Bradley Gasawski

From: Jackson Purcell <jackson0121@gmail.com>
Sent: Thursday, April 30, 2026 8:29 AM
To: CDS User; Bradley Gasawski
Cc: Terrence Danysh; cbeckett@prklaw.com
Subject: SE-26-00001 SEPA comment
Attachments: A-5 Easton TIA Review memo Final_with attachments.pdf

Kittitas County Community Development Services

411 N. Ruby Street, Suite 2 Ellensburg, WA 98926

Email: cds@co.kittitas.wa.us

Re: SEPA Checklist and Application SE-26-00001 – Easton Travel Center (Majestic Group LLC) – Strong Opposition and Request for Denial

Date: April 27, 2026

Dear Kittitas County Planning Staff:

I am writing as a concerned resident of Easton and on behalf of Friends of Easton to submit formal comments on the proposed Easton Travel Center truck stop at I-90 Exit 70 (Tax Parcel 778834). I strongly oppose issuance of a Determination of Non-Significance (DNS) or Mitigated DNS and request that the application be **denied** or, at minimum, that a full Environmental Impact Statement (EIS) be required.

The proposed project — a large-scale travel center with 9 truck/diesel fueling positions, 16 passenger vehicle fueling positions, 117 overnight truck parking stalls, a 3-bay tire shop, fast-food and casual restaurants, and a convenience market — would generate significant adverse environmental and transportation impacts that have not been adequately analyzed. Kittitas County's own studies demonstrate that this location is the wrong place for this intensity of development.

1. The Applicant's Traffic Impact Analysis Is Deficient and Underestimates Impacts

The SCJ Alliance Traffic Impact Analysis (2019, with 2023 addendum) severely underestimates trip generation. As detailed in the independent Transpo Group review (January 17, 2024): *Added as an attachment*

- Total PM peak-hour trips are underestimated by nearly **100%** (SCJ: 358 trips vs. Transpo: 662–710 trips even after pass-by adjustments).
- Truck trips alone are underestimated by a factor of almost **2**.
- The AM peak hour — higher than the PM — was not analyzed at all.
- Using realistic ITE Trip Generation (11th Edition) rates, the I-90 Eastbound Ramps/Lake Easton Road intersection drops to **LOS D (PM)** and **LOS F (AM)** well below Kittitas County's rural LOS C standard and WSDOT standards.

These failures mean the TIA cannot be relied upon. The project would cause or significantly contribute to failing operations at the very interchange serving the site.

2. The Project Fails Kittitas County's Mandatory Transportation Concurrency Requirements (KCC 12.10)

Kittitas County Code requires a concurrency evaluation for all development applications projected to generate more than 41 daily vehicle trips (KCC § 12.04.02.020 and Chapter 12.10). This evaluation must demonstrate that adequate transportation facilities will be available **concurrent with development** per the Growth Management Act.

The Easton Travel Center far exceeds the 41-trip threshold. The deficient SCJ TIA cannot support a valid concurrency determination. Using the more accurate Transpo analysis, the project causes the critical I-90 EB Ramps/Lake Easton Road intersection to fall below the adopted LOS C standard.

KCC 12.10.050 explicitly prohibits approval unless concurrency is met. Permits **cannot legally be issued** until a corrected evaluation with fully funded mitigation is approved.

3. The Project Directly Conflicts with Kittitas County's Own STEER I-90 Feasibility Study

The county-funded **I-90 Corridor – Easton to Cle Elum Feasibility Study (September 2024)** analyzes the exact segment beginning at Exit 70. It shows that recurring seasonal congestion originates at Lake Easton Road / Exit 70, with severe westbound slowdowns, massive diversion onto local roads, and major freight impacts. Adding a major truck stop at this precise location directly undermines the County's own corridor improvement goals.

4. Serious Risks to the Easton Wellhead Protection Area and Critical Aquifer Recharge Area

The project site lies within a **Critical Aquifer Recharge Area (CARA)** and is located in close proximity to the **Easton Wellhead Protection Area** that supplies drinking water to the Easton Water District. The proposal includes large underground fuel storage tanks (gasoline and diesel), a tire shop with potential oil and chemical storage, and a Large On-Site Sewer (LOSS) system. Any leak, spill, or failure in

containment could contaminate the aquifer that serves local residents and Lake Easton. These risks have not been adequately evaluated, especially given the project's location only 1,200 feet from Lake Easton and 1,400 feet from Silver Creek.

5. Significant Cumulative Environmental Impacts Under SEPA Have Not Been Addressed

The project would increase air emissions, 24/7 noise and light pollution, stormwater runoff, and heavy winter snow-zone operations. Combined with the threats to groundwater and the rural/recreational character near Lake Easton State Park, these impacts require a full EIS.

6. Incompatibility with Comprehensive Plan and Community Character

The scale and truck-intensive nature of the proposal is incompatible with the rural character, tourism economy, and quality of life the County seeks to protect in the Easton area near Lake Easton State Park.

Conclusion and Requested Action For the reasons above — particularly the failure to meet mandatory transportation concurrency requirements and the serious threat to the Easton Wellhead Protection Area — I respectfully request that Kittitas County:

1. Issue a **Determination of Significance** and require a full EIS.
2. Reject the deficient SCJ TIA and require a new, independent traffic study incorporating STEER I-90 data, current counts, and both AM/PM peaks.
3. **Deny the application** unless and until a valid concurrency evaluation demonstrates compliance and all significant impacts are fully mitigated.

Thank you for considering these comments. Please place them in the official record for SE-26-00001. I request notification of any hearings or decisions.

Sincerely,

Jackson Purcell

Individually and as a member and behalf of Friends of Easton

Jackson0121@gmail.com

Cc:

Terrence Danysh, PRK Law — tdanysh@prklaw.com

Charlie Beckett, PRK Law — cbeckett@prklaw.com

Jamie Carmody, MFT Law — carmody@mftlaw.com

EXHIBIT A-5

transpogroup
WHAT TRANSPORTATION CAN BE.

MEMORANDUM

Date:	January 17, 2024	**TG:**	1.23463.00, 1.23463.01
To:	Terence Danysh, Peterson Russell Kelly Livengood PLLC Audrey Clungeon, Bricklin & Newman, LLP		
From:	Mike Swenson, PE PTOE Transpo Group Linda Cuadra, Transpo Group		
Subject:	Easton Truck Stop Transportation Traffic Impact Analysis Review		

Transpo Group was retained by Peterson Russell Kelly Livengood PLLC and Bricklin & Newman, LLP to review the traffic analysis completed to date for the proposed truck stop located in Easton, WA along I-90, Eit 70 in Kittitas County. This memorandum summarizes comparisons of the transportation analysis performed to date for the proposed Easton Truck Stop with new analyses performed by Transpo Group. The transportation analysis of the proposed project was originally analyzed by SCJ Alliance in August 2019[1]. The analysis was updated in April 2023.[2]

The proposed project would include:

- 14,500 square foot building with
  - A 3,332 sf fast food restaurant with drive through ;
  - a 1,648 sf fast casual restaurant; and,
  - a convenience market occupying the remaining 9,520 sf. Based on the available documentation this facility would also include showers.
- 9 truck/diesel fueling positions.
- 16 passenger vehicle fueling positions.
- A 3 bay truck tire shop with limited truck services.
- 117 multiple hour/overnight truck parking stalls.
- 3 RV parking stalls.
- Parking for 80 passenger vehicles (located adjacent to the convenience mart).

The project would have two driveways. The north driveway would result in a fourth leg of the intersection of Lake Easton Road/W Sparks Road. All vehicles and trucks must enter the site at this driveway. Vehicles can also leave the site via this intersection. A second exit-only driveway (South Driveway) is located south along W Sparks Road.

Transpo reviewed the assumptions and analyses performed in these earlier studies. This memorandum addresses issues related to the 2019 and 2023 analyses, presents new trip generation, traffic analysis, and traffic operations, and compares this information to the earlier studies.

[1] Traffic Impact Analysis, Love's Truck Stop, Easton, Washington, SCJ Alliance Consulting Services, August 2019.

[2] Easton Truck Stop, Traffic Impact Analysis Addendum, SCJ Alliance Consulting Services, April 24, 2023.

Key Findings

The results of Transpo's review and additional analysis identified the following concerns regarding the analysis prepare to date.

1. Trip Generation estimates for the project were underestimated
    a. Total truck traffic was underestimated by a factor of almost 2.
    b. The total passenger vehicle traffic was underestimated
2. The original and updated studies did not address AM peak hour conditions. Transpo's AM peak hour trip generation analysis shows higher AM peak hour traffic levels than found in the PM peak hour.
3. New traffic data were not collected in 2023. Transpo collected new data and found higher volumes than projected by SCJ Alliance.
4. Due to the underestimates in the trip generation, under projection of existing volumes, and the lack of analysis of AM peak hour operations, the earlier traffic analyses did not correctly analyze future traffic operations at the study area intersections.
5. The updated traffic analysis show the need for mitigation at the I-90 EB Ramps/Lake Easton Road intersection.

The following provides additional documentation supporting each of the items noted above.

Trip Generation Estimates for the Project Were Underestimated

PM Peak Hour Trip Generation by Vehicle Type and Land Use

Table 1 compares PM peak hour trip generation estimated by Transpo with the PM peak hour trip generation estimated by SCJ Alliance. Note that the trip generation used in the April 2023 study is the same as that used in the August 2019 study. The table shows trip generation broken down by land use type.

The table is broken on the left into three general categories. The first is "Truck Trips". These are trip generation calculations that are specific to commercial vehicles. The second is "Passenger Vehicle Trips". These are calculations that are specific to passenger vehicles, and these calculations do not include truck trips. The third category of "Truck + Passenger Trips" calculates both types of trips for two of the land uses. Both truck drivers and vehicle drivers would make use of those land uses.

ITE recognizes that some land uses have primary trips (trips headed only to this land use) and pass-by trips (trips headed elsewhere on an adjacent street that turn in to this land use on the way elsewhere) For this section, we will deal only with primary trips. Pass-by trips are discussed later.

The table rows are labeled A to F to facilitate the text discussion of those rows.

Truck Stop Land Use - Trucks. Row A shows the trip generation for the Truck Stop use of the site. Transpo referenced ITE's *Trip Generation, 11th Edition* for Truck Stop (Land Use 950). For that land use, truck trips are estimated per truck fueling position. The proposed project includes 9 truck fueling positions. Details in *Trip Generation* show that the trip generation rates are based on 7 PM peak hour studies. These studies were conducted in Colorado, Florida, Tennessee, and Virginia in the 2000s and 2010s. ITE notes that the trip generation rates are for trucks ONLY; other sources must be used to determine passenger vehicle trips. During the PM peak hour, the average rate is 15.42 truck trips per fueling position.

Table 1. PM Peak Hour Trip Generation Comparison – SCJ vs Transpo

Land Use	Transpo Group					SCJ Alliance (2019 & 2023 Studies)				
	Source[1]	Rate	In	Out	Total	Source[1]	Rate	In	Out	Total
Truck Trips										
A. Truck Stop (LU 950)	ITE 11th Ed.	15.42	74	65	139	Fontana CA Study	8.22	39	35	74
B. Tire Store (LU 848)	60% of ITE 11th Ed.	2.05	3	3	6	60% of ITE 10th Ed.	2.05	3	3	6
Total Truck Trips			***77***	***68***	***145***			***42***	***38***	***80***
Passenger Vehicle Trips										
C. Conv Store/Gas Station (LU 945)	ITE 11th Ed.	26.90	215	215	430	unknown	14.51	75	67	142
D. Tire Store (LU 848)	40% of ITE 11th Ed.	1.37	2	2	4	40% of ITE 10th Ed.	1.37	1	3	4
Total Passenger Car Trips			***217***	***217***	***434***			***76***	***70***	***146***
Truck+Passenger Trips										
E. Fast Casual Restaurant (LU 930)	ITE 11th Ed.	12.55	12	9	21	ITE 10th Ed.	14.13	13	10	23
F. Fast Food Rest w/ Drive-Through (LU 934)	ITE 11th Ed.	33.03	57	53	110	ITE 10th Ed.	32.67	57	52	109
Total Shared Use Trips			***69***	***62***	***131***			***70***	***62***	***132***
Total Trips					***710***					***358***

Notes:
1. ITE 11th Ed. = ITE Trip Generation Manual (11th Edition, 2021). ITE 10th Ed. = ITE Trip Generation Manual (10th Edition, 2017).

SCJ Alliance used trip generation rates for truck stops from a study conducted for the City Fontana, California, in August 2003.[3,4] The trip generation rates from that study indicate a trip generation rate of 8.22 trucks per fueling position. However, there are issues with the applicability of this study. Fontana is an urban setting with dense development. There are many fueling station opportunities along its major roadways, which include I-10, SR-210, I-15 and I-215. But the proposed Easton truck stop location is rural, with only distant opportunities for truck fueling or overnight stays (Cle Elum, Snoqualmie Summit). Further, the City of Fontana study was based on only 2 independent studies, as compared to 7 for ITE. The City of Fontana study data were collected prior to 2003, while the ITE studies were collected later. Finally, it is not completely clear how the traffic data were collected.[5] Therefore, it would have been more appropriate and conservative to use ITE's trip generation for LU 950.

The trip generation comparison table shows significantly more PM peak hour trips in Transpo's analysis than in the previous studies. Transpo projected a total of 139 PM peak hour trips for just the Truck Stop Land use, compared to the 74 projected by SCJ Alliance.

[3] *Truck Trip Generation Study*, City of Fontana, County of San Bernadino, State of California, August 2003. URL: Fontana Truck Generation Study.pdf (tampabayfreight.com).

[4] ITE had little trip generation information related to truck uses at that time. That appears to have been the impetus for the August 2003 report.

[5] That study includes trip generation for other truck-related land uses, such as warehouses, industrial uses, and truck sales facilities. The text of the study states, on page 5: "Manual traffic counts were taken for each site driveway, *except two truck stops*." [emphasis added. There were only two truck stops studied]. However, the remainder of the text is unclear as to how the data for the truck stops were collected. One can infer that these were from ADT counts on the adjacent roadways, but there does not seem to be a definitive methodology.

Tire Store (Trucks) Land Use (Trucks). Row B shows trip generation related to just the Tire Store (Land Use 848). Both Transpo and SCJ Alliance used ITE *Trip Generation* rates for this land use.[6] The number of associated trips is the same – 6 PM peak hour trips.

Convenience Store/Gas Station (Passenger Vehicles). Row C shows trip generation for the passenger vehicles related to this land use. Transpo estimated PM peak hour trips for the convenience Store/Gas Station Land use using ITE's *Trip Generation, 11th edition* rate for that land use, termed LU 945. ITE shows an average rate based on vehicle fueling positions (e.g. the number of vehicles that can fuel simultaneously). The ITE average trip generation rate is 26.90 per fueling position. Transpo's calculations show 430 PM peak hour trips for this land use.

The source of trip generation in the SCJ Alliance studies is unclear. Appendix B of the August 2019 study shows a summary trip generation table. This is shown below. The yellow highlighted areas show a trip generation rate for Truck Stop LU 950. However, the SCJ Alliance report text says they relied on the City of Fontana study for a trip generation rate. That rate was 8.22 per pump. The provenance of the 22.73 rate is unknown. It does not appear anywhere in the City of Fontana study.

SCJ Alliance's trip generation table (2019 study) shows a calculation of 216 total trips in that row. The following row shows the trip generation using the 8.22 per pump rate, or 74 trips (green highlight). The next row shows, in green, 142 trips; this is equivalent to 216 – 74.

The blue highlighted areas indicate that, for Love's Travel Stop passenger cars, ITE *Trip Generation* LU 950 (Truck Stop) was used. However, that manual clearly states that LU 950 trip generation rate apply *only* to trucks, and specifically not to passenger vehicles. There is no Trip Rate given in that row, but volumes are shown.

Note that the green highlighted cells show those data used to reach a total trip generation of 358 trips in the SCJ Alliance work. That is for the entire project, not just the truck stop.

SCJ ALLIANCE
CONSULTING SERVICES

Easton Love's Travel Stop

Trip Generation

PM Peak Hour Trip Generation

Site Plan Description	LUC	ITE Description	Variable	Value	Trip Rate	Distribution		Total Trips		
						In	Out	In	Out	Total
Fueling/Convenience Market - Total	*950*	*Truck Stop*	*1,000-sf gfa*	*9.500*	*22.73*	*53%*	*47%*	*114*	*102*	*216*
Love's Travel Stop - Trucks	950	Truck Stop	Pumps	9.000	8.22	53%	47%	39	35	74
Love's Travel Stop - Passenger Cars	950	Truck Stop	1,000-sf gfa			53%	47%	75	67	142
Three Bay Tire Shop - Total	*848*	*Tire Store*	*Service Bay*	*3.0*	*3.42*	*42%*	*58%*	*4*	*6*	*10*
Three Bay Tire Shop - Trucks	848	Tire Store	Service Bay		60%	42%	58%	3	3	6
Three Bay Tire Shop - Passenger Cars	848	Tire Store	Service Bay		40%	42%	58%	1	3	4
Counter Service Restaurant	930	Fast Casual Restaurant	1,000-sf gfa	1.648	14.13	55%	45%	13	10	23
Fast Food Restaurant with Drive-Through Window	934	Fast Food Restaurant with Drive	1,000-sf gfa	3.332	32.67	52%	48%	57	52	109
Truck Stop Total						**52.5%**	**47.5%**	**188**	**170**	**358**

In any event, SCJ Alliance's PM peak hour trips for passenger vehicles for convenience store/gas station land use are shown as 142 trips. This is significantly less than Transpo's calculation of 430 trips.

Tire Store Land Use (Passenger Vehicles). Row D shows trip generation related to passenger vehicles using the Tire Store (Land Use 848). Both Transpo and SCJ Alliance used ITE *Trip Generation* for this land use.[7] The number of associated trips is the same, at 4 PM peak hour trips.

[6] Although SCJ Alliance used the 10th edition and Transpo, the 11th edition.

[7] Although SCJ Alliance used the 10th edition and Transpo, the 11th edition.

Fast Casual Restaurant (LU 930) (Trucks and Passenger Vehicles). Row E shows trip generation for this land use. The trip generation rate of 12.55/thousand square feet was applied to a 1,648 square foot facility. Transpo estimates 21 PM peak hour trips for this use.

The SCJ Alliance studies used a different trip generation rate of 14.13/thousand square feet. This was the rate in ITE's *Trip Generation, 10th edition*, which is the version used in SCJ Alliance's work. While this version was not available at the time of the 2019 study, it was available at the time of the April 2023 study and should have been used. Applied to the 1,648 square foot restaurant results in 23 PM peak hour trips for Fast Casual Restaurant.

The Transpo and SCJ Alliance trip generation results are very close.

Fast Food Restaurant with Drive-Through (LU 934) (Trucks and Passenger Vehicles). This land use is shown in Row F. Transpo applied a PM peak hour rate of 33.03/thousand square feet. With 3,332 square feet, this results in a projected trip generation of 110 trips.

The SCJ Alliance studies used a different trip generation rate of 32.67/1,000 square feet. This was the rate in ITE's Trip Generation, 10th edition, which is the version used in SCJ Alliance's work. Applied to the 3,332 square foot restaurant results in 109 PM peak hour trips for Fast Casual Restaurant.

The Transpo and SCJ Alliance trip generation for Fast Food Restaurant with Drive-Through are essentially the same.

Summary. Transpo projects a total of 710 total trips for the proposed land uses, compared to 358 projected by the SCJ Alliance studies. The subsequent SCJ Alliance traffic operations analyses relied on significantly under-forecast traffic levels.

AM Peak Hour Conditions

The earlier studies did not consider or evaluate the AM peak hour conditions. The trip generation analysis performed by Transpo showed that the AM peak hour trip generation is higher than the PM peak hour, with 790 AM peak hour trips. This time period should have also been analyzed. The AM peak hour trip generation is shown in Table 2.

Table 2. AM Peak Hour Trip Generation – Transpo

		Transpo Group			
Land Use	**Source[1]**	**Rate**	**In**	**Out**	**Total**
Truck Trips					
A. Truck Stop (LU 950)	ITE 11th Ed.	13.97	62	64	126
B. Tire Store (LU 848)	60% of ITE 11th Ed.	1.26	3	1	4
Total Truck Trips			***65***	***65***	***130***
Passenger Vehicle Trips					
C. Conv Store/Gas Station (LU 945)	ITE 11th Ed.	31.60	253	253	506
D. Tire Store (LU 848)	40% of ITE 11th Ed.	0.84	2	1	3
Total Passenger Car Trips			***255***	***254***	***509***
Truck + Passenger Trips					
E. Fast Casual Restaurant (LU 930)	ITE 11th Ed.	1.43	1	1	2
F. Fast Food Rest w/ Drive-Through (LU 934)	ITE 11th Ed.	33.03	76	73	149
Total Shared Use Trips			***77***	***74***	***151***
Total Trips					***790***

Notes:
1. ITE 11th Ed. = ITE Trip Generation Manual (11th Edition, 2021).

Pass-by and Diverted Linked Trips

PM Peak Pass-by trips. For passenger vehicles, it is reasonable that a percentage of trips to the site would be considered "pass-by" trips. Pass-by trips are a component of trip generation which reflect traffic already on streets in the vicinity of the project site. Those drivers would then visit the project while "passing by" the site on the way to a final destination. There are some residents and visitors to the study area that begin or end their vehicles trips along W Sparks Road, Lake Easton Road, etc. If those drivers are headed elsewhere but make a stop in at the truck stop facility, those would be pass-by trips. For instance, a vehicle originally turning left from West Sparks Road to Lake Easton Road might instead turn right into the project site to get gas, buy food, etc. That means a "trip" would be moved from the original left turn to become a right turn into the site. That same vehicle would then be shown leaving the driveway as a through trip onto Lake Easton Road. The driver enters the site, leaves the site, then continues on the original, intended route.

The area has limited housing, schools, and other businesses, so the amount of potential pass-by trips would be lower than in more densely populated areas. SCJ Alliance used 8% in their study for some uses and Transpo also used this percentage for several of the land uses.

Table 3 shows the original trip generation numbers from Table 1 and then the number of pass-by trips for each land use. SCJ Alliance did not use pass-by for the Tire Store land use; Transpo used the 25% recommended by ITE for this land use. However, the numbers are very small and likely not important to the analysis outcome (-4 trips for Transpo, 0 for SCJ Alliance)

The pass-by reduction for the Fast Casual Restaurant (LU 930) and Fast Food Restaurant with Drive-Through (LU 934) are essentially the same for both the Transpo and SCJ Alliance projections. Transpo's pass-by numbers for the Convenience Store/Gas Station are higher than that for SCJ Alliance (-34 trips and -11, respectively). The pass-by rates are a percentage of the total trips. Since Transpo forecast higher PM peak hour trips for this land use, the number of pass-by trips is also greater.

Table 3. PM Peak Hour Trip Generation with Pass-by Trips Deducted

Land Use	Transpo Group			SCJ Alliance		
	Peak Trips	Less Pass-By	Total Trips	Peak Trips	Less Pass-By	Total Trips
Truck Trips						
A. Truck Stop (LU 950)	139	n/a	139	74	n/a	74
B. Tire Store (LU 848)	6	-2	4	6	n/a	6
Total Truck Trips			***143***			***80***
Passenger Vehicle Trips						
C. Convenience Store/Gas Station (GSF 5.5-10k) (LU 945)	430	-34	396	142	-11	131
D. Tire Store (LU 848)	4	-2	2	4	n/a	4
Total Passenger Car Trips			***398***			***135***
Trucks + Passenger Trips						
E. Fast Casual Restaurant (LU 930)	21	-2	19	23	-2	21
F. Fast Food Restaurant with Drive-Through (LU 934)	110	-8	102	109	-9	100
Total Shared Use Trips			***121***			***121***
Total Trips			***662***			***336***

AM Peak Pass-by Trips. Table 4 shows the original trip generation numbers for the AM peak from Table 2 and then the number of pass-by trips for each land use. SCJ Alliance did not project AM peak hour traffic, so there is no comparison of pass-by trips here.

Table 4. AM Peak Hour Trip Generation with Pass-by Trips Deducted

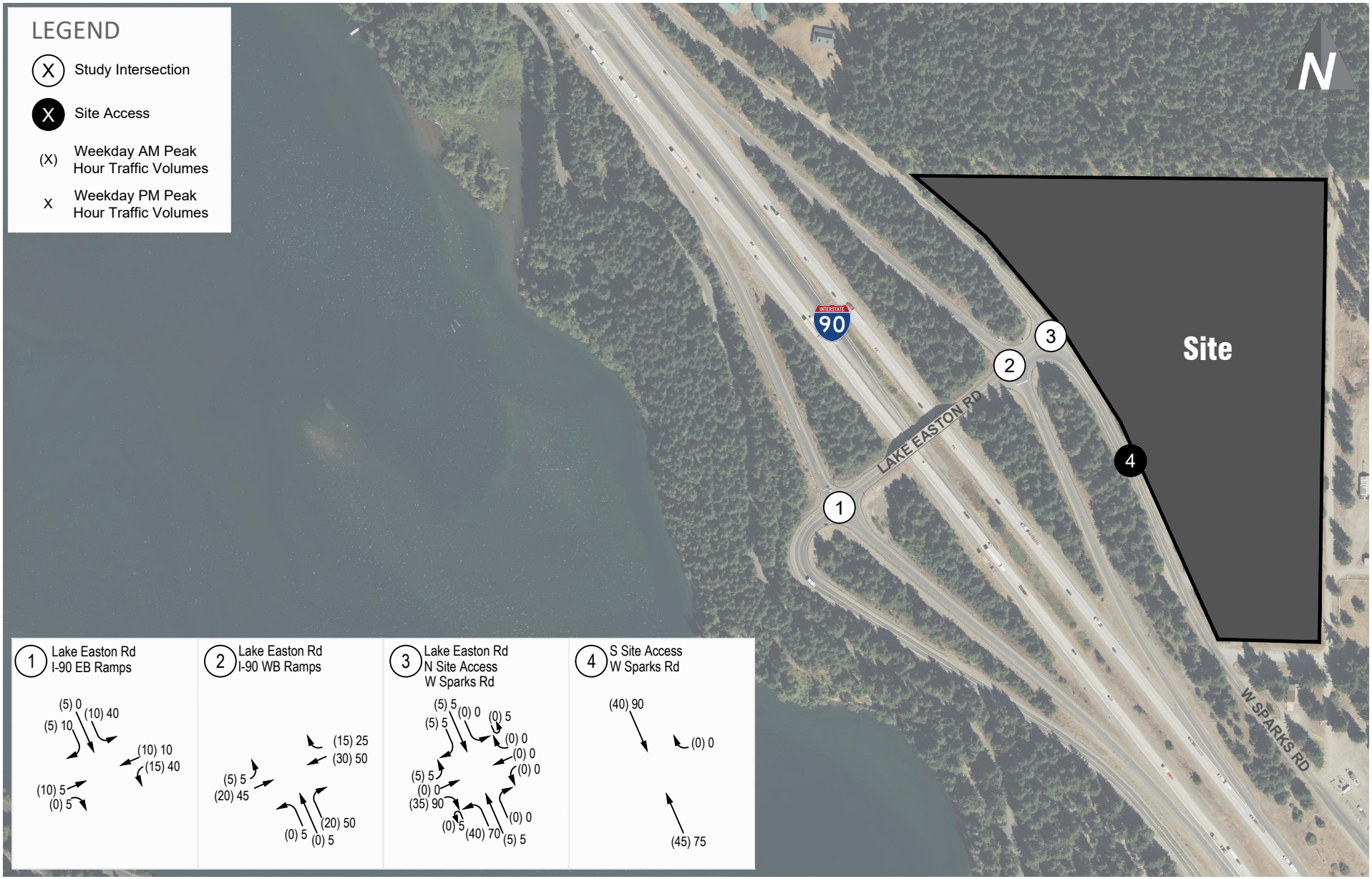
Land Use	Transpo Group		
	Peak Trips	Less Pass-By	Total Trips
Truck Trips			
A. Truck Stop (LU 950)	126	n/a	126
B. Tire Store (LU 848)	4	n/a	4
Total Truck Trips			***130***
Passenger Vehicle Trips			
C. Convenience Store/Gas Station (GSF 5.5-10k) (LU 945)	506	-40	466
D. Tire Store (LU 848)	3	n/a	3
Total Passenger Car Trips			***469***
Trucks + Passenger Trips			
E. Fast Casual Restaurant (LU 930)	2	0	2
F. Fast Food Restaurant with Drive-Through (LU 934)	149	-12	137
Total Shared Use Trips			***139***
Total Trips			***738***

New Traffic Counts and Future With-Project Traffic Volumes

Existing Traffic Volumes. SCJ Alliance collected turning movement count data at the study intersections in 2019. For the 2023 study, those volumes were increased by applying a 2% annual traffic growth. The original SCJ Alliance data were collected in March 2019.

Transpo collected new data in October 2023. These data showed greater volumes at all study intersections compared to those in the SCJ Alliance studies. Transpo's existing condition traffic volumes range from 21% to 45% higher than the volumes used for the future-without project volumes shown in Figure 2 the SCJ Alliance April 2023 study (that study did not show existing volumes, nor were the level of service worksheets provided). This is reasonable, given that traffic on I-90 in the study area is higher in the summer and fall than in the spring.[8] Figure 1 shows the AM and PM peak hour volumes from data collected by Transpo.

[8] Washington State Department of Transportation Traffic Count Data Base System.



Existing AM and PM Peak Hour Traffic Volumes

FIGURE 1

Easton TIA Review

transpogroup

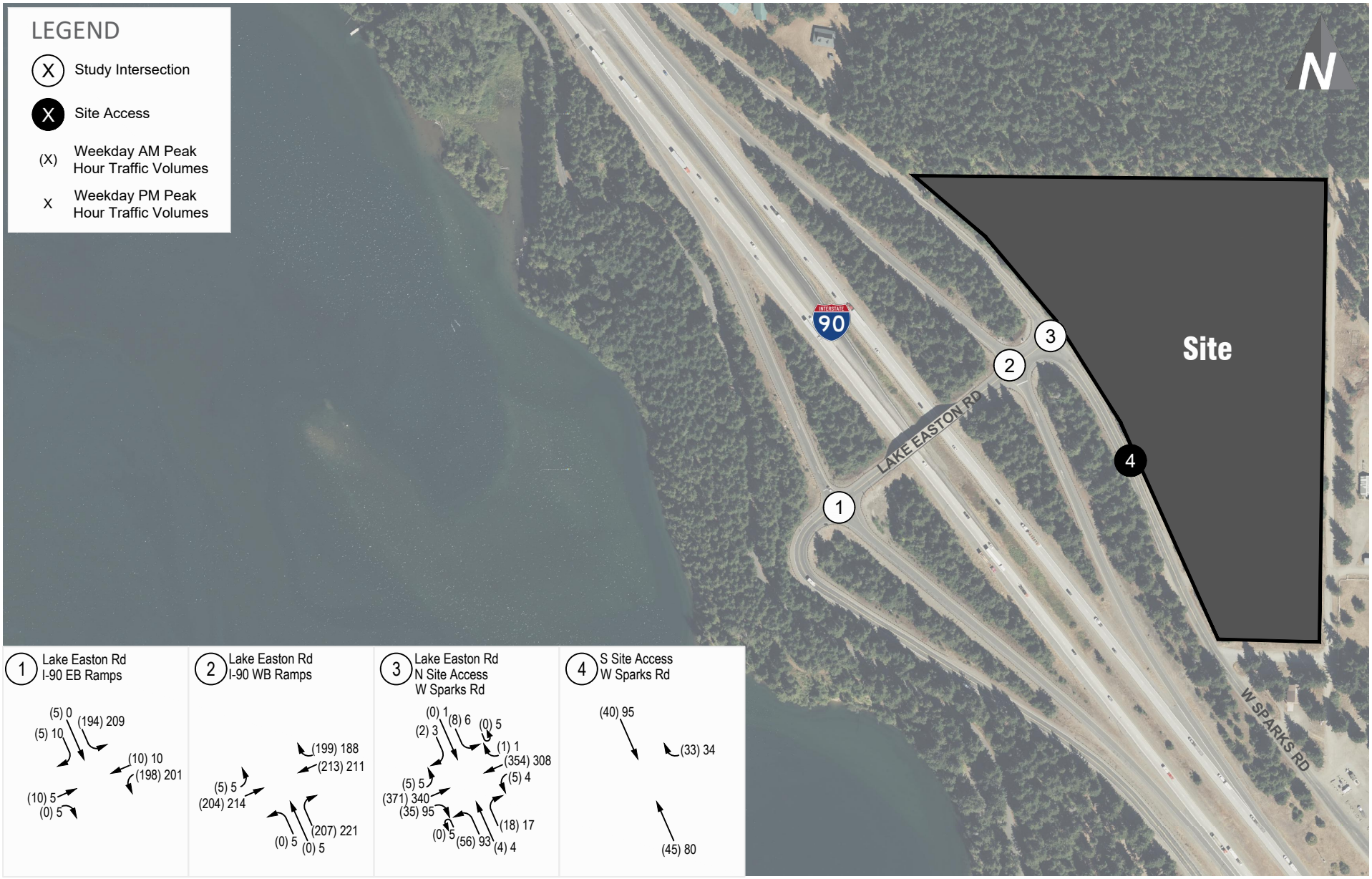
Future With-Project Volumes. Both Transpo and SCJ Alliance added two years' worth of background traffic growth to the existing volumes to forecast future without-project volumes (2025, the project opening year). Then, the trips associated with the proposed project were added to determine total with-project turning movement volumes. Table 5 summarizes total intersection volumes projected by SCJ Alliance and Transpo. The difference in traffic volumes reflect the updated counts as well as the increases in site trip generation forecasts. As shown in Table 5, as a result of updates to these two areas, the Transpo forecasts are 62% to 91% higher overall in with-project conditions.

Figure 2 illustrates the AM and PM peak hour volumes for with-project conditions as projected by Transpo.

Table 5. PM Peak Hour Total Intersection Entering Volumes Comparison, With-Project Conditions

Intersection	SCJ Alliance Entering Volumes[1]	Transpo Entering Volumes	Difference Transpo and SCJ
Lake Easton Rd/I-90 EB Ramps	271	440	+62%
Lake Easton Rd/I-90 WB Ramps	444	849	+91%
Lake Easton Rd/W Sparks Rd	474	882	+86%

2. From SCJ Alliance Study April 2023, Figure 3



Future (2025) With-Project AM and PM Peak Hour Traffic Volumes

FIGURE 2

Easton TIA Review

transpogroup

Traffic Operations – Level of Service

For the intersections of I-90 Eastbound Ramps/Lake East Road and I-90 Westbound Ramps/Lake Easton Road, analyses are based on the *Highway Capacity Manual* (HCM) 7th Edition, Transportation Research Board methodology using Synchro software version 12. Table 4 shows the SCJ Alliance (2023 study) with-project operational conditions compared to the Transpo with-project operational conditions.[9] Detailed traffic operations worksheets are included in Appendix A.

The site driveway intersection (Lake Easton Road/W Sparks Road) is currently a T intersection, with stop sign controls on the two legs of W Sparks Road. The project will create a fourth leg of this intersection, the project North Driveway. That leg will also be stop-sign controlled. Traffic travelling northeast on Lake Easton Road will not have a stop sign. Based on the proposed configuration, standard analysis methodology discussed above cannot be applied at this intersection. For this intersection, SimTraffic was used to estimate the delay for each approach to the intersection.

The operational characteristics of an intersection are determined by calculating the intersection level of service (LOS). The study intersections all have stop-sign controls. For these intersections, LOS and delay are reported for the worst movement. Traffic operations and average vehicle delay can be described qualitatively with a range of levels of service (LOS A through LOS F), with LOS A indicating free-flowing traffic and LOS F indicating extreme congestion and long vehicle delays.

The intersection of W Sparks Road/South Driveway is not shown in the table. Although not shown in the table, the technical analysis shows it would operate at LOS A in both SCJ Alliance and Transpo analyses. Exiting-only traffic is allowed from the site at the South Driveway.

Table 4. Future With-Project LOS - Comparison

	SCJ Alliance			Transpo		
Intersection	**LOS[1]**	**Delay[2]**	**WM[4]**	**LOS**	**Delay**	**V/C or WM**
Weekday PM Peak Hour						
I-90 EB Ramps/Lake Easton Rd	B	11.9	SEB[5]	D	34.1	SEB
I-90 WB Ramps/Lake Easton Rd	B	10.0	NWB[6]	B	12.6	NWB
Lake Easton Road/W Sparks Rd/North Driveway	A	7.9	SEB[7]	B	13.8	SEB
Weekday AM Peak Hour						
I-90 EB Ramps/Lake Easton Rd	n/a	n/a	n/a	F	175.8	SEB
I-90 WB Ramps/Lake Easton Rd	n/a	n/a	n/a	B	12.4	NWB
Lake Easton Road/W Sparks Rd/North Driveway	n/a	n/a	n/a	B	10.6	NWB

1. Level of service, based on 2010 Highway Capacity Manual methodology.
2. Average delay in seconds per vehicle.
3. Volume-to-capacity ratio reported for signalized intersections.
4. Worst movement reported for unsignalized intersections.
5. SEB indicates vehicles turning from the I-90 EB off-ramp to Lake Easton Road (or travelling straight through).
6. NEB indicates vehicles turning from the I-90 WB off-ramp to Lake Easton Road (or travelling straight through).
7. SEB here indicates vehicles travelling southeast on W Sparks Road.

[9] There would be a small increase in traffic in 2025 without the project. The differences are very small, so a separate analysis is not included in this table. Those small increases in background traffic are included in the with-project analyses.

Mitigation

Transpo's analysis shows that the intersection of I-90 EB Ramps/Lake Easton Road would operate at LOS D in the PM peak hour and LOS F during the AM peak hour. Both Kittitas County and the Washington State Department of Transportation (WSDOT) use LOS C as their standards in this area. Therefore, this intersection would operate below acceptable levels and would require mitigation.

Conclusion and Recommendations

Based on the results of the analysis we have identified the following issues with the work completed to date:

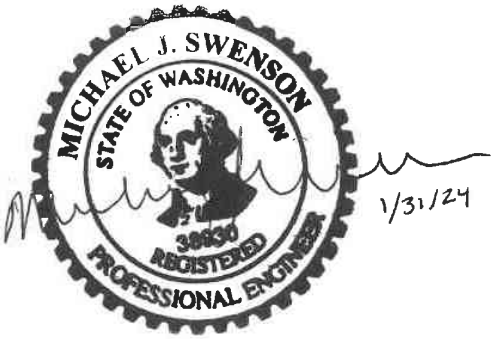
1. Trip Generation estimates for the project were underestimated
    a. Total truck traffic was underestimated by a factor of almost 2.
    b. The total passenger vehicle traffic was underestimated
    c. New traffic data were not collected in 2023. Transpo collected new data and found higher volumes than projected by SCJ Alliance.
2. The original and updated studies did not address AM peak hour conditions. Transpo's AM peak hour trip generation analysis shows higher AM peak hour traffic levels than found in the PM peak hour.
3. New traffic data were not collected in 2023. Transpo collected new data and found higher volumes than projected by SCJ Alliance.
4. Due to the underestimates in the trip generation, under projection of existing volumes, and the lack of analysis of AM peak hour operations, the earlier traffic analyses did not correctly analyze future traffic operations at the study area intersections.
5. The updated traffic analysis shows the need for mitigation at the I-90 EB Ramps/Lake Easton Road intersection.

SCJ Alliance underestimate existing volumes, and underestimated the traffic associated with the proposed project. This led to errors in the level of service calculations. Those studies also did not analyze the AM peak hour, which has higher project volumes than the PM peak hour. The intersection of I-90 EB Ramps/Lake Easton Road would operate at LOS F in the AM peak hour and LOS D in the PM peak hour. Both Kittitas County and WSDOT require LOS C or better in this area. The intersection will require mitigation.

Mitigating that intersection with higher level traffic controls, such as a roundabout or signal, may affect operations at the other study intersections. Both roundabouts and signals tend to "meter" traffic. Gaps between vehicles may decrease travelling northeast toward the project site. This may affect the level of service at the other two intersections on Lake Easton Road.

Transpo recommends the following:

1. Collection of new data, during the summer, which has the highest volumes in the study area. The data should consider Friday or Sunday conditions as these have the highest overall volumes in the area based on WSDOT data.
2. Updating the trip generation for the project using ITE *Trip Generation 11th edition* trip generation rates, not the 10th edition, as that was the current version at the time of the amended traffic study was prepared.
3. Utilizing ITE *Trip Generation 11th edition* trip generation rates for Truck Stop (LU 950) for that land use.
4. Reanalyzing traffic operations based on the above steps.
5. Providing mitigation as necessary so all intersections operate at acceptable levels of service.



Attachment A Level of Service Worksheets

Intersection	
Int Delay, s/veh	88.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	194	5	5	0	0	0	0	10	0	198	10	0
Future Vol, veh/h	194	5	5	0	0	0	0	10	0	198	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	-5	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	63	63	63	63	63	63	63	63	63
Heavy Vehicles, %	26	26	26	0	0	0	0	0	0	24	24	24
Mvmt Flow	308	8	8	0	0	0	0	16	0	314	16	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	660	660	16	-	0	0	16	0	0
Stage 1	644	644	-	-	-	-	-	-	-
Stage 2	16	16	-	-	-	-	-	-	-
Critical Hdwy	7.66	7.76	6.96	-	-	-	4.34	-	-
Critical Hdwy Stg 1	6.66	6.76	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.66	6.76	-	-	-	-	-	-	-
Follow-up Hdwy	3.734	4.234	3.534	-	-	-	2.416	-	-
Pot Cap-1 Maneuver	327	295	996	0	-	-	1470	-	0
Stage 1	401	362	-	0	-	-	-	-	0
Stage 2	944	833	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 256	0	996	-	-	-	1470	-	-
Mov Cap-2 Maneuver	~ 256	0	-	-	-	-	-	-	-
Stage 1	401	0	-	-	-	-	-	-	-
Stage 2	740	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	175.82	0	7.72
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	261	1457	-
HCM Lane V/C Ratio	-	-	1.24	0.214	-
HCM Control Delay (s/veh)	-	-	175.8	8.1	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	15.6	0.8	-

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

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	207	5	204	0	0	213	199
Future Vol, veh/h	0	0	0	0	0	207	5	204	0	0	213	199
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-5	-	-	5	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	25	25	25	24	24	24	24	24	24
Mvmt Flow	0	0	0	0	0	241	6	237	0	0	248	231

Major/Minor	Minor1			Major1			Major2			
Conflicting Flow All	497	728	237	479	0	-	-	-	0
Stage 1	249	249	-	-	-	-	-	-	-
Stage 2	248	479	-	-	-	-	-	-	-
Critical Hdwy	7.65	7.75	6.95	4.34	-	-	-	-	-
Critical Hdwy Stg 1	6.65	6.75	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.65	6.75	-	-	-	-	-	-	-
Follow-up Hdwy	3.725	4.225	3.525	2.416	-	-	-	-	-
Pot Cap-1 Maneuver	430	264	724	978	-	0	0	-	-
Stage 1	692	616	-	-	-	0	0	-	-
Stage 2	693	454	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	427	0	724	978	-	-	-	-	-
Mov Cap-2 Maneuver	427	0	-	-	-	-	-	-	-
Stage 1	688	0	-	-	-	-	-	-	-
Stage 2	693	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.43	0.21	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	43	-	724	-	-
HCM Lane V/C Ratio	0.006	-	0.332	-	-
HCM Control Delay (s/veh)	8.7	0	12.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	1.5	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	40	45	0	0	33
Future Vol, veh/h	0	40	45	0	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	63	63	63	63	63	63
Heavy Vehicles, %	2	2	45	45	100	100
Mvmt Flow	0	63	71	0	0	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	135	71
Stage 1	-	-	-	-	71	-
Stage 2	-	-	-	-	63	-
Critical Hdwy	-	-	-	-	7.4	7.2
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	-	-	-	-	4.4	4.2
Pot Cap-1 Maneuver	0	-	-	0	673	774
Stage 1	0	-	-	0	753	-
Stage 2	0	-	-	0	760	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	673	774
Mov Cap-2 Maneuver	-	-	-	-	673	-
Stage 1	-	-	-	-	753	-
Stage 2	-	-	-	-	760	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	9.99
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	774
HCM Lane V/C Ratio	-	-	0.068
HCM Control Delay (s/veh)	-	-	10
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.2

1: Lake Easton Rd & I-90 EB Off Ramp/I-90 EB On Ramp Performance by movement

Movement	EBL	EBT	EBR	NBT	SBL	SBT	All
Denied Del/Veh (s)	0.3	0.3	0.2	0.1	0.0	0.0	0.1
Total Del/Veh (s)	12.7	19.3	7.3	0.5	3.1	1.4	7.3
Vehicles Entered	189	6	6	11	197	31	440
Vehicles Exited	188	6	6	11	197	31	439
Hourly Exit Rate	188	6	6	11	197	31	439
Input Volume	194	5	5	10	198	36	447
% of Volume	97	120	120	110	100	87	98

2: Lake Easton Rd & I-90 WB On Ramp/I-90 WB Off Ramp Performance by movement

Movement	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.3	0.0	0.0	0.2	0.2	0.2
Total Del/Veh (s)	7.6	4.9	2.2	1.2	0.9	2.9
Vehicles Entered	209	4	220	280	199	912
Vehicles Exited	208	4	220	280	198	910
Hourly Exit Rate	208	4	220	280	198	910
Input Volume	207	5	224	287	199	922
% of Volume	100	76	98	98	100	99

3: Lake Easton Rd/N Site Driveway & W Sparks Rd Performance by movement

Movement	EBL	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.1
Total Del/Veh (s)	6.4	6.3	10.6	2.3	6.9	0.4	1.0	0.3	8.7	5.6	4.5	3.7
Vehicles Entered	7	2	54	22	19	4	372	37	6	351	2	876
Vehicles Exited	8	2	54	22	19	4	372	37	6	350	2	876
Hourly Exit Rate	8	2	54	22	19	4	372	37	6	350	2	876
Input Volume	8	2	56	22	18	5	375	35	5	354	1	882
% of Volume	97	100	96	100	107	76	99	105	114	99	200	99

4: W Sparks Rd & S Site Driveway Performance by movement

Movement	EBT	WBT	SBR	All
Denied Del/Veh (s)	0.0	0.1	0.2	0.1
Total Del/Veh (s)	0.2	0.2	2.6	0.8
Vehicles Entered	50	44	33	127
Vehicles Exited	50	44	33	127
Hourly Exit Rate	50	44	33	127
Input Volume	48	45	33	126
% of Volume	104	98	99	101

Total Network Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	9.5
Vehicles Entered	1017
Vehicles Exited	1011
Hourly Exit Rate	1011
Input Volume	3246
% of Volume	31

Intersection: 1: Lake Easton Rd & I-90 EB Off Ramp/I-90 EB On Ramp

Movement	EB	SB
Directions Served	LTR	LT
Maximum Queue (ft)	217	58
Average Queue (ft)	68	4
95th Queue (ft)	152	28
Link Distance (ft)	1298	557
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Lake Easton Rd & I-90 WB On Ramp/I-90 WB Off Ramp

Movement	WB	NB	SB
Directions Served	LTR	LT	TR
Maximum Queue (ft)	165	89	9
Average Queue (ft)	62	10	0
95th Queue (ft)	113	49	6
Link Distance (ft)	1490	557	74
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Lake Easton Rd/N Site Driveway & W Sparks Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	40	113	61	146
Average Queue (ft)	7	51	6	74
95th Queue (ft)	26	92	34	118
Link Distance (ft)	1366	444	74	495
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: W Sparks Rd & S Site Driveway

Movement	SB
Directions Served	LR
Maximum Queue (ft)	104
Average Queue (ft)	38
95th Queue (ft)	88
Link Distance (ft)	244
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection	
Int Delay, s/veh	20.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	209	0	10	0	0	0	0	5	5	201	10	0
Future Vol, veh/h	209	0	10	0	0	0	0	5	5	201	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	-5	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	29	29	29	0	0	0	13	13	13	24	24	24
Mvmt Flow	246	0	12	0	0	0	0	6	6	236	12	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	491	496	12	-	0	0	12	0	0
Stage 1	485	485	-	-	-	-	-	-	-
Stage 2	6	12	-	-	-	-	-	-	-
Critical Hdwy	7.69	7.79	6.99	-	-	-	4.34	-	-
Critical Hdwy Stg 1	6.69	6.79	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.69	6.79	-	-	-	-	-	-	-
Follow-up Hdwy	3.761	4.261	3.561	-	-	-	2.416	-	-
Pot Cap-1 Maneuver	429	382	994	0	-	-	1475	-	0
Stage 1	496	445	-	0	-	-	-	-	0
Stage 2	950	832	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	360	0	994	-	-	-	1475	-	-
Mov Cap-2 Maneuver	360	0	-	-	-	-	-	-	-
Stage 1	496	0	-	-	-	-	-	-	-
Stage 2	796	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	34.14	0	7.53
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	371	1465	-
HCM Lane V/C Ratio	-	-	0.695	0.16	-
HCM Control Delay (s/veh)	-	-	34.1	7.9	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	5	0.6	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	5	5	221	5	214	0	0	211	188
Future Vol, veh/h	0	0	0	5	5	221	5	214	0	0	211	188
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-5	-	-	5	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	25	25	25	25	25	25	25	25	25
Mvmt Flow	0	0	0	5	5	238	5	230	0	0	227	202

Major/Minor	Minor1		Major1		Major2				
Conflicting Flow All	468	670	230	429	0	-	-	-	0
Stage 1	241	241	-	-	-	-	-	-	-
Stage 2	227	429	-	-	-	-	-	-	-
Critical Hdwy	7.65	7.75	6.95	4.35	-	-	-	-	-
Critical Hdwy Stg 1	6.65	6.75	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.65	6.75	-	-	-	-	-	-	-
Follow-up Hdwy	3.725	4.225	3.525	2.425	-	-	-	-	-
Pot Cap-1 Maneuver	451	291	732	1018	-	0	0	-	-
Stage 1	700	623	-	-	-	0	0	-	-
Stage 2	713	485	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	448	0	732	1018	-	-	-	-	-
Mov Cap-2 Maneuver	448	0	-	-	-	-	-	-	-
Stage 1	696	0	-	-	-	-	-	-	-
Stage 2	713	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.59	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	41	-	721	-	-
HCM Lane V/C Ratio	0.005	-	0.344	-	-
HCM Control Delay (s/veh)	8.6	0	12.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	1.5	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	95	80	0	0	34
Future Vol, veh/h	0	95	80	0	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	31	31	100	100
Mvmt Flow	0	112	94	0	0	40

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	206	94
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	112	-
Critical Hdwy	-	-	-	-	7.4	7.2
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	-	-	-	-	4.4	4.2
Pot Cap-1 Maneuver	0	-	-	0	606	750
Stage 1	0	-	-	0	733	-
Stage 2	0	-	-	0	718	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	606	750
Mov Cap-2 Maneuver	-	-	-	-	606	-
Stage 1	-	-	-	-	733	-
Stage 2	-	-	-	-	718	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	10.07
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	750
HCM Lane V/C Ratio	-	-	0.053
HCM Control Delay (s/veh)	-	-	10.1
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.2

1: Lake Easton Rd & I-90 EB Off Ramp/I-90 EB On Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.3	0.3	0.1	0.1	0.0	0.0	0.1
Total Del/Veh (s)	10.4	6.8	0.4	0.1	3.0	1.9	6.4
Vehicles Entered	212	12	4	6	200	21	455
Vehicles Exited	213	12	4	6	200	21	456
Hourly Exit Rate	213	12	4	6	200	21	456
Input Volume	209	10	5	5	201	20	450
% of Volume	102	123	76	114	100	108	101

2: Lake Easton Rd & I-90 WB On Ramp/I-90 WB Off Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.3	0.1	0.3	0.0	0.0	0.1	0.2	0.2
Total Del/Veh (s)	10.8	17.7	9.6	4.5	2.6	1.2	0.9	3.6
Vehicles Entered	4	3	216	4	224	294	188	933
Vehicles Exited	4	4	216	4	224	294	188	934
Hourly Exit Rate	4	4	216	4	224	294	188	934
Input Volume	5	5	221	5	222	288	188	934
% of Volume	80	80	98	80	101	102	100	100

3: Lake Easton Rd/N Site Driveway & W Sparks Rd Performance by movement

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	4.1	7.0	13.8	4.1	10.4	11.4	2.2	6.6	0.7	1.2	0.4	10.9
Vehicles Entered	4	6	1	4	4	94	23	16	4	337	95	4
Vehicles Exited	4	6	1	4	4	94	23	16	4	337	95	4
Hourly Exit Rate	4	6	1	4	4	94	23	16	4	337	95	4
Input Volume	5	6	1	3	5	93	26	17	5	340	95	4
% of Volume	80	100	100	133	80	101	90	93	80	99	100	100

3: Lake Easton Rd/N Site Driveway & W Sparks Rd Performance by movement

Movement	SBT	SBR	All
Denied Del/Veh (s)	0.3	0.2	0.1
Total Del/Veh (s)	6.1	5.6	4.2
Vehicles Entered	314	2	908
Vehicles Exited	313	2	907
Hourly Exit Rate	313	2	907
Input Volume	308	1	909
% of Volume	102	200	100

4: W Sparks Rd & S Site Driveway Performance by movement

Movement	EBT	WBT	SBR	All
Denied Del/Veh (s)	0.0	0.2	0.1	0.1
Total Del/Veh (s)	0.2	0.2	2.8	0.6
Vehicles Entered	117	78	33	228
Vehicles Exited	118	78	33	229
Hourly Exit Rate	118	78	33	229
Input Volume	118	80	34	232
% of Volume	100	98	97	99

Total Network Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	10.2
Vehicles Entered	1033
Vehicles Exited	1036
Hourly Exit Rate	1036
Input Volume	3420
% of Volume	30

Intersection: 1: Lake Easton Rd & I-90 EB Off Ramp/I-90 EB On Ramp

Movement	EB	SB
Directions Served	LTR	LT
Maximum Queue (ft)	149	61
Average Queue (ft)	65	7
95th Queue (ft)	115	34
Link Distance (ft)	1298	557
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Lake Easton Rd & I-90 WB On Ramp/I-90 WB Off Ramp

Movement	WB	NB	SB
Directions Served	LTR	LT	TR
Maximum Queue (ft)	188	102	39
Average Queue (ft)	72	12	2
95th Queue (ft)	136	57	19
Link Distance (ft)	1490	557	74
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Lake Easton Rd/N Site Driveway & W Sparks Rd

Movement	EB	WB	NB	SB
Directions Served	ULTR	ULTR	LTR	LTR
Maximum Queue (ft)	34	128	49	144
Average Queue (ft)	9	59	6	71
95th Queue (ft)	27	103	31	116
Link Distance (ft)	1366	444	74	495
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: W Sparks Rd & S Site Driveway

Movement	SB
Directions Served	LR
Maximum Queue (ft)	96
Average Queue (ft)	39
95th Queue (ft)	90
Link Distance (ft)	244
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0