

## MEMORANDUM

<b>Date:</b>	February 6, 2024	<b>TG:</b>	1.23278.00
<b>To:</b>	Patrick Yamashita, PE – City of Mercer Island		
<b>From:</b>	Dan McKinney, Jr.		
<b>Subject:</b>	Private School (HNT Site) – Transportation Impact Analysis Scope		

This memorandum provides a summary of preliminary transportation related information for the proposed private school development on the Herzl (HNT) property in Mercer Island, Washington. The following sections provide a brief description of the proposed project, an estimate of the project's vehicular trip generation and distribution throughout the adjacent roadway network, and a summary of the recommended study intersections and broader analysis scope for the Transportation Impact Analysis (TIA) report.

### Project Description

The proposed project is located at 3700 E Mercer Way. The proposed project includes approximately 14,051 gross square feet of private school and 12,300 gross square feet of general office. The project site location is shown in Figure 1. The private school will enroll up to 150 students in the PK-8 grade levels. The private school space would be occupied by the Jewish Day School (JDS), which is currently located in Bellevue and intends to move to the proposed site.

Vehicular access to the project site would be provided along the northern site limits where a driveway would be provided onto Frontage Rd, as illustrated in Figure 1.

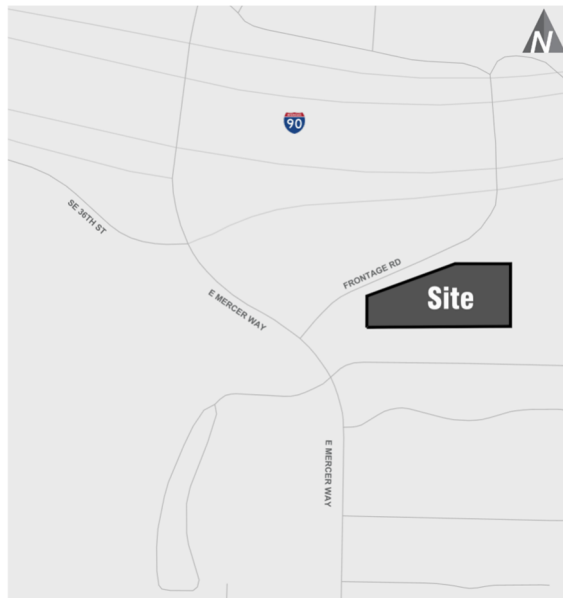


Figure 1 – Project Vicinity

## Project Trip Generation

Project trip generation estimates were developed for the project based on information contained in the Institute of Transportation Engineers (ITE) *Trip Generation* (11th Edition, 2021). Trip Generation is a nationally recognized and locally accepted method for determining trip generation for private and public developments. Trips were calculated using the Private School (K-8) (LU #530) and General Office (ITE LU #710) land uses. The following paragraphs summarize the preliminary trip generation estimate for the remaining proposed uses.

Table 1 summarizes the project's estimated trip generation for weekday AM peak hour, PM peak hour, and school peak hour time periods. School peak hour trip generation is based on the PM peak hour of generator for the private school land use. Detailed trip generation calculation worksheets are provided in Attachment A.

**Table 1. Estimated Trip Generation**

Land Use	Size	Weekday AM Peak Hour			Weekday PM Peak Hour			School PM Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total
<b>Proposed Uses</b>										
Private School (LU #530)	150 students	85	67	152	18	21	39	42	48	90
General Office (LU #710)	12,300 sf	17	2	19	2	12	14	-	-	-
<b>Total</b>		<b>102</b>	<b>69</b>	<b>171</b>	<b>20</b>	<b>33</b>	<b>53</b>	<b>42</b>	<b>48</b>	<b>90</b>

## Project Trip Distribution & Assignment

Vehicular trip distribution for the private school land use is based on information provided by the JDS regarding the ZIP code locations where students currently attending the school lived. It is assumed that the trip distribution of the proposed private school will match the current trip distribution at JDS. A separate primary vehicular trip distribution was determined for office trips consistent with Mercer Island General Traffic Impact Analysis Requirements. Vehicular trip distribution for the office land use is based on the U.S. Census Bureau's *OnTheMap* tool. *OnTheMap* is a web-based mapping and reporting application, which shows where workers are employed and where they live based on census data. The school and office trip distributions are provided in Attachment B. Table 2 summarizes the general primary trip distribution patterns assumed by land use as shown in Attachment B.

**Table 2. Weekday AM & PM Peak Hour Trip Distribution by Land Use**

Location	School Trips	Office Trips
East of Mercer Island	65%	45%
West of Mercer Island	25%	40%
Within Mercer Island	10%	15%

Primary project trips for each site use were assigned to the study intersections based on these general travel patterns. The resulting distribution and assignment of primary vehicular trips are shown in Attachment B.

## **Study Intersections & Analysis Scope**

Based on the forecast trip assignment to the adjacent roadway network, the following intersections could be considered for analysis under weekday AM and PM peak hour conditions:

1. SE 40th Street/E Mercer Way
2. Frontage Road/E Mercer Way
3. SE 36th Street/E Mercer Way
4. I-90 EB Off-Ramp/E Mercer Way
5. I-90 WB Ramps/E Mercer Way
6. Site Access/Frontage Rd

Weekday AM and PM peak hour volumes would be collected at all study intersections.

In addition, an evaluation of traffic operations related impacts, the TIA will also include an evaluation of non-motorized facilities, transit service, and the collision history within the project vicinity. Please identify whether any of the intersection within the project vicinity should be removed or added to the above list of potential study intersection, other whether other specific elements should also considered in the evaluation of potential transportation related impacts.

## Attachment A: Trip Generation Worksheets

## Attachment B: Trip Generation

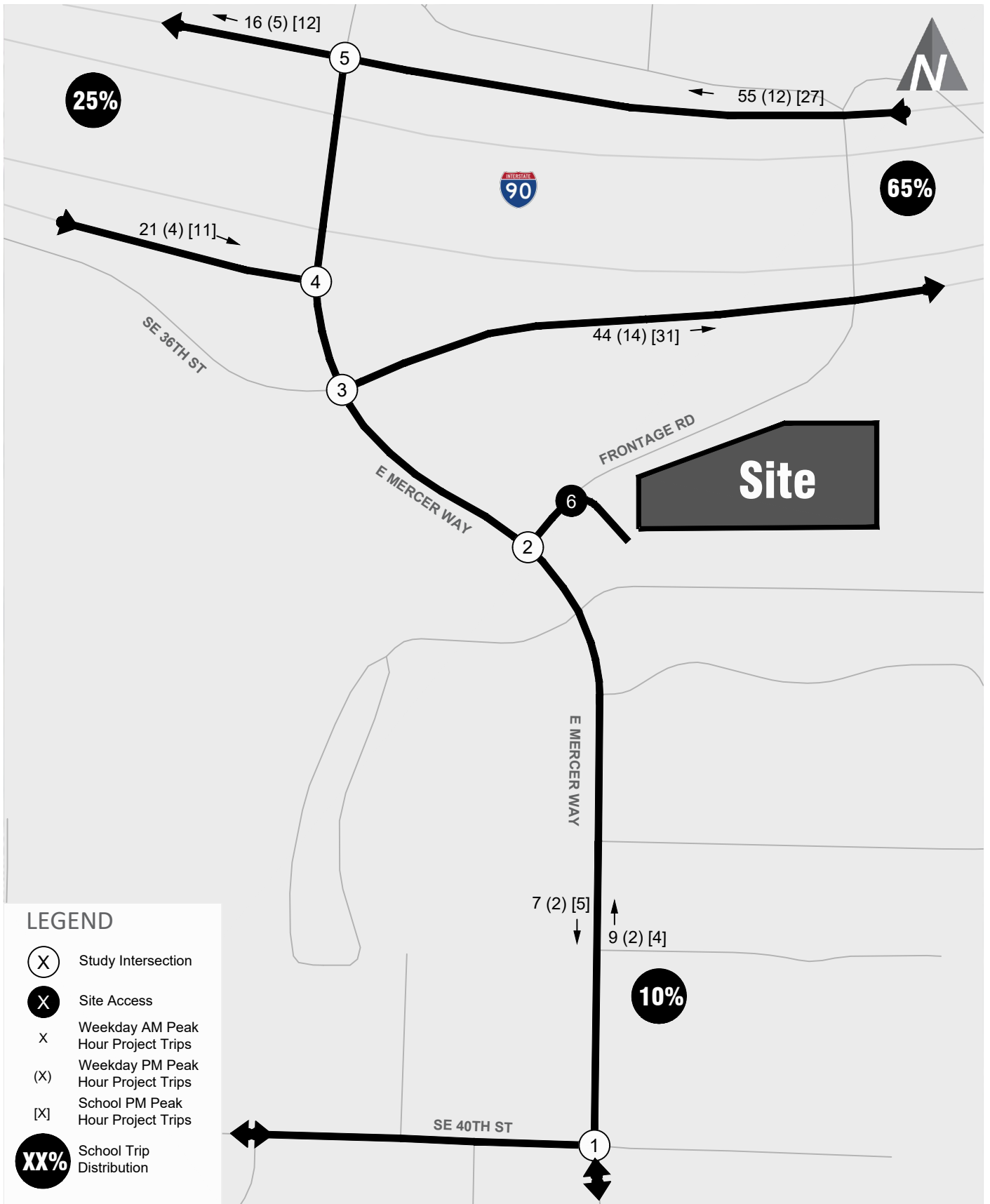
### Herzl Private School

<u>Proposed Use</u>														
Land Use	Setting	Size	Units	Model	Equation	Rate	Units	Inbound %	Gross Trips			Total Net New		
									Inbound	Outbound	Subtotal	Inbound	Outbound	Total
<b>Private School (K-8) (LU 530)</b>		150	students											
	PM Peak Hour of Generator			Rate	-	0.60	per student	47%	42	48	90	42	48	90
	AM Peak Hour			Rate	-	1.01	per student	56%	85	67	152	85	67	152
	PM Peak Hour			Rate	-	0.26	per student	46%	18	21	39	18	21	39
<b>General Office Building (LU 710)</b>		12,300	sf											
	Daily				-	-	-	-	0	0	0	0	0	0
	AM Peak Hour			Rate	-	1.52	per ksf	88%	17	2	19	17	2	19
	PM Peak Hour			Rate	-	1.15	per ksf	17%	2	12	14	2	12	14
<b><u>Subtotal</u></b>														
	PM Peak Hour of Generator								42	48	90	42	48	90
	AM Peak Hour								102	69	171	102	69	171
	PM Peak Hour								20	33	53	20	33	53
<u>Net New Trips</u>														
	PM Peak Hour of Generator											42	48	90
	AM Peak Hour											102	69	171
	PM Peak Hour											20	33	53

**Notes:**

1. Trip rates based on Institute of Transportation Engineers' (ITE) *Trip Generation* 10th Edition equation and average trip rate as shown above.
2. AVO = average vehicle occupancy. Retail and Residential AVO based on NCHRP 365 for urban areas with populations over 1 million people. No AVO rate if trips calculated based on person trip rate

## Attachment B: Trip Distribution & Assignment



# School Trip Distribution and Assignment

ATTACHMENT

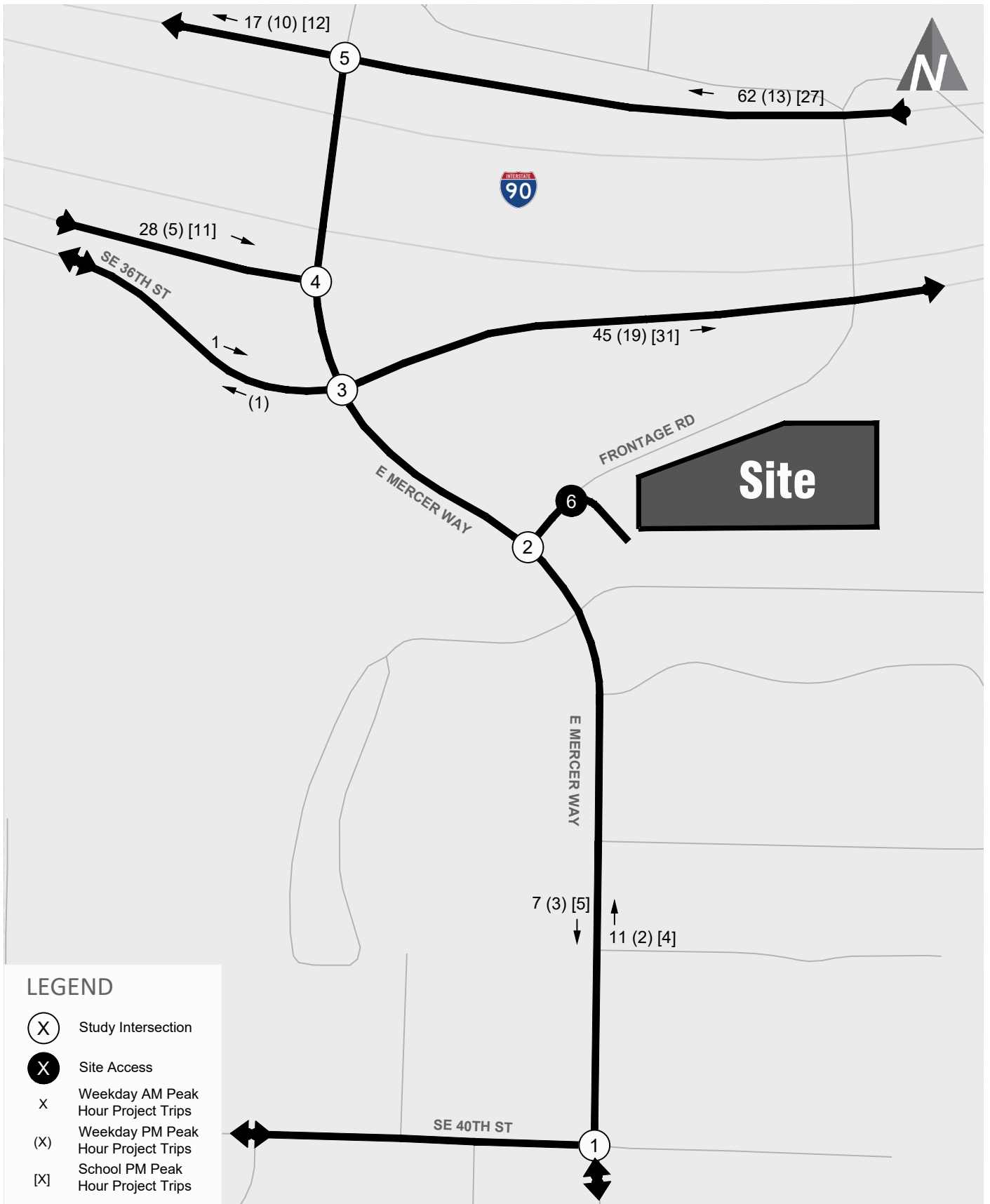
Herzl Private School



**B**







# Total Trip Distribution and Assignment

ATTACHMENT

Herzl Private School



**B**