MEMORANDUM

DATE: December 1, 2020

TO: Andy Chow
City of Redmond

FROM: Amy Wasserman
TENW

SUBJECT: Updated Phase 1 Traffic Study
Cascadia School Expansion (4239 162nd Ave NE)
City File No. LAND-2019-00139
TENW Project No. 5890

This memorandum documents an updated Phase 1 traffic study for the proposed Cascadia School expansion project in Redmond, WA. This memo has been updated based on comments received from the City of Redmond in August 2020.

EXECUTIVE SUMMARY

- The proposed Cascadia expansion project would add up to 55 new students and 4 staff to accommodate a total capacity of up to 130 students and 21 staff members (14.5 FTE's). The school currently has 75 students and 17 staff members (11.5 FTE's).
- The proposed expansion (55 new students and 4 staff) is estimated to generate 51 new weekday AM peak hour trips, 34 new weekday afternoon peak hour trips, and 14 new weekday PM peak hour trips.
- Based on existing observations conducted at Cascadia School in April 2019, at no time did Cascadia related vehicles block north/south through traffic on 162nd Ave NE.
- As a result of staggered start times and various student pick-up times (due to student participation in after school care and activities), the maximum on-site vehicle queue during the peak drop-off or pick-up periods was 6 vehicles under existing conditions (75 students) and is forecast to be up to 10 vehicles under future conditions with the proposed expansion (130 total students). A forecast future queue of up to 10 vehicles in the drop-off/pick-up lane during peak drop-off or pick-up would be accommodated entirely on-site and would not be expected to extend off-site onto 162nd Ave NE at any time.
- Based on 21 total future staff members with the proposed expansion, the total future peak parking demand at Cascadia School is estimated to be 18 vehicles. The anticipated future peak parking demand of 18 vehicles would be accommodated by the total future on-site parking supply (18 stalls) with the expansion.

INTRODUCTION

This Phase 1 traffic study is an update to our Phase 1 Traffic Study dated June 10, 2020 and incorporates comments received from the City of Redmond on August 5, 2020. the following items are addressed in this updated Phase 1 traffic study:

- Project Description
- Existing Conditions
- Future Conditions (including trip generation, drop-off/pick-up schedule, queue analysis, and parking analysis)

PROJECT DESCRIPTION

The existing Cascadia School site is located at 4239 162nd Ave NE in the Overlake area of Redmond, WA. A vicinity map showing the location of the site and the surrounding area is included in Figure 1. As of April 2019, the school has an enrollment of 75 students in Pre-Kindergarten through 5th grade and a total of 17 staff members (11.5 FTE (full time equivalents)). Based on information provided by the school, all 17 staff members are rarely on campus at the same time and an average of 11 staff are on-site during primary school hours (between 8:30 a.m. and 3:15 p.m.).

The proposed expansion project at Cascadia School would add up to 55 students and 4 staff to accommodate a total capacity of up to 130 students and 21 staff members (14.5 FTE's). The school expansion would be complete by fall 2021 for the start of the 2021-2022 academic year, but the school anticipates that they would not reach the full 130 student capacity until fall of 2023. Staff is not projected to increase proportionally with the student enrollment given that the school is currently underutilizing their existing space and staffing. The additional 55 students anticipated with the expansion will be spread out among 7 grades (pre-k through 5th) bringing the average size up to 17 per class, which is still an appropriate class size for 1 teacher. Thus, the additional four staff members with the expansion will be part-time assistants and administrative staff.

There are a total of 10 surface parking stalls on the existing school site and the proposed expansion would add eight (8) parking stalls for a total of 18 parking stalls with the proposed project. Access to the school would continue to be provided by the existing full access driveway on 162nd Ave NE. A preliminary site plan is provided in Figure 2.

Figure 1: Project Site Vicinity

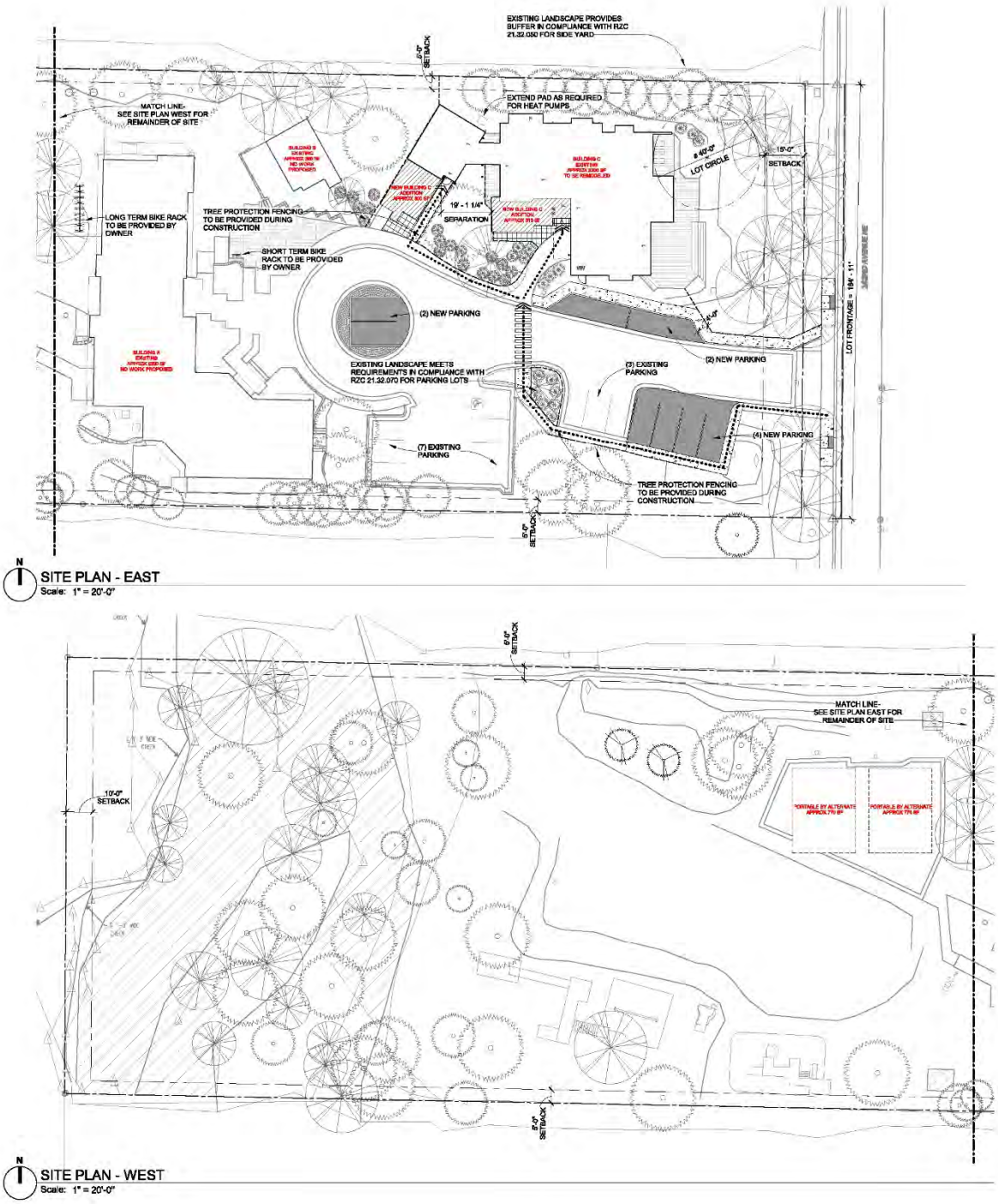

Figure 2: Preliminary Site Plan

NOT TO SCALE

EXISTING CONDITIONS

Existing School Operations

As of April 2019, Cascadia School currently has an enrollment of 75 students and 17 staff members (11.5 FTE (full time equivalents). There is no bus service provided by Cascadia School.
The school operates on a staggered start schedule, with approximately half of the students starting at 8:30 a.m. and the other half of the students starting at 8:45 a.m. Based on information provided by the school, families can drop off their students beginning at 8:00 a.m.

School dismissal is at 3:15 p.m. and based on information provided by the school, approximately 1/3 of the students leave at 3:15 p.m. Cascadia offers after school care and enrichment classes every day, so approximately 1/3 of the students leave the school campus at approximately 4:45 p.m., and the remaining 1/3 of the students leave the campus between 5:45 p.m. and 6:00 p.m.

The following provides a description of the existing conditions on the Cascadia School campus based on TENW observations conducted in April 2019.

Parking Lot and Drop-Off/Pick-Up Loop

- The parking lot and drop-off/pick-up loop is served by one full-access driveway on 162nd Ave NE that is stop controlled.
- The parking lot contains 10 parking stalls (1 ADA and 9 unmarked general stalls) and accommodates staff, visitors, and parents who park to pick-up or drop-off their student.
- The active student pick-up/drop-off zone has capacity for approximately 4 vehicles to queue along the curb. A total of approximately 10 vehicles (250 feet at 25 feet per vehicle assumed) can store on-site in the pick-up/drop-off queue before the pick-up/drop-off loop queue would extend onto 162nd Ave NE.
- One staff member is stationed at the main school entry and assists students in and out of vehicles.

Off-Site on 162nd Ave NE

- Legal unrestricted on-street parking exists on both sides of 162nd Ave NE adjacent to the school.

Summary of Existing Traffic Observations

TENW conducted observations of existing conditions at Cascadia on Tuesday, April 2, 2019, during the AM peak period (8:00 to 9:00 a.m.), afternoon peak period (3:00 to 3:30 p.m.), and PM peak period (4:30 to 6:00 p.m.). The weather on Tuesday, April 2 was cloudy.

The following provides a summary of our key traffic observations during the peak periods.

AM Peak Period Observations (8:00 – 9:00 a.m.)

- As a result of the staggered start times, the AM peak generally occurred during the 30-minute period between 8:15 a.m. and 8:45 a.m., however the arrival of vehicles dropping off students was spread out within the 30-minute peak period.
- Staff was observed assisting in drop-off operations (i.e. assisting students out of vehicles). The staff member encouraged vehicles to move as far forward as possible and parents to remain in their vehicle.

- Vehicles were generally efficient in dropping off students and exiting the site quickly.
- The maximum on-site drop-off queue was observed to be 5 vehicles. The drop-off queue occurred entirely on-site and was not observed to extend off-site onto 162nd Ave NE at any time.
- Only one vehicle was observed to use the legal on-street parking on 162nd Ave NE to park and walk their student into the school. The vehicle used the on-street parking in a legal, safe, and conforming manner.
- No student drop-offs were observed off-site on 162nd Ave NE.
- At no time did any Cascadia related vehicles block north/south through traffic on 162nd Ave NE.

Afternoon Peak Period Observations (3:00 – 3:30 p.m.)

- The afternoon peak was primarily concentrated within the 30-minute period between 3:00 and 3:30 p.m., however the arrival of vehicles picking up students was spread out within the 30-minute peak period.
- Vehicles arriving before the scheduled pick-up time (3:15 p.m.) queued in the legal on-street parking on 162nd Ave NE. At no time did vehicles queue on 162nd Ave NE and block north/south through traffic.
- Staff was observed assisting in pick-up operations (i.e. assisting students into vehicles). The staff members encouraged vehicles to move as far forward as possible and parents to remain in their vehicle to expedite loading and keep cars moving.
- Vehicles were generally efficient in picking up students and exiting the site quickly.
- The maximum on-site pick-up queue was observed to be 5 vehicles. The pick-up queue occurred entirely on-site and was not observed to extend off-site onto 162nd Ave NE at any time.
- No vehicles were observed to use the legal on-street parking on 162nd Ave NE to park and walk to the school to pick up their student.
- No student pick-ups were observed off-site on 162nd Ave NE.

PM Peak Period Observations (4:30 – 6:00 p.m.)

- As a result of the staggered pick-up times, the arrival of vehicles picking up students was spread out within the PM peak period.
- Staff was observed assisting in pick-up operations (i.e. assisting students into vehicles).
- Vehicles were generally efficient in picking up students and exiting the site quickly.
- The maximum on-site pick-up queue was observed to be 6 vehicles. The pick-up queue occurred entirely on-site and was not observed to extend off-site onto 162nd Ave NE at any time.
- One vehicle was observed to use the legal on-street parking on 162nd Ave NE to park and walk to the school to pick up their student. The vehicle used the on-street parking in a legal, safe, and conforming manner.
- No student pick-ups were observed off-site on 162nd Ave NE.
- At no time did any Cascadia related vehicles block north/south through traffic on 162nd Ave NE.

FUTURE CONDITIONS

Future Operations

The proposed expansion project at Cascadia School would add up to 55 students and 4 staff members to accommodate a total capacity of up to 130 students and 21 staff members (14.5 FTE's). Based on information provided by the school, the school intends to continue to operate on a staggered start schedule, with student drop-off beginning at 8:00 a.m. and approximately half of the students starting at 8:30 a.m. and the other half of the students starting at 8:45 a.m. The school also anticipates a dismissal schedule similar to existing conditions, with approximately 1/3 of the students leaving at school dismissal (3:15 p.m.), approximately 1/3 of the students leaving at 4:45 p.m., and the remaining 1/3 of the students leaving the campus between 5:45 p.m. and 6:00 p.m.

Project Trip Generation

The weekday daily, AM and PM peak hour trip generation estimates for the proposed school expansion project were estimated based on trip rates published in the most recent version of the Institute of Transportation Engineers (ITE) *Trip Generation* manual for Land Use Code (LUC) 534 (Private School K-8). The resulting new weekday daily, AM and PM peak hour trips are summarized in Table 1. A detailed trip generation estimate is also included in Attachment A.

Table 1
Trip Generation Summary (55 new students)

	New Trips Generated		
Time Period	In	Out	Total
Weekday AM Peak Hour	29	22	51
Weekday Afternoon Peak Hour	16	18	34
Weekday PM Peak Hour	6	8	14

As shown in Table 1, the proposed Cascadia expansion project is estimated to generate 51 new weekday AM peak hour trips (29 in, 22 out), 34 new weekday afternoon peak hour trips (16 in, 18 out), and 14 new weekday PM peak hour trips (6 in, 8 out). A concurrency application and Mobility Unit calculation are submitted separately.

Queue Analysis

A total of approximately 10 vehicles (250 feet at 25 feet per vehicle assumed) can store on-site in the pick-up/drop-off lane before the pick-up/drop-off loop queue would extend onto 162nd Ave NE. Based on existing observations in April 2019 with a total of 75 students enrolled, the maximum observed on-site queue during peak drop-off or pick-up periods was 6 vehicles.

With the proposed expansion and a maximum capacity of 130 students, the maximum on-site queue during drop-off or pick-up is estimated to be up to 10 vehicles (6 vehicle queue / 75 existing students X 130 future students = 10 vehicle queue). The forecast queue of 10 vehicles in the drop-off/pick-up lane would occur entirely on-site and would not be expected to extend off-site onto 162nd Ave NE at any time.

Parking Analysis

Parking Code

Cascadia has a conditional use permit (CUP) to operate in its existing zoning (the site is located within a Single-Family Urban R-4 zone). Redmond Zoning Code (RZC) Table 21.08.060C does not establish a required parking ratio for school uses within the R-4 Single-Family Urban Residential zone but states that the minimum amount of on-site parking supplied must be "adequate to accommodate peak use."

Table 21.08.060C
Allowed Uses and Special Regulations

Section	Use	Parking Ratio: Unit of measure (Minimum required; Maximum allowed)	Special Regulations
26	Public safety	Adequate to accommodate peak use	A Conditional Use Permit is required.
27	Grade schools (K-12)		

Parking Supply

Based on the current site plan, the proposed Cascadia School expansion project would add eight (8) parking stalls to result in a total of 18 on-site parking stalls. Legal on-street parking is also available along the school frontage on 162nd Ave NE.

Existing Weekday Peak Parking Demand

A parking demand study was conducted at Cascadia School on two "typical" weekdays (Monday, February 10, 2020 and Wednesday, February 26, 2020) to determine existing peak parking demand and provide data for evaluating future parking demand with the proposed expansion. The scope of the existing weekday peak parking demand study at Cascadia School was confirmed by City of Redmond staff.

The existing on-site parking supply was field-verified by TENW in February 2020 and includes a total of 10 striped parking stalls. It should be noted there is also an on-site (unstriped) paved area that is used as parking by staff and can accommodate an additional 2 vehicles.

The "typical" weekdays to study were provided by the school and are intended to reflect operations of the school on an average school day. At the time of the parking demand counts on February 10, 2020 and February 26, 2020, the school had a total of 17 employees.

To assess current weekday parking demand during school hours, the number of parked vehicles both on-site and off-site on 162nd Ave NE (both north and south of the Cascadia driveway) and NE 43rd Street were recorded every 15 minutes from 8:00 a.m. to 6:30 p.m. on the two weekdays. It should be noted that the off-site parking demand only included vehicles observed to be related to Cascadia School. Additionally, vehicles associated with peak drop-off or pick-up activities at the school were excluded from the parking demand counts. Exclusion of vehicles associated with peak drop-off or pick-up activities is consistent with the peak parking demand rates and methodology documented in ITE *Parking Generation* (5th Edition) for schools.

The existing weekday peak parking demand at Cascadia is summarized in Table 2 below. Attachment B includes the existing weekday parking demand study data.

Table 2
Existing Weekday Peak Parking Demand

Day	Peak Parking Demand (vehicles)			Time of Day Peak Demand Observed	Total # of Employees	Peak Parking Demand Rate per Employee
	On-site	Off-site	Total			
Monday 2/10/20	11	2	13	3:30 p.m.	17	0.76
Wednesday 2/26/20	12	4	16	3:00 p.m.	17	0.94
2-day average					17	0.85

Parking Demand on Monday 2/10/20

As shown in Table 2, the peak parking demand observed at Cascadia on Monday, February 10, 2020 was 13 vehicles at 3:30 p.m. of which 11 vehicles were parked on-site and 2 vehicles were parked off-site in legal on-street parking on 162nd Ave NE. It should be noted that Cascadia related vehicles observed to use the on-street parking on 162nd Ave NE did so in a legal, safe, and conforming manner.

The peak parking demand of 13 vehicles occurred during only one 15-minute period (3:30 to 3:45 p.m.). The average parking demand between 8:30 a.m. and 3:15 p.m. was 12 vehicles parked on-site and zero vehicles parked off-site on 162nd Ave NE. Cascadia off-site (on-street) parking demand on 162nd Ave NE occurred only between 3:15 p.m. and 6:30 p.m. and was 1 to 2 vehicles (teachers of extracurricular classes). The on-street parking demand on 162nd Ave NE was zero vehicles for the remainder of the observation period (8:30 a.m. to 3:15 p.m.).

Parking Demand on Wednesday 2/26/20

As shown in **Table 2**, the peak parking demand observed at Cascadia on Wednesday, February 26, 2020 was 16 vehicles at 3:00 p.m. of which 12 vehicles were parked on-site and 4 vehicles were parked off-site in legal on-street parking on 162nd Ave NE. It should be noted that Cascadia related vehicles observed to use the on-street parking on 162nd Ave NE did so in a legal, safe, and conforming manner.

The peak parking demand of 16 vehicles occurred during only one 15-minute period (3:00 to 3:15 p.m.) and a parking demand of 15 vehicles was observed during the 15-minute period from 2:45 to 3:15 p.m. The average parking demand between 8:30 a.m. and 3:15 p.m. was 11 vehicles parked on-site and one (1) vehicle parked off-site on 162nd Ave NE.

It should be noted that the Cascadia off-site (on-street) parking demand during every 15-minute period of the study period was no more than two (2) vehicles except for between 2:45 p.m. and 3:15 p.m. and between 4:00 and 4:45 p.m. when the on-street demand was three to four vehicles. All of the Cascadia related vehicles observed to be parking on 162nd Ave NE were parked for 2 hours or less.

Two-Day Average Peak Parking Demand

As shown in **Table 2**, the weekday (two-day) average peak parking demand rate observed at Cascadia was 0.85 vehicles per employee. The two-day average parking demand during core school hours (8:30 a.m. and 3:15 p.m.) was 12 vehicles, which is equivalent to a parking demand rate of 0.71 vehicles per employee (12 vehicles / 17 employees = 0.71 vehicles per employee).

Comparison to ITE Parking Demand

The existing weekday peak parking demand rates observed at Cascadia School were compared to rates published in the ITE *Parking Generation* manual (5th Edition) for an elementary school (land use code 520) since it is the closest land use category applicable to the Cascadia School site. Per ITE, the weekday peak parking demand rate for an elementary school (grades K-5) is 0.95 vehicles per employee.

Future Weekday Parking Demand

Based on the results of the existing parking demand study, the existing weekday peak parking demand is 0.85 vehicles per employee. With the proposed addition project, a total of 21 staff members are expected at the school. Applying the existing peak parking demand ratio (0.85 vehicles per employee) to the total future staff expected with the addition project (21 staff) results in an estimated peak parking demand of 18 vehicles with the proposed expansion. Therefore, the proposed addition of eight (8) stalls to the existing on-site parking supply (10 stalls) would be expected to accommodate the total future parking demand with the expansion.

Event Parking

With regard to events (open houses, curriculum nights, etc), school sites are not typically sized to accommodate all event-related parking on-site. During events at Cascadia School, additional parking demand can be accommodated through the use of legal on-street parking on 162nd Ave NE and NE 43rd Street adjacent to the school.

It is Cascadia School's policy to plan events in a manner that minimizes traffic and parking impacts to the neighborhood by limiting the number of students and/or classes that participate in a scheduled event. Cascadia typically has between 8 and 10 events a year with approximately half of the annual events

occurring in September with new class orientations. The events at Cascadia generally fall into three categories:

1. *Class Presentations*. This category includes beginning of the year orientations and presentations for holidays such as Thanksgiving, Valentine's Day, or Mother's Day. The class presentations typically are planned for the middle of the day and last for one hour with families expected to attend during the entire presentation. Two classes typically bundle together for presentations (i.e. 1st/2nd grades together) with no more than 2 classes hosting a presentation on a single day. In total these class presentation events can have up to 30 parents attend.
2. *Parent Volunteer Events*. Parent volunteer events occur once per year. These events are either Halloween or Field Day but these events are alternated every year so they don't occur during the same year. These all school events are typically scheduled from 12 p.m. to 3 p.m. and have 6 to 8 parent volunteers helping run events.
3. *Drop-in Events*. This category includes a curriculum sharing event like a science fair. Parents are given a 1-hour window (typically during the middle of the day) in which they can attend. In total, a drop-in event would be anticipated to have up to 30 families attend.

Parking demand data during an event Cascadia School was collected on Friday, February 7, 2020. The event was a drop-in event for 17 students scheduled from 12 p.m. to 1 p.m. Therefore, parking demand data was collected from 11 a.m. to 2 p.m. Since the event was limited to a one-hour timeframe, the parking demand was concentrated between 12 p.m. and 1 p.m. The observed peak parking demand during the event was 26 vehicles at 12:30 p.m. which consisted of 9 vehicles parked on-site and 17 vehicles parked off-site in legal on-street parking on 162nd Ave NE. The weekday event parking demand study data is included in Attachment C.

With a future student enrollment of 130 students with the proposed expansion, Cascadia School would continue to plan events in a manner that would minimize traffic and parking impacts to the neighborhood by limiting the number of students and/or classes that participate in events. During events, vehicles are anticipated to continue to use legal on-street parking on 162nd Ave NE and would typically be parked on-street for 1 hour or less.

Traffic Management Plan

A Traffic Management Plan (TMP) is being prepared for the Cascadia School and will be submitted separately to the City of Redmond for review and approval.

If you have any questions, please feel free to contact me at (425) 466-7072 or amy@tenw.com.

cc: Ben Sticka, City of Redmond
Philip Keeton, Cascadia School
Abigail DeWeese, Hillis Clark Martin & Peterson

Attachments

ATTACHMENT A

Trip Generation Calculations

Cascadia School Expansion

Trip Generation Estimate

Land Use	Size	Units	ITE LUC	Trip Rate [1]	Directional Split [1]		Vehicle Trip Generation		
					Enter	Exit	Enter	Exit	Total
AM PEAK HOUR (BETWEEN 7 - 9 AM)									
Proposed Use:									
Cascadia School Expansion	55	New Students	534	0.93	56%	44%	29	22	51
				NEW AM PEAK HOUR TRIP GENERATION:			29	22	51
AFTERNOON PEAK HOUR (BETWEEN 2 - 4 PM)									
Proposed Use:									
Cascadia School Expansion	55	New Students	534	0.62	47%	53%	16	18	34
				NEW AFTERNOON PEAK HOUR TRIP GENERATION:			16	18	34
PM PEAK HOUR (BETWEEN 4 - 6 PM)									
Proposed Use:									
Cascadia School Expansion	55	New Students	534	0.26	46%	54%	6	8	14
				NEW PM PEAK HOUR TRIP GENERATION:			6	8	14

Notes:

1. Trip rates and directional splits based on ITE *Trip Generation* , 10th Edition, 2017.

ATTACHMENT B

Existing Weekday

Parking Demand Study Data

Cascadia School Parking Demand Study

Date: Monday 2/10/20

Weather: Sunny

Data Collector: TDG

	PARKING DEMAND (VEHICLES)																								TOTAL CASCADIA RELATED PARKING DEMAND (vehicles)		
	On-Site at Cascadia School				162nd Ave NE north of Cascadia Driveway (NE 43rd Street to NE 44th Street)						162nd Ave NE south of Cascadia Driveway (NE 43rd St to NE 42nd Street)						NE 43rd Street east of 162nd Ave NE								
					East side of Street			West Side of Street			East side of Street			West Side of Street			North side of Street			South Side of Street					
Time Period	ADA (1 stall)	General (9 stalls)	Other	Pick-Up/Drop-Off Loop (Driver stays in vehicle)	Cascadia Related	NOT Cascadia Related	PICK-UP/DROP-OFF	Cascadia Related	NOT Cascadia Related	PICK-UP/DROP-OFF	Cascadia Related	NOT Cascadia Related	PICK-UP/DROP-OFF	Cascadia Related	NOT Cascadia Related	PICK-UP/DROP-OFF	Cascadia Related	NOT Cascadia Related	PICK-UP/DROP-OFF	Cascadia Related	NOT Cascadia Related	PICK-UP/DROP-OFF	on-site	on-street	Total
8:00 AM	1	4	2	1	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	0	7	0	7
8:15 AM	1	5	2	4	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	0	8	0	8
8:30 AM	1	8	2	4	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	11	0	11
8:45 AM	1	8	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	11	0	11
9:00 AM	1	8	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	11	0	11
9:15 AM	1	8	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	11	0	11
9:30 AM	1	8	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	11	0	11
9:45 AM	1	8	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	11	0	11
10:00 AM	1	8	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	11	0	11
10:15 AM	1	8	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	11	0	11
10:30 AM	1	8	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	11	0	11
10:45 AM	1	8	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	11	0	11
11:00 AM	1	8	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	11	0	11
11:15 AM	1	9	2	0	0	0	0	0	1	0	0	2	0	0	0	0	0	1	0	0	0	0	12	0	12
11:30 AM	1	9	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	12	0	12
11:45 AM	1	9	2	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	12	0	12
12:00 PM	1	9	2	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	1	0	12	0	12
12:15 PM	1	9	2	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	1	0	12	0	12
12:30 PM	1	8	2	1	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	2	0	11	0	11
12:45 PM	1	9	2	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	2	0	12	0	12
1:00 PM	1	9	2	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	2	0	12	0	12
1:15 PM	1	8	2	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	2	0	11	0	11
1:30 PM	1	9	2	0	0	1	0	0	0	0	0	3	0	0	0	0	0	1	0	0	1	0	12	0	12
1:45 PM	1	9	2	0	0	1	0	0	0	0	0	3	0	0	0	0	0	1	0	0	1	0	12	0	12
2:00 PM	1	9	2	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	1	0	12	0	12
2:15 PM	1	9	2	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	1	0	12	0	12
2:30 PM	1	9	2	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	1	0	12	0	12
2:45 PM	1	9	2	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	1	0	12	0	12
3:00 PM	1	9	2	0	0	2	0	0	0	0	0	2	0	0	0	0	0	1	0	0	1	0	12	0	12
3:15 PM	1	8	2	8	0	2	0	1	0	1	0	2	2	0	0	0	0	1	0	0	0	0	11	1	12
3:30 PM	1	8	2	0	1	2	0	1	0	0	0	2	0	0	0	1	0	1	0	0	0	0	11	2	13
3:45 PM	1	7	1	0	1	2	0	1	0	0	0	2	0	0	0	1	0	1	0	0	0	0	9	2	11
4:00 PM	1	6	0	0	1	2	0	1	0	0	0	2	0	0	0	1	0	1	0	0	0	0	7	2	9
4:15 PM	1	5	0	1	1	1	0	1	0	0	0	2	0	0	0	1	0	1	0	0	0	0	6	2	8
4:30 PM	1	7	0	1	1	1	0	1	0	0	0	2	0	0	0	1	0	1	0	0	0	0	8	2	10
4:45 PM	1	7	1	2	1	1	0	1	0	0	0	2	0	0	0	0	0	1	0	0	0	0	9	2	11
5:00 PM	1	3	0	3	1	1	0	1	0	0	0	2	0	0	0	0	0	1	0	0	0	0	4	2	6
5:15 PM	1	4	0	3	1	1	0	1	0	0	0	2	0	0	0	0	0	1	0	0	0	0	5	2	7
5:30 PM	1	2	0	1	1	1	0	1	0	0	0	2	0	0	0	0	0	1	0	0	0	0	3	2	5
5:45 PM	1	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	1	3
6:00 PM	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	1	3
6:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2
																							MAX		13

Cascadia School Parking Demand Study

Date: Wednesday 2/26/20

Weather: Sunny

Data Collector: TDG

	PARKING DEMAND (VEHICLES)																								TOTAL CASCADIA RELATED PARKING DEMAND (vehicles)		
	On-Site at Cascadia School				162nd Ave NE north of Cascadia Driveway (NE 43rd Street to NE 44th Street)						162nd Ave NE south of Cascadia Driveway (NE 43rd St to NE 42nd Street)						NE 43rd Street east of 162nd Ave NE										
					East side of Street			West Side of Street			East side of Street			West Side of Street			North side of Street			South Side of Street							
Time Period	ADA (1 stall)	General (9 stalls)	Other	Pick-Up/Drop-Off Loop (Driver stays in vehicle)	Cascadia Related	NOT Cascadia Related	PICK-UP/DROP-OFF	Cascadia Related	NOT Cascadia Related	PICK-UP/DROP-OFF	Cascadia Related	NOT Cascadia Related	PICK-UP/DROP-OFF	Cascadia Related	NOT Cascadia Related	PICK-UP/DROP-OFF	Cascadia Related	NOT Cascadia Related	PICK-UP/DROP-OFF	Cascadia Related	NOT Cascadia Related	PICK-UP/DROP-OFF	on-site	on-street	Total
8:00 AM	0	6	0	1	0	0	0	1	0	0	0	1	0	0	1	1	0	2	0	0	0	0	6	1	7
8:15 AM	1	6	0	2	0	0	0	1	0	0	0	1	0	0	1	0	0	2	0	0	0	0	7	1	8
8:30 AM	1	7	0	6	0	0	1	1	0	0	0	1	0	0	0	1	0	2	0	0	0	0	8	1	9
8:45 AM	1	7	1	0	0	0	0	1	0	0	0	1	1	0	0	0	0	2	0	0	0	0	9	1	10
9:00 AM	1	7	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	0	0	0	0	9	1	10
9:15 AM	1	7	2	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	0	0	0	0	10	1	11
9:30 AM	1	8	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	11	0	11
9:45 AM	1	8	2	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	11	1	12
10:00 AM	1	8	2	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	11	2	13
10:15 AM	1	9	2	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0	0	1	0	12	2	14
10:30 AM	1	9	2	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0	0	1	0	12	2	14
10:45 AM	1	9	2	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0	0	1	0	12	2	14
11:00 AM	1	9	2	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	12	2	14
11:15 AM	1	9	2	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	12	2	14
11:30 AM	1	9	2	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	12	2	14
11:45 AM	1	9	2	0	0	0	0	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	12	1	13
12:00 PM	1	8	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	11	0	11
12:15 PM	1	8	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	11	0	11
12:30 PM	1	7	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0	0	1	0	10	0	10
12:45 PM	1	8	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	1	0	11	0	11
1:00 PM	1	9	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	12	0	12
1:15 PM	1	9	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	12	0	12
1:30 PM	1	9	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	12	0	12
1:45 PM	1	9	2	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	1	0	12	1	13
2:00 PM	1	8	2	0	0	0	0	2	0	0	0	1	0	0	0	0	0	1	0	0	0	0	11	2	13
2:15 PM	1	8	2	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	11	1	12
2:30 PM	1	8	2	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	0	0	0	0	11	1	12
2:45 PM	1	9	2	1	0	0	0	1	0	0	1	1	0	1	0	0	0	1	0	0	0	0	12	3	15
3:00 PM	1	9	2	1	0	0	0	1	0	0	1	1	0	2	0	0	0	1	0	0	0	0	12	4	16
3:15 PM	1	9	2	13	0	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	12	1	13
3:30 PM	1	9	2	3	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	12	0	12
3:45 PM	1	9	2	3	0	0	0	0	0	0	0	1	0	2	0	0	0	2	0	0	0	0	12	2	14
4:00 PM	1	6	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	1	0	0	0	0	7	3	10
4:15 PM	1	7	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	1	0	0	0	0	8	3	11
4:30 PM	1	6	0	2	0	0	0	0	0	0	1	1	0	2	0	0	0	2	0	0	0	0	7	3	10
4:45 PM	1	5	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	1	0	0	0	0	6	2	8
5:00 PM	1	4	0	1	0	0	0	0	0	0	0	1	0	2	0	0	0	1	0	0	0	0	5	2	7
5:15 PM	1	2	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	3	0	3
5:30 PM	1	5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	6	0	6
5:45 PM	1	3	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	4	0	4
6:00 PM	1	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	3	0	3
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
																							MAX		16

ATTACHMENT C

Existing Weekday Event

Parking Demand Study Data

Cascadia School Parking Demand Study

Date: Friday 2/7/20 (Event at school from 12 to 1 PM)

Weather: rainy

Data Collector: TDG

	PARKING DEMAND (VEHICLES)															TOTAL CASCADIA RELATED PARKING DEMAND (vehicles)		
	On-Site at Cascadia School			162nd Ave NE north of Cascadia Driveway (NE 43rd Street to NE 44th Street)				162nd Ave NE south of Cascadia Driveway (NE 43rd St to NE 42nd Street)				NE 43rd Street east of 162nd Ave NE						
				East side of Street		West Side of Street		East side of Street		West Side of Street		North side of Street		South Side of Street				
Time Period	ADA (1 stall)	General (9 stalls)	Illegal	Cascadia Related	NOT Cascadia Related	Cascadia Related	NOT Cascadia Related	Cascadia Related	NOT Cascadia Related	Cascadia Related	NOT Cascadia Related	Cascadia Related	NOT Cascadia Related	Cascadia Related	NOT Cascadia Related	on-site	on-street	Total
11:00 AM	0	9	2	0	0	1	0	0	0	0	0	0	2	0	0	11	1	12
11:15 AM	0	9	2	0	0	1	0	0	0	0	0	0	2	0	0	11	1	12
11:30 AM	0	9	1	1	0	1	0	0	0	0	0	0	3	0	0	10	2	12
11:45 AM	0	8	1	1	0	1	0	2	0	0	0	0	3	0	0	9	4	13
12:00 PM	0	8	1	1	0	5	0	7	0	0	0	0	2	0	0	9	13	22
12:15 PM	0	8	1	3	0	5	0	7	0	0	0	0	2	0	0	9	15	24
12:30 PM	0	8	1	3	0	5	0	9	0	0	0	0	2	0	0	9	17	26
12:45 PM	0	8	1	3	0	4	0	9	0	0	0	0	2	0	0	9	16	25
1:00 PM	0	8	1	0	0	3	0	1	0	0	0	0	2	0	0	9	4	13
1:15 PM	0	8	1	0	0	1	0	0	0	0	0	0	2	0	0	9	1	10
1:30 PM	0	8	1	0	0	1	0	0	0	0	0	0	2	0	0	9	1	10
1:45 PM	0	8	1	0	0	1	0	0	0	0	0	0	2	0	0	9	1	10
																	MAX	26