TRANSPORTATION CONSULTANTS, INC.

TRANSPORTATION PLANNING AND TRAFFIC ENGINEERING CONSULTANTS

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April 1, 2021

Alan Ashimine
Michael Baker International

RE: Mammoth Disposal Transportation Analysis

Dear Mr. Ashimine:

Per your request, LSC Transportation Consultants, Inc. is pleased to present our Transportation Impact Analysis for the proposed changes to Mammoth Disposal's existing transfer station located on Commerce Drive in Mammoth Lakes, California. This project is in response to the Benton Crossing Landfill closing in 2022.

Existing Conditions

The proposed project includes two sites on Commerce Drive. The first is the existing recycling center and transfer station located at 59 Commerce Drive and the second is the existing maintenance yard at 264 Commerce Drive. The project proposes to move the recycling center to 264 Commerce Drive, increase the capacity of the transfer station, and move the maintenance yard to 59 Commerce Drive. For C&D waste, bulk/large loads will not be accepted at the new transfer station. Typically, this is 100% exclusion for transfer station, however, it is assumed that minor (5%) C&D from the Town can be dropped off in a bin at the proposed facility.

LSC conducted intersection turning movement counts at the following study intersections on Saturday February 6th 2021 from 3:30 PM to 5:30 PM:

- Meridian Boulevard / Hwy 203 Eastbound
- Meridian Boulevard / Hwy 203 Westbound
- Meridian Boulevard / Commerce Drive
- Meridian Boulevard / Old Mammoth Road

To determine if the 2021 counts were comparable to pre-COVID volumes, the traffic counts were compared to 2019 Caltrans volumes on Hwy 203 at Meridian. It was found that the counts were 18 percent lower than pre-COVID volumes near the Hwy 203/Meridian. Therefore, counts at Highway 203 and Commerce Drive were increased by 18 percent. The count volumes at Meridian Blvd/Old

Mammoth Road were compared to the most recent counts available (winter 2017). The 2021 counts were found to be slightly higher than 2017 levels and therefore were not adjusted. The resulting existing peak hour volumes are shown in Table 1.

Trip Generation, Distribution and Assignment

As standard Institute of Transportation Engineers (ITE) trip generation rates are not available and would not accurately estimate the project, an analysis of the vehicle-trips traveling to/from the site was conducted as a basis for the trip generation analysis. Trip generation based on the existing and proposed trips can be found in Table 2. The trips are listed as “daily one-way vehicle trips.” A trip to the site includes two one-way trips: one entering and one exiting. The existing trips are based on visitor logs at the existing site and the number of employees. The proposed trips at each site are based on the increase tonnage that will be processed on site and increased usage, as shown in the *Mammoth Transfer Station Conceptual Transfer/Processing Report and Project Description* (Lawrence & Associates, 8/25/2020). The data used in this document comes directly from Mono County for the year 2018. The difference between the existing and proposed trips is shown in Table 2 as the project’s net impact.

The new transfer station is assumed to operate more like the existing transfer station rather than the Benton landfill. Based on hourly records of trips at the existing recycling/transfer facility, 9.6 percent of the daily Saturday trips occur in the Saturday PM peak hour. Of these trips, 50 percent are entering the facility during the peak hour, as this is the time customer and route trucks visit the facility with quick turnaround times. To be conservative, estimated peak customer trips per day were used rather than average customer trips. Haul trucks access the facility during the less busy times during the early morning and evening hours. To be conservative, estimated peak haul-out trips per day were also used rather than average haul-out trips per day. The resulting PM peak hour trips are shown at the bottom of Table 2. As shown the project is expected to create 188 additional daily trips, with 18 trips occurring in the PM peak hour.

The new trips generated by the project would be trips that originally traveled to/from Benton Crossing Landfill (accessed off of US 395 east of Mammoth Lakes) and now will travel past the landfill to Commerce Drive. Therefore, all new trips are assumed to travel to/from the east via Highway 203 and US 395, as shown in Table 1 under project generated volumes. Assuming all new trips are coming from US 395 makes this analysis conservative. These volumes were added to the existing volumes to produce the ‘existing plus project volumes’.

Level of Service Standards

The Town of Mammoth Lakes General Plan Transportation Element, adopted in 2016, currently contains the following policy:

> *“Policy 1.7: Establish and maintain a Level of Service D or better on a typical winter Saturday peak hour for signalized intersections and for primary through movements for unsignalized*

> *intersections along arterial and collector roads. This standard is expressly not applied to absolute peak conditions, as it would result in construction of roadway improvements that are warranted only a limited number of days per year and that would unduly impact pedestrian and visual conditions."*

For unsignalized intersections, in order to avoid the identification of a LOS failure for intersections that result in only a few vehicles experiencing a delay greater than 50 seconds, a LOS deficiency is not identified for all intersections with approach LOS E or F. Instead, a LOS deficiency is only identified if an individual minor street movement operates at LOS E or F and total minor approach delay exceeds 4 vehicle hours for a single lane approach and 5 vehicle hours for a multi-lane approach.

Level of Service

The existing LOS was evaluated at all study intersections for winter Saturday PM peak hour conditions. LOS delays were calculated using Synchro 10 software using the Highway Capacity Manual (HCM) methodologies. All intersections meet the LOS standard without and with the project as shown in Table 3. Detailed LOS reports are attached.

Commerce Drive Trail Crossing

There is an existing bike trail that crosses Commerce Drive 130 feet west of Meridian Boulevard. The bike crossing is marked with two parallel white lines as a standard crosswalk and signed with a bike crossings warning sign with a 'Bike Xing' text sign below. The queues along Commerce Drive were analyzed to determine if the trail would be blocked by vehicles due to the project. The resulting 95th percentile queue is expected to be a maximum of one vehicle long. In other words, 95 percent of the time the queue along Commerce Drive would be no more than one vehicle long. Therefore, the trail is not expected to be blocked by vehicles including large trucks up to 80 feet in length.

Installation of a rectangular rapid-flashing beacon (RRFB) with pedestrian activation is proposed at the Commerce Trail crossing. There is not a threshold or warrant used for determining installation a RRFB. Instead, there is guidance on factors that should be considered for installation. The RRFB would be considered appropriate at this location because the roadway has a speed of less than 40 miles per hour and there are no sight distance issues. Additionally, the beacon's main purpose is to address conflict between vehicles and non-auto users at roadway crossings and is therefore appropriate at this location. Final design of the RRFB should be coordinated with the Mammoth Lakes Public Works department.

Conclusions

Based upon this analysis, we can make the following conclusions:

- The proposed project would generate approximately 692 daily one-way vehicle trips. This is a net increase of 188 trips for the day up from the existing 504 daily trips. During the PM peak hour, the project will have a net increase of 18 trips.
- All intersections meet the LOS standard without and with the project
- The bike crossing on Commerce Drive is not expected to be blocked by vehicles, including large trucks up to 80 feet in length. A rectangular rapid-flashing beacon (RRFB) would be appropriate to install at this location.

Respectfully Submitted,

LSC Transportation Consultants, Inc.

By Leslie Suen
Leslie Suen, PE, Senior Engineer

Enclosure: Tables 1-3, LOS Output

Table 1: Saturday PM Peak-Hour Volumes

	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Vehicles
Existing Volumes													
Meridian Blvd./Hwy 203 Eastbound	0	32	142	2	145	0	4	464	22	0	0	0	811
Meridian Blvd./Hwy 203 Westbound	42	0	0	0	0	0	0	0	0	148	402	0	592
Meridian Blvd./Commerce Dr.	32	126	0	0	146	31	45	0	45	0	0	0	425
Meridian Blvd./Old Mammoth Rd.	109	227	84	116	324	120	102	232	119	138	203	124	1898
Project Generated Volumes													
Meridian Blvd./Hwy 203 Eastbound	0	0	9	0	9	0	0	0	0	0	0	0	18
Meridian Blvd./Hwy 203 Westbound	0	0	0	0	0	0	0	0	0	9	0	0	9
Meridian Blvd./Commerce Dr.	0	0	0	0	0	9	9	0	0	0	0	0	18
Meridian Blvd./Old Mammoth Rd.	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Plus Project Volumes													
Meridian Blvd./Hwy 203 Eastbound	0	32	151	2	154	0	4	464	22	0	0	0	829
Meridian Blvd./Hwy 203 Westbound	42	0	0	0	0	0	0	0	0	157	402	0	601
Meridian Blvd./Commerce Dr.	32	126	0	0	146	40	54	0	45	0	0	0	443
Meridian Blvd./Old Mammoth Rd.	109	227	84	116	324	120	102	232	119	138	203	124	1898

Table 2: Mammoth Transfer Station - Trip Generation Analysis

Description	Daily One-way Vehcile Trips[1] Daily
Existing Vehicle Trips	
264 Commerce Drive (Maintenance Operations)	
Customer Trips	0
Haul Out Trips	0
Employee, Maintenance, Visitor Trips	40
59 Commerce Drive (Transfer Station and Recycling Center)	
Customer and Route Truck Trips	410
Haul Out Trips	4
Employee, Maintenance, Visitor Trips	50
TOTAL EXISTING	**504**
Proposed Vehicle Trips	
264 Commerce Drive (Recycling Center)	
Customer Trips	100
Haul Out Trips	14
Employee, Maintenance, Visitor Trips	10
59 Commerce Drive (Transfer Station and Maitenance Operations)	
Customer and Route Truck Trips	440
Haul Out Trips	50
Employee, Maintenance, Visitor Trips	78
TOTAL PROPOSED	**692**
PROJECT NET IMPACT on Daily Trips	***188***
Project Net Impact on PM Peak Hour Trips	***18***

Note 1: A visit to the site includes two one-way trips - one entering and one exiting.
Source: LSC Transportation Consultants, Inc.

Table 3: Mammoth Transfer Station - Intersection LOS Summary

			Existing No Project		Existing Plus Project	
Intersection	Control Type[1]	LOS Threshold	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Meridian Blvd./Hwy 203 Eastbound	TWSC	D	17.3	C	17.7	C
Meridian Blvd./Hwy 203 Westbound	TWSC	D	13.5	B	13.7	B
Meridian Blvd./Commerce Dr.	TWSC	D	10.7	B	10.9	B
Meridian Blvd./Old Mammoth Rd.	Signalized	D	16.6	B	16.6	B

***BOLD** text indicates that LOS standard is exceeded.*
NOTE 1: LOS for unsignalized intersections is reported for the worst movement while total intersection LOS is reported for signalized intersections.
Source: LSC Transportation Consultants, Inc.

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	464	22	0	0	0	0	32	142	2	145	0
Future Vol, veh/h	4	464	22	0	0	0	0	32	142	2	145	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	150	-	100	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	504	24	0	0	0	0	35	154	2	158	0

Major/Minor	Major1						Minor1			Minor2		
Conflicting Flow All	0	0	0				-	512	-	278	536	-
Stage 1	-	-	-				-	512	-	0	0	-
Stage 2	-	-	-				-	0	-	278	536	-
Critical Hdwy	4.14	-	-				-	6.54	-	7.54	6.54	-
Critical Hdwy Stg 1	-	-	-				-	5.54	-	-	-	-
Critical Hdwy Stg 2	-	-	-				-	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-				-	4.02	-	3.52	4.02	-
Pot Cap-1 Maneuver	-	-	-				0	464	0	652	449	0
Stage 1	-	-	-				0	535	0	-	-	0
Stage 2	-	-	-				0	-	0	705	522	0
Platoon blocked, %		-	-									
Mov Cap-1 Maneuver	-	-	-				-	464	-	615	449	-
Mov Cap-2 Maneuver	-	-	-				-	464	-	615	449	-
Stage 1	-	-	-				-	535	-	-	-	-
Stage 2	-	-	-				-	-	-	659	522	-

Approach	EB	NB	SB
HCM Control Delay, s		13.4	17.3
HCM LOS		B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	SBLn1
Capacity (veh/h)	464	-	-	-	-	451
HCM Lane V/C Ratio	0.075	-	-	-	-	0.354
HCM Control Delay (s)	13.4	0	-	-	-	17.3
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	-	1.6

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations			↰	↑↑	↰	
Traffic Vol, veh/h	0	0	148	402	42	0
Future Vol, veh/h	0	0	148	402	42	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	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	0	0	161	437	46	0

Major/Minor			Major2		Minor1	
Conflicting Flow All			0	0	541	-
Stage 1			-	-	0	-
Stage 2			-	-	541	-
Critical Hdwy			4.14	-	6.84	-
Critical Hdwy Stg 1			-	-	-	-
Critical Hdwy Stg 2			-	-	5.84	-
Follow-up Hdwy			2.22	-	3.52	-
Pot Cap-1 Maneuver			-	-	471	0
Stage 1			-	-	-	0
Stage 2			-	-	548	0
Platoon blocked, %				-		
Mov Cap-1 Maneuver			-	-	471	-
Mov Cap-2 Maneuver			-	-	471	-
Stage 1			-	-	-	-
Stage 2			-	-	548	-

Approach	WB	NB
HCM Control Delay, s		13.5
HCM LOS		B

Minor Lane/Major Mvmt	NBLn1	WBL	WBT
Capacity (veh/h)	471	-	-
HCM Lane V/C Ratio	0.097	-	-
HCM Control Delay (s)	13.5	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	45	45	32	126	146	31
Future Vol, veh/h	45	45	32	126	146	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	50
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	49	49	35	137	159	34

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	366	159	193	0	-	0
Stage 1	159	-	-	-	-	-
Stage 2	207	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	634	886	1380	-	-	-
Stage 1	870	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	618	886	1380	-	-	-
Mov Cap-2 Maneuver	618	-	-	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	828	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	10.7		1.6		0	
HCM LOS	B					

Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1380	-	728	-	-
HCM Lane V/C Ratio		0.025	-	0.134	-	-
HCM Control Delay (s)		7.7	-	10.7	-	-
HCM Lane LOS		A	-	B	-	-
HCM 95th %tile Q(veh)		0.1	-	0.5	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	232	119	138	203	124	109	227	84	116	324	120
Future Volume (veh/h)	102	232	119	138	203	124	109	227	84	116	324	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	252	129	150	221	135	118	247	91	126	352	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	813	500	248	423	425	332	378	488	414	450	493	418
Arrive On Green	0.09	0.22	0.20	0.10	0.23	0.21	0.09	0.26	0.26	0.09	0.26	0.26
Sat Flow, veh/h	3456	2301	1141	1781	1870	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	111	193	188	150	221	135	118	247	91	126	352	130
Grp Sat Flow(s),veh/h/ln	1728	1777	1665	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.2	4.8	5.0	3.2	5.2	3.7	2.4	5.6	2.3	2.5	8.6	3.3
Cycle Q Clear(g_c), s	1.2	4.8	5.0	3.2	5.2	3.7	2.4	5.6	2.3	2.5	8.6	3.3
Prop In Lane	1.00		0.69	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	813	386	362	423	425	332	378	488	414	450	493	418
V/C Ratio(X)	0.14	0.50	0.52	0.35	0.52	0.41	0.31	0.51	0.22	0.28	0.71	0.31
Avail Cap(c_a), veh/h	1233	1255	1176	479	1172	964	466	877	743	570	914	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	17.2	17.6	13.7	17.0	17.1	12.6	15.8	14.5	12.1	16.8	14.8
Incr Delay (d2), s/veh	0.1	1.0	1.2	0.5	1.0	0.8	0.5	0.8	0.3	0.3	1.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.7	1.7	1.1	2.0	1.3	0.9	2.3	0.8	0.9	3.6	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.3	18.2	18.8	14.2	17.9	17.9	13.1	16.6	14.8	12.5	18.7	15.2
LnGrp LOS	B	B	B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h		492			506			456			608	
Approach Delay, s/veh		17.3			16.8			15.3			16.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	14.5	9.0	17.2	8.9	15.0	9.1	17.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.9	4.5	4.5	4.5	4.9
Max Green Setting (Gmax), s	6.5	34.5	7.0	23.6	10.5	30.5	8.0	22.6
Max Q Clear Time (g_c+I1), s	5.2	7.0	4.4	10.6	3.2	7.2	4.5	7.6
Green Ext Time (p_c), s	0.1	1.5	0.1	1.7	0.2	1.3	0.1	1.2

Intersection Summary			
HCM 6th Ctrl Delay			16.6
HCM 6th LOS			B

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	464	22	0	0	0	0	32	151	2	154	0
Future Vol, veh/h	4	464	22	0	0	0	0	32	151	2	154	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	150	-	100	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	504	24	0	0	0	0	35	164	2	167	0

Major/Minor	Major1			Minor1			Minor2		
Conflicting Flow All	0	0	0	-	512	-	278	536	-
Stage 1	-	-	-	-	512	-	0	0	-
Stage 2	-	-	-	-	0	-	278	536	-
Critical Hdwy	4.14	-	-	-	6.54	-	7.54	6.54	-
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	-	4.02	-	3.52	4.02	-
Pot Cap-1 Maneuver	-	-	-	0	464	0	652	449	0
Stage 1	-	-	-	0	535	0	-	-	0
Stage 2	-	-	-	0	-	0	705	522	0
Platoon blocked, %		-	-						
Mov Cap-1 Maneuver	-	-	-	-	464	-	615	449	-
Mov Cap-2 Maneuver	-	-	-	-	464	-	615	449	-
Stage 1	-	-	-	-	535	-	-	-	-
Stage 2	-	-	-	-	-	-	659	522	-

Approach	EB	NB	SB
HCM Control Delay, s		13.4	17.7
HCM LOS		B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	SBLn1
Capacity (veh/h)	464	-	-	-	-	451
HCM Lane V/C Ratio	0.075	-	-	-	-	0.376
HCM Control Delay (s)	13.4	0	-	-	-	17.7
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	-	1.7

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	157	402	42	0
Future Vol, veh/h	0	0	157	402	42	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	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	0	0	171	437	46	0

Major/Minor	Major2		Minor1	
Conflicting Flow All	0	0	561	-
Stage 1	-	-	0	-
Stage 2	-	-	561	-
Critical Hdwy	4.14	-	6.84	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.84	-
Follow-up Hdwy	2.22	-	3.52	-
Pot Cap-1 Maneuver	-	-	458	0
Stage 1	-	-	-	0
Stage 2	-	-	535	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	458	-
Mov Cap-2 Maneuver	-	-	458	-
Stage 1	-	-	-	-
Stage 2	-	-	535	-

Approach	WB	NB
HCM Control Delay, s		13.7
HCM LOS		B

Minor Lane/Major Mvmt	NBLn1	WBL	WBT
Capacity (veh/h)	458	-	-
HCM Lane V/C Ratio	0.1	-	-
HCM Control Delay (s)	13.7	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-

Intersection						
Int Delay, s/veh	3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	45	32	126	146	40
Future Vol, veh/h	54	45	32	126	146	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	50
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	59	49	35	137	159	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	366	159	202	0	-	0
Stage 1	159	-	-	-	-	-
Stage 2	207	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	634	886	1370	-	-	-
Stage 1	870	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	618	886	1370	-	-	-
Mov Cap-2 Maneuver	618	-	-	-	-	-
Stage 1	847	-	-	-	-	-
Stage 2	828	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	1.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1370	-	717	-	-
HCM Lane V/C Ratio	0.025	-	0.15	-	-
HCM Control Delay (s)	7.7	-	10.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	232	119	138	203	124	109	227	84	116	324	120
Future Volume (veh/h)	102	232	119	138	203	124	109	227	84	116	324	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	252	129	150	221	135	118	247	91	126	352	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	813	500	248	423	425	332	378	488	414	450	493	418
Arrive On Green	0.09	0.22	0.20	0.10	0.23	0.21	0.09	0.26	0.26	0.09	0.26	0.26
Sat Flow, veh/h	3456	2301	1141	1781	1870	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	111	193	188	150	221	135	118	247	91	126	352	130
Grp Sat Flow(s),veh/h/ln	1728	1777	1665	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.2	4.8	5.0	3.2	5.2	3.7	2.4	5.6	2.3	2.5	8.6	3.3
Cycle Q Clear(g_c), s	1.2	4.8	5.0	3.2	5.2	3.7	2.4	5.6	2.3	2.5	8.6	3.3
Prop In Lane	1.00		0.69	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	813	386	362	423	425	332	378	488	414	450	493	418
V/C Ratio(X)	0.14	0.50	0.52	0.35	0.52	0.41	0.31	0.51	0.22	0.28	0.71	0.31
Avail Cap(c_a), veh/h	1233	1255	1176	479	1172	964	466	877	743	570	914	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	17.2	17.6	13.7	17.0	17.1	12.6	15.8	14.5	12.1	16.8	14.8
Incr Delay (d2), s/veh	0.1	1.0	1.2	0.5	1.0	0.8	0.5	0.8	0.3	0.3	1.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.7	1.7	1.1	2.0	1.3	0.9	2.3	0.8	0.9	3.6	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.3	18.2	18.8	14.2	17.9	17.9	13.1	16.6	14.8	12.5	18.7	15.2
LnGrp LOS	B	B	B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h		492			506			456			608	
Approach Delay, s/veh		17.3			16.8			15.3			16.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	14.5	9.0	17.2	8.9	15.0	9.1	17.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.9	4.5	4.5	4.5	4.9
Max Green Setting (Gmax), s	6.5	34.5	7.0	23.6	10.5	30.5	8.0	22.6
Max Q Clear Time (g_c+I1), s	5.2	7.0	4.4	10.6	3.2	7.2	4.5	7.6
Green Ext Time (p_c), s	0.1	1.5	0.1	1.7	0.2	1.3	0.1	1.2

Intersection Summary	
HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

TRANSPORTATION CONSULTANTS, INC.

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February 17, 2021

Alan Ashimine, Project Manager
Michael Baker International

RE: Mammoth Disposal VMT Analysis

Dear Mr. Ashimine:

Per your request, LSC Transportation Consultants, Inc. is pleased to present our analysis of Vehicle Miles Traveled (VMT) for the proposed changes to Mammoth Disposal's existing transfer station located on Commerce Drive in Mammoth Lakes, California. This project is in response to the planned closing of the Benton Crossing Landfill in 2022. When that landfill closes, all trucks that currently go to the landfill would be diverted to the Commerce Drive site.

VMT analysis was conducted in line *with SB 743 Implementation Guidelines Town of Mammoth Lakes* (November 2020). Using the process described in that document, the project's land uses were reviewed in Step 1 and it was determined the project should move on to Step 2. In Step 2, the project was determined to be a 'local essential services', therefore it is screened out as a non-significant transportation impact. The project is considered to be a local essential service because it falls under the land use category of '*government offices: in person services such as post office, library, and utilities.'* Additionally, after the Benton landfill closes, not providing a waste transfer facility with sufficient capacity would simply result in additional VMT as people drive further to dump waste.

In summary, the project was screened out of a full VMT analysis as it is considered a local essential service and therefore it was determined to have a less than significant impact on VMT.

Respectfully Submitted,

LSC Transportation Consultants, Inc.

By Lesli Suen ________________________________
Leslie Suen, PE, Senior Engineer