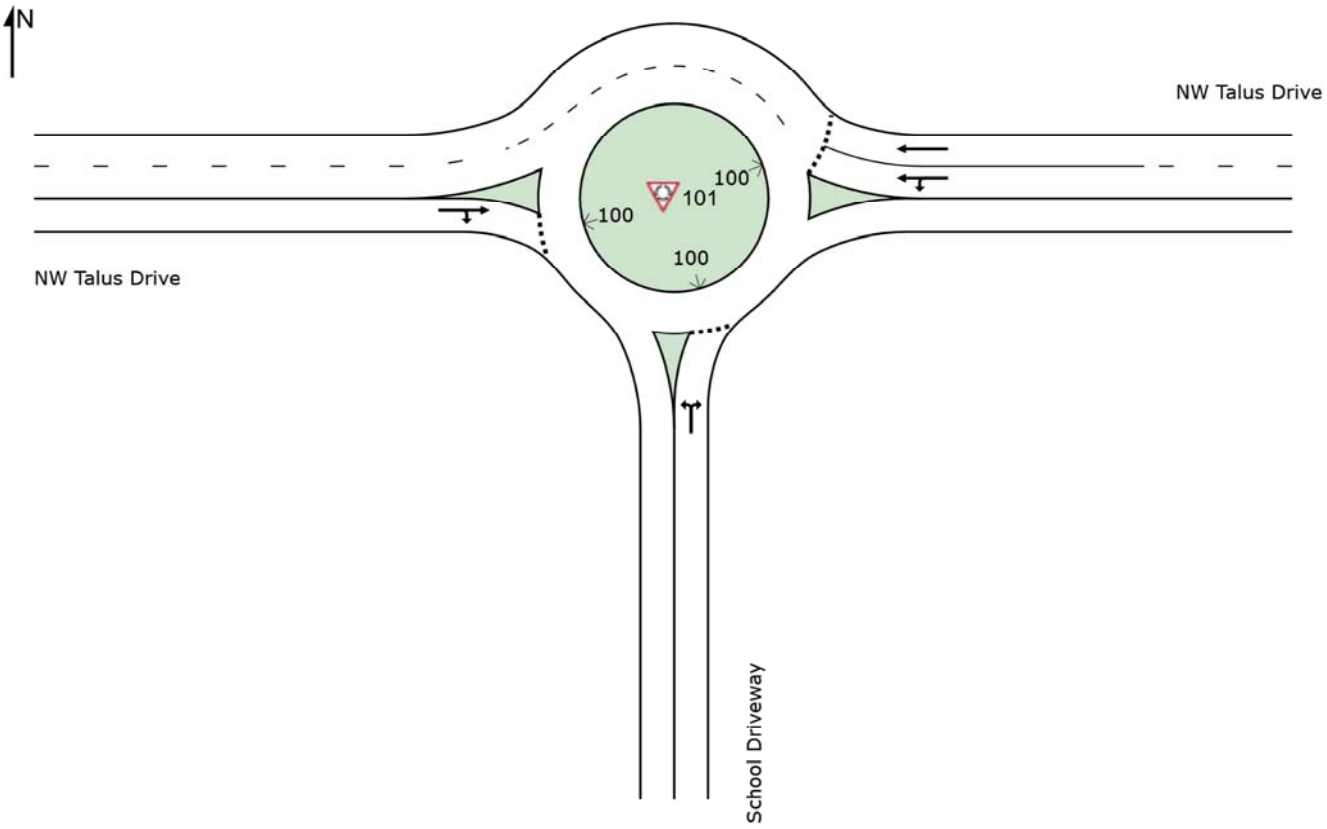
Fatal Flaw / Not Feasible

Attachment: SIDRA Level of Service and Queuing Report

SITE LAYOUT

Site: 101 [NW Talus Drive / MS#6 Dwy - AM]

New Site
Site Category: (None)
Roundabout



Organisation: HEFFRON TRANSPORTATION, INC. | Created: Thursday, October 31, 2019 5:37:13 PM
Project: C:\Users\Marni\OneDrive - Heffron Transportation, Inc\Heffron Files\Projects\Issaquah Schools\Middle School #6\Roundabout\Talus at MS#6 Dwy.sip8

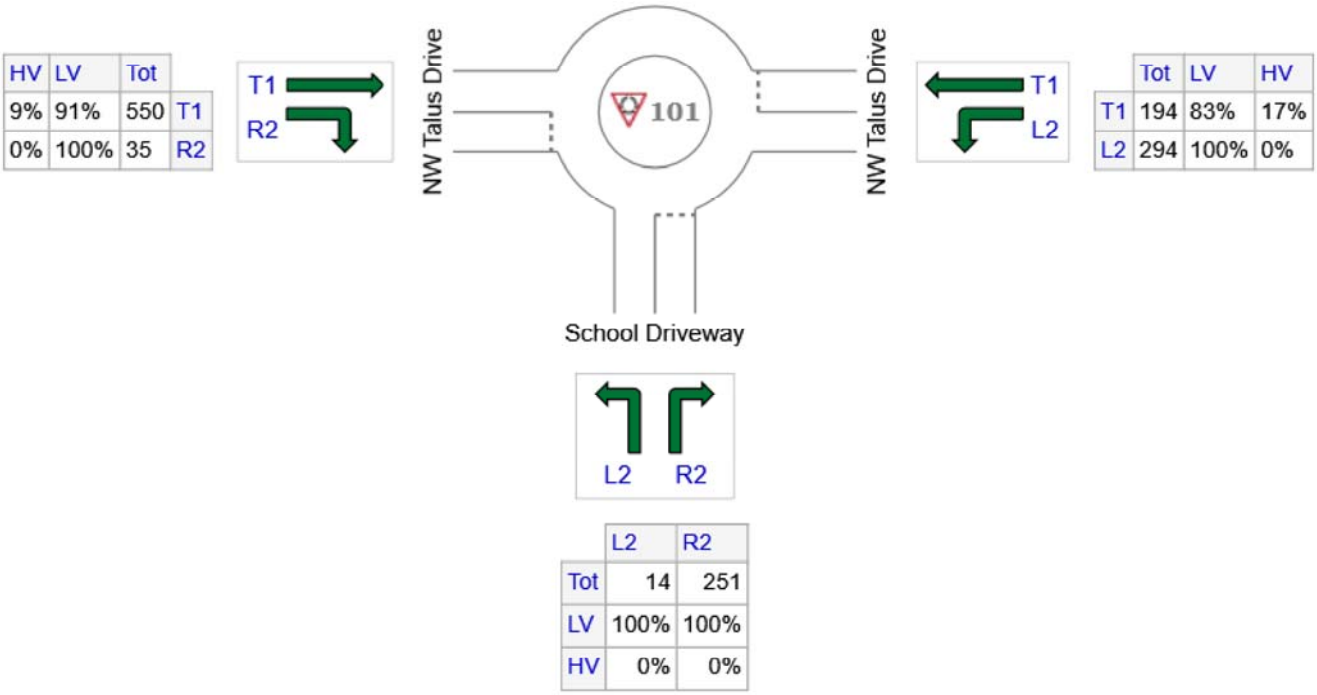
INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

Site: 101 [NW Talus Drive / MS#6 Dwy - AM]

New Site
Site Category: (None)
Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: School Driveway	265	265	0
E: NW Talus Drive	488	455	33
W: NW Talus Drive	585	536	50
Total	1338	1256	82

DEGREE OF SATURATION

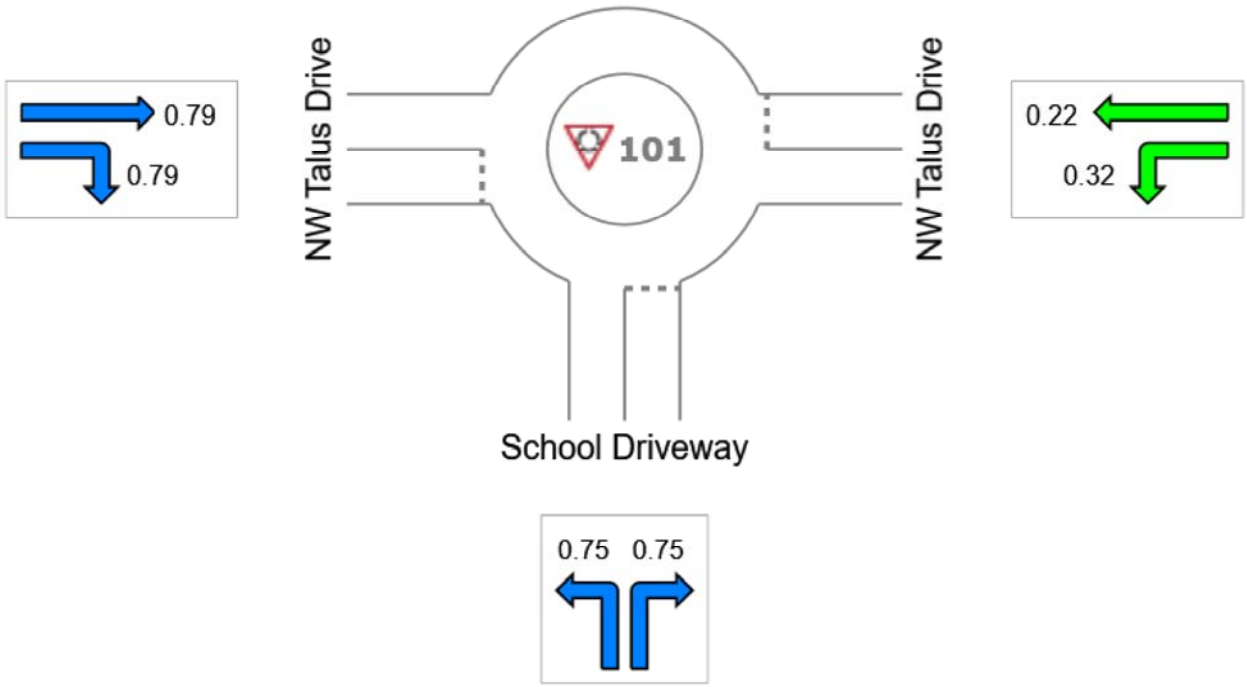
Ratio of Demand Volume to Capacity, v/c ratio per movement

Site: 101 [NW Talus Drive / MS#6 Dwy - AM]

New Site
Site Category: (None)
Roundabout

All Movement Classes

	Approaches			Intersection
	South	East	West	
Degree of Saturation	0.75	0.32	0.79	0.79



Colour code based on Degree of Saturation

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0]

DELAY (CONTROL)

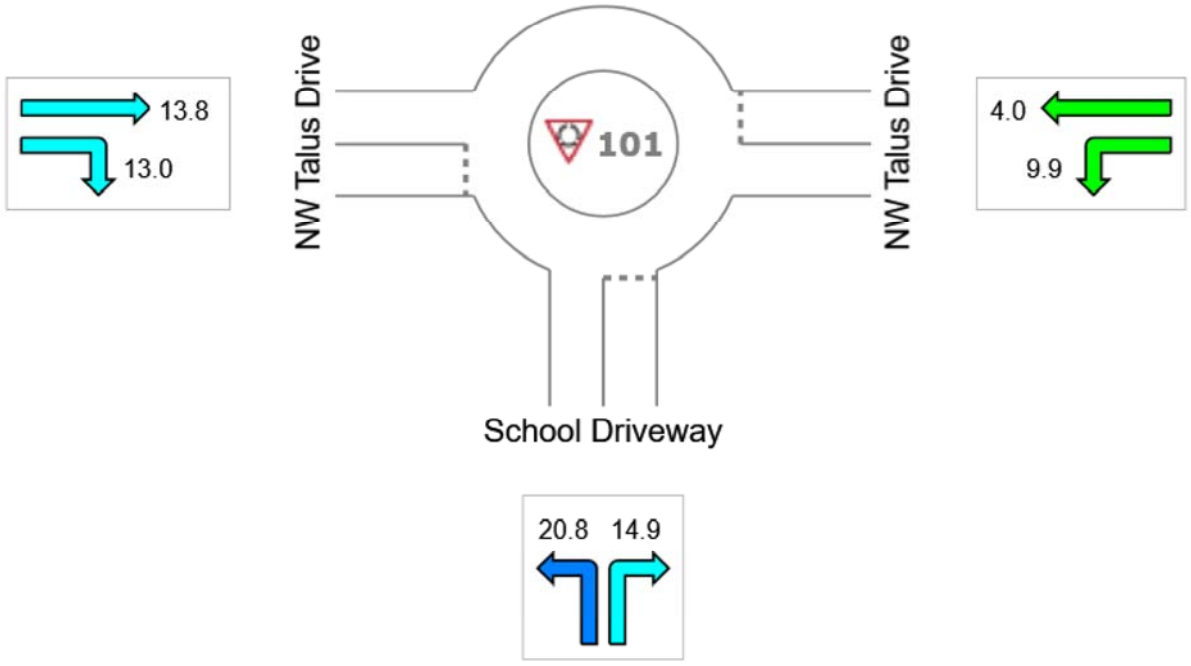
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [NW Talus Drive / MS#6 Dwy - AM]

New Site
Site Category: (None)
Roundabout

All Movement Classes

	Approaches			Intersection
	South	East	West	
Delay (Control)	15.2	8.0	13.7	12.0
LOS	B	A	B	B



Colour code based on Level of Service

LOS A | LOS B | LOS C | LOS D | LOS E | LOS F

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

QUEUE DISTANCE (%ILE)

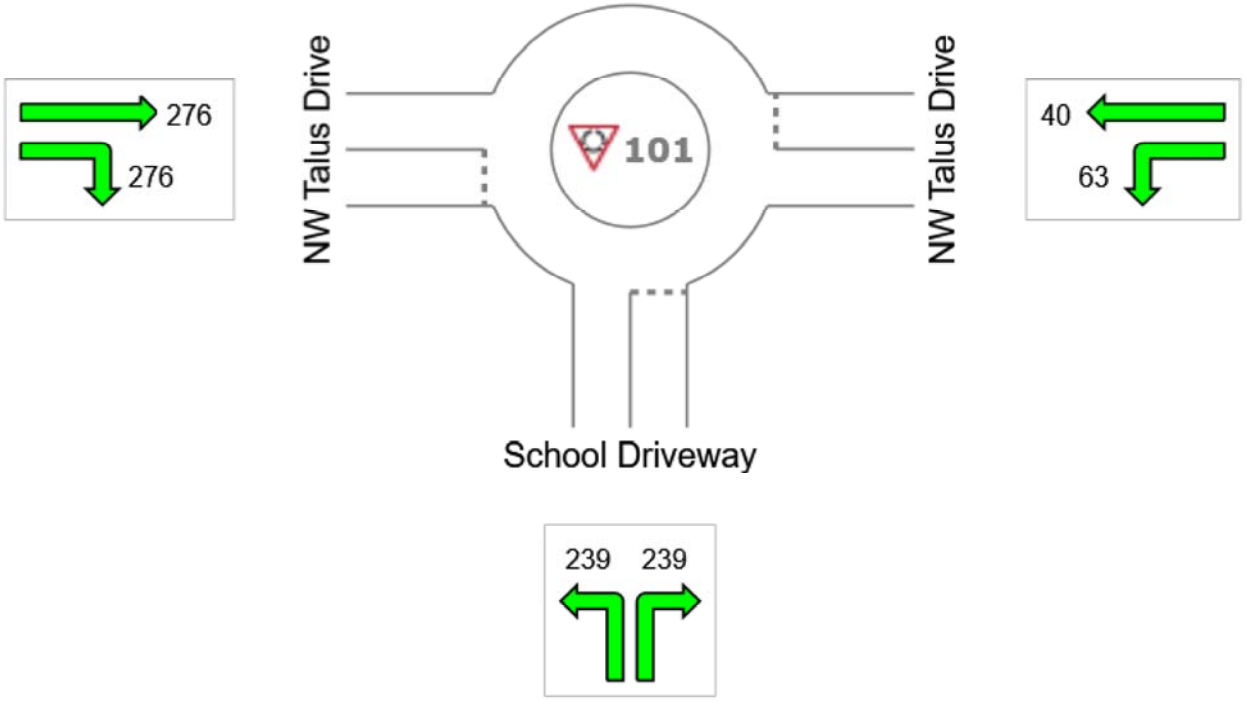
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

Site: 101 [NW Talus Drive / MS#6 Dwy - AM]

New Site
Site Category: (None)
Roundabout

All Movement Classes

	Approaches			Intersection
	South	East	West	
Vehicle Queue (%ile)	239	63	276	276



Colour code based on Queue Storage Ratio

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0]

Option	3. All-way stop at NW Talus Drive / Falcon Way NW	
Description	Change traffic control from northbound (minor leg) stop-sign control to all-way stop-sign control (to meter traffic approaching MS 6 driveway)	
Criteria	**Rating**	**Assessment**
Operational Effect		(WSDOT) *Design Manual* provides guidance on applications for multi-way stop control in section 1300.03. It is suited for lower speed facilities, but with approximately equal volumes on all legs; not recommended for locations with unbalanced volumes. Would degrade morning operations from LOS A to LOS C at Talus/Falcon, which would be within City LOS standards. However, the operational impact at Talus Drive/MS 6 driveway would remain, and this option would worsen the westbound queuing condition on Talus Drive beyond the condition described for Option 1. This is because a stop sign would cause eastbound traffic flow on Talus Drive to be more evenly distributed, providing fewer gaps for the westbound left-turning traffic. Typically, fewer severe/injury collisions than two-way stop control.
Physical Feasibility		Small project footprint, could be implemented within existing right-of-way
Environmental Impact		Minimal disturbed area that would occur within the right-of-way. Increased traffic delays, fuel consumption, and air pollution.
Policy/Standard Compliance		Manual on Uniform Traffic Control Devices (MUTCD) warrant for multi-way stop control requires the combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approach (Falcon Way NW in this case) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle. The low volumes on Falcon Way NW would not meet warrant for all-way stop control. Operation at Talus Drive/MS 6 driveway would not meet the City's traffic operational standards or queuing objectives on Talus Drive
Cost		Low cost (<$5K)

Criteria Rating Description:

 Favorable

 Mixed Favorable / Unfavorable

 Unfavorable

 Fatal Flaw / Not Feasible

Attachment: Vissim Queuing Summary

Issaquah Middle School # 6 Traffic Analysis - Vissim Queuing Results

Table E2. Key Movement Queue Length (feet) - 2023 With Project - All-Way-Stop @ Falcon

2023 AM Peak Analysis

			Hourly Average									*Max 15 Minutes Demand*					
			7:25 am - 8:25 am			7:25 am - 7:40 am			7:40 am - 7:55 am			7:55 am - 8:10am			8:10 am - 8:25am		
Intx No	**Intersection**	**Movement**	**Average**	**85th Percentile**	**Maximum**	**Average**	**85th Percentile**	**Maximum**	**Average**	**85th Percentile**	**Maximum**	**Average**	**85th Percentile**	**Maximum**	**Average**	**85th Percentile**	**Maximum**
1	Talus & SR 900	NBR	307	612	835	136	238	247	215	351	412	387	652	732	489	810	835
1	Talus & SR 900	NBT	307	612	836	137	239	247	216	351	412	388	653	732	489	810	836
1	Talus & SR 900	NBL	265	618	838	74	98	110	151	320	398	389	665	736	444	797	838
1	Talus & SR 900	EBR	196	264	355	178	255	273	187	245	266	219	313	355	200	262	273
1	Talus & SR 900	EBL	195	263	354	177	255	273	186	244	266	218	312	354	200	261	273
1	Talus & SR 900	SBR	191	668	922	15	39	44	25	60	93	403	825	860	321	853	922
1	Talus & SR 900	SBT	97	142	236	70	120	139	96	139	159	110	151	161	113	176	236
1	Talus & SR 900	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Talus & SR 900	WBR	7	17	24	8	20	24	7	15	24	7	17	18	8	17	24
1	Talus & SR 900	WBL	8	17	28	9	23	23	8	18	28	7	16	21	8	19	28
2	Talus & School Access	NBR	269	626	742	43	84	86	75	106	115	327	435	505	629	725	742
2	Talus & School Access	NBL	269	626	743	44	85	87	76	106	115	328	436	506	630	726	743
2	Talus & School Access	EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Talus & School Access	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Talus & School Access	WBT	0	0	5	0	0	0	0	0	5	0	0	0	0	0	0
2	Talus & School Access	WBL	462	1027	1038	39	57	63	100	218	315	916	1034	1038	793	1026	1037
3	Talus & Falcon	NBR	40	92	265	16	35	79	28	87	102	99	199	265	19	32	68
3	Talus & Falcon	EBR	760	1060	1095	313	482	553	696	763	782	985	1080	1083	1047	1088	1095
3	Talus & Falcon	EBT	760	1060	1094	312	482	552	696	762	782	985	1079	1083	1047	1087	1094
3	Talus & Falcon	WBT	0	0	5	0	0	0	1	3	5	0	0	5	0	0	0
3	Talus & Falcon	WBL	25	51	192	18	43	61	43	110	192	24	65	78	17	29	34

Source: Concord Engineering, 11/07/2019

Option	4. All-way stop at NW Talus Drive / MS 6 driveway	
Description	Provide all-way stop-sign control at the NW Talus Dr/MS 6 driveway intersection	
Criteria	Rating	Assessment
Operational Effect		(WSDOT) Design Manual provides guidance on applications for multi-way stop control in section 1300.03. It is suited for lower speed facilities, but with approximately equal volumes on all legs; not recommended for locations with unbalanced volumes. Projected morning operation of LOS F. Failing operations could lead to undesirable U-turn maneuvers, more trips spilling into neighborhood, or other safety issues resulting from driver frustration and poor decisions.
Physical Feasibility		Small project footprint, could be implemented within existing right-of-way
Environmental Impact		Minimal disturbed area that would occur within the right-of-way. Increased traffic delays, fuel consumption, and air pollution.
Policy/Standard Compliance		Would not meet City's traffic operational standards. Manual on Uniform Traffic Control Devices (MUTCD) warrant for multi-way stop control requires the combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approach (MS 6 driveway in this case) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle. Peak hours may be met, but not 8 hours.
Cost		Low cost (<$5K)

Criteria Rating Description:				
				
	Favorable	Mixed Favorable / Unfavorable	Unfavorable	Fatal Flaw / Not Feasible

Attachment: Synchro Level of Service Reports

Intersection	
Intersection Delay, s/veh	176.4
Intersection LOS	F

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	550	35	294	194	14	251
Future Vol, veh/h	550	35	294	194	14	251
Peak Hour Factor	0.88	0.53	0.53	0.86	0.49	0.49
Heavy Vehicles, %	7	0	0	17	0	0
Mvmt Flow	625	66	555	226	29	512
Number of Lanes	1	0	1	2	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	3
HCM Control Delay	308	117.1	93.8
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	WBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	0%	94%	0%	100%	100%
Vol Right, %	0%	100%	6%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	14	251	585	294	97	97
LT Vol	14	0	0	294	0	0
Through Vol	0	0	550	0	97	97
RT Vol	0	251	35	0	0	0
Lane Flow Rate	29	512	691	555	113	113
Geometry Grp	8	8	8	7	7	7
Degree of Util (X)	0.07	1.079	1.608	1.249	0.247	0.185
Departure Headway (Hd)	10.342	9.072	9.191	9.289	9.068	6.985
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	349	405	401	394	398	517
Service Time	8.042	6.772	6.891	6.989	6.768	4.685
HCM Lane V/C Ratio	0.083	1.264	1.723	1.409	0.284	0.219
HCM Control Delay	13.8	98.3	308	159.4	14.7	11.3
HCM Lane LOS	B	F	F	F	B	B
HCM 95th-tile Q	0.2	14.8	36.3	20.8	1	0.7

Intersection	
Intersection Delay, s/veh	14
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	267	7	120	318	17	135
Future Vol, veh/h	267	7	120	318	17	135
Peak Hour Factor	0.92	0.55	0.55	0.81	0.51	0.51
Heavy Vehicles, %	9	0	0	10	0	0
Mvmt Flow	290	13	218	393	33	265
Number of Lanes	1	0	1	2	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	3
HCM Control Delay	19.2	11.3	14.3
HCM LOS	C	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	WBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	0%	97%	0%	100%	100%
Vol Right, %	0%	100%	3%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	17	135	274	120	159	159
LT Vol	17	0	0	120	0	0
Through Vol	0	0	267	0	159	159
RT Vol	0	135	7	0	0	0
Lane Flow Rate	33	265	303	218	196	196
Geometry Grp	8	8	8	7	7	7
Degree of Util (X)	0.07	0.468	0.585	0.393	0.336	0.232
Departure Headway (Hd)	7.586	6.369	6.953	6.489	6.154	4.256
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	470	561	515	552	583	838
Service Time	5.366	4.149	4.732	4.25	3.915	2.015
HCM Lane V/C Ratio	0.07	0.472	0.588	0.395	0.336	0.234
HCM Control Delay	10.9	14.7	19.2	13.4	12	8.3
HCM Lane LOS	B	B	C	B	B	A
HCM 95th-tile Q	0.2	2.5	3.7	1.9	1.5	0.9

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	270	4	71	403	8	70
Future Vol, veh/h	270	4	71	403	8	70
Peak Hour Factor	0.90	0.59	0.59	0.82	0.58	0.58
Heavy Vehicles, %	3	0	0	4	0	0
Mvmt Flow	300	7	120	491	14	121
Number of Lanes	1	0	1	2	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	3
HCM Control Delay	15.2	9.4	10.4
HCM LOS	C	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	WBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	0%	99%	0%	100%	100%
Vol Right, %	0%	100%	1%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	8	70	274	71	202	202
LT Vol	8	0	0	71	0	0
Through Vol	0	0	270	0	202	202
RT Vol	0	70	4	0	0	0
Lane Flow Rate	14	121	307	120	246	246
Geometry Grp	8	8	8	7	7	7
Degree of Util (X)	0.028	0.205	0.519	0.195	0.361	0.239
Departure Headway (Hd)	7.315	6.101	6.086	5.82	5.285	3.503
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	491	589	595	621	673	1003
Service Time	5.039	3.825	3.803	3.52	3.085	1.301
HCM Lane V/C Ratio	0.029	0.205	0.516	0.193	0.366	0.245
HCM Control Delay	10.3	10.4	15.2	9.9	11.1	7.4
HCM Lane LOS	B	B	C	A	B	A
HCM 95th-tile Q	0.1	0.8	3	0.7	1.6	0.9

Option	5. Traffic signal at NW Talus Drive / MS 6 driveway	
Description	Install actuated traffic signal at the NW Talus Drive/MS 6 driveway intersection	
Criteria	Rating	Assessment
Operational Effect		Projected morning operation of LOS , and LOS B or better during all other hours of the day (see attached LOS reports). Peak queues could be accommodated with existing or planned lane storage capacity. Allows for improved progression with coordination at Talus / SR 900. Interrupts Talus Drive flows to allow school traffic to complete turns. Adequately serves all turn movements. Susceptible to power outages.
Physical Feasibility		Small project footprint; expected to be implemented within existing right-of-way.
Environmental Impact		Minimal disturbed area that would occur within the right-of-way or on-site – little to no environmental impact expected.
Policy/Standard Compliance		Analyses indicate intersection would meet applicable MUTCD warrants and would be compliant with applicable policies and standards.
Cost		Medium to high cost (~$500K to $900K); requires ongoing maintenance and periodic adjustment.

Criteria Rating Description:

 Favorable

 Mixed Favorable / Unfavorable

 Unfavorable

 Fatal Flaw / Not Feasible

Attachments: Synchro Level of Service Report

Vissim Queuing Summary

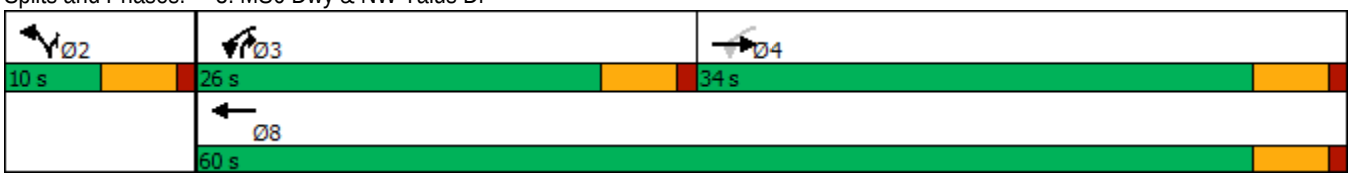
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	550	35	294	194	14	251
Future Volume (vph)	550	35	294	194	14	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	11	10	10
Grade (%)	-8%			9%	1%	
Storage Length (ft)		0	300		0	130
Storage Lanes		0	1		1	1
Taper Length (ft)			50		50	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00					
Frt	0.987					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1889	0	1724	2848	1676	1500
Flt Permitted			0.159		0.950	
Satd. Flow (perm)	1889	0	289	2848	1676	1500
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	9					140
Link Speed (mph)	25			25	20	
Link Distance (ft)	199			460	217	
Travel Time (s)	5.4			12.5	7.4	
Confl. Peds. (#/hr)		10	10			
Peak Hour Factor	0.88	0.53	0.53	0.86	0.49	0.49
Heavy Vehicles (%)	7%	0%	0%	17%	0%	0%
Adj. Flow (vph)	625	66	555	226	29	512
Shared Lane Traffic (%)						
Lane Group Flow (vph)	691	0	555	226	29	512
Turn Type	NA		D.P+P	NA	Prot	pt+ov
Protected Phases	4		3	8	2	2 3
Permitted Phases			4			
Detector Phase	4		3	8	2	3
Switch Phase						
Minimum Initial (s)	7.0		5.0	7.0	5.0	
Minimum Split (s)	25.0		10.0	12.0	10.0	
Total Split (s)	34.0		26.0	60.0	10.0	
Total Split (%)	48.6%		37.1%	85.7%	14.3%	
Maximum Green (s)	29.0		21.0	55.0	5.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	None	None	
Walk Time (s)	7.0					
Flash Dont Walk (s)	13.0					
Pedestrian Calls (#/hr)	20					
Act Effct Green (s)	24.8		43.3	52.2	5.3	21.7

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Actuated g/C Ratio	0.43		0.76	0.91	0.09	0.38
v/c Ratio	0.84		0.81	0.09	0.19	0.78
Control Delay	27.3		25.0	1.2	32.6	20.7
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	27.3		25.0	1.2	32.6	20.7
LOS	C		C	A	C	C
Approach Delay	27.3			18.1	21.3	
Approach LOS	C			B	C	
Queue Length 50th (ft)	186		97	0	10	114
Queue Length 95th (ft)	#447		99	13	19	67
Internal Link Dist (ft)	119			380	137	
Turn Bay Length (ft)			300			130
Base Capacity (vph)	1019		789	2570	155	747
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.68		0.70	0.09	0.19	0.69

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 57.1
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 22.1 Intersection LOS: C
Intersection Capacity Utilization 64.1% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: MS6 Dwy & NW Talus Dr



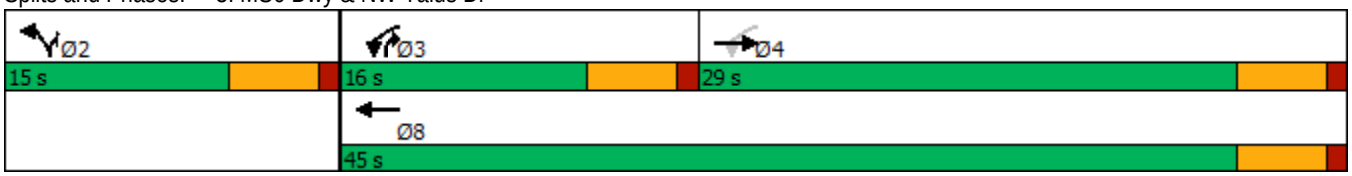
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	267	7	120	318	17	135
Future Volume (vph)	267	7	120	318	17	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	11	10	12
Grade (%)	-8%			9%	1%	
Storage Length (ft)		0	300		0	130
Storage Lanes		0	1		1	1
Taper Length (ft)			50		50	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00		0.99			
Frt	0.994					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1866	0	1724	3030	1676	1607
Flt Permitted			0.575		0.950	
Satd. Flow (perm)	1866	0	1034	3030	1676	1607
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4					265
Link Speed (mph)	25			25	20	
Link Distance (ft)	199			450	217	
Travel Time (s)	5.4			12.3	7.4	
Confl. Peds. (#/hr)		10	10			
Peak Hour Factor	0.92	0.55	0.55	0.81	0.51	0.51
Heavy Vehicles (%)	9%	0%	0%	10%	0%	0%
Adj. Flow (vph)	290	13	218	393	33	265
Shared Lane Traffic (%)						
Lane Group Flow (vph)	303	0	218	393	33	265
Turn Type	NA		D.P+P	NA	Prot	pt+ov
Protected Phases	4		3	8	2	2 3
Permitted Phases			4			
Detector Phase	4		3	8	2	3
Switch Phase						
Minimum Initial (s)	7.0		5.0	7.0	5.0	
Minimum Split (s)	25.0		10.0	12.0	10.0	
Total Split (s)	29.0		16.0	45.0	15.0	
Total Split (%)	48.3%		26.7%	75.0%	25.0%	
Maximum Green (s)	24.0		11.0	40.0	10.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	None	None	
Walk Time (s)	7.0					
Flash Dont Walk (s)	13.0					
Pedestrian Calls (#/hr)	20					
Act Effct Green (s)	13.5		18.2	25.5	6.6	11.4

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Actuated g/C Ratio	0.49		0.67	0.93	0.24	0.42
v/c Ratio	0.33		0.23	0.14	0.08	0.32
Control Delay	8.7		2.7	1.2	14.6	3.0
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	8.7		2.7	1.2	14.6	3.0
LOS	A		A	A	B	A
Approach Delay	8.7			1.8	4.2	
Approach LOS	A			A	A	
Queue Length 50th (ft)	23		0	0	3	0
Queue Length 95th (ft)	114		21	26	16	0
Internal Link Dist (ft)	119			370	137	
Turn Bay Length (ft)			300			130
Base Capacity (vph)	1608		1148	2898	760	998
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.19		0.19	0.14	0.04	0.27

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 27.3
Natural Cycle: 45
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.33
Intersection Signal Delay: 4.1 Intersection LOS: A
Intersection Capacity Utilization 38.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: MS6 Dwy & NW Talus Dr



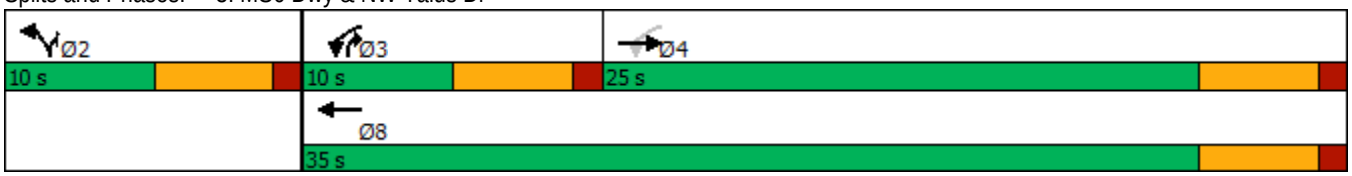
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	270	4	71	403	8	70
Future Volume (vph)	270	4	71	403	8	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	11	10	12
Grade (%)	-8%			9%	1%	
Storage Length (ft)		0	300		0	130
Storage Lanes		0	1		1	1
Taper Length (ft)			50		50	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00		0.99			
Frt	0.997					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1976	0	1724	3204	1676	1607
Flt Permitted			0.573		0.950	
Satd. Flow (perm)	1976	0	1032	3204	1676	1607
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	3					121
Link Speed (mph)	25			25	20	
Link Distance (ft)	199			452	217	
Travel Time (s)	5.4			12.3	7.4	
Confl. Peds. (#/hr)		10	10			
Peak Hour Factor	0.90	0.59	0.59	0.82	0.58	0.58
Heavy Vehicles (%)	3%	0%	0%	4%	0%	0%
Adj. Flow (vph)	300	7	120	491	14	121
Shared Lane Traffic (%)						
Lane Group Flow (vph)	307	0	120	491	14	121
Turn Type	NA		D.P+P	NA	Prot	pt+ov
Protected Phases	4		3	8	2	2 3
Permitted Phases			4			
Detector Phase	4		3	8	2	3
Switch Phase						
Minimum Initial (s)	7.0		5.0	7.0	5.0	
Minimum Split (s)	25.0		10.0	12.0	10.0	
Total Split (s)	25.0		10.0	35.0	10.0	
Total Split (%)	55.6%		22.2%	77.8%	22.2%	
Maximum Green (s)	20.0		5.0	30.0	5.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	None	None	
Walk Time (s)	7.0					
Flash Dont Walk (s)	13.0					
Pedestrian Calls (#/hr)	20					
Act Effct Green (s)	10.7		16.0	21.6	8.7	9.8

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Actuated g/C Ratio	0.43		0.65	0.87	0.35	0.40
v/c Ratio	0.36		0.13	0.18	0.02	0.17
Control Delay	7.8		2.3	1.2	13.5	3.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	7.8		2.3	1.2	13.5	3.5
LOS	A		A	A	B	A
Approach Delay	7.8			1.4	4.5	
Approach LOS	A			A	A	
Queue Length 50th (ft)	22		0	0	1	0
Queue Length 95th (ft)	90		12	27	10	7
Internal Link Dist (ft)	119			372	137	
Turn Bay Length (ft)			300			130
Base Capacity (vph)	1613		913	2990	593	713
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.19		0.13	0.16	0.02	0.17

Intersection Summary

Area Type: Other
Cycle Length: 45
Actuated Cycle Length: 24.7
Natural Cycle: 45
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.36
Intersection Signal Delay: 3.7 Intersection LOS: A
Intersection Capacity Utilization 35.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: MS6 Dwy & NW Talus Dr



Issaquah Middle School # 6 Traffic Analysis

Table x. Key Movement Queue Length (feet)

			Hourly Average									*Max 15 Minutes*					
			7:25 am - 8:25 am			7:25 am - 7:40 am			7:40 am - 7:55 am			7:55 am - 8:10am			8:10 am - 8:25am		
Intx No	**Intersection**	**Movement**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**	**Average**	**95th Percentile**	**Maximum**
1	Talus & SR 900	NBR	212	314	324	196	295	324	213	293	303	233	316	319	206	299	299
1	Talus & SR 900	NBT	212	314	324	196	295	324	214	293	303	233	316	319	207	299	299
1	Talus & SR 900	NBL	93	187	249	62	86	93	98	148	158	143	206	249	67	125	209
1	Talus & SR 900	EBR	230	337	370	187	250	268	228	279	289	263	336	337	243	358	370
1	Talus & SR 900	EBL	229	336	370	186	249	268	227	278	288	262	335	336	243	357	370
1	Talus & SR 900	SBR	53	184	290	18	40	46	78	262	290	93	154	155	25	69	145
1	Talus & SR 900	SBT	103	139	164	94	135	137	111	144	156	106	145	164	100	136	139
1	Talus & SR 900	SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Talus & SR 900	WBR	8	16	25	9	17	25	9	17	22	7	14	16	8	16	16
1	Talus & SR 900	WBL	9	19	25	9	18	23	10	19	25	7	16	19	9	16	18
2	Talus & School Access	NBR	158	627	635	36	79	80	77	118	121	274	494	526	247	634	635
2	Talus & School Access	NBL	159	627	636	36	78	81	77	119	121	274	495	527	247	634	636
2	Talus & School Access	EBR	144	217	223	100	157	169	144	176	195	205	221	223	126	209	215
2	Talus & School Access	EBT	146	220	225	102	160	171	146	179	197	208	223	225	128	212	217
2	Talus & School Access	WBT	5	17	20	2	8	13	5	14	15	7	18	20	5	17	17
2	Talus & School Access	WBL	103	337	346	37	60	64	74	125	170	234	342	346	66	278	278
3	Talus & Falcon	NBR	95	326	385	24	49	68	35	146	147	247	371	385	74	172	183
3	Talus & Falcon	EBR	102	320	331	23	59	65	52	104	114	205	326	331	128	304	321
3	Talus & Falcon	EBT	103	320	331	24	61	66	53	104	114	205	326	331	128	305	321
3	Talus & Falcon	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Talus & Falcon	WBL	15	71	139	10	35	42	29	101	139	15	60	70	7	12	13

Option	6. Switch bus and family vehicle loading areas	
Description	Reverse location of loading areas, with family vehicle loading located in west loop (accessed from Falcon Way NW) and bus loading in the east loop (accessed from NW Talus Dr)	
Criteria	**Rating**	**Assessment**
Operational Effect		The (west) bus loop, as it is currently designed, has about half the queuing/stacking capacity of the (east) family-vehicle loop to accommodate peak vehicle queues. It would have a higher chance of peak afternoon queues extending to the Falcon Way NW and NW Talus Drive. Additionally, a traffic impact similar to that projected for the MS 6 driveway intersection would instead shift to Falcon Way. Effect on Talus Drive would be similar to stop-control (Option 1) but higher impact to Falcon Way; it is likely that signalization at Falcon Way would be needed. Bus ingress and egress at east access would be poor.
Physical Feasibility		Depends on the extent of site redesign and resulting access control options that would be required.
Environmental Impact		Depends on the extent of site redesign and resulting access control options that would be required.
Policy/Standard Compliance		With mitigation to address operational issues this option would be expected to be compliant with applicable policies and standards
Cost		Depends on the extent of redesign that would be required. Medium to high cost (~$300K to $1M)

Criteria Rating Description:

 Favorable

 Mixed Favorable / Unfavorable

 Unfavorable

 Fatal Flaw / Not Feasible

Option	7. Traffic signal at NW Talus Drive / Falcon Way NW	
Description	Install a traffic signal at the NW Talus Drive/Falcon Way NW intersection, with intent of creating gaps at the NW Talus Drive/MS 6 driveway intersection	
Criteria	**Rating**	**Assessment**
Operational Effect		Would not adequately address operational and queuing impacts that would be generated at the MS 6 driveway (with driveway stop-sign control).
Physical Feasibility		Small project footprint, could be implemented within existing right-of-way or with minor right-of-way acquisition.
Environmental Impact		Minimal disturbed area that would primarily occur within the right-of-way. Congestion and delay at MS 6 driveway would remain and would contribute to increased traffic delays, fuel consumption, and air pollution.
Policy/Standard Compliance		Traffic volumes to and from Falcon Way NW are low and the intersection would not meet minimum MUTCD traffic signal warrants. Installing a traffic signal at one intersection that would be timed to react to traffic patterns and address issues at a different intersection is non-standard and would not be supported by industry best practice.
Cost		Medium to high cost (~$500K to $900K)

Criteria Rating Description:

 Favorable

 Mixed Favorable / Unfavorable

 Unfavorable

 Fatal Flaw / Not Feasible

Option	8. Ramp meter for Talus Drive	
Description	Install meter signal facing eastbound traffic on NW Talus Drive, to the west of Falcon Way NW, to meter the flow of eastbound traffic past the school site	
Criteria	**Rating**	**Assessment**
Operational Effect		Operational effect expected to be similar to Option 3, which would worsen the westbound queuing condition on Talus Drive beyond the condition described for Option 1. This is because a reasonable metering rate would cause eastbound traffic flow on Talus Drive to be more evenly distributed, providing fewer gaps for the westbound left-turning traffic. Metering at a rate slow enough to create adequate gaps for westbound left turns would likely result in high eastbound queue in the morning.
Physical Feasibility		Small project footprint, could be implemented within existing right-of-way or with minor right-of-way acquisition.
Environmental Impact		Minimal disturbed area that would primarily occur within the right-of-way. Congestion and delay at meter and some on-site would remain and would contribute to increased traffic delays, fuel consumption, and air pollution.
Policy/Standard Compliance		Installing a meter to create gaps at a downstream local access street or driveway is non-standard and would not be supported by industry best practice.
Cost		Low to medium cost (~$100K to $250K)

Criteria Rating Description:

 Favorable

 Mixed Favorable / Unfavorable

 Unfavorable

 Fatal Flaw / Not Feasible

Option	9. Direct vehicle access to SR 900	
Description	Provide primary site access connecting to SR 900 instead of NW Talus Drive	
Criteria	Rating	Assessment
Operational Effect		Would introduce operational and safety issues at load area access driveway intersections with SR 900, which is a higher volume and higher speed road than NW Talus Drive.
Physical Feasibility		Severe topographical constraints would require excessive excavation and construction of retaining walls. Acquisition of additional right-of-way would be required.
Environmental Impact		Extensive area of disturbance would be required to construct this option, which in turn would have a high level of environmental impacts.
Policy/Standard Compliance		Providing direct access on a state highway, when it is feasible to provide access on a lower classified street would be in violation of state policy and not permitted by WSDOT. Proximity of any new access points unlikely to meet minimum spacing requirements to Talus Drive NW.
Cost		Excavation, structural requirements, and right-of-way requirements would have a prohibitively high cost. ($millions)

Criteria Rating Description:

 Favorable

 Mixed Favorable / Unfavorable

 Unfavorable

 Fatal Flaw / Not Feasible

Option	10. Grade-separated access for access for MS 6 Driveway (underpass)	
Description	Construct a grade-separated ramp under NW Talus Drive to accommodate the westbound left-turn movement into the school site	
Criteria	**Rating**	**Assessment**
Operational Effect		Although this type of structure could be designed to operate at a high level of service (LOS A) and minimize queues for traffic on NW Talus Drive, it would result in very poor operations on the school site, with LOS F operation for exiting vehicles during the morning peak hour (see attached LOS report). It would not provide calming or encourage slowing of traffic on Talus Drive. Additional space on site to accommodate this type of facility could reduce on-site queuing space. Poor on-site operation and/or reduced queuing area may also cause some family drivers to choose to avoid entering the site and circulate or turn around within the Talus neighborhood in order to drop-off or pick-up students. Grade-separation would eliminate the potential for collisions related to left turns into the school site. However, with this option, vehicles exiting the school would still do so via a stop-sign controlled at-grade driveway, and would need to wait for adequate gaps to enter Talus Drive. During the morning condition with LOS F operation for vehicles exiting the site, drivers may become frustrated and select less than adequate gaps to enter Talus Drive, which could also increase the potential for collisions related to right-turns or left-turns from the school driveway to Talus Drive. The poor operations could also result in undesirable U-turn maneuvers along Talus Drive or at the SR 900 intersection.
Physical Feasibility		City Street Standards for Collector Arterials allow maximum allowable grades of 10%. To achieve grade separation and adequate clearance, ramp(s) would need to be very long, and require widening of NW Talus Drive. Topographical constraints would require excessive excavation and construction of retaining walls in addition to ramp structures. Acquisition of additional right-of-way would be required.
Environmental Impact		Extensive area of disturbance would be required to construct this option, which in turn would have a high level of environmental impacts.
Policy/Standard Compliance		Due to physical constraints and existing 10% grade of Talus Drive, it is unclear if feasible design, compliant with applicable policies and standards, is possible.
Cost		Excavation, structural requirements, and right-of-way requirements would have a prohibitively high cost. ($millions)

Criteria Rating Description:

 Favorable

 Mixed Favorable / Unfavorable

 Unfavorable

 Fatal Flaw / Not Feasible

Attachment: Synchro Level of Service Report

Intersection	
Int Delay, s/veh	35.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	550	0	0	194	14	251
Future Vol, veh/h	550	0	0	194	14	251
Conflicting Peds, #/hr	0	10	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	10	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-8	-	-	9	1	-
Peak Hour Factor	88	53	53	86	49	49
Heavy Vehicles, %	7	0	0	17	0	0
Mvmt Flow	625	0	0	226	29	512

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	748	635
Stage 1	-	-	-	-	635	-
Stage 2	-	-	-	-	113	-
Critical Hdwy	-	-	-	-	6.8	6.3
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	6	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	0	-	352	~ 474
Stage 1	-	-	0	-	513	-
Stage 2	-	-	0	-	900	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	350	~ 471
Mov Cap-2 Maneuver	-	-	-	-	350	-
Stage 1	-	-	-	-	509	-
Stage 2	-	-	-	-	900	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	92.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBT
Capacity (veh/h)	350	471	-	-	-
HCM Lane V/C Ratio	0.082	1.088	-	-	-
HCM Control Delay (s)	16.2	96.6	-	-	-
HCM Lane LOS	C	F	-	-	-
HCM 95th %tile Q(veh)	0.3	16.7	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Option	11. Off-site shuttle (e.g. all students required to ride school bus)	
Description	Prohibit vehicle traffic on the MS 6 campus and provide shuttle service between designated off-site locations, or require all students to ride the school bus	
Criteria	**Rating**	**Assessment**
Operational Effect		There would be no legal basis for prohibiting school-generated vehicles from using public streets, or for requiring all students to ride the bus. Therefore, some families would likely still drive students to school, either regularly or under certain circumstances. The effect of prohibiting vehicle traffic from the school campus (instead of designing to accommodate it) would be for this traffic instead occur on streets near the school site.
Physical Feasibility		Although this option would have minimal space requirements at the site, the District/School would still need to identify locations and procedures to accommodate transport of all students.
Environmental Impact		Little to no area of construction disturbance, and therefore low environmental impact would be expected.
Policy/Standard Compliance		There would be no legal basis for prohibiting school-generated vehicles from public streets, or for requiring all students to ride the bus.
Cost		Low to medium capital costs (primarily buses), but operational costs could be high depending on how legal, logistical issues, and enforcement measures are resolved.

Criteria Rating Description:


Favorable


Mixed Favorable / Unfavorable


Unfavorable


Fatal Flaw / Not Feasible

Option	12. Add second EB lane on Talus between MS 6 driveway and SR 900	
Description	Add second eastbound lane on NW Talus Drive from east of the MS 6 driveway to the point where Talus Drive widens to meet SR 900	
Criteria	**Rating**	**Assessment**
Operational Effect		Adding eastbound capacity between the MS 6 driveway and SR 900 would not fully address the westbound queuing issues identified with stop-sign control at the driveway. Queuing effects would be similar to Option 1.
Physical Feasibility		Acquisition of additional right-of-way would be required. Relocation of sidewalk, illumination, and possibly some utilities would be required. Retaining walls may also be required.
Environmental Impact		Extensive area of disturbance would be required to construct this option, which in turn would have a high level of environmental impacts.
Policy/Standard Compliance		Would not meet City's queuing objectives on Talus Drive.
Cost		Right of way requirements, structural requirements and project size would have a prohibitively high cost. ($millions)

Criteria Rating Description:

 Favorable

 Mixed Favorable / Unfavorable

 Unfavorable

 Fatal Flaw / Not Feasible

Option	13. Student load/unload on SR 900 with pedestrian bridge to school site	
Description	Construct a student load/unload area on the west side of SR 900, and a pedestrian bridge to the school site.	
Criteria	**Rating**	**Assessment**
Operational Effect		Would introduce operational and safety issues at load area access driveway intersections with SR 900, which is a higher volume and higher speed road than NW Talus Drive. Compliance and usage by students/families may be low or negligible.
Physical Feasibility		Severe topographical constraints would require excessive excavation and construction of retaining walls in addition to bridge structure. Acquisition of additional right-of-way would be required. Pedestrian bridge would require Americans with Disabilities Act (ADA) accessible connections including elevator and maximum grade of 5%.
Environmental Impact		Extensive area of disturbance would be required to construct this option, which in turn would have a high level of environmental impacts.
Policy/Standard Compliance		Providing access on a state highway, when it is feasible to provide access on a lower classified street would be in violation of state policy and not permitted by WSDOT. May not be feasible for pedestrian bridge to comply with ADA requirements, due to the substantial elevation difference between SR 900 and the site.
Cost		Excavation, structural, and right-of-way requirements would have a prohibitively high cost ($tens of millions)

Criteria Rating Description:

 Favorable

 Mixed Favorable / Unfavorable

 Unfavorable

 Fatal Flaw / Not Feasible

APPENDIX F

HISTORICAL COLLISION DATA

December 13, 2019

OFFICER REPORTED CRASHES THAT OCCURRED *on* OR *in the vicinity of* THE FOLLOWING ROAD SEGMENTS IN THE CITY OF ISSAQUAH

TALUS DR FROM FALCON WAY / TIMBER RIDGE WAY TO SR 900 (aka Renton Issaquah Rd)

SR 900 (mp 20.36 - 20.48) @ TALUS DR

01/01/2016 - *available 2019*

Under 23 U.S. Code § 148 and 23 U.S. Code § 409, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

JURISDICTION	COUNTY	CITY	PRIMARY TRAFFICWAY	BLOCK NUMBER	INTERSECTING TRAFFICWAY	DIST FROM REF POINT	MI or FT	COMP DIR FROM REF POINT	REFERENCE POINT NAME	MILEPOST	A / B	SR ONLY HISTORY / SUSPENSE IND	REPORT NUMBER	DATE	TIME	MOST SEVERE INJURY TYPE	# INJ	# FAT	# VEH	# PEDS	# BIKES	VEHICLE 1 TYPE	VEHICLE 2 TYPE	JUNCTION RELATIONSHIP	WEATHER	ROADWAY SURFACE CONDITION	LIGHTING CONDITION	FIRST COLLISION TYPE / OBJECT STRUCK
City Street	King	Issaquah	NW TALUS DR	0	TIMBER RIDGE WAY NW							No	E792699	04/28/2018	02:20	No Apparent Injury	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		At Intersection and Not Related	Raining	Wet	Dark-Street Lights On	Tree or Stump (stationary)
City Street	King	Issaquah	NW TALUS DR	1100		0.11	M	E	FALCON WAY NW			No	E878316	12/30/2018	11:42	No Apparent Injury	0	0	1	0	0	Passenger Car		Not at Intersection and Not Related	Overcast	Wet	Daylight	Tree or Stump (stationary)
City Street	King	Issaquah	NW TALUS DR	2000		202	F	E	FALCON WAY NW			No	E892310	02/11/2019	15:27	No Apparent Injury	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		Not at Intersection and Not Related	Snowing	Snow/Slush	Daylight	Tree or Stump (stationary)
City Street	King	Issaquah	NW TALUS DR	9700		128	F	W	RENTON ISSAQUAH RD SE			No	E634887	01/20/2017	07:32	No Apparent Injury	0	0	4	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	Intersection Related but Not at Intersection	Overcast	Ice	Dawn	From same direction - both going straight - both moving - rear-end
City Street	King	Issaquah	NW TALUS DR	2500		0.11	M	NW	RENTON ISSAQUAH RD SE			No	E755571	01/05/2018	23:37	No Apparent Injury	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		Not at Intersection and Not Related	Overcast	Wet	Dark-Street Lights On	Street Light Pole or Base
City Street	King	Issaquah	NW TALUS DR	3600		491	F	NW	RENTON ISSAQUAH RD SE			No	E883089	01/15/2019	00:31	Possible Injury	1	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		Not at Intersection and Not Related	Clear or Partly Cloudy	Ice	Dark-Street Lights On	Street Light Pole or Base
City Street	King	Issaquah	NW TALUS DR	2000		160	F	E	TIMBER RIDGE WAY NW			No	E646818	02/27/2017	16:39	No Apparent Injury	0	0	1	0	0	Passenger Car		Not at Intersection and Not Related	Snowing	Snow/Slush	Dark-Street Lights On	Street Light Pole or Base
City Street	King	Issaquah	NW TALUS DR	200		227	F	W	TIMBER RIDGE WAY NW			No	E750875	12/24/2017	17:20	Possible Injury	1	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	Not at Intersection and Not Related	Snowing	Snow/Slush	Dark-Street Lights On	From same direction - both going straight - one stopped - rear-end
City Street	King	Issaquah	NW TALUS DR	2000		132	F	E	TIMBER RIDGE WAY NW			No	E903588	03/18/2019	22:11	Suspected Minor Injury	1	0	1	0	0	Motorcycle		Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Dark-Street Lights On	Vehicle overturned
City Street	King	Issaquah	NW TALUS DR	8600		0.19	M	NW	WA-900			No	E857200	11/04/2018	07:53	No Apparent Injury	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		Not at Intersection and Not Related	Raining	Wet	Daylight	Tree or Stump (stationary)
City Street	King	Issaquah	TIMBER RIDGE WAY NW	100		127	F	S	NW TALUS DR			No	E819068	07/18/2018	12:00	No Apparent Injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	One parked--one moving
State Route	King	Issaquah	900							20.37		No	E627871	01/01/2017	04:54	No Apparent Injury	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb		At Intersection and Not Related	Snowing	Snow/Slush	Dark-Street Lights On	Roadway Ditch
State Route	King	Issaquah	900							20.38		No	E738988	11/21/2017	07:14	Suspected Minor Injury	1	0	1	1	0	Pickup,Panel Truck or Vanette under 10,000 lb		At Intersection and Related	Raining	Wet	Daylight	Vehicle going straight hits pedestrian
State Route	King	Issaquah	900							20.38		No	E827229	08/09/2018	13:18	No Apparent Injury	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	Entering at angle
State Route	King	Issaquah	900							20.38		No	E893947	02/16/2019	05:36	Possible Injury	1	0	1	0	0	Passenger Car		At Intersection and Not Related	Raining	Ice	Dark-Street Lights On	Guardrail - Through, Over or Under
State Route	King	Issaquah	900							20.39		No	E647204	02/28/2017	15:25	Possible Injury	1	0	2	0	0	Passenger Car	Passenger Car	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end
State Route	King	Issaquah	900							20.39		No	E693245	07/17/2017	16:41	No Apparent Injury	0	0	2	0	0	Truck Tractor & Semi-Trailer	Passenger Car	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end
State Route	King	Issaquah	900							20.42		No	E717467	09/28/2017	13:40	No Apparent Injury	0	0	2	0	0	Passenger Car	Passenger Car	Intersection Related but Not at Intersection	Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end
State Route	King	Issaquah	900							20.45		No	E651941	03/15/2017	17:15	No Apparent Injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	Intersection Related but Not at Intersection	Raining	Wet	Daylight	From same direction - both going straight - one stopped - rear-end
State Route	King	Issaquah	900							20.47		No	E868661	12/03/2018	16:03	No Apparent Injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Dusk	From same direction - both going straight - both moving - sideswipe
State Route	King	Issaquah	900							20.48		No	E782958	03/27/2018	20:32	Possible Injury	1	0	1	0	0	Passenger Car		Not at Intersection and Not Related	Raining	Wet	Dark-Street Lights On	Concrete Barrier/Jersey Barrier - Face

OFFICER REPORTED CRASHES THAT OCCURRED *on* OR *in the vicinity of* THE FOLLOWING ROAD SEGMENTS IN THE CITY OF ISSAQUAH
TALUS DR FROM FALCON WAY / TIMBER RIDGE WAY TO SR 900 (aka Renton Issaquah Rd)
SR 900 (mp 20.36 - 20.48) @ TALUS DR

01/01/2016 - *available 2019*

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JURISDICTION	COUNTY	CITY	PRIMARY TRAFFICWAY	BLOCK NUMBER	INTERSECTING TRAFFICWAY	DIST FROM REF POINT	MI or FT	COMP DIR FROM REF POINT	REFERENCE POINT NAME	MILEPOST	A / B	SR ONLY HISTORY / SUSPENSE IND	REPORT NUMBER	DATE	VEHICLE 1 ACTION	VEHICLE 2 ACTION	VEHICLE 1 COMPASS DIRECTION FROM	VEHICLE 1 COMPASS DIRECTION TO	VEHICLE 2 COMPASS DIRECTION FROM	VEHICLE 2 COMPASS DIRECTION TO	MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 2)	PEDESTRIAN CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2)	PEDESTRIAN CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2)
City Street	King	Issaquah	NW TALUS DR	0	TIMBER RIDGE WAY NW							No	E792699	04/28/2018	Going Straight Ahead		East	West			Other							
City Street	King	Issaquah	NW TALUS DR	1100		0.11	M	E	FALCON WAY NW			No	E878316	12/30/2018	Going Straight Ahead		East	West			Exceeding Reas. Safe Speed							
City Street	King	Issaquah	NW TALUS DR	2000		202	F	E	FALCON WAY NW			No	E892310	02/11/2019	Going Straight Ahead		West	East			Exceeding Reas. Safe Speed							
City Street	King	Issaquah	NW TALUS DR	9700		128	F	W	RENTON ISSAQUAH RD SE			No	E634887	01/20/2017	Going Straight Ahead	Going Straight Ahead	West	East	West	East	Exceeding Reas. Safe Speed			None				
City Street	King	Issaquah	NW TALUS DR	2500		0.11	M	NW	RENTON ISSAQUAH RD SE			No	E755571	01/05/2018	Going Straight Ahead		West	East			Exceeding Stated Speed Limit							
City Street	King	Issaquah	NW TALUS DR	3600		491	F	NW	RENTON ISSAQUAH RD SE			No	E883089	01/15/2019	Changing Lanes		West	East			Exceeding Reas. Safe Speed							
City Street	King	Issaquah	NW TALUS DR	2000		160	F	E	TIMBER RIDGE WAY NW			No	E646818	02/27/2017	Going Straight Ahead		West	East			Other							
City Street	King	Issaquah	NW TALUS DR	200		227	F	W	TIMBER RIDGE WAY NW			No	E750875	12/24/2017	Going Straight Ahead	Stopped in Roadway	West	East	Vehicle Stopped	Vehicle Stopped	Exceeding Reas. Safe Speed			None				
City Street	King	Issaquah	NW TALUS DR	2000		132	F	E	TIMBER RIDGE WAY NW			No	E903588	03/18/2019	Going Straight Ahead		East	West			Exceeding Stated Speed Limit							
City Street	King	Issaquah	NW TALUS DR	8600		0.19	M	NW	WA-900			No	E857200	11/04/2018	Going Straight Ahead		West	East			Other	Exceeding Reas. Safe Speed						
City Street	King	Issaquah	TIMBER RIDGE WAY NW	100		127	F	S	NW TALUS DR			No	E819068	07/18/2018	Backing	Legally Parked, Unoccupied	North	Vehicle Backing			None			None				
State Route	King	Issaquah	900							20.37		No	E627871	01/01/2017	Going Straight Ahead		South	North			Exceeding Reas. Safe Speed							
State Route	King	Issaquah	900							20.38		No	E738988	11/21/2017	Going Straight Ahead		South	North			None						None	
State Route	King	Issaquah	900							20.38		No	E827229	08/09/2018	Going Straight Ahead	Making Left Turn	North	South	West	North	Unknown Driver Distraction			Unknown Driver Distraction				
State Route	King	Issaquah	900							20.38		No	E893947	02/16/2019	Going Straight Ahead		South	North			Other							
State Route	King	Issaquah	900							20.39		No	E647204	02/28/2017	Going Straight Ahead	Stopped at Signal or Stop Sign	South	North	Vehicle Stopped	Vehicle Stopped	Inattention			None				
State Route	King	Issaquah	900							20.39		No	E693245	07/17/2017	Stopped at Signal or Stop Sign	Going Straight Ahead	Vehicle Stopped	Vehicle Stopped	Vehicle Stopped	Vehicle Stopped	None			Inattention				
State Route	King	Issaquah	900							20.42		No	E717467	09/28/2017	Going Straight Ahead	Stopped for Traffic	North	South	North	Vehicle Stopped	Inattention			Other				
State Route	King	Issaquah	900							20.45		No	E651941	03/15/2017	Going Straight Ahead	Stopped at Signal or Stop Sign	North	South	North	Vehicle Stopped	Follow Too Closely			None				
State Route	King	Issaquah	900							20.47		No	E868661	12/03/2018	Changing Lanes	Going Straight Ahead	North	South	North	South	Inattention	Did Not Grant RW to Vehicle		None				
State Route	King	Issaquah	900							20.48		No	E782958	03/27/2018	Going Straight Ahead		North	South			Exceeding Reas. Safe Speed							

OFFICER REPORTED CRASHES THAT OCCURRED *on* OR *in the vicinity of* THE FOLLOWING ROAD SEGMENTS IN THE CITY OF ISSAQUAH
TALUS DR FROM FALCON WAY / TIMBER RIDGE WAY TO SR 900 (aka Renton Issaquah Rd)
SR 900 (mp 20.36 - 20.48) @ TALUS DR

01/01/2016 - *available 2019*

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JURISDICTION	COUNTY	CITY	PRIMARY TRAFFICWAY	BLOCK NUMBER	INTERSECTING TRAFFICWAY	DIST FROM REF POINT	MI or FT	COMP DIR FROM REF POINT	REFERENCE POINT NAME	MILEPOST	A / B	SR ONLY HISTORY / SUSPENSE IND	REPORT NUMBER	DATE	PEDESTRIAN CONTRIBUTING CIRCUMSTANCE 3 (UNIT 2)	FIRST IMPACT LOCATION (City, County & Misc Trafficways - 2010 forward)	WA STATE PLANE SOUTH - X 2010 - FORWARD	WA STATE PLANE SOUTH - Y 2010 - FORWARD
City Street	King	Issaquah	NW TALUS DR	0	TIMBER RIDGE WAY NW							No	E792699	04/28/2018		Median of Primary Trafficway	1253211.56	805986.32
City Street	King	Issaquah	NW TALUS DR	1100		0.11	M	E	FALCON WAY NW			No	E878316	12/30/2018		Median of Primary Trafficway	1254172.99	805781.32
City Street	King	Issaquah	NW TALUS DR	2000		202	F	E	FALCON WAY NW			No	E892310	02/11/2019		Median of Primary Trafficway	1253843.97	805967.11
City Street	King	Issaquah	NW TALUS DR	9700		128	F	W	RENTON ISSAQUAH RD SE			No	E634887	01/20/2017		Lane of Primary Trafficway	1254414.46	805307.65
City Street	King	Issaquah	NW TALUS DR	2500		0.11	M	NW	RENTON ISSAQUAH RD SE			No	E755571	01/05/2018		Past the Outside Shoulder of Primary Trafficway	1254146.64	805681.82
City Street	King	Issaquah	NW TALUS DR	3600		491	F	NW	RENTON ISSAQUAH RD SE			No	E883089	01/15/2019		Past the Outside Shoulder of Primary Trafficway	1254180.18	805612.66
City Street	King	Issaquah	NW TALUS DR	2000		160	F	E	TIMBER RIDGE WAY NW			No	E646818	02/27/2017		Past the Outside Shoulder of Primary Trafficway	1253367.99	805947.81
City Street	King	Issaquah	NW TALUS DR	200		227	F	W	TIMBER RIDGE WAY NW			No	E750875	12/24/2017		Lane of Primary Trafficway	1252985	806058.56
City Street	King	Issaquah	NW TALUS DR	2000		132	F	E	TIMBER RIDGE WAY NW			No	E903588	03/18/2019		Lane of Primary Trafficway	1253343.29	805973.34
City Street	King	Issaquah	NW TALUS DR	8600		0.19	M	NW	WA-900			No	E857200	11/04/2018		Median of Primary Trafficway	1253929.48	805988.86
City Street	King	Issaquah	TIMBER RIDGE WAY NW	100		127	F	S	NW TALUS DR			No	E819068	07/18/2018		Outside Shoulder of Primary Trafficway	1253208.04	805833
State Route	King	Issaquah	900							20.37		No	E627871	01/01/2017		Past Right Shoulder Increasing Milepost	1254569.22	805233.9
State Route	King	Issaquah	900							20.38		No	E738988	11/21/2017		Lane 1 Increasing Milepost	1254565.5	805299.29
State Route	King	Issaquah	900							20.38		No	E827229	08/09/2018		Lane 1 Decreasing Milepost	1254573.35	805284.21
State Route	King	Issaquah	900							20.38		No	E893947	02/16/2019		Right Shoulder Increasing Milepost	1254560.91	805311.25
State Route	King	Issaquah	900							20.39		No	E647204	02/28/2017		Lane 1 Increasing Milepost	1254575.84	805330.2
State Route	King	Issaquah	900							20.39		No	E693245	07/17/2017		Lane 2 Decreasing Milepost	1254575.84	805330.2
State Route	King	Issaquah	900							20.42		No	E717467	09/28/2017		Lane 1 Decreasing Milepost	1254548.07	805483.44
State Route	King	Issaquah	900							20.45		No	E651941	03/15/2017		Lane 3 Decreasing Milepost	1254532.47	805667.05
State Route	King	Issaquah	900							20.47		No	E868661	12/03/2018		Lane 1 Decreasing Milepost	1254529.38	805759.54
State Route	King	Issaquah	900							20.48		No	E782958	03/27/2018		Right Shoulder Increasing Milepost	1254519.9	805829.85

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TALUS DR FROM FALCON WAY / TIMBER RIDGE WAY TO SR 900 (aka Renton Issaquah Rd)
SR 900 (mp 20.36 - 20.48) @ TALUS DR

01/01/2016 - *available 2019*

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JURISDICTION	COUNTY	CITY	PRIMARY TRAFFICWAY	BLOCK NUMBER	INTERSECTING TRAFFICWAY	DIST FROM REF POINT	MI or FT	COMP DIR FROM REF POINT	REFERENCE POINT NAME	MILEPOST	A / B	SR ONLY HISTORY / SUSPENSE IND	REPORT NUMBER	DATE	TIME	MOST SEVERE INJURY TYPE	# INJ	# FAT	# VEH	# PEDS	# BIKES	VEHICLE 1 TYPE	VEHICLE 2 TYPE
NW Talus Dr / SR 900																							
State Route	King	Issaquah	900							20.38		No	E738988	11/21/2017	07:14	Suspected Minor Injury	1	0	1	1	0	Pickup,Panel Truck or Vanette under 10,000 lb	
State Route	King	Issaquah	900							20.38		No	E827229	08/09/2018	13:18	No Apparent Injury	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb
State Route	King	Issaquah	900							20.39		No	E647204	02/28/2017	15:25	Possible Injury	1	0	2	0	0	Passenger Car	Passenger Car
State Route	King	Issaquah	900							20.39		No	E693245	07/17/2017	16:41	No Apparent Injury	0	0	2	0	0	Truck Tractor & Semi-Trailer	Passenger Car
State Route	King	Issaquah	900							20.42		No	E717467	09/28/2017	13:40	No Apparent Injury	0	0	2	0	0	Passenger Car	Passenger Car
State Route	King	Issaquah	900							20.45		No	E651941	03/15/2017	17:15	No Apparent Injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb
City Street	King	Issaquah	NW TALUS DR	9700		128	F	W	RENTON ISSAQUAH RD SE			No	E634887	01/20/2017	07:32	No Apparent Injury	0	0	4	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb
NW Talus Dr / Falcon Way NW																							
Roadway Segment																							
NW Talus Dr between Falcon Way NW and SR 900																							
City Street	King	Issaquah	NW TALUS DR	2500		0.11	M	NW	RENTON ISSAQUAH RD SE			No	E755571	01/05/2018	23:37	No Apparent Injury	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	
City Street	King	Issaquah	NW TALUS DR	3600		491	F	NW	RENTON ISSAQUAH RD SE			No	E883089	01/15/2019	00:31	Possible Injury	1	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	
City Street	King	Issaquah	NW TALUS DR	8600		0.19	M	NW	WA-900			No	E857200	11/04/2018	07:53	No Apparent Injury	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	
City Street	King	Issaquah	NW TALUS DR	1100		0.11	M	E	FALCON WAY NW			No	E878316	12/30/2018	11:42	No Apparent Injury	0	0	1	0	0	Passenger Car	
City Street	King	Issaquah	NW TALUS DR	2000		202	F	E	FALCON WAY NW			No	E892310	02/11/2019	15:27	No Apparent Injury	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	
Not included in Study Area																							
State Route	King	Issaquah	900							20.38		No	E893947	02/16/2019	05:36	Possible Injury	1	0	1	0	0	Passenger Car	
State Route	King	Issaquah	900							20.37		No	E627871	01/01/2017	04:54	No Apparent Injury	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	
State Route	King	Issaquah	900							20.47		No	E868661	12/03/2018	16:03	No Apparent Injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car
State Route	King	Issaquah	900							20.48		No	E782958	03/27/2018	20:32	Possible Injury	1	0	1	0	0	Passenger Car	
City Street	King	Issaquah	TIMBER RIDGE WAY NW	100		127	F	S	NW TALUS DR			No	E819068	07/18/2018	12:00	No Apparent Injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb
City Street	King	Issaquah	NW TALUS DR	2000		160	F	E	TIMBER RIDGE WAY NW			No	E646818	02/27/2017	16:39	No Apparent Injury	0	0	1	0	0	Passenger Car	
City Street	King	Issaquah	NW TALUS DR	200		227	F	W	TIMBER RIDGE WAY NW			No	E750875	12/24/2017	17:20	Possible Injury	1	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb
City Street	King	Issaquah	NW TALUS DR	2000		132	F	E	TIMBER RIDGE WAY NW			No	E903588	03/18/2019	22:11	Suspected Minor Injury	1	0	1	0	0	Motorcycle	
City Street	King	Issaquah	NW TALUS DR	0	TIMBER RIDGE WAY NW							No	E792699	04/28/2018	02:20	No Apparent Injury	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	

JUNCTION RELATIONSHIP	WEATHER	ROADWAY SURFACE CONDITION	LIGHTING CONDITION	FIRST COLLISION TYPE / OBJECT STRUCK	VEHICLE 1 ACTION	VEHICLE 2 ACTION	VEHICLE 1 COMPASS DIRECTION FROM	VEHICLE 1 COMPASS DIRECTION TO	VEHICLE 2 COMPASS DIRECTION FROM	VEHICLE 2 COMPASS DIRECTION TO	MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 1)
At Intersection and Related	Raining	Wet	Daylight	Vehicle going straight hits pedestrian	Going Straight Ahead		South	North			None
At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	Entering at angle	Going Straight Ahead	Making Left Turn	North	South	West	North	Unknown Driver Distraction
At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	South	North	Vehicle Stopped	Vehicle Stopped	Inattention
At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Stopped at Signal or Stop Sign	Going Straight Ahead	Vehicle Stopped	Vehicle Stopped	Vehicle Stopped	Vehicle Stopped	None
Intersection Related but Not at Intersection	Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	North	South	North	Vehicle Stopped	Inattention
Intersection Related but Not at Intersection	Raining	Wet	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	North	South	North	Vehicle Stopped	Follow Too Closely
Intersection Related but Not at Intersection	Overcast	Ice	Dawn	From same direction - both going straight - both moving - rear-end	Going Straight Ahead	Going Straight Ahead	West	East	West	East	Exceeding Reas. Safe Speed
Not at Intersection and Not Related	Overcast	Wet	Dark-Street Lights On	Street Light Pole or Base	Going Straight Ahead		West	East			Exceeding Stated Speed Limit
Not at Intersection and Not Related	Clear or Partly Cloudy	Ice	Dark-Street Lights On	Street Light Pole or Base	Changing Lanes		West	East			Exceeding Reas. Safe Speed
Not at Intersection and Not Related	Raining	Wet	Daylight	Tree or Stump (stationary)	Going Straight Ahead		West	East			Other
Not at Intersection and Not Related	Overcast	Wet	Daylight	Tree or Stump (stationary)	Going Straight Ahead		East	West			Exceeding Reas. Safe Speed
Not at Intersection and Not Related	Snowing	Snow/Slush	Daylight	Tree or Stump (stationary)	Going Straight Ahead		West	East			Exceeding Reas. Safe Speed
At Intersection and Not Related	Raining	Ice	Dark-Street Lights On	Guardrail - Through, Over or Under	Going Straight Ahead		South	North			Other
At Intersection and Not Related	Snowing	Snow/Slush	Dark-Street Lights On	Roadway Ditch	Going Straight Ahead		South	North			Exceeding Reas. Safe Speed
Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Dusk	From same direction - both going straight - both moving - sideswipe	Changing Lanes	Going Straight Ahead	North	South	North	South	Inattention
Not at Intersection and Not Related	Raining	Wet	Dark-Street Lights On	Concrete Barrier/Jersey Barrier - Face	Going Straight Ahead		North	South			Exceeding Reas. Safe Speed
Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	One parked--one moving	Backing	Legally Parked, Unoccupied	North	Vehicle Backing			None
Not at Intersection and Not Related	Snowing	Snow/Slush	Dark-Street Lights On	Street Light Pole or Base	Going Straight Ahead		West	East			Other
Not at Intersection and Not Related	Snowing	Snow/Slush	Dark-Street Lights On	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped in Roadway	West	East	Vehicle Stopped	Vehicle Stopped	Exceeding Reas. Safe Speed
Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Dark-Street Lights On	Vehicle overturned	Going Straight Ahead		East	West			Exceeding Stated Speed Limit
At Intersection and Not Related	Raining	Wet	Dark-Street Lights On	Tree or Stump (stationary)	Going Straight Ahead		East	West			Other

MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2)	FIRST IMPACT LOCATION (City, County & Misc Trafficways - 2010 forward)	WA STATE PLANE SOUTH - X 2010 - FORWARD	WA STATE PLANE SOUTH - Y 2010 - FORWARD
			Lane 1 Increasing Milepost	1254565.5	805299.29
		Unknown Driver Distraction	Lane 1 Decreasing Milepost	1254573.35	805284.21
		None	Lane 1 Increasing Milepost	1254575.84	805330.2
		Inattention	Lane 2 Decreasing Milepost	1254575.84	805330.2
		Other	Lane 1 Decreasing Milepost	1254548.07	805483.44
		None	Lane 3 Decreasing Milepost	1254532.47	805667.05
		None	Lane of Primary Trafficway	1254414.46	805307.65
			Past the Outside Shoulder of Primary Trafficway	1254146.64	805681.82
			Past the Outside Shoulder of Primary Trafficway	1254180.18	805612.66
Exceeding Reas. Safe Speed			Median of Primary Trafficway	1253929.48	805988.86
			Median of Primary Trafficway	1254172.99	805781.32
			Median of Primary Trafficway	1253843.97	805967.11
			Right Shoulder Increasing Milepost	1254560.91	805311.25
			Past Right Shoulder Increasing Milepost	1254569.22	805233.9
Did Not Grant RW to Vehicle		None	Lane 1 Decreasing Milepost	1254529.38	805759.54
			Right Shoulder Increasing Milepost	1254519.9	805829.85
		None	Outside Shoulder of Primary Trafficway	1253208.04	805833
			Past the Outside Shoulder of Primary Trafficway	1253367.99	805947.81
		None	Lane of Primary Trafficway	1252985	806058.56
			Lane of Primary Trafficway	1253343.29	805973.34
			Median of Primary Trafficway	1253211.56	805986.32

APPENDIX G

PARKING ANALYSIS MEMO

December 13, 2019

TECHNICAL MEMORANDUM

Project: Issaquah Middle School #6

Subject: Parking Analysis

Date: December 13, 2019

Authors: Jennifer Barnes, P.E., Associate Principal

This memorandum presents parking analysis completed for the Issaquah School District's (District) proposed new middle school (Middle School #6). It includes estimates of parking demand on a typical school day and during special events, assessment of potential parking impacts during each of these periods, and recommendations for potential mitigation measures to address parking impacts. Please contact Jennifer Barnes at (206) 324-3623 with any questions regarding this memorandum.

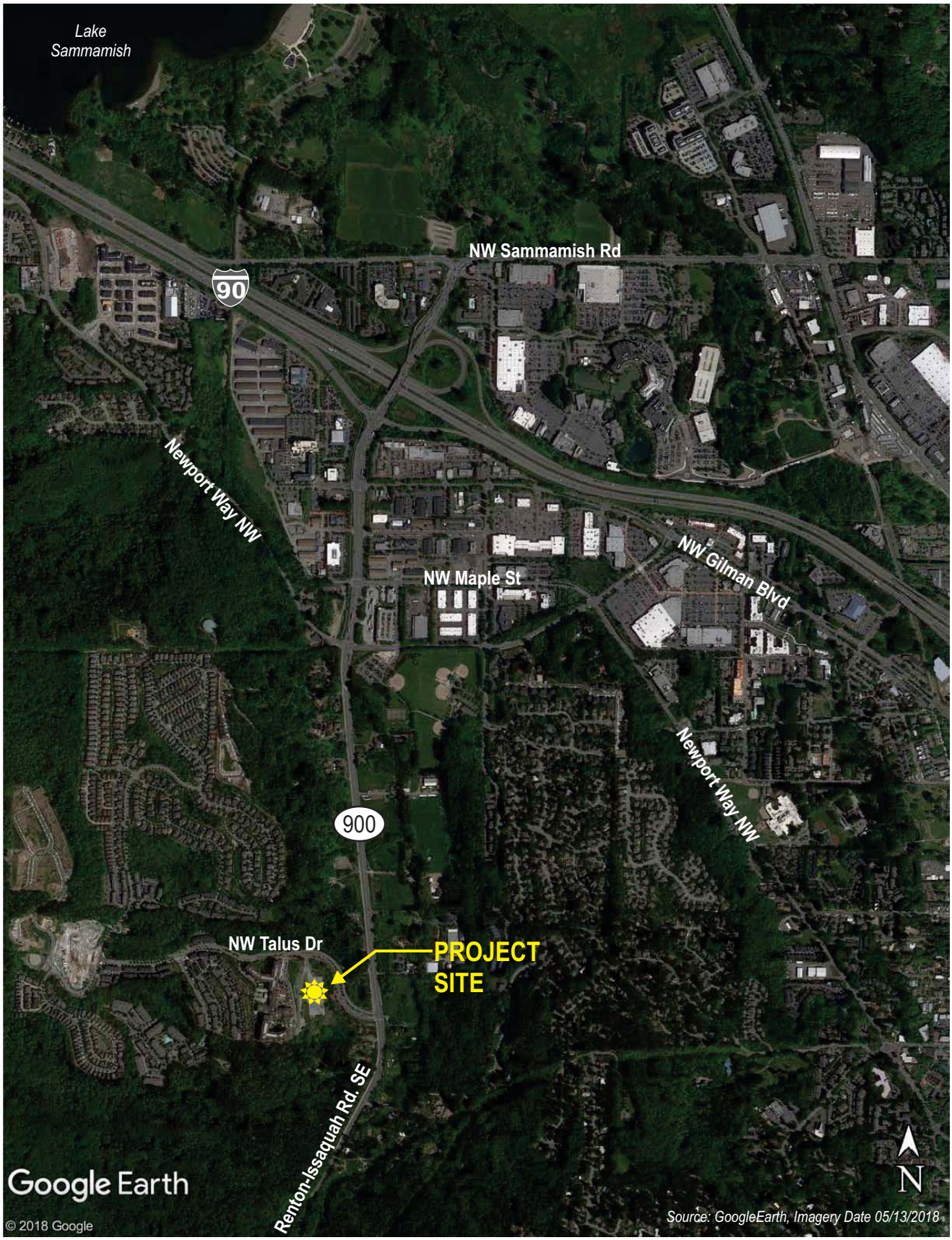
1. Project Description

The District proposes to construct a new middle school (serving grades 6 through 8) on property located west of the State Route (SR) 900 / NW Talus Drive intersection, in the Talus community of Issaquah. The site location is shown on Figure 1.

The school is planned for an enrollment capacity of 850 students with about 75 faculty and staff. However, to ensure a conservative analysis, an enrollment of up to 900 students was evaluated to account for possible unanticipated fluctuations. (Note: Preliminary analyses prepared for initial design concepts referenced a capacity range of 800 to 1,000 students; however, site constraints have resulted in a reduced number of classrooms and the District has confirmed the planned capacity at 850 students).

The proposed school facilities include an athletic field, commons, and a gymnasium. The main access driveway is proposed on NW Talus Drive at the approximate location of an existing temporary site access. This driveway would provide access to the family-vehicle load/unload area as well as on-site staff and visitor parking. A separate emergency-access/service driveway connection to the fire lane east of the school building is also proposed from NW Talus Drive. This access is planned for use only by emergency vehicles and occasional service vehicles and is expected to have access control (e.g., gates and/or removable bollards). A school-bus load/unload area is planned along the west side of the site with vehicle access from Falcon Way NW. A pedestrian bridge would provide connection between the school bus loading area and the school, over the main internal access road and queuing area for the family vehicle loading zone.

The proposed site plan with planned parking configuration is shown on Figure 2. On-site parking is planned to include 122 long-term parking spaces (99 spaces within a garage, and 23 surface parking spaces), plus an additional 40 stalls in load/unload areas that would be available for off-peak hours use, for a total of 162 parking stalls.



MIDDLE SCHOOL #6

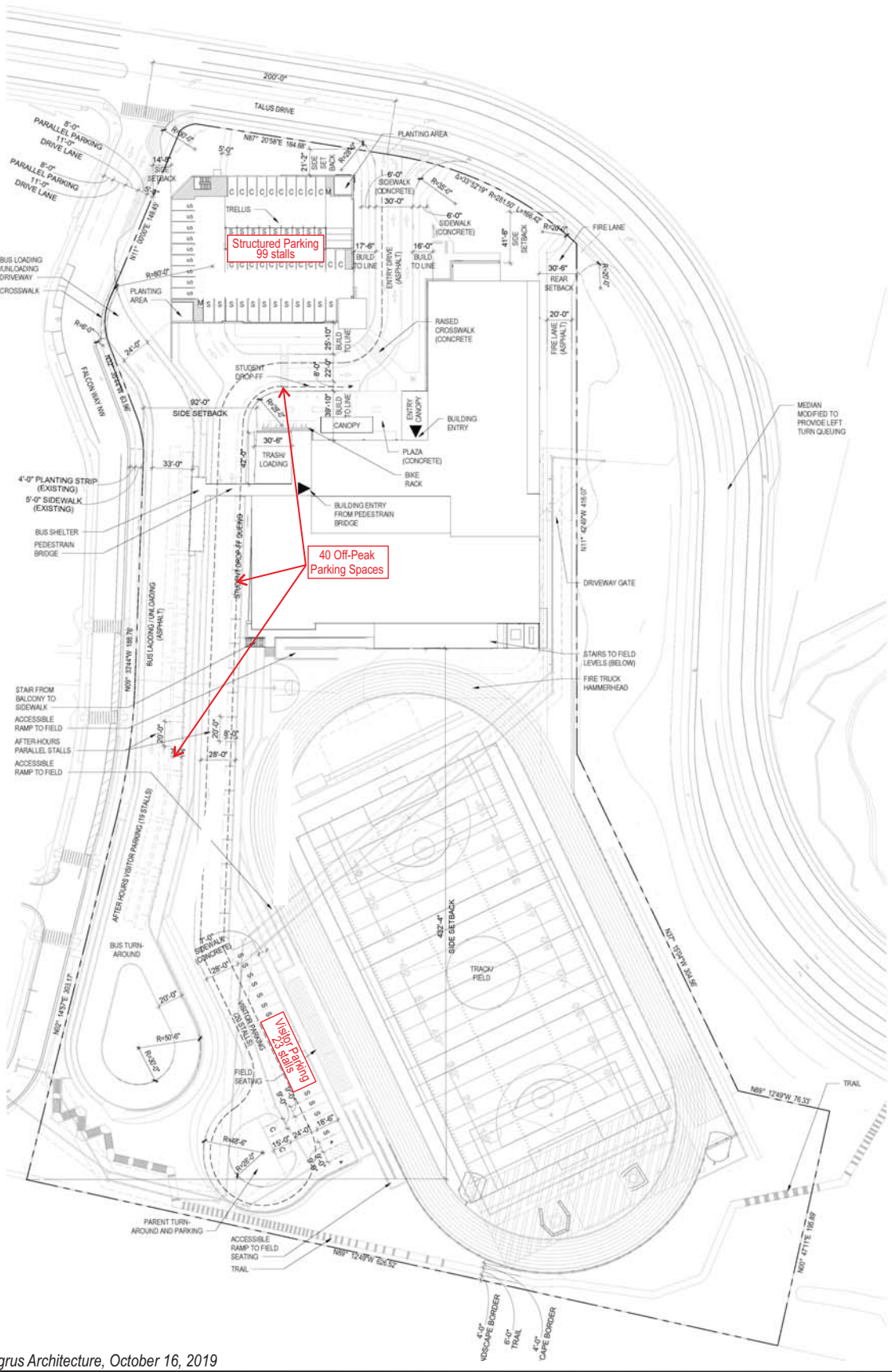
Issaquah School District

Figure 1

Site Location

heffron transportation inc

12.13.19



Source: Integrus Architecture, October 16, 2019

MIDDLE SCHOOL #6
Issaquah School District

Figure 2

Parking Plan

heffron transportation inc

12.13.19

2. City Parking Code Requirements

The Central Issaquah Development and Design Standards (CIDDS)[1] require the following parking supply for the proposed school.

196 stalls (2 spaces per 1,000 net square feet = 97,960 / 1,000 x 2)
- 9 stalls (5% reduction allowed for electric vehicle charging stations)
187 stalls

As described previously, the project proposes to construct 162 parking spaces; therefore, an Administrative Adjustment to Standards (AAS) will be required. The following sections present analysis of the parking demand expected during a typical school day and during evening events, and identify mitigation measures that could be implemented to ensure that the school-generated parking does not overflow to residential streets in the neighborhood.

3. Parking Demand Analysis

3.1. Typical School Day

Parking demand estimates for development projects are typically derived using rates and equations published in ITE's *Parking Generation Manual*.[2] For a Middle School/Junior High School (Land Use 522), the published equation is $Ln(P) = 0.56\ Ln(X) + 0.59$, where X is number of students and P is peak parking demand; the average demand rate is 0.09 vehicles per student. At the assumed maximum enrollment level of 900 students, both the equation and rate project a school-day peak parking demand of 81 vehicles for Middle School #6.

School day parking counts were conducted at two existing middle schools in the Issaquah School District—Pacific Cascade Middle School and Pine Lake Middle School—that are similar in size to the proposed Middle School #6. The counts were conducted on days when school was in session between 10:00 A.M. and 2:00 P.M., the period in which peak daytime parking typically occurs for middle schools.[3]

Midday parking demand counts were conducted at Pacific Cascade Middle School—located at 24635-Issaquah-Fall City Road in Sammamish—on three school days in June 2019, between 10:00 and 11:00 A.M. At the time of the counts, the school's enrollment was 1,014 students. The number of vehicles parked on each survey day and the parking rate are summarized in Table 1. As shown, the observed demand values ranged between 0.07 and 0.09 parked vehicles per student, with an average rate of 0.08 parked vehicles per student. The highest observed rate, 0.09 average vehicles per student, is the same as the published ITE average rate.

At Pine Lake Middle School—located at 3200-228th Avenue SE in Sammamish—there are on-site cameras that photograph the school parking lot every day at about 1:00 P.M. Utilizing the time-lapse photographs, parking demand counts were compiled for three separate two-week periods (one period each in the fall, winter and spring) throughout the 2018/2019 school year. Results from six weeks of counts are summarized in Table 2. The student enrollment for this school year was 953 students.[4] The table shows that the observed demand ranged between 0.06 and 0.08 parked vehicles per student, with an average rate of 0.08 parked vehicles per student. The highest observed rate, 0.08 average vehicles per student, is slightly lower than the published ITE average rate.

1 City of Issaquah, CIDDS, Section 8.0 Parking Standards, Table 8.10-1, last updated 10-25-17 (Ordinance 2809).
2 ITE, 5th Edition, January 2019.
3 Ibid.
4 Pine Lake Middle School enrollment provided by the Issaquah School District for October 2018.

The parking counts conducted at Pacific Cascade and Pine Lake Middle Schools indicate that the published ITE average rate of 0.09 parked vehicles per student reflects the high end of typical school day parking demand at Issaquah School District middle schools. Therefore, the estimated demand of 81 vehicles for Middle School #6 is reasonable and could be accommodated by the planned on-site supply of 122 long-term spaces. At this level, an average of 41 spaces would be available for daytime event parking in the garage and surface lots; during midday, the additional 40 spaces in the student loading areas would also be available, for a total of 81 spaces.

Table 1. School Day Parking Demand – Pacific Cascade Middle School (June 2019)

Day of Count [a]	Number of Parked Vehicles
Tuesday, June 11, 2019	93
Wednesday, June 12, 2019	75
Thursday, June 13, 2019	77
Average Count	82
On-Site Parking Supply (spaces)	156
Parking Demand Rate (parked vehicles per student) [b]	
Average Rate	0.08
Observed Range of Rates	0.07 – 0.09

Source: Heffron Transportation, Inc., June 2019.

a. All parking counts were conducted between 10:00 and 11:00 A.M.

b. Rates were derived by dividing the observed parking counts by the PCMS June 2019 enrollment of 1,014 students.

Table 2. School Day Parking Demand – Pine Lake Middle School (2018/2019 School Year)

Day of Count [a]	Number of Parked Vehicles	Day of Count [a]	Number of Parked Vehicles
Fall 2018			
Monday, October 15, 2018	65	Monday, October 22, 2018	66
Tuesday, October 16, 2018	71	Tuesday, October 23, 2018	69
Wednesday, October 17, 2018	79	Wednesday, October 24, 2018	72
Thursday, October 18, 2018	69	Thursday, October 25, 2018	71
Friday, October 19, 2018	67	Friday, October 26, 2018	58
Average for Week	70	Average for Week	67
Winter 2019			
Monday, January 7, 2019	70	Monday, January 14, 2019	64
Tuesday, January 8, 2019	69	Tuesday, January 15, 2019	66
Wednesday, January 9, 2019	62	Wednesday, January 16, 2019	65
Thursday, January 10, 2019	66	Thursday, January 17, 2019	80
Friday, January 11, 2019	66	Friday, January 18, 2019	64
Average for Week	67	Average for Week	68
Spring 2019			
Monday, June 3, 2019	62	Monday, June 10, 2019	57
Tuesday, June 4, 2019	62	Tuesday, June 11, 2019	62
Wednesday, June 5, 2019	64	Wednesday, June 12, 2019	63
Thursday, June 6, 2019	66	Thursday, June 13, 2019	60
Friday, June 7, 2019	64	Friday, June 14, 2019	64
Average for Week	64	Average for Week	61
On-Site Parking Supply		135 spaces	
Average Demand Count		66 parked vehicles	
Parking Demand Rate [b]			
Average Rate		0.07 parked vehicle / student	
Observed Range of Rates		0.06 – 0.08 parked vehicle / student	

Source: Heffron Transportation, Inc., August 2019.

a. All parking counts were conducted from photographs taken at approximately 1:00 P.M.

b. Rates were derived by dividing the observed parking counts by the PLMS enrollment of 953 students (enrollment provided by the Issaquah School District for October 2018).

3.2. Special Event Parking

The highest parking demand for schools typically occurs during special events. Special events most often occur in the early evenings; however, some may occur on school days or on weekends. Table 3 summarizes the expected types, sizes, and frequencies of events at the proposed Middle School #6. The event scheduled was estimated by the District, based upon the typical event schedule for Pine Lake Middle School (summarized in Attachment A).

Parking demand was then estimated based on Heffron Transportation observations at numerous other schools. Those observations have found that parent-only meetings (such as a PTSA meeting) typically have vehicle occupancy rates of one person per vehicle. However, larger evening events typically have between 3 and 3.5 attendees per parked vehicle, while smaller events may average closer to 2 attendees per parked vehicle.[5] These rates account for multiple attendees who arrive in one vehicle (e.g. students with families) and participants who may be dropped off at an event without generating parking demand. The potential parking demand for each event is presented in Table 3.

As requested by the City, parking demand was observed at Pacific Cascade Middle School during an afternoon special event—the 8th-Grade Promotion Ceremony, held on Monday, June 24, 2019—which is the largest event held when school is in session. The counts found a peak parking demand of 427 vehicles during this event, which included vehicles parked on-site, as well as vehicles parked off-site on vicinity streets. The demand reflected typical school-day demand from teachers, staff, and visitors as well as event-generated demand. After subtracting estimated average school-day demand (about 82 vehicles, as described previously in Table 1), the event is estimated to have generated about 345 vehicles. As reflected in these counts, it is expected that 8th Grade promotion would have the highest parking impact of all middle school events. As a daytime event, it is likely that a greater number of parents and other family members travel from separate work places and other origins in separate vehicles; additionally, parked vehicles generated by this event typically occur concurrently with regular school day parking.

The table shows that other than the 8th grade promotion, the only other regular daytime event during the school year would be Parent Teacher Student Association (PTSA) meetings that would occur once every month or two. These meetings typically have about 20 participants, and the parking demand they would generate could be accommodated with available supply (estimated to average about 80 spaces as described in the previous section).

For most of the larger afternoon/evening events summarized in Table 3, the ability of the proposed on-site parking to accommodate demand would be dependent on the vehicle occupancy. At the higher end of the typical range (e.g., 3 attendees per parked vehicle), parking generated by the event could be accommodated entirely on site. However, with lower occupancies (e.g., 2 attendees per parked vehicle), additional off-site parking would be needed for the larger events.

For all events anticipated to have 300 or more attendees, it is recommended that the District and School implement parking management measures to ensure that parking overspill does not occur on nearby streets.

[5] These rates were most recently corroborated with parking counts conducted by Heffron Transportation at the Northshore Performing Arts Center (NPAC), located at the Bothell High School campus, which hosts music and performance events for all Northshore District schools; the counts found average parking rates of 1.9 to 3.2 parked vehicles per attendee at two music events in May 2018.

Table 3. Expected Special Events and Parking Demand – Middle School #6

Event	Approximate Attendance (per occurrence)	Total # of Occurrences (time of year)	Estimated Parking Demand [a]	Accommodated On- Site? [b]
Daytime Events [c]				
B to Business days	20 people every 20 minutes ½ each day	2 days (early August)	20 – 40	Yes
PTSA meetings monthly	20	6 (September – June)	20	Yes
8th Grade Promotion	650	1 (June)	220 - 325	With Parking Management
Late Afternoon/Evening Events [d]				
Curriculum night(s)	500	2 (September)	160 - 250	With Parking Management
Back to school fun activity	400	1 (September)	130 - 200	With Parking Management
Parent Information Nights	100	3 (October, January, March)	35 - 50	Yes
Season 1 sports – Gym Volleyball	100	5 (September – November)	35 - 50	Yes
Season 1 sports – Track & Field	100	3 (September – November)	35 - 50	Yes
Season 2 sports – Gym Boys Basketball	100	5 (December – February)	35 - 50	Yes
Season 2 sports – Field Girls Soccer	100	4 (December – February)	35 - 50	Yes
5th Grade Parent Night	600	1 (March)	200 - 300	With Parking Management
Season 3 sports – Girls Basketball	100	5 (February – April)	35 – 50	Yes
Season 3 sports – Gym Wrestling	100	4 (February – April)	35 – 50	Yes
Season 4 sports – Boys and Girls Track	500	4 (April – June)	165 – 250	With Parking Management
Music concert, Band, Orchestra and Choir	200 – 500	15 (December – June)	100 - 250	With Parking Management
Drama performances	150	6 (December & April)	50 – 75	Yes

Source: Heffron Transportation, Inc., compiled from information provided by the Issaquah School District, September 2019.

a. Estimated parking demand reflects 1 meeting participant or approximately 2 to 3 event attendees per parked vehicle.

b. "With Parking Management" indicates that some measures may be needed to accommodate the total parking generated by the event. Potential measures are described in Section 4.

c. Available parking spaces for daytime events estimated to be about 41 spaces—122 garage & surface lot spaces minus average peak school-generated demand of 81 parked vehicles. An additional 40 spaces in the load/unload areas would be available during midday.

d. Available parking spaces for late afternoon/evening events estimated to be 162 spaces—122 garage & surface lot spaces plus about 40 spaces in load/unload areas that would be available for parking after regular school hours.

It is important to note that for the event categories identified in the table as needing parking management, not all would necessarily generate parking that exceeds the on-site supply, if no management were implemented. Twenty of the identified events are music performances, track and field, and a back-to-school fun night that can vary considerably in size. For each of these 20 events, the high end of potential attendance level combined with the low end of typical vehicle occupancy range (2.0 to 3.5 participants per vehicle, as described above) would result in parking overflow. However, alternatively, the low end of the potential attendance range and/or the higher end of vehicle occupancy would not result in parking overflow. Rather than attempting to predict how many of these events would have one pattern or the other, the District has agreed to implement parking management measures for all events in those categories to ensure that parking overspill would not occur. Some of these events would have attendance at levels low enough to accommodate parking on site, and implementation of the management measures should also encourage more carpooling so that attendees per vehicle would be at the higher end of the range. The remaining four events for which management has been identified would likely generate parking that exceeds on-site supply unless parking management is implemented.

It should also be noted that if the proposed parking were to meet CIDDS requirements described previously and included 25 additional spaces, this would not affect the number of events for which parking management would be required. All events identified in the shaded rows in Table 3 would still have potential parking impacts for which management measures would be warranted. Recommended measures to address event parking impacts are described in the following section.

4. Recommended Parking Management Measures

Analysis presented in this study found that the proposed on-site parking supply for Middle School #6 would be adequate to accommodate typical school day parking, and with the exception of the 8th grade promotion ceremony, would also be sufficient to accommodate daytime meetings that would occur occasionally throughout the year.

Parking management would be needed **for evening events with more than 300 expected attendees**. It is recommended that the District and School develop and implement a parking management plan to mitigate parking impacts associated with large events. The following measures could be included.

- Identify an off-site parking location for large events. The District could potentially work with Sound Transit to utilize parking at the Issaquah Transit Center, located less than one mile to the north of the school site at SR 900/Newport Way NW, or lease parking from a vicinity business that is closed in the evening and has parking supply available.
- Provide a shuttle between the off-site parking and the school during large events. This would likely be provided using District yellow school buses.
- Develop a parking permit system for each large event that would identify who would be allowed to park on site and who would be required to park off site. No more than 162 on-site permits should be issued for each event (including parking for attendees and staff, and accounting for accessible stalls). The priority for on-site parking could be rotated (e.g., by grade or alphabetically) between events. In addition to managing the number of vehicles accessing the school campus to park, this type of system could incentivize carpools between the campus priority and non-priority permit holders for a given event.
- Provide staff enforcement of permit restrictions at on-site parking entry points. (Vehicles entering to drop students off without parking would be allowed, regardless of their permit group).
- Develop a parking communication plan that would be distributed to all school faculty, staff, and families prior to the start of the school year, and would be available to the school population and

other community members via the school's web site. In addition to detailing the parking procedures for larger events, the plan should emphasize the school's "good neighbor" policies by which all school-generated parking would occur on campus or at the designated off-site location. The plan should also provide contact information for a school official to whom any questions or complaints related to parking can be directed.

- Separate large events between different evenings to the extent feasible (e.g. separate by one or more grade level) to reduce the number of events for which permit management and shuttle service would be required.
- Consider holding 8th Grade Promotion during the evening instead of the school day; this would reduce overall parking demand by separating it from school-day parking demand, and could allow higher vehicle occupancies with more family members traveling from home instead of work places. There would also be more off-site parking options in the evening compared to a weekday. Alternatively, the District could consider holding the ceremony at an off-site facility that has capacity to accommodate the anticipated size.
- ISD and the school could also explore potential use of the athletic field to accommodate overspill parking for some large events that do not use the field. This would require management measures, including use of flaggers for traffic control on the field and at the Talus Drive access, which would be determined in coordination with the City if the option were to be pursued.

The *School-Event Management Plan*—which would include the location and capacity of off-site parking supply that has been secured, as well as the logistics of providing shuttle service when it is needed—would need to be provided to the City for review prior to issuance of either the building permit or certificate of occupancy. The actual timeline of delivery would be determined by the City.

JAB/mch

ISD Middle School No 6_Parking Analysis_Dec2019-FINAL

ATTACHMENT A
Pine Lake Middle School Event Summary

Table A-1. Summary of Special Events during Typical School Year – Pine Lake Middle School

Event	Approximate Attendance (per occurrence)	Total # of Occurrences (time of year)
Daytime Events		
B to Business days	20 people every 20 minutes ½ each day	2 days (early August)
PTSA meetings monthly	20	6 (September – June)
8th Grade Promotion	700	1 (June)
Later Afternoon/Evening Events		
Curriculum night	1,000	1 (September)
Back to school fun activity	400	1 (September)
Parent Information Nights	100	3 (October, January, March)
Season 1 sports – Gym Volleyball	100	5 (September – November)
Season 1 sports – Track & Field	100	8 (September – November)
Season 2 sports – Gym Boys Basketball	100	5 (December – February)
Season 2 sports – Field Girls Soccer	100	4 (December – February)
5th grade parent night	600	1 (March)
Season 3 sports – Gyn Girls Basketball	100	5 (February – April)
Season 3 sports – Gym Wrestling	100	4 (February – April)
Season 4 sports – Boys and Girls Track	500	4 (April – June)
Music concert, Band, Orchestra and Choir	500	15 (December – June)
Drama performances	120	6 (December & April)

Source: Issaquah School District, August 2019.