



## LSC Transportation Consultants, Inc.

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July 10, 2024

Scott Mathot, Senior Engineer  
Town of Truckee  
10183 Truckee Airport Road  
Truckee, CA 96161

RE: Truckee KidZone Museum Relocation – Traffic Analysis

Dear Mr. Mathot:

Per your request, LSC Transportation Consultants, Inc. has prepared a traffic analysis for the proposed relocation of the KidZone Museum. The KidZone Museum is currently located at 11711 Donner Pass Road in Truckee, California. The museum is proposed to be moved to 10010 Estates Drive in Truckee, California. First, the land uses are discussed. Then existing conditions are presented. Next, the trip generation of the proposed project is estimated. Finally, the intersection level of service analysis is performed.

### Land Uses

The KidZone Museum is currently located at 11711 Donner Pass Road in Truckee, California. It is a 3,885-square-foot tent-like structure. The museum is designed for children ages 7 and younger and serves approximately 25,000 visits annually. In the 30 years since KidZone opened their doors, the audience has had a growth of 500%. Currently the museum reaches full capacity approximately 30 days per year. An economic study performed for the museum predicts it will eventually grow to have 50,000 annual visits. As such, a new larger building is needed.

The museum is proposed to be located at 10010 Estates Drive in Truckee, California in a 10,500-square-foot building. The Town determined the building to be 9,823 square feet of “Museum” and 677 square feet of “Coffee Shop.” As the coffee shop will be exclusively for museum patrons, it will be considered accessory to the museum.

### Existing Conditions

Through the study area, Brockway Road is a two-lane road with a posted speed limit of 45 miles per hour (mph). River View Drive is a two-lane local road with a 25-mph speed limit. The proposed site driveway would be located on the west side of River View Drive between Nicolas Drive and the Senior Apartments Roadway on the eastern side of the road. The driveway will be located 69 feet north of the Senior Apartments Roadway.

### Existing Traffic Volumes

PM turning-movement counts were conducted by LSC staff at Brockway Road/Estates Drive and Estates Drive/River View Drive on Wednesday, June 5, 2024 from 4:00 PM to 6:00 PM. The PM peak hour occurred from 4:30 PM to 5:30 PM. As the volumes were collected in early June, a seasonal adjustment factor of 25 percent increase was calculated based on seasonal variation at the closest Caltrans station (SR 267/Truckee Airport Road). The through volumes on Brockway Road were adjusted and the resulting 'existing no-project' intersection volumes are shown in Table 1.

### **Future Traffic Volumes**

The future volumes are derived using the Town of Truckee TransCAD Travel Demand Model, which assumes full buildout of the Town's General Plan land uses. Consistent with previous use of the Truckee Model, existing model volumes were subtracted from the future model volumes to obtain the growth in traffic on Brockway Road and on Estates Drive. This growth was then added to the 'existing no project' peak-hour traffic volumes to result in the 'future no project' peak-hour traffic volumes. The resulting 'future no project' peak-hour traffic volumes are shown in Table 1.

### **Trip Generation**

The first step in the analysis of traffic impacts is to prepare an estimate of the number of trips generated by the proposed project. Trip generation is the evaluation of the number of vehicle-trips that will either have an origin or destination at the project site. Daily vehicle trips and peak-hour vehicle trips need to be determined to analyze the potential impacts of the proposed project.

While standard trip-generation rates for a museum are provided in the Institute of Transportation Engineers (ITE) *Trip Generation, 11th Edition Manual* (ITE, 2021), the rates are based on data collected at only one 176,000 square foot museum. In order to provide a more accurate estimate of site-generated traffic, a detailed analysis is performed to estimate the vehicular trip generation of the museum based on the number of employees, visitors, and service vehicles. The existing museum operates under the following conditions:

- The existing museum is 3,885 square feet.
- The museum is open to the public from 10:30 AM to 3:00 PM Tuesday-Saturday. Members of the museum can access the museum earlier, from 9:00 AM to 10:30 AM. The highest visitation occurs in the morning between 9:00 AM and 12:00 PM.
- On average, visiting groups are composed of one guardian and two children. Occasionally a second guardian will also be in attendance. Groups typically stay between 1.5-2.5 hours at the museum.
- There are currently 11 employees of the museum. On site, there are typically between 2-3 staff members between 9:00 AM and 4:00 PM. The remaining staff typically work from home.
- The service and utility trips are as follows:
  - Trash is collected once a week
  - Maintenance supplies deliveries occur 1-2 times per month
  - Mail is collected at a PO Box. However approximately 1-2 times per month some merchandise is delivered directly to the museum
- The existing museum receives approximately 25,000 visitors annually.

**TABLE 1: Truckee KidZone - Peak-Hour Intersection Traffic Volumes**

Intersection	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
<b>Existing No Project</b>													
Brockway Road/Estates Drive	0	0	0	40	0	74	100	475	0	0	508	61	1,258
Estates Drive/Riverview Drive	0	0	0	1	0	26	47	84	0	0	68	1	227
<b>Project Net Impact</b>													
Brockway Road/Estates Drive	0	0	0	4	0	7	3	0	0	0	0	2	16
Estates Drive/Riverview Drive	0	0	0	0	0	11	5	0	0	0	0	0	16
<b>Existing Plus Project</b>													
Brockway Road/Estates Drive	0	0	0	44	0	81	103	475	0	0	508	63	1,274
Estates Drive/Riverview Drive	0	0	0	1	0	37	52	84	0	0	68	1	243
<b>Future No Project</b>													
Brockway Road/Estates Drive	0	0	0	40	0	74	100	595	0	0	585	61	1,455
Estates Drive/Riverview Drive	0	0	0	1	0	26	47	84	0	0	68	1	227
<b>Future Plus Project</b>													
Brockway Road/Estates Drive	0	0	0	44	0	81	103	595	0	0	585	63	1,471
Estates Drive/Riverview Drive	0	0	0	1	0	37	52	84	0	0	68	1	243

Source: LSC Transportation Consultants, Inc.

The proposed museum will operate under the following assumptions:

- The proposed museum will be 10,500 square feet.
- The museum will have extended hours of operation. It will be open to the public from 7:00 AM to 9:00 PM Monday-Saturday, with shorter hours of 9:00 AM to 6:00 PM on Sundays.
- Per the *Workforce Housing Requirement and FTEE Calculation Memo* (November 22, 2023) an additional 2.5 full-time employees are required per the business plan. Adding this to the existing 3 on-site employees results in a total of 6 on-site employees.
- Approximately 1 service/delivery vehicle is anticipated to visit the site over the course of a busy day.
- Due to the larger building size and extended operating hours, the annual visitors are expected to increase to 50,000 visitors annually which averages out to 137 visitors per day.

Based on the usage of the existing museum and modifications for the new building/program, the trip-generation rates for the proposed museum are based on the following methodology and assumptions:

- **Museum Visitor Trip Generation** – Each vehicle is assumed to make 1 inbound and 1 outbound trip. An average vehicle occupancy rate of 2.5 visitors per vehicle is assumed, consistent with other recent studies. The PM peak hour is assumed to account for a total of 10% of the daily trips. The PM peak-hour inbound and outbound percentages are consistent with the inbound and outbound percentages presented for the ITE trip-generation PM peak-hour rates for a museum.
- **Museum Employee Trip Generation** – The six on-site museum employees are assumed to have a vehicle occupancy rate of 1 employee per vehicle. Approximately half of the employees will make one round trip off the site during the workday for lunch, errands, etc. About half of the employees are assumed to exit during the PM peak hour.
- **Service Trip Generation** – The one daily service trip is assumed to happen in the PM peak hour.

The trip generation of the proposed museum can be found in Table 2.

### Reduction for Non-Auto

Non-auto trips, such as trips made to/from the site via bike, walking, or transit reduce trip generation. The proposed site will be located adjacent to the Truckee River Regional Park. The Legacy Trail runs along the Truckee River just north of the project site. A Class 1 paved bike trail also runs along Brockway Road, providing easy non-auto access to the property. A bus stop is located at Brockway Road and Palisades Drive. In addition, the micro transit service TART Connect provides service to the site. Various residential neighborhoods surround the park which makes the museum an easy walking destination for families with young children. Taking all this data into consideration, the non-auto access rate for the museum is assumed to be around 15 percent, as shown in Table 2. As employees are less likely to be living in the neighborhoods adjacent to the museum, a lower non-auto access rate of 10% is assumed.

### Trip Generation at Site Driveways

Multiplying the land-use quantities by the trip rates yields the vehicle trips generated at the site driveways for proposed project conditions. As shown in Table 2, the proposed land uses are forecast to generate a total of approximately 112 daily vehicle trips at the site driveways on a weekday, including 16 PM peak-hour vehicle trips (5 inbound plus 11 outbound).

### Table 2: Truckee KidZone - Trip Generation

Description	Quantity	Units	Occupancy per vehicle	Vehicles	Trip Generation Rates				Reduction for Non- Auto Trips	Vehicle Trips at Site Driveways			
					Daily	PM Peak Hour				Daily	PM Peak Hour		
						In	Out	Total			In	Out	Total
Proposed Museum													
Visitors	137	Visitors	2.5	55	2.00	0.03	0.17	0.20	15%	94	2	7	9
Employees	6	On-site Employees	1	6	3.00	0.25	0.50	0.75	10%	16	2	3	5
Service Trips	1	Vehicle	N/A	N/A	2.00	1.00	1.00	2.00	0%	2	1	1	2
Total Proposed Museum										112	5	11	16
Note 1: Peak-hour rates for the proposed museum visitors are based on the ITE <a href="#">Trip Generation Manual</a> (11th Edition).													
Source: LSC Transportation Consultants, Inc. and ITE <a href="#">Trip Generation Manual</a> (11th Edition).													

## Trip Distribution and Assignment

The distribution of site-generated trips is based upon observed patterns of existing traffic movements. The estimated distribution is as follows:

- 36% to/from the east on Brockway Road (SR 267)
- 62% to/from the west on Brockway Road (Downtown Truckee, Donner Pass Road)
- 2% to/from the east on Estates Drive

The site-generated traffic volumes are assigned at the site driveways by applying the distribution percentages to the peak-hour vehicle trips. The site-generated traffic volumes are then added to the no-project sets of volumes to get the plus-project sets of volumes, as seen in Table 1.

## Level of Service Analysis

Level of Service (LOS) is a quantitative and qualitative measure of traffic conditions on isolated sections of roadways or intersections. LOS ranges from “A” (with no congestion) to “F” (where the system fails with gridlock or stop-and-go conditions prevailing). As is the standard for traffic engineering analyses, intersection LOS is analyzed based on the procedures presented in the *Highway Capacity Manual* (Federal Highways Administration, 2016) using the Synchro software application (Version 11.1, Trafficware). The LOS calculations are attached for further reference.

### LOS Standards

#### *Town of Truckee LOS Standards*

As stated in the *Town of Truckee 2040 General Plan* (May 2023), the Town’s LOS standards are as follows:

*Policy M-4.4 – Establish and maintain the following summer weekday PM peak hour-level of service (LOS) standards in the portions of the town that are outside of the Downtown area depicted in Figure M-6:*

- *LOS D or better on Donner Pass Road*
- *Total intersection LOS D or better for signalized intersections and roundabouts*
- *Individual turning movements at unsignalized intersections shall not be allowed to reach LOS F and to exceed a cumulative vehicle delay of four vehicle hours. Both of these conditions shall be met for traffic operations to be considered unacceptable.*

*Intersection improvements necessitated by new developments [sic] shall not use two-way left-turn lanes as a way to meet LOS thresholds at unsignalized intersections. Instead, roundabout or other capacity-improving treatments should be prioritized.*

Based on the above standards, the LOS threshold for both project intersections is LOS F.

### Intersection Level of Service

As shown in Table 3, Brockway Road/Estates Drive currently operates at LOS C and Estates Drive/River View Drive operates at LOS A. Under future conditions without the project, the LOS for Brockway Road/Estates Drive will degrade to a LOS D and the Estates Drive/Riverview Drive will remain the same.

With implementation of the proposed project, Brockway Road/Estates Drive will operate at LOS D and Estates Drive/River View Drive at LOS A for existing conditions. Under future-plus-project conditions, the Brockway

Road/Estates Drive will degrade to an acceptable LOS E and the Estates Drive/River View Drive will remain at LOS A. In summary, the LOS at all study intersections would remain acceptable with the project.

**Table 3: Truckee KidZone - Existing Intersection LOS Summary**

			No Project		Plus Project	
Intersection	Control Type	LOS Threshold <sup>1,2</sup>	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
<b>Existing Volumes</b>						
Brockway Road/Estates Drive	TWSC	F	24.6	C	26.3	D
Estates Drive/Riverview Drive	TWSC	F	8.8	A	8.9	A
<b>Future Volumes</b>						
Brockway Road/Estates Drive	TWSC	F	34.3	D	37.5	E
Estates Drive/Riverview Drive	TWSC	F	8.8	A	8.9	A
<b>BOLD</b> text indicates that LOS standard is exceeded. TWSC = Two-Way Stop-Control NOTE 1: Level of service for roundabouts and other unsignalized intersections is reported for the worst movement. NOTE 2: Level of service threshold for unsignalized intersections (not including roundabouts) in the Town of Truckee outside of downtown are exceeded if Level of Service is F and 4 hours of vehicle delay is exceeded. Source: LSC Transportation Consultants, Inc.						

## Driver Sight Distance

Driver sight distance was evaluated at the proposed access intersection under sight-distance standards found in *A Policy on Geometric Design of Highways and Streets (AASHTO, 2018 7<sup>th</sup> Edition)*.

Corner sight-distance requirements are meant to ensure that adequate time is provided for the waiting driver at an unsignalized intersection or driveway to either cross all lanes of through traffic, cross the near lanes and turn left, or turn right without requiring through traffic to radically alter their speed. AASHTO requirements state that for a design speed of 30 mph, an intersection sight distance of 335 feet for a left-turn movement and an intersection sight distance of 290 feet for a right-turn movement is required. LSC staff visited the site to measure the corner sight distance for the proposed driveway. The sight distance for both the left-turn movement and the right-turn movement exceed the AASHTO requirements. As such, LSC determined the corner sight distance was adequate, so long as the final landscaping plans do not hinder the corner sight distance.

## Conclusions

The following conclusions are made based on this analysis:

- The proposed project would generate approximately 112 daily vehicle trips with 16 in the PM peak hour (5 inbound and 11 outbound).


- The project study intersections have an acceptable LOS both without and with the proposed project.
- The proposed driveway has adequate corner sight distance.



Please contact our office with any questions or comments pertaining to this analysis.

Respectfully Submitted,

LSC Transportation Consultants, Inc.





by \_\_\_\_\_

Leslie Suen, PE, Principal

LSC Transportation Consultants, Inc.

Attached: Synchro Outputs






Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	100	475	508	61	40	74
Future Vol, veh/h	100	475	508	61	40	74
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	315	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	495	529	64	42	77

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	593	0	0 1264 561
Stage 1	-	-	- 561 -
Stage 2	-	-	- 703 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	983	-	- 187 527
Stage 1	-	-	- 571 -
Stage 2	-	-	- 491 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	983	-	- 167 527
Mov Cap-2 Maneuver	-	-	- 167 -
Stage 1	-	-	- 510 -
Stage 2	-	-	- 491 -

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	24.6
HCM LOS			C





Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	983	-	-	-	300
HCM Lane V/C Ratio	0.106	-	-	-	0.396
HCM Control Delay (s)	9.1	-	-	-	24.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	1.8

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	47	84	68	1	1	26
Future Vol, veh/h	47	84	68	1	1	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	91	74	1	1	28

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	75	0	0 268 75
Stage 1	-	-	- 75 -
Stage 2	-	-	- 193 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1524	-	- 721 986
Stage 1	-	-	- 948 -
Stage 2	-	-	- 840 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1524	-	- 696 986
Mov Cap-2 Maneuver	-	-	- 696 -
Stage 1	-	-	- 915 -
Stage 2	-	-	- 840 -

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	8.8
HCM LOS	A		




Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1524	-	-	-	971
HCM Lane V/C Ratio	0.034	-	-	-	0.03
HCM Control Delay (s)	7.4	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1





Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	103	475	508	63	44	81
Future Vol, veh/h	103	475	508	63	44	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	315	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	107	495	529	66	46	84

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	595	0	0 1271 562
Stage 1	-	-	- 562 -
Stage 2	-	-	- 709 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	981	-	- 185 526
Stage 1	-	-	- 571 -
Stage 2	-	-	- 488 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	981	-	- 165 526
Mov Cap-2 Maneuver	-	-	- 165 -
Stage 1	-	-	- 509 -
Stage 2	-	-	- 488 -

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	26.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	981	-	-	-	297
HCM Lane V/C Ratio	0.109	-	-	-	0.438
HCM Control Delay (s)	9.1	-	-	-	26.3
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	2.1




Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	52	84	68	1	1	37
Future Vol, veh/h	52	84	68	1	1	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	91	74	1	1	40
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	75	0	-	0	280	75
Stage 1	-	-	-	-	75	-
Stage 2	-	-	-	-	205	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1524	-	-	-	710	986
Stage 1	-	-	-	-	948	-
Stage 2	-	-	-	-	829	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1524	-	-	-	682	986
Mov Cap-2 Maneuver	-	-	-	-	682	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	829	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.8	0		8.9		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1524	-	-	-	975	
HCM Lane V/C Ratio	0.037	-	-	-	0.042	
HCM Control Delay (s)	7.5	0	-	-	8.9	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	100	595	585	61	40	74
Future Vol, veh/h	100	595	585	61	40	74
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	315	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	620	609	64	42	77

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	673	0	0 1469 641
Stage 1	-	-	- 641 -
Stage 2	-	-	- 828 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	918	-	- 140 475
Stage 1	-	-	- 525 -
Stage 2	-	-	- 429 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	918	-	- 124 475
Mov Cap-2 Maneuver	-	-	- 124 -
Stage 1	-	-	- 466 -
Stage 2	-	-	- 429 -

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	34.3
HCM LOS			D





Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	918	-	-	-	238
HCM Lane V/C Ratio	0.113	-	-	-	0.499
HCM Control Delay (s)	9.4	-	-	-	34.3
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	2.6

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	47	84	68	1	1	26
Future Vol, veh/h	47	84	68	1	1	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	91	74	1	1	28

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	75	0	0 268 75
Stage 1	-	-	- 75 -
Stage 2	-	-	- 193 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1524	-	- 721 986
Stage 1	-	-	- 948 -
Stage 2	-	-	- 840 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1524	-	- 696 986
Mov Cap-2 Maneuver	-	-	- 696 -
Stage 1	-	-	- 915 -
Stage 2	-	-	- 840 -

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	8.8
HCM LOS			A




Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1524	-	-	-	971
HCM Lane V/C Ratio	0.034	-	-	-	0.03
HCM Control Delay (s)	7.4	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	103	595	585	63	44	81
Future Vol, veh/h	103	595	585	63	44	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	315	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	107	620	609	66	46	84

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	675	0	0 1476 642
Stage 1	-	-	- 642 -
Stage 2	-	-	- 834 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	916	-	- 139 474
Stage 1	-	-	- 524 -
Stage 2	-	-	- 426 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	916	-	- 123 474
Mov Cap-2 Maneuver	-	-	- 123 -
Stage 1	-	-	- 463 -
Stage 2	-	-	- 426 -

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	37.5
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	916	-	-	-	236
HCM Lane V/C Ratio	0.117	-	-	-	0.552
HCM Control Delay (s)	9.5	-	-	-	37.5
HCM Lane LOS	A	-	-	-	E
HCM 95th %tile Q(veh)	0.4	-	-	-	3

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	52	84	68	1	1	37
Future Vol, veh/h	52	84	68	1	1	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	91	74	1	1	40
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	75	0	-	0	280	75
Stage 1	-	-	-	-	75	-
Stage 2	-	-	-	-	205	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1524	-	-	-	710	986
Stage 1	-	-	-	-	948	-
Stage 2	-	-	-	-	829	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1524	-	-	-	682	986
Mov Cap-2 Maneuver	-	-	-	-	682	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	829	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.8	0		8.9		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1524	-	-	-	975	
HCM Lane V/C Ratio	0.037	-	-	-	0.042	
HCM Control Delay (s)	7.5	0	-	-	8.9	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	