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July 11, 2007

Nancy Fairchild, Transportation Planner
Development Services
City of Mercer Island
9611 SE 36th Street
Mercer Island, WA 98040

Subject: Stroum Jewish Community Center – French American School of Puget Sound – Conditional Use Permit Application – Traffic Analysis

Dear Ms. Fairchild:

This letter report summarizes the transportation analysis in support of a Conditional Use Permit (CUP) for the proposed expansion of the French American School of Puget Sound (FASPS) on the Stroum Jewish Community Center (SJCC) campus. This report also replaces a letter report titled *JCC Master Plan – Transportation Analysis Supplement #3* dated May 21, 2007. It is organized to provide background information on land use actions for the SJCC campus followed by a technical analysis of existing traffic conditions and future traffic conditions with the FASPS expansion complete and occupied.

Background

In 2002, the SJCC prepared a master plan that envisioned a community center with expanded facilities and programs. An expanded SEPA checklist was prepared for the master plan and a mitigated declaration of non-significance (MDNS) issued in July of 2002. At this time, the SJCC decided that it would not expand SJCC operated programs or facilities and the Master Plan was dropped.

In June 2003, an application for a CUP for expansion of the FASPS building was submitted. This expansion provided for the consolidation of FASPS classes on the SJCC campus. Classroom space at Herzl-Ner Tamid across East Mercer Way would no longer be used. A traffic study was prepared to address the effects of the proposed expansion.

On July 2, 2003, a *Mitigated Determination of Non-Significance* (MDNS) was issued that included the following mitigation (summarized):

1. Work with WSDOT to remove vegetation to provide a clear line of sight between the SE 36th Street intersection and the SJCC intersection.

2. Design the entry drive (SJCC access) to provide one inbound lane and an outbound left turn lane and shared through and right turn lane.
3. The City reserves the driveway to right-turn in/ right-turn out only based on traffic safety concerns.
4. The existing sidewalk shall be aligned closer to the new campus driveway in a location acceptable to the City Engineer.
5. The SJCC and FASPS shall submit a coordinated Transportation Management Plan (TMP) and designate a Transportation Coordinator.

Items 1, 2, and 4 are complete. It is not clear if SJCC has submitted the TMP to the City, but it has implemented the requirements of the TMP. The TMP is discussed below under the existing conditions section.

A CUP was issued on July 23, 2003 authorizing the expansion of the FASPS and reconfiguration of SJCC parking. The CUP authorized expansion of the immediate school population of 215 students to a maximum of 300 students over a ten year period. The school would provide 67 parking spaces and the entire SJCC site would provide 235 parking stalls, an increase from the current 220 stalls provided on-site.

The transportation related conditions outlined in the July 23, 2003 *Notice of Decision for Conditional Use* included:

1. The SJCC shall pay the City to designate a short northbound center lane along East Mercer Way to provide increased safety for SJCC motorists and visitors making the eastbound to northbound turning movement out of the main access drive.
2. The proposal shall be constructed as proposed in the CUP permit application dated on June 16, 2003.
3. The applicant shall install a "Stop" sign with a stop bar and "Caution, Watch for Pedestrians" sign at the FASPS driveway.
4. Prior to the issuance of any building or development permit for this site the applicant shall complete the approved street vacation, impervious surface deviation, and obtain approval for the lot line consolidation.

All of the conditions listed in the *Decision* with the exception of the center turn lane on E. Mercer Way have been implemented. It should be noted that the center turn lane was recommended as part of SJCC Master Plan traffic analysis, which has been dropped. The combination of increased traffic volumes generated by expanded SJCC facilities and the school was the basis for this recommendation and it was not mentioned in the traffic analysis prepared for the 2003 CUP because the increase in traffic volumes in that analysis were minimal and consideration of a turn lane was not warranted.



The current CUP application requests an increase in the maximum number of FASPS students from 300 students to 425, an increase of 125 students. Facilities would be expanded to accommodate the increase in students. The following analysis summarizes existing conditions, compares existing conditions against 2002 conditions, and analyzes the effects of the expansion on traffic operations and parking.

Existing Conditions

Campus Programs and Services

Programs and services offered at the SJCC facilities on the campus have remained relatively unchanged since 2002. The only exception to this is that the FASPS has expanded its facilities and consolidated operations on the SJCC campus. The current SJCC program is summarized in Attachment #1.

At the FASPS, the current enrollment is 264 students served by 35 teachers and staff. Preschool classrooms are ready to receive students at 8:30AM, with classes beginning at 8:45AM. The kindergarten through 5th grade students begin arriving at their classrooms at 8:15AM and classes begin at 8:30AM. Morning care is provided for the convenience of parents. Children can start the day at 8:00 AM and are supervised before classes start.

In the afternoon, dismissal time for preschool students is at 3:00 PM. These children must be signed out in their classrooms by their parent/guardian. Dismissal time for kindergarten through 5th grade is at 3:15 PM.

Parking

There are currently 155 parking stalls serving the SJCC facilities and 66 stalls serving the FASPS for a total of 221 stalls on the SJCC campus. In addition, the FASPS has an agreement with Herzl-Ner Tamid to provide 30 off-site parking stalls for school staff. A copy of this agreement is attached (Attachment #2). The total SJCC campus parking supply is 251 stalls, which exceeds the minimum supply of 235 stalls required by the 2003 CUP.

The demand for parking peaks at mid-day when SJCC programs generate a demand of 142 vehicles and the FASPS generates a demand for 8 vehicles on the SJCC campus and 22 vehicles at Herzl-Ner Tamid. The total peak parking demand is 172 vehicles. This is approximately the same as the forecasted demand of 175 vehicles documented in the June 2003 traffic study.

While all parking on the SJCC campus is identified as shared parking, the lots serving the SJCC facilities and the FASPS are separated by distance and landscaping

and there is negligible spillover between the lots on a day to day basis. Special events at either facility are coordinated to ensure that adequate parking is available.

Transportation Management Plan (TMP)

The *MDNS* for the 2003 CUP required that the SJCC and FASPS submit a coordinated TMP annually no later than December 31 of each year. Both organizations shall submit a transportation coordinator for the site within three months of issuance of the certificate of occupancy of the project. The duties of the Transportation Coordinators include:

1. Serve as a liaison for residents, tenants, employees, and City staff regarding traffic, parking, and other site related issues.
2. Monitor and manage on-site parking and deliveries.
3. Encourage ridesharing and public transit use by workers, employers, and users.
4. Establish a transportation information center in a common area (e.g. Lobby) displaying information on ridesharing, parking, public transit routes, schedules, etc.

Transportation Coordinators were designated and continue to coordinate site transportation activities; however, there is no record of the TMP being submitted to the City. At FASPS, Andrée McGiffin, the Head of School coordinates special event activities and other site related issued with the SJCC. Teachers are instructed to park at Herzl-Ner Tamid at beginning of the school year and are given a parking pass at the orientation/information meeting held right before school starts each year. Teachers are also encouraged to car pool and/or take public transportation.

The school has a defined pick-up and drop-off program that is communicated to all parents at the beginning of the school year in the parent handbook. Staff members are assigned to direct pedestrian traffic at pick up times to maintain pedestrian safety. In addition, the school employs a police officer to direct and manage vehicular traffic during the morning drop off. The SJCC pays the same person to direct and manage vehicular traffic during the afternoon pick up period. The section of the parent handbook describing the pick-up and drop-off program is attached as Attachment #3.

Site Circulation

As part of the FASPS expansion authorized by the 2003 CUP, an internal circulation road surrounding the FASPS site was constructed to provide access to school buildings and adjacent parking areas. On the north and west sides of the school, the road is one-way (dictating a clockwise traffic flow) and provides adequate width to accommodate a 450 foot loading zone adjacent to the travel lane. This 20-foot wide

road also serves as the fire access lane for the FASPS. During the day when classes are in session, only the south parking lot is accessible. Gates controlling access to the north lot are closed and the area is used as a playground.

Drop-off and pick-up time periods last approximately 30 minutes each. During these times, the gates are opened and circulation is converted to one-way, clockwise movements around the building. Field observations of the morning drop-off and afternoon pick-up activity conducted in June 2007 showed that in the morning, up to 10 of the 17 parking stalls on the north side of the building were occupied while parents walked their children into the classrooms and a maximum of 3 vehicles were parked in the 450 foot loading zone. On the south side of the building, up to 35 vehicles were parked in the 49 stalls while parents walked their children into the building. Given the current enrollment of 264 students, the morning FASPS parking demand is 0.18 stalls per student.

During the afternoon, the pick-up period peaked between 3:00 PM and 3:15 PM when 36 to 40 of the 50 stalls on the south side of the building were occupied. On the north side of the building, there were only 2 vehicles parked and no accumulation of vehicles in the loading zone. Loading zone operations in the afternoon require that entering vehicles display a student number on their wind shield. This number is transmitted via radio by an attendant and the student is escorted to the loading area and is waiting as the parent arrives. The afternoon FASPS parking demand is 0.16 stalls per student.

A police officer directed traffic at the FASPS access and as noted above, school staff were observed directing students and managing the loading areas in an orderly manner. The 450 foot load zone and available parking provide adequate space for loading activities as long as staff are present to keep the process flowing smoothly.

The importance of the pick-up and drop-off circulation plan and schedule is emphasized in the FASPS Parent Handbook and all parents are expected to adhere to the guidelines provided.

Traffic Volumes and Level of Service

Traffic counts were made at the SJCC campus in June 2007 to determine if traffic volumes in the vicinity or trip generation characteristics associated with the SJCC or FASPS have substantially changed from those described and analyzed in the *2002 Traffic Impact Analysis* and the *2003 update* to that analysis.

Table 1 summarizes the entering PM peak hour traffic volumes for intersections analyzed in 2002 and the current 2007 analysis to illustrate changes in local PM peak hour traffic volumes. Traffic volumes at the westbound I-90 ramps and the eastbound i-90 off-ramp have grown by slightly less than 2% per year while volumes at the eastbound on-ramp have increased by less than 1% per year. Volumes at the access to Herzl-Ner Tamid, which also serves the boat ramp, have dropped. This may be due to the effects of weather on boat ramp traffic when the counts were

made. Volumes at the SJCC access are unchanged while volumes at E Mercer Way/ SE 40th have increased by slightly more than 1% per year. The existing PM peak hour turning movement counts from the 2002 traffic analysis are illustrated in Figure 1 and Figure 2 illustrates the 2007 PM peak hour turning movement volumes.

Table 1: Comparison of Entering PM peak Hour Traffic Volumes at Analyzed Intersections

Intersection	2002	2007
E Mercer Way/ I-90 WB Ramps	854	931
E Mercer Way/ I-90 EB Off Ramp	853	923
E Mercer Way/ I-90 EB On Ramp	1,511	1,575
E Mercer Way/ Herzl-Ner Tamid	629	459
E Mercer Way/ SJCC access	585	581
E Mercer Way/ SE 40 th St	321	342

A breakdown of PM peak hour turning movement volumes at the SJCC access is summarized in Table 2. Total traffic volumes at the access are almost the same. The number of trips generated by the SJCC campus was 273 (121 entering, 152 exiting) in 2002 and 272 (140 entering, 132 exiting) in 2007. The number of trips generated by the SJCC campus have not increased since 2002

Table 2: Comparison of PM peak Hour Traffic Volumes at SJCC Access

Approach and Turning Movement		2002	2007
Eastbound	left	141	121
	through	1	1
	right	10	10
Westbound	left	0	0
	through	0	0
	right	3	2
Northbound	left	8	6
	through	133	128
	right	0	1
Southbound	left	0	2
	through	176	176
	right	113	134
Total		585	581

A level of service analysis was prepared for the intersections listed in Table 1. The results of this analysis are summarized in Table 3. Existing conditions LOS from the 2002 study are included for comparative purposes. All intersections continue to operate at or near the same LOS as in 2002 with the exception of the all-way stop controlled intersection at the I-90 westbound ramps, which has dropped from LOS-C

to LOS-F. The drop in LOS at this intersection is due to a significant increase in the number of vehicle making the westbound to southbound turning movement.

Table 3: Existing Conditions LOS

Intersection	Control		2002		2007	
			LOS	Delay ¹	LOS	Delay ¹
E Mercer Way & I-90 WB Ramps	AWSC ²	Avg.	C	16	F	87
		WB			F	103
		NB			B	11
		SB			A	9
E Mercer Way & I-90 EB Off Ramp	Signal	Avg.	A	8	A	10
E Mercer Way & I-90 EB On Ramp	Signal	Avg.	A	8	B	15
E Mercer Way & Herzl-Ner Tamid access	WB Stop	WB	B	12	A	9
		NB			A	0
		SB			A	<1
E Mercer Way & SJCC access	E-W Stop	EB	B	13	B	14
		WB			A	9
		NB			A	<1
		SB			A	<1
E Mercer Way & SE 40th Street	E-W Stop	EB	B	11	A	8
		WB			A	0
		NB			A	8
		SB			A	8

¹ Vehicle delay in seconds

² AWSC = All-way stop control

In general, transportation conditions associated with the SJCC campus have not changed since 2002. A summary of transportation related characteristics of campus programs is provided in Table 4.

Table 4: Comparative Program Development and Transportation Summary

Characteristic	Existing Conditions (May 2002)	Conditional Use Permit (June 2003)	Existing Conditions (June 2007)
SJCC programs	See attachment #1.	Same as attachment #1.	Same as attachment #1.
FASPS enrollment	200 students	215 students in near term w/ increase up to 300 in 10 years.	264 students
Parking Supply	223 stalls	235 stalls required	251 stalls provided
Peak Parking Demand	158 vehicles	175 vehicles (forecasted)	172 vehicles
Peak Hour Traffic Volume at E. Mercer Way/ SJCC Access	585 vehicles	N/A	581 vehicles
SJCC Generated PM Peak Hour Trips	273 trips	N/A	272 trips

Future Conditions

Program

The current CUP application requests an increase in the maximum number of permitted FASPS students from 300 students to 425, an increase of 125 students. These students would be accommodated in second story classrooms. Class sizes would be slightly larger and there will be six new teachers and two new staff. The total number of teachers and staff present during the day will increase from 35 to 43. SJCC programs will not change.

Parking

The parking supply would remain at current levels and FASPS staff will continue to park at Herzl-Ner Tamid. SJCC parking demand will not change. Long term parking demand for the FASPS will increase with the additional staff and teachers. This increase in parking demand will be accommodated by existing parking supplies at Herzl-Ner Tamid. The demand for short-term parking at the FASPS may increase slightly at the beginning and end of the school day when parents drop-off and pick-up their children. Based on the parking demand per student ratios described in the existing conditions section of this report, the future FASPS parking and loading zone demand would be approximately 75 vehicles in the morning during the half hour when students are dropped off and 68 vehicles in the afternoon during the half hour when students are picked up. This level of demand can be easily accommodated by the existing parking supply and 450 foot loading zone. It should be noted that this is a very conservative forecast and that actual demand would likely be less. The increase in student enrollment will provide increased opportunities for carpooling, which would likely reduce the number of new trips generated as well as associated short-term parking demand.

City code (MIUC 19.02.010 A.4.b) establishes parking requirements for private schools in a residential zone at a minimum of one stall per classroom. With the expansion, the parking supply adjacent to FASPS facilities will still exceed this requirement.

In summary, the parking demand generated by SJCC programs will not change and the long-term parking demand generated by the FASPS will increase by up to 8 vehicles. FASPS generated short-term parking demand will increase but can be accommodated by existing supplies. It is recommended that the parking requirements established in the 2003 CUP remain unchanged.

Transportation Management Plan (TMP)

While both the SJCC and FASPS have worked to coordinate shared parking facilities and minimize the impact of special events, they have not documented these activities nor prepared a TMP program as required by the 2003 MDNS. It is recommended that as a condition of the current CUP application that this condition be reinstated as follows:

Prior to issuance of an occupancy permit for the proposed project the SJCC and FASPS shall submit to the City a TMP that includes at minimum the following:

- 1. The name and contact information for a designated Transportation Coordinator for each facility. The duties of the Transportation Coordinators shall include:
 - a. Serve as a liaison for residents, tenants, employees, and City staff regarding traffic, parking, and site issues.*
 - b. Monitor and manage on-site parking and deliveries.*
 - c. Encourage ridesharing and public transit use by workers, employers, and users.**
- 2. Each facility shall establish a transportation information center in a common area (e.g. Lobby) displaying information on ridesharing, parking, public transit routes, schedules, etc.*

Site Circulation

The site circulation pattern would not change nor would the current program to manage student drop-offs and pick-ups. The number of vehicles circulating on the site would increase by up to 29 vehicles in the morning and 26 vehicles in the afternoon. There would be increased demand for short-term parking as described above and the loading zone would experience greater use. This increase in short-term demand can be accommodated by the existing loading zone and parking supply.

Traffic Volumes and Level of Service

Peak traffic volumes generated by the FASPS students occur in the morning and between 3 and 3:30 PM and do not affect PM peak hour (4 to 6 PM) traffic volumes at the SJCC access. With the expansion, there would be 30 to 40 new trips (inbound and outbound) generated between 8:00 and 8:30 AM and 3:00 to 3:30 PM. FASPS teachers and staff depart during the PM peak hour from the Herzl-Ner Tamid site. Therefore, the FASPS expansion would not affect existing PM peak hour traffic volumes at the SJCC access. There would be up to eight new PM peak hour trips generated by the additional FASPS teachers and staff at the Herzl-Ner Tamid access. There would be no significant increase in trips generated during the PM peak

hour. The center turn lane on E. Mercer Way that was required as mitigation in the 2003 CUP is not warranted.

Traffic volumes at the SJCC access and adjacent intersections would increase due to traffic generated by the arrival and departure of the additional students during the AM peak hour and at the end of the school day. However, traffic volumes on E. Mercer Way are lower during these off-peak times than during the PM peak hour so the additional trips would not have a noticeable effect on intersection operations during these off-peak times.

SJCC programs would also not change so there would be no change in PM peak hour traffic volumes at the SJCC access or the other analyzed intersections. The PM peak hour level of service would remain as shown in Table 3 for 2007 conditions.

Summary

Parking and loading operations in the future would not change from existing conditions except that the additional students would cause a small increase in short term parking demand and would increase demand for space along the loading zone. However, any such increases would be very short term in nature and well within the capacity of the existing parking supply and loading zone. Based on the observed loading capacities and operations at the FASPS, an increase in from 300 to 425 students will have negligible impact.

The proposed expansion would not generate noticeable new PM peak hour trips and the existing level of service at analyzed intersections is expected to remain at current levels.

Based on this analysis, we conclude that the proposed FASPS expansion would not result in on or off-site transportation related impacts. Accordingly, we find no need for any traffic related mitigation associated with the increase in school enrollment except for preparing and implementing the TMP.

I trust this report provides you with the information you need to process the CUP application. If you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,

Transportation Solutions, Inc.



David Johnson

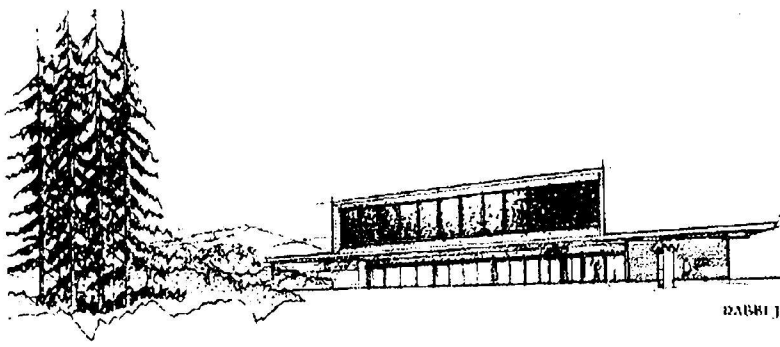
Principal

Attachments

Attachment #1

Stroum Jewish Community Center Program Activity Summary

Program	Description	Participants and Staff	Schedule	Travel Mode
<u>Early Childhood</u>				
Daycare program	Children 3 months to 6 years. Some mothers stay after to swim.	305	Morning with small afternoon session.	Auto drop-off with some carpool.
Early childhood education	Early childhood education for parents and preschool children.	20	Morning and afternoon sessions. Up to two classes concurrently	Drive automobiles with minimal carpooling.
<u>Youth and Family</u>				
Before-school program	Childcare and activities prior to School.	15	Early Morning.	Auto drop-off with some carpool.
Transportation to JDS	Buses transport students from before school program to public schools and JDS.	25	Morning and afternoon.	Auto drop-off with some carpool. Buses from Mercer Island public schools, vans from Bellevue and JDS.
After-school program	Childcare and activities following school.	30	Late afternoon.	Auto pick-up with some carpools.
Youth basketball league	Organized youth basketball.	25	Late afternoon.	Auto drop-off with some carpools.
Teen programs	Various.	20	Evenings.	Auto drop-off with some carpools. Some teens drive.
Hebrew High School	Jewish education for teens.	250	Evenings.	Parent drop-off with some carpools. Some teens drive.
B'nai Brith Youth Meetings	Religious studies for youth.	80	Monday nights.	Parent drop-off with some carpools.
Kumon Math Classes	Special math/learning classes.	20	Tuesday and Thursday evenings.	Auto drop-off.
Students from Yeshiva	Use physical education facilities to complement the academic program offered at their existing school.	30	Friday afternoons.	Bus from Yeshiva High school.
<u>Adult and Seniors</u>				
Aerobics, dance classes, crafts, Hebrew Language, Travel		50	During weekdays and some evenings.	Drive automobiles with minimal carpooling. Some seniors use Metro Access Service.
Basketball leagues		30	Weekday evenings.	Drive automobiles with minimal carpooling.



herzl-ner tamid
conservative congregation

affiliated with the united synagogue of conservative judaism

Attachment #2

RABBI JAY ROSENBAUM • CANTOR ANDRÉE KUGLAND • CANTOR EMERITUS JOSEPH FRANKEL

June 6, 2007

Andrée McGiffin, Head of School
The French American School of Puget Sound
3795 East Mercer Way
Mercer Island, WA 98040

Dear Andrée,

We look forward to continuing to provide faculty parking for thirty cars from FASPS during the school year 2007-2008.

It has been our pleasure to be able to accommodate your parking needs for the last several years and anticipate being able to do so next year and in the future.

Carol Maslan
Facility Operations/Membership Services
Herzl-Ner Tamid Conservative Congregation

FASPS Transportation: Drop Off and Pick-Up

Drop off and pick up are a complicated process and require careful management. We need everyone's cooperation! Please read carefully.

DROP OFF AND PICK-UP FOR YPK AND PK

8:30am to 8:45am for drop-off

3:00pm to 3:15pm for pick-up

State law requires that YPK and PK children be escorted to their classrooms and signed in by the responsible adult. The main parking lot (at the entrance) and 18 parking spaces on the playground side are reserved for parents of YPK and PK children for 15 minutes. Overflow parking for these parents only is available on the lower parking lot of the JCC (along East Mercer Way).

MORNING DROP OFF FOR KINDERGARTEN – 5TH GRADE

8:00am to 8:25am

1. Drop off lane by car
2. Drop off is conducted on the playground side of the building
3. Drop off will be done at the end of the building, on a drop off lane between cones
4. Please stop your car and drop off students in the area marked by cones.
5. Children must exit the car on the building side; do not let them exit on the traffic side of the vehicle.
6. There is a bell at 8:25am and children are in class at 8:30am

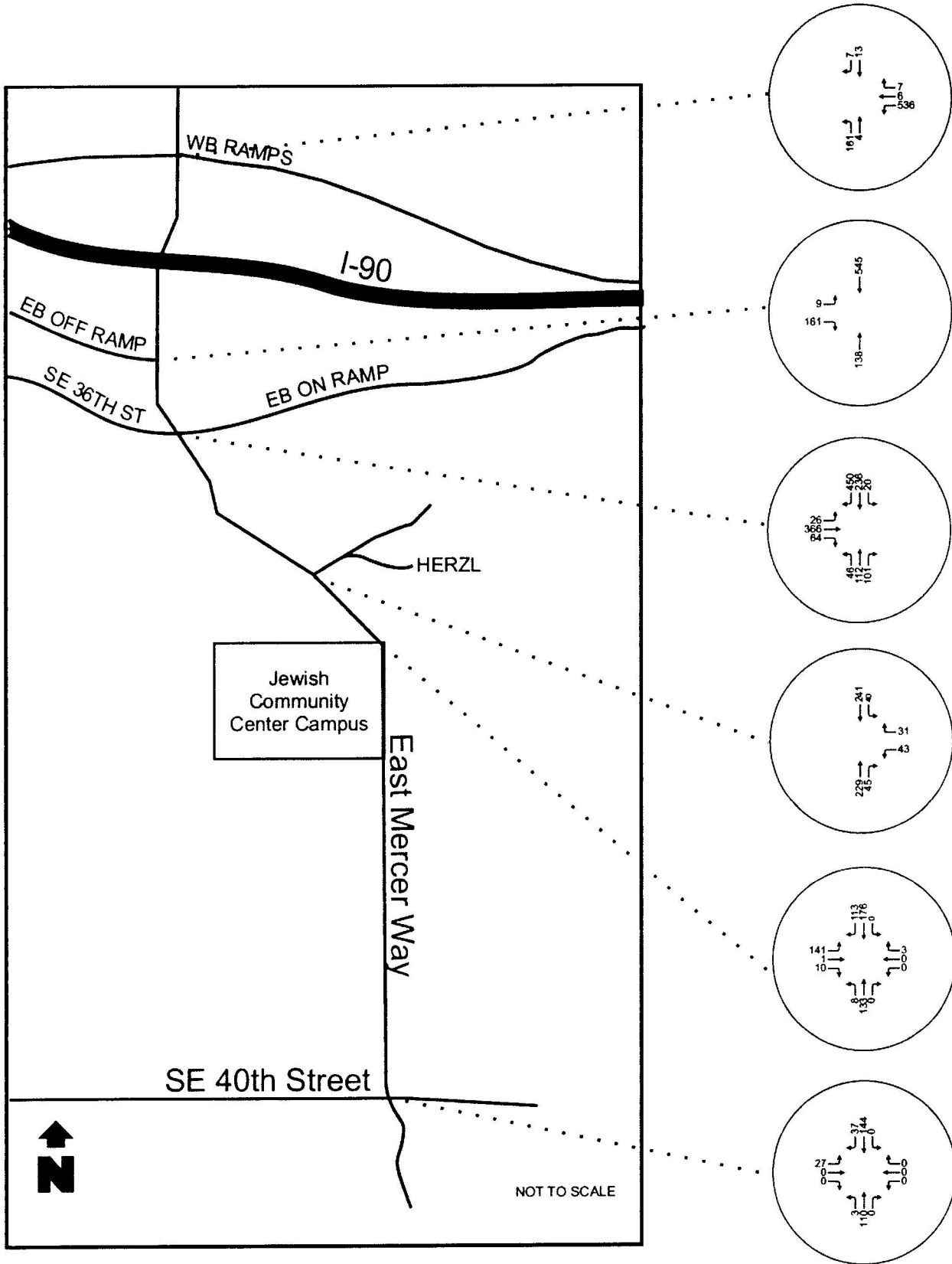
Parents are encouraged to vary their drop off time in order to help stagger the number of cars on campus at a time. This may mean coming to campus 15 minutes before class begins.

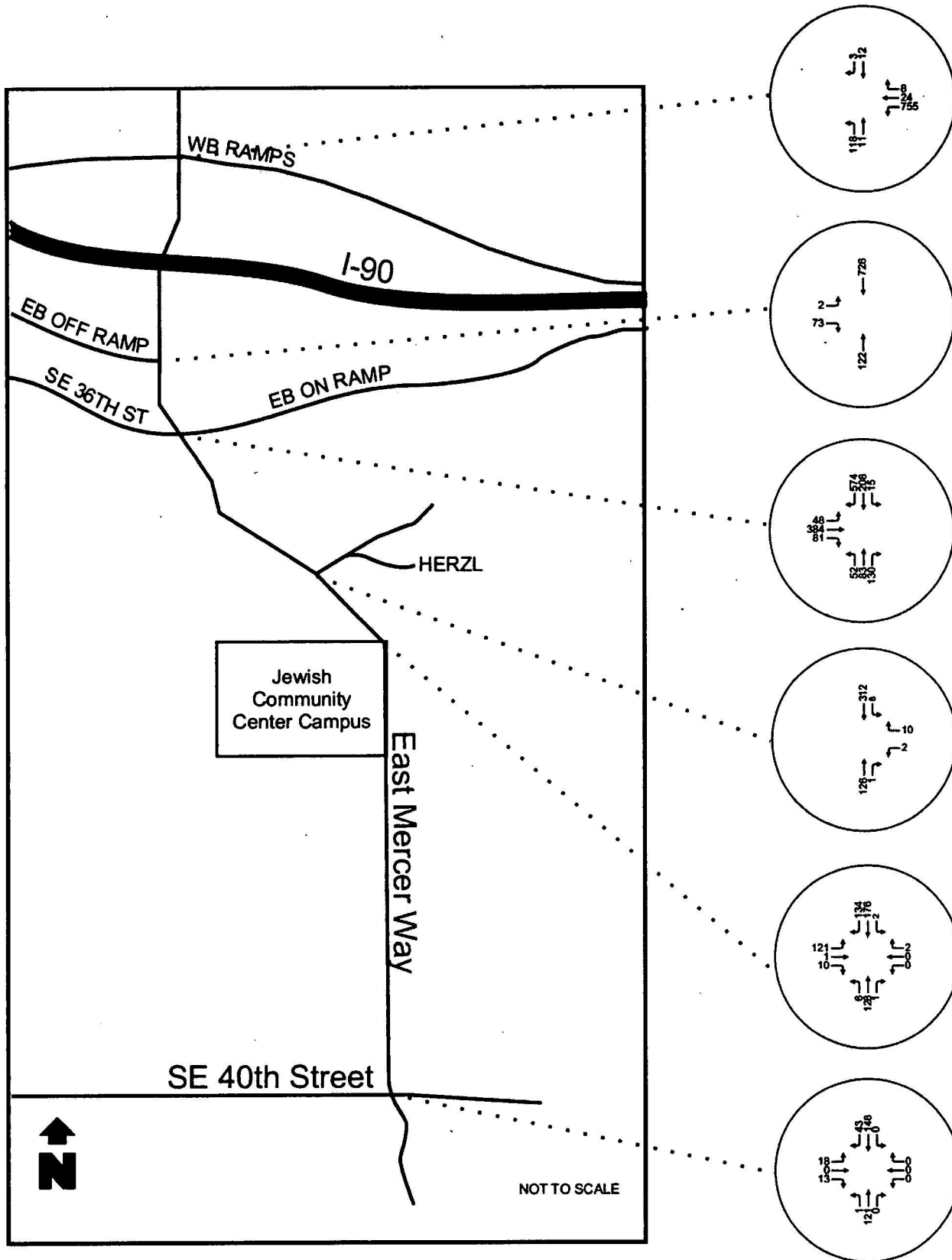
AFTERNOON PICK UP FOR KINDERGARTEN – 5TH GRADE

3:15-3:30pm

Students wait for pick up either in the Multi-Purpose Room inside. While awaiting their designated rides, they are supervised by teachers and monitors who also keep traffic flowing, assure that everyone is safe, and help load children into their cars.

This system should help avoid parking and traffic congestion at dismissal time. Please do not arrive too early, because the children are not ready to be picked up until 3:15pm (Kindergarten – 5th grade). The entire procedure should be completed in approximately 15 minutes. You need to be patient and organized.







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August 10, 2007

Nancy Fairchild, Transportation Planner
Development Services
City of Mercer Island
9611 SE 36th Street
Mercer Island, WA 98040

Subject: Stroum Jewish Community Center – French American School of Puget Sound – Conditional Use Permit Application – Traffic Analysis Supplement

Dear Ms. Fairchild:

This letter report supplements the traffic analysis dated July 11, 2007 that was submitted as part of the application for a Conditional Use Permit (CUP) to expand the French American School of Puget Sound (FASPS) on the Stroum Jewish Community Center (SJCC) campus. This report responds to your request that the applicant address the level of service condition (LOS-E) calculated for the intersection of the I-90 Westbound ramps and E. Mercer Way.

The July 11, 2007 traffic analysis showed that the intersection is currently operating at LOS-E and would not be degraded further by the FASPS expansion. This level of service does not meet the City of Mercer Islands concurrency standard.

The intersection is currently controlled by stop signs on all approaches. WSDOT planned improvements in the area include signalization of the intersection. Information on this project was not available when the July traffic analysis was submitted.

With signalization and a single lane on all approaches, the intersection is forecasted to operate at LOS-B under PM peak hour conditions with an average vehicle delay of 19.7 seconds. It is assumed that the new signal would be coordinated with the adjacent existing signals at the eastbound off-ramp and eastbound on-ramp. If the intersection is channelized with separate left turn lanes on the westbound and northbound approaches, the intersection would remain at LOS-B but the average vehicle delay would drop to 17.5 seconds. With signalization, the City's concurrency



Transportation Solutions, Inc.

Nancy Fairchild
August 10, 2007
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threshold is met. The Synchro reports for both of the channelization scenarios are attached.

Please feel free to contact me if you have any questions or require additional information.

Sincerely,
Transportation Solutions, Inc.

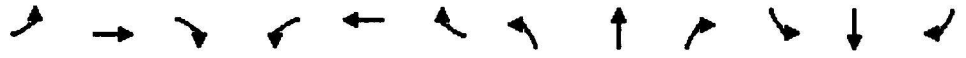
A handwritten signature in black ink that reads "David W. Johnson". The signature is written in a cursive style with a large initial "D".

David Johnson
Principal

Attachment

Lanes, Volumes, Timings
2: I-90 WB Ramp & East Mercer Way

2007 w/ single lane all approaches
PM Peak Hour



Lane Group	EBL	EBR	EBR	WBL	WBL	WBR	NBL	NBL	NBR	SBL	SBL	SBR
Lane Configurations					↕			↕				↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				50	50		50	50				50
Trailing Detector (ft)				0	0		0	0				0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t					0.999							0.972
Fl _t Protected					0.954				0.956			
Satd. Flow (prot)	0	0	0	0	1793	0	0	1781	0	0	1847	0
Fl _t Permitted					0.954			0.614				
Satd. Flow (perm)	0	0	0	0	1793	0	0	1144	0	0	1847	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1							7
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		595			840			2192			236	
Travel Time (s)		13.5			19.1			49.8			5.4	
Volume (vph)	0	0	0	755	24	8	118	11	0	0	12	3
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.84	0.84	0.84	0.44	0.44	0.44
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	2%	2%	2%	0%	0%	0%
Adj. Flow (vph)	0	0	0	848	27	9	140	13	0	0	27	7
Lane Group Flow (vph)	0	0	0	0	884	0	0	153	0	0	34	0
Turn Type				Perm			pm+pt					
Protected Phases					8		5	2				6
Permitted Phases				8			2					
Detector Phases				8	8		5	2				6
Minimum Initial (s)				4.0	4.0		4.0	4.0				4.0
Minimum Split (s)				20.0	20.0		8.0	20.0				20.0
Total Split (s)	0.0	0.0	0.0	42.0	42.0	0.0	8.0	28.0	0.0	0.0	20.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	60.0%	60.0%	0.0%	11.4%	40.0%	0.0%	0.0%	28.6%	0.0%
Yellow Time (s)				3.5	3.5		3.5	3.5			3.5	
All-Red Time (s)				0.5	0.5		0.5	0.5			0.5	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Recall Mode				None	None		None	Min			Min	
Act Effct Green (s)					30.1			12.1			12.1	
Actuated g/C Ratio					0.59			0.24			0.24	
v/c Ratio					0.83			0.56			0.08	
Control Delay					18.5			27.9			14.9	
Queue Delay					0.0			0.0			0.0	
Total Delay					18.5			27.9			14.9	
LOS					B			C			B	
Approach Delay					18.5			27.9			14.9	
Approach LOS					B			C			B	
Queue Length 50th (ft)					176			46			7	
Queue Length 95th (ft)					#517			91			11	
Internal Link Dist (ft)		515			760			2112			156	
Turn Bay Length (ft)												

Lanes, Volumes, Timings
 2: I-90 WB Ramp & East Mercer Way

2007 w/ single lane all approaches
 PM Peak Hour



Lane	SB	EB	WB	NB	WB	NB	NB	NB	SB	SB	SB
Base Capacity (vph)				1173			451				584
Starvation Cap Reductn				0			0				0
Spillback Cap Reductn				0			0				0
Storage Cap Reductn				0			0				0
Reduced v/c Ratio				0.75			0.34				0.06

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 50.9
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 19.7
 Intersection Capacity Utilization 64.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: I-90 WB Ramp & East Mercer Way

↑ ø2			
28 s			
↙ ø5	↓ ø6	← ø8	
8 s	20 s	42 s	

Lanes, Volumes, Timings
2: I-90 WB Ramp & East Mercer Way

2007 w/ WB & NB LTL
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↑	↑		↑	↑				↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)				50	50		50	50				50
Trailing Detector (ft)				0	0		0	0				0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Friction				0.962							0.972	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1787	1810	0	1770	1863	0	0	1847	0
Flt Permitted				0.950			0.588					
Satd. Flow (perm)	0	0	0	1787	1810	0	1095	1863	0	0	1847	0
Right Turn on Red				Yes			Yes			Yes		Yes
Satd. Flow (RTOR)				9							7	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		595			840			2192			236	
Travel Time (s)		13.5			19.1			49.8			5.4	
Volume (vph)	0	0	0	755	24	8	118	11	0	0	12	3
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.84	0.84	0.84	0.44	0.44	0.44
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	2%	2%	2%	0%	0%	0%
Adj. Flow (vph)	0	0	0	848	27	9	140	13	0	0	27	7
Lane Group Flow (vph)	0	0	0	848	36	0	140	13	0	0	34	0
Turn Type				Perm			pm+pt					
Protected Phases					8		5	2			6	
Permitted Phases				8			2					
Detector Phases				8	8		5	2			6	
Minimum Initial (s)				4.0	4.0		4.0	4.0			4.0	
Minimum Split (s)				20.0	20.0		8.0	20.0			20.0	
Total Split (s)	0.0	0.0	0.0	42.0	42.0	0.0	8.0	28.0	0.0	0.0	20.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	60.0%	60.0%	0.0%	11.4%	40.0%	0.0%	0.0%	28.6%	0.0%
Yellow Time (s)				3.5	3.5		3.5	3.5			3.5	
All-Red Time (s)				0.5	0.5		0.5	0.5			0.5	
Lead/Lag							Lead				Lag	
Lead-Lag Optimize?							Yes				Yes	
Recall Mode				None	None		None	Min			Min	
Act Effct Green (s)				29.2	29.2		12.6	12.7			6.9	
Actuated g/C Ratio				0.58	0.58		0.24	0.25			0.14	
v/c Ratio				0.82	0.03		0.44	0.03			0.13	
Control Delay				17.1	4.0		22.7	17.3			21.6	
Queue Delay				0.0	0.0		0.0	0.0			0.0	
Total Delay				17.1	4.0		22.7	17.3			21.6	
LOS				B	A		C	B			C	
Approach Delay					16.5			22.2			21.6	
Approach LOS					B			C			C	
Queue Length 50th (ft)				182	3		37	3			8	
Queue Length 95th (ft)				344	12		78	14			14	
Internal Link Dist (ft)		515			760			2112			156	
Turn Bay Length (ft)												

Lanes, Volumes, Timings
 2: I-90 WB Ramp & East Mercer Way

2007 w/ WB & NB LTL
 PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NET	NBR	SBL	SBT	SBR
Base Capacity (vph)				1158	1176		318	743				523
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				0.73	0.03		0.44	0.02				0.07

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 50.6
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 17.5
 Intersection Capacity Utilization 61.7%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 2: I-90 WB Ramp & East Mercer Way

↑ ø2			
28 s			
↙ ø5	↓ ø6	← ø8	
8 s	20 s	42 s	



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August 24, 2007

Nancy Fairchild, Transportation Planner
Development Services
City of Mercer Island
9611 SE 36th Street
Mercer Island, WA 98040

Subject: Stroum Jewish Community Center – French American School of Puget Sound – Conditional Use Permit Application – Traffic Analysis Supplement #2

Dear Ms. Fairchild:

This letter report supplements the traffic analysis dated July 11, 2007 that was submitted as part of the application for a Conditional Use Permit (CUP) to expand the French American School of Puget Sound (FASPS) on the Stroum Jewish Community Center (SJCC) campus as well as a supplement to that report dated August 10, 2007. This second supplement responds to your request for additional information regarding the need for a center turn lane on E. Mercer Way at the SJCC access.

The CUP that allowed FASPS to consolidate and expand its school on the SJCC contained a number of conditions (*July 23, 2003 Notice of Decision for Conditional Use*) as summarized in the July 11, 2007 traffic analysis. Among these was requirement for a center turn lane on E. Mercer Way.

"The SJCC shall pay the City to designate a short northbound center lane along East Mercer Way to provide increased safety for SJCC motorists and visitors making the eastbound to northbound turning movement out of the main access drive."

The need for this turn lane was not analyzed nor recommended in the traffic analysis for the CUP submittal dated June 30, 2003. In fact, the condition appears to be associated with a recommendation made in the traffic analysis (May, 2002) for the *SJCC Master Plan* that was never adopted. That plan anticipated a growth in programs that included a 475 student school as well as expansion of day care facilities and other SJCC programs.

The *Master Plan* traffic analysis forecasted that program changes would result in 405 site generated PM peak hour trips. This should be compared against the 2002 volume of 274 trips entering or leaving the site during the PM peak hour. The *Master Plan* was never adopted and the increase in forecasted traffic volumes has not occurred. In fact, 2007 counts show that 272 trips are generated by the SJCC during the PM peak hour. Site generated trips have remained stable since 2002 in spite of the modest increase in FASPS enrollment.

It is not clear how or why the condition for a center turn lane was included in the original CUP for the FASPS. It is assumed that it must have been carried forward from the *Master Plan* that was never adopted. Some of the other recommendations, such as providing two outbound lanes at the SJCC access to better accommodate the forecasted increase in traffic volumes, for improvements were also carried forward into the CUP and constructed.

There are two factors that would warrant a center turn lane at the SJCC access; level of service and safety. Table 3 of the July 11, 2007 CUP traffic analysis report compares level of service in 2002 with current 2007 conditions. The SJCC access operates at LOS-B under both conditions. Using SimTraffic, which simulates traffic operations at unsignalized intersections more accurately than Synchro, analysis shows that the entire intersection operates at LOS-A with 3.7 seconds of vehicle delay. The controlled eastbound left turn movement also operates at LOS-A with 8 seconds of delay while the eastbound through and right turn movements have slightly less than 10 seconds of delay. The uncontrolled northbound left turn has 4 seconds of delay and the through movement 2 seconds. The uncontrolled southbound right turn and through movements also have less than 2 seconds of delay. This excellent level of service found using both Synchro and SimTraffic shows that the intersection operates at a very good level of service and that a center turn lane is not warranted to reduce delay for vehicles making a northbound left turn or a two stage left turn out of the site. The SimTraffic report is attached.

The second factor that could warrant a center left turn lane is safety. If vehicles waiting to make a left turn into the SJCC were struck from behind on a regular basis, a center turn lane would provide a refuge for turning vehicles and the number of rear end collisions would drop. A review of the collision data (see Table 1 of the June 30, 2003 CUP traffic analysis) showed no rear end collisions at the SJCC access. Between 1999 and 2003 there were 3 right angle collisions at the access. Given the configuration of the access; the collisions were likely caused by southbound vehicles colliding with a vehicle turning left out of the site. It was recommended that the entering sight and safe stopping distance be improved by clearing brush along the west side of E. Mercer Way to the north of the SJCC access. This recommendation and subsequent condition to correct the deficiency was in the CUP and action taken to improve the sight distance. There are no remaining safety issues that would warrant a center turn lane.



Nancy Fairchild
August 24, 2007
Page 3

In conclusion, the condition for a center turn lane should not have been included as a condition of the previous FASPS CUP and is not warranted by a level of service or safety deficiency as part of this CUP application. The center turn lane was recommended as part of mitigation for the *SJCC Master Plan* that anticipated a significant increase in SJCC trips. The *Master Plan* was never adopted and the forecasted increase in traffic volumes that were the basis for the recommendation have not materialized. For these reasons, I respectfully request that the condition to add a center turn lane on E. Mercer Way be removed from the current CUP.

Please feel free to contact me if you have any questions or require additional information.

Sincerely,
Transportation Solutions, Inc.

A handwritten signature in black ink that reads "David W. Johnson". The signature is written in a cursive style.

David Johnson
Principal
Attachment

4: Herzl-Ner Tamid & East Mercer Way Performance by movement

Total Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.1
Delay / Veh (s)	2.9	0.5	0.8	3.6	4.3	2.4
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
St Del/Veh (s)	2.6	0.2	0.3	1.8	0.4	0.3
Total Stops	2	0	0	1	1	4
Stop/Veh	2.00	0.00	0.00	0.50	0.02	0.04
Travel Dist (mi)	0.2	1.6	0.0	0.4	15.4	17.6
Vehicles Entered	2	51	1	1	50	105
Vehicles Exited	1	52	1	2	55	111
Hourly Exit Rate	6	312	6	12	330	666

5: SJCC access & East Mercer Way Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Delay / Veh (s)	8.1	9.6	9.3	4.0	2.1	1.8	0.9	3.7
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
St Del/Veh (s)	6.2	6.3	6.6	0.2	0.3	0.0	0.0	2.0
Total Stops	33	1	2	0	0	0	0	36
Stop/Veh	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.32
Travel Dist (mi)	2.0	0.1	0.1	0.3	6.0	1.2	1.0	10.6
Vehicles Entered	33	1	2	1	21	29	26	113
Vehicles Exited	33	1	2	1	21	30	26	114
Hourly Exit Rate	198	6	12	6	126	180	156	684

6: SE 40th Street & East Mercer Way Performance by movement

Movement	EBL	EBT	NBT	SBR	All	
Total Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.1
Delay / Veh (s)	4.7	2.9	5.4	8.1	6.9	6.8
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
St Del/Veh (s)	3.0	2.5	2.5	2.7	3.2	2.7
Total Stops	6	1	15	25	4	51
Stop/Veh	1.00	1.00	0.94	0.93	1.00	0.94
Travel Dist (mi)	1.1	0.2	1.3	7.7	1.2	11.5
Vehicles Entered	5	1	16	28	4	54
Vehicles Exited	6	1	16	27	4	54
Hourly Exit Rate	36	6	96	162	24	324