

Attachment 1: Traffic – Ogden Dunes Additional Parcels

Memo



Date: Tuesday, December 10, 2019

Project: Double Track - NWI

To: Nicole Barker, NICTD Project Manager

From: Janice Reid, Jennifer Mitchell, HDR

Subject: Ogden Dunes Parking Concept

The approved EA/FONSI for this project includes the existing lot (Lot 1) with a reduction of spaces due to station improvements resulting in 202 spaces, the development of a new parking lot south of US-12 with 265 spaces (Lot 2) and a new parking lot located west of Hillcrest Road and north of the South Shore Line with 89 spaces on NICTD property (Lot 3). A total of 556 spaces would be provided which is consistent with the number of spaces NICTD indicated in the New Starts project description. See Attachment 1 for an excerpt of the EA/FONSI Appendix III DT-NWI Parking and Traffic Technical Memorandum depicting the Ogden Dunes Parking.

The Town of Ogden Dunes and the City of Portage have requested that Lot 3 not be built in the proposed location west of Hillcrest Road, citing traffic and safety concerns. They have requested that the spaces be accommodated south of US-12.

The area that could accommodate the 89 spaces encompasses seven individual parcels (see Attachment 2) west of proposed Lot 2. Parcel 1 has a gas station and Parcel 7 has a NIPSCO substation. National Park Service (NPS) property lies directly west of the seven parcels. It is in NICTD's best interest to avoid parcels 1 and 7 and the NPS property. The remaining five parcels appear to be residential or undeveloped. Of note, access to all seven parcels is from US-12. There are no access drives or entries from Stagecoach Road, in part, due to the topography.

To accommodate the relocation of 89 spaces and remain consistent with the New Starts project description of 556 spaces, HDR developed a rough concept to extend Lot 2 to the southwest, along with a detention pond to accommodate drainage needs due to additional impervious pavement. (See Attachment 3). (Note: this rough concept does not have the benefit of survey, topography, or other design related data, and cannot be relied upon for such matters.) Additionally, NICTD could consider a second access point connecting to Stagecoach Drive at the southwest quadrant, if warranted.

This parking lot modification requires property acquisition of three parcels (3, 4 and 5). Two parcels have residences on them and one parcel is vacant. This concept avoids the gas station, NIPSCO substation, and the NPS property. This concept also does not necessarily preclude the future development a new connecting roadway by Portage between the NPS land and the parking lot.

HDR re-evaluated the traffic analysis from the 2018 EA/FONSI to reflect these changes. The analysis indicates that the intersections and driveways would continue to operate at an acceptable LOS for both the AM and PM peak hours. Exit B/Dune Harbor Drive at U.S. 12 is projected to operate at a slightly less than desirable LOS (D); however, this is not uncommon and is acceptable given the nature of the land use and short influx of traffic as vehicles leave in the evening. This same result for Exit B/Dune Harbor Drive was projected in the 2018 EA and FONSI also.

The outputs from the Synchro model for this re-evaluation are shown in Attachment 4.

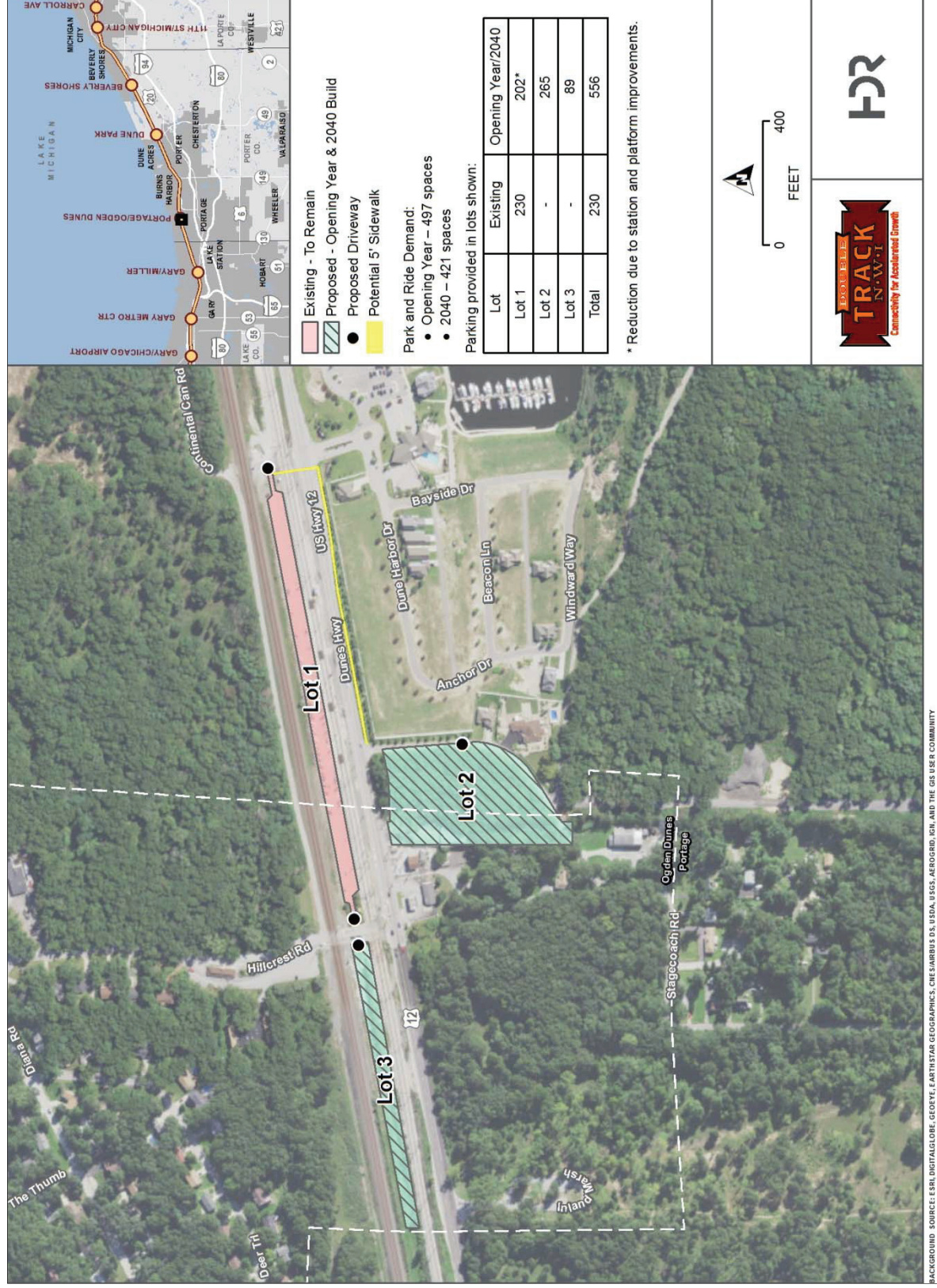
Table 1. Portage/Ogden Dunes Station Opening Year – Build (2022) Level of Service – REEVALUATED

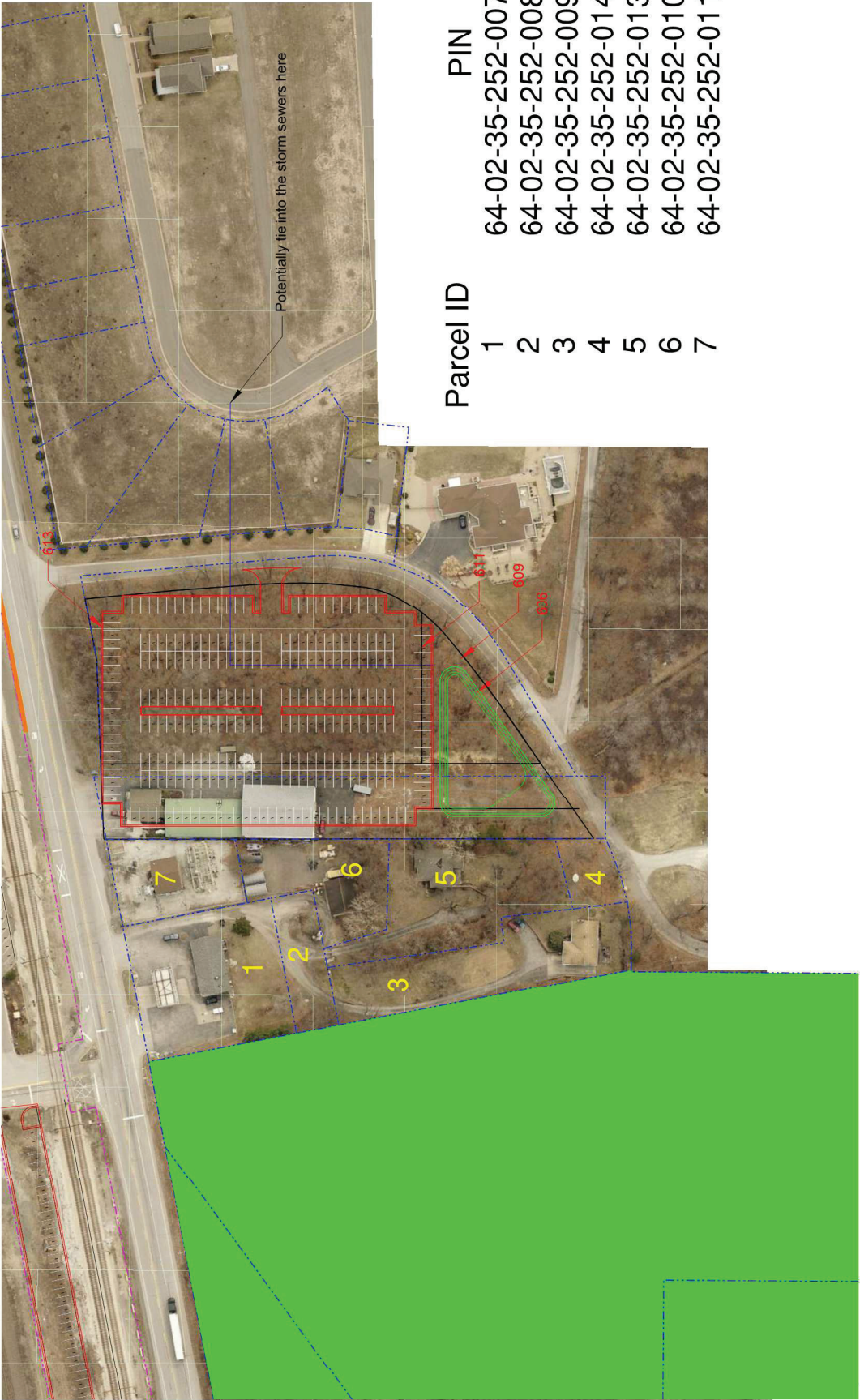
Location	AM Peak Hour	PM Peak Hour
U.S. 12 and Hillcrest Road	A	B
U.S. 12 and Portage/Ogden Dunes Station Exit B @ Dune Harbor Drive	B	C
U.S. 12 and Stagecoach Road	C	B
Stagecoach Road and Portage/Ogden Dunes Station Entrance C	A	B

Table 2. Portage/Ogden Dunes Station 2040 – Build Level of Service – REEVALUATED

Location	AM Peak Hour	PM Peak Hour
U.S. 12 and Hillcrest Road	A	B
U.S. 12 and Portage/Ogden Dunes Station Exit B @ Dune Harbor Drive	B	D
U.S. 12 and Stagecoach Road	C	C
Stagecoach Road and Portage/Ogden Dunes Station Entrance C	A	B

Figure 3-3. Portage/Ogden Dunes Station Park-and-Ride Parking Areas – Existing (2015), Opening Year (2022), and 2040 – Build



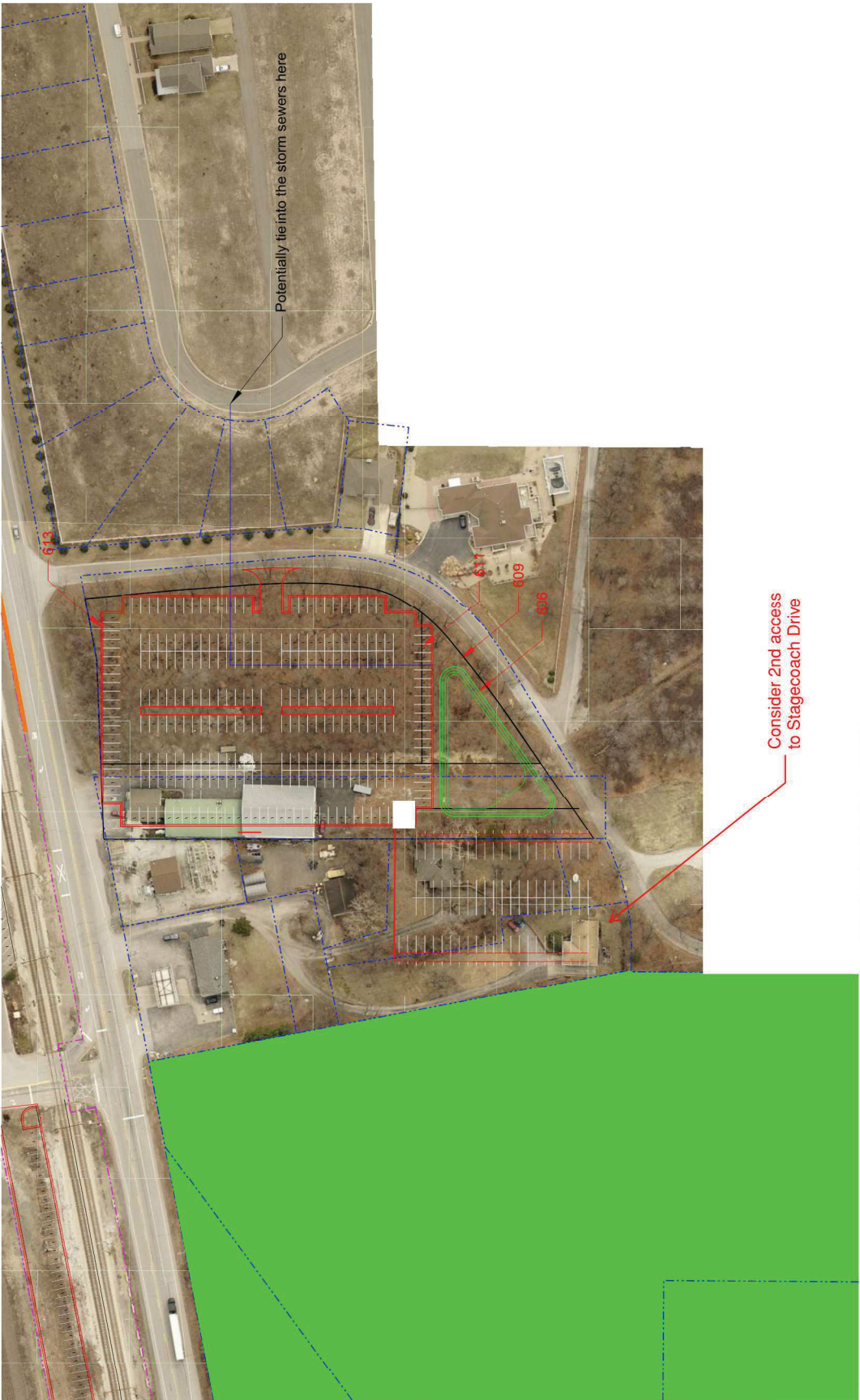


Parcel ID

1
2
3
4
5
6
7

PIN

64-02-35-252-007.000-017
64-02-35-252-008.000-017
64-02-35-252-009.000-017
64-02-35-252-014.000-017
64-02-35-252-013.000-017
64-02-35-252-010.000-017
64-02-35-252-011.000-017

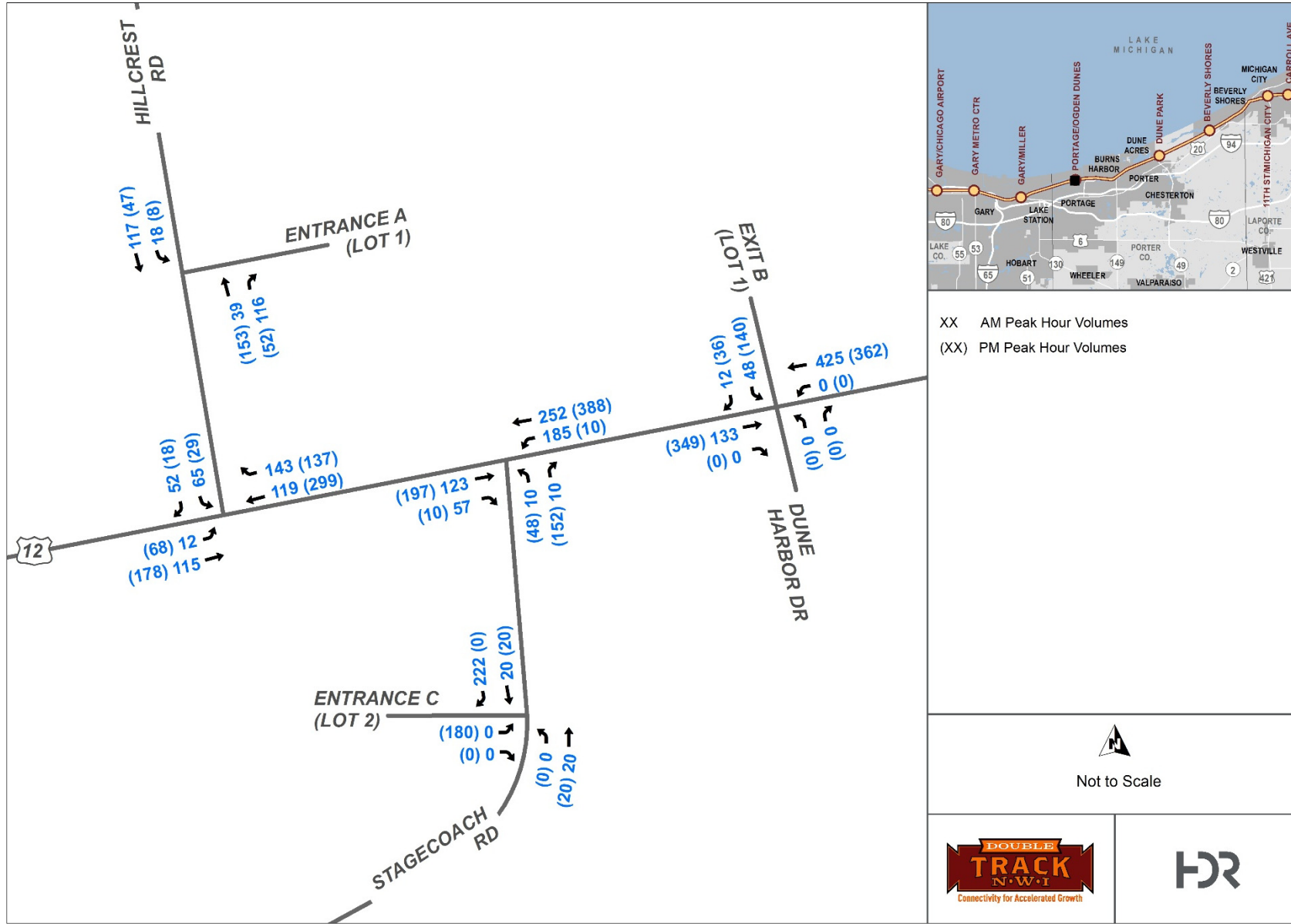


Relocated Lot 3

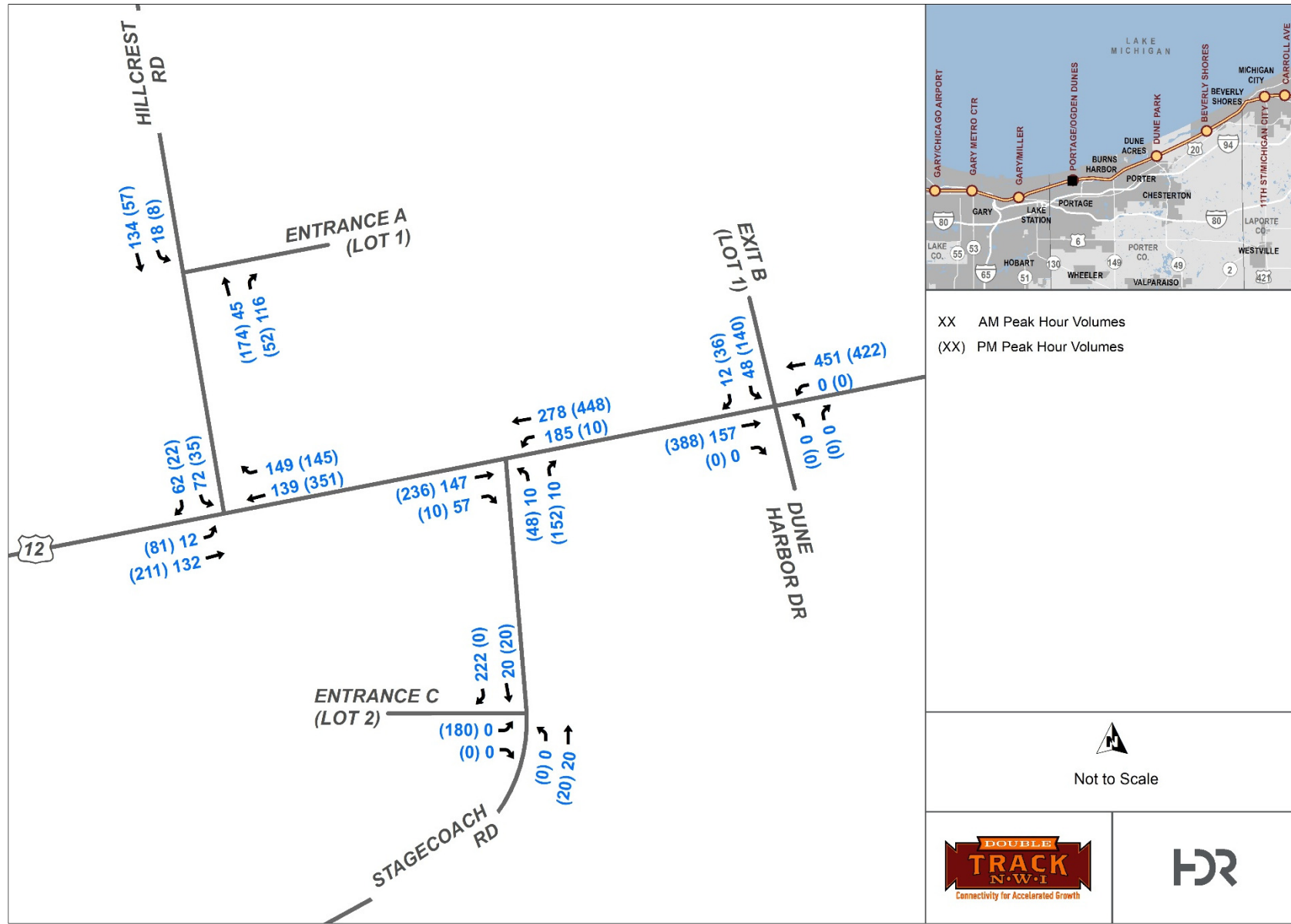
ATTACHMENT 4: OGDEN DUNES PARKING RE-EVALAUTION

SYNCHRO RESULTS

Portage/Ogden Dunes Station – Opening Year – Build (2022) Peak Hour Volumes – RE-EVALUATED



Portage/Ogden Dunes Station – 2040 – Build Peak Hour Volumes – RE-EVALUATED



HCM 2010 Signalized Intersection Capacity Analysis

1: US 12 & Hillcrest Rd

07/10/2019

									
Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations									
Traffic Volume (veh/h)	12	115	119	143	65	52			
Future Volume (veh/h)	12	115	119	143	65	52			
Number	7	4	8	18	1	16			
Initial Q, veh	0	0	0	0	0	0			
Ped-Bike Adj (A_pbT)	1.00			1.00	1.00	1.00			
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1961	1961	1863	1863	1863			
Adj Flow Rate, veh/h	16	153	159	191	87	69			
Adj No. of Lanes	1	1	1	1	1	1			
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75			
Percent Heavy Veh, %	2	2	2	2	2	2			
Opposing Right Turn Influence	Yes				Yes				
Cap, veh/h	496	770	451	364	191	171			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Prop Arrive On Green	0.02	0.39	0.23	0.23	0.11	0.11			
Ln Grp Delay, s/veh	5.7	4.9	8.2	9.3	11.7	11.5			
Ln Grp LOS	A	A	A	A	B	B			
Approach Vol, veh/h		169	350		156				
Approach Delay, s/veh		5.0	8.8		11.6				
Approach LOS		A	A		B				
Timer:		1	2	3	4	5	6	7	8
Assigned Phs		6			4			7	8
Case No		9.0			4.0			1.2	7.0
Phs Duration (G+Y+Rc), s		8.6			15.4			3.9	11.5
Change Period (Y+Rc), s		6.0			6.0			3.5	6.0
Max Green (Gmax), s		19.0			29.0			6.5	19.0
Max Allow Headway (MAH), s		3.9			4.9			3.7	4.4
Max Q Clear (g_c+I1), s		3.1			3.2			2.1	4.5
Green Ext Time (g_e), s		0.4			0.7			0.0	1.2
Prob of Phs Call (p_c)		0.65			0.97			0.10	0.97
Prob of Max Out (p_x)		0.00			0.00			0.29	0.01
Left-Turn Movement Data									
Assigned Mvmt		1						7	3
Mvmt Sat Flow, veh/h		1774						1774	0
Through Movement Data									
Assigned Mvmt		6			4				8
Mvmt Sat Flow, veh/h		0			1961				1961
Right-Turn Movement Data									
Assigned Mvmt		16			14				18
Mvmt Sat Flow, veh/h		1583			0				1583
Left Lane Group Data									
Assigned Mvmt		1	0	0	0	0	0	7	3
Lane Assignment		(Pr/Pm)							

HCM 2010 Signalized Intersection Capacity Analysis

1: US 12 & Hillcrest Rd

07/10/2019

Lanes in Grp	1	0	0	0	0	0	1	0
Grp Vol (v), veh/h	87	0	0	0	0	0	16	0
Grp Sat Flow (s), veh/h/ln	1774	0	0	0	0	0	1774	0
Q Serve Time (g_s), s	1.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Cycle Q Clear Time (g_c), s	1.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Perm LT Sat Flow (s_l), veh/h/ln	1774	0	0	0	0	0	1027	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	0.0	7.5	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	191	0	0	0	0	0	496	0
V/C Ratio (X)	0.46	0.00	0.00	0.00	0.00	0.00	0.03	0.00
Avail Cap (c_a), veh/h	1404	0	0	0	0	0	946	0
Upstream Filter (I)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	10.1	0.0	0.0	0.0	0.0	0.0	5.7	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	11.7	0.0	0.0	0.0	0.0	0.0	5.7	0.0
1st-Term Q (Q1), veh/ln	0.5	0.0	0.0	0.0	0.0	0.0	0.1	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
%ile Back of Q (50%), veh/ln	0.6	0.0	0.0	0.0	0.0	0.0	0.1	0.0
%ile Storage Ratio (RQ%)	0.29	0.00	0.00	0.00	0.00	0.00	0.04	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	6	0	0	4	0	0	0	8
Lane Assignment				T				T
Lanes in Grp	0	0	0	1	0	0	0	1
Grp Vol (v), veh/h	0	0	0	153	0	0	0	159
Grp Sat Flow (s), veh/h/ln	0	0	0	1961	0	0	0	1961
Q Serve Time (g_s), s	0.0	0.0	0.0	1.2	0.0	0.0	0.0	1.6
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	1.2	0.0	0.0	0.0	1.6
Lane Grp Cap (c), veh/h	0	0	0	770	0	0	0	451
V/C Ratio (X)	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.35
Avail Cap (c_a), veh/h	0	0	0	2368	0	0	0	1551
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	4.8	0.0	0.0	0.0	7.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	4.9	0.0	0.0	0.0	8.2
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.9

HCM 2010 Signalized Intersection Capacity Analysis

1: US 12 & Hillcrest Rd

07/10/2019

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.9
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.05
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	16	0	0	14	0	0	0	18
Lane Assignment	R							R
Lanes in Grp	1	0	0	0	0	0	0	1
Grp Vol (v), veh/h	69	0	0	0	0	0	0	191
Grp Sat Flow (s), veh/h/ln	1583	0	0	0	0	0	0	1583
Q Serve Time (g_s), s	1.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5
Cycle Q Clear Time (g_c), s	1.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	171	0	0	0	0	0	0	364
V/C Ratio (X)	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.52
Avail Cap (c_a), veh/h	1253	0	0	0	0	0	0	1253
Upstream Filter (I)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	10.0	0.0	0.0	0.0	0.0	0.0	0.0	8.1
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.0	0.0	0.0	0.0	1.2
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	11.5	0.0	0.0	0.0	0.0	0.0	0.0	9.3
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.2
%ile Storage Ratio (RQ%)	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.60
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 2010 Ctrl Delay	8.5
HCM 2010 LOS	A

HCM 6th TWSC
2: Stagecoach Rd & US 12

07/10/2019

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	123	57	185	252	10	10
Future Vol, veh/h	123	57	185	252	10	10
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	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	164	76	247	336	13	13
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	240	0	1032	202
Stage 1	-	-	-	-	202	-
Stage 2	-	-	-	-	830	-
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	-	-	1327	-	258	839
Stage 1	-	-	-	-	832	-
Stage 2	-	-	-	-	428	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1327	-	199	839
Mov Cap-2 Maneuver	-	-	-	-	199	-
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	428	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	3.5		17.2		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	322	-	-	1327	-	
HCM Lane V/C Ratio	0.083	-	-	0.186	-	
HCM Control Delay (s)	17.2	-	-	8.3	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	0.3	-	-	0.7	-	

HCM 6th TWSC
3: US 12 & Ogden Dunes Ent. B

07/10/2019

Intersection

Int Delay, s/veh 1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	133	425	0	48	12
Future Vol, veh/h	0	133	425	0	48	12
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	0	145	462	0	52	13

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 607 462
Stage 1	-	-	- 462 -
Stage 2	-	-	- 145 -
Critical Hdwy	-	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	-	-	- 3.518 3.318
Pot Cap-1 Maneuver	0	-	0 460 600
Stage 1	0	-	0 634 -
Stage 2	0	-	0 882 -
Platoon blocked, %	-	-	
Mov Cap-1 Maneuver	-	-	- 460 600
Mov Cap-2 Maneuver	-	-	- 460 -
Stage 1	-	-	- 634 -
Stage 2	-	-	- 882 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	483
HCM Lane V/C Ratio	-	-	0.135
HCM Control Delay (s)	-	-	13.6
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.5

HCM 6th TWSC
10: Stagecoach Rd & Ogden Dunes Ent. C

07/10/2019

Intersection

Int Delay, s/veh 0

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 0 0 0 20 20 222

Future Vol, veh/h 0 0 0 20 20 222

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 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 75 75 75 75 75 75

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 0 0 0 27 27 296

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 202 175 323 0 - 0

Stage 1 175 - - - - -

Stage 2 27 - - - - -

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 787 868 1237 - - -

Stage 1 855 - - - - -

Stage 2 996 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 787 868 1237 - - -

Mov Cap-2 Maneuver 787 - - - - -

Stage 1 855 - - - - -

Stage 2 996 - - - - -

Approach EB NB SB

HCM Control Delay, s 0 0 0

HCM LOS A

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1237 - - - - -

HCM Lane V/C Ratio - - - - -

HCM Control Delay (s) 0 - 0 - -

HCM Lane LOS A - A - -

HCM 95th %tile Q(veh) 0 - - - -

HCM 2010 Signalized Intersection Capacity Analysis

1: US 12 & Hillcrest Rd

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Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations									
Traffic Volume (veh/h)	68	178	299	137	29	18			
Future Volume (veh/h)	68	178	299	137	29	18			
Number	7	4	8	18	1	16			
Initial Q, veh	0	0	0	0	0	0			
Ped-Bike Adj (A_pbT)	1.00			1.00	1.00	1.00			
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1961	1961	1863	1863	1863			
Adj Flow Rate, veh/h	91	237	399	183	39	24			
Adj No. of Lanes	1	1	1	1	1	1			
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75			
Percent Heavy Veh, %	2	2	2	2	2	2			
Opposing Right Turn Influence	Yes				Yes				
Cap, veh/h	310	766	513	414	649	579			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Prop Arrive On Green	0.06	0.39	0.26	0.26	0.37	0.37			
Ln Grp Delay, s/veh	12.6	10.6	20.4	15.9	10.3	10.2			
Ln Grp LOS	B	B	C	B	B	B			
Approach Vol, veh/h		328	582		63				
Approach Delay, s/veh		11.2	19.0		10.3				
Approach LOS		B	B		B				
Timer:		1	2	3	4	5	6	7	8
Assigned Phs		6			4			7	8
Case No		9.0			4.0			1.2	7.0
Phs Duration (G+Y+Rc), s		24.0			25.2			6.3	18.9
Change Period (Y+Rc), s		6.0			6.0			3.5	6.0
Max Green (Gmax), s		18.0			30.0			8.5	18.0
Max Allow Headway (MAH), s		3.9			4.9			3.7	4.6
Max Q Clear (g_c+I1), s		2.7			6.1			3.7	11.3
Green Ext Time (g_e), s		0.1			1.2			0.1	1.6
Prob of Phs Call (p_c)		1.00			1.00			0.71	1.00
Prob of Max Out (p_x)		0.00			0.00			0.29	0.56
Left-Turn Movement Data									
Assigned Mvmt		1						7	3
Mvmt Sat Flow, veh/h		1774						1774	0
Through Movement Data									
Assigned Mvmt		6			4				8
Mvmt Sat Flow, veh/h		0			1961				1961
Right-Turn Movement Data									
Assigned Mvmt		16			14				18
Mvmt Sat Flow, veh/h		1583			0				1583
Left Lane Group Data									
Assigned Mvmt		1	0	0	0	0	0	7	3
Lane Assignment		(Pr/Pm)							

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Lanes in Grp	1	0	0	0	0	0	1	0
Grp Vol (v), veh/h	39	0	0	0	0	0	91	0
Grp Sat Flow (s), veh/h/ln	1774	0	0	0	0	0	1774	0
Q Serve Time (g_s), s	0.7	0.0	0.0	0.0	0.0	0.0	1.7	0.0
Cycle Q Clear Time (g_c), s	0.7	0.0	0.0	0.0	0.0	0.0	1.7	0.0
Perm LT Sat Flow (s_l), veh/h/ln	1774	0	0	0	0	0	829	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	0.0	14.9	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.9
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	649	0	0	0	0	0	310	0
V/C Ratio (X)	0.06	0.00	0.00	0.00	0.00	0.00	0.29	0.00
Avail Cap (c_a), veh/h	649	0	0	0	0	0	513	0
Upstream Filter (I)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	10.1	0.0	0.0	0.0	0.0	0.0	12.1	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	10.3	0.0	0.0	0.0	0.0	0.0	12.6	0.0
1st-Term Q (Q1), veh/ln	0.3	0.0	0.0	0.0	0.0	0.0	0.8	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
%ile Back of Q (50%), veh/ln	0.4	0.0	0.0	0.0	0.0	0.0	0.9	0.0
%ile Storage Ratio (RQ%)	0.25	0.00	0.00	0.00	0.00	0.00	0.45	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	6	0	0	4	0	0	0	8
Lane Assignment				T				T
Lanes in Grp	0	0	0	1	0	0	0	1
Grp Vol (v), veh/h	0	0	0	237	0	0	0	399
Grp Sat Flow (s), veh/h/ln	0	0	0	1961	0	0	0	1961
Q Serve Time (g_s), s	0.0	0.0	0.0	4.1	0.0	0.0	0.0	9.3
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	4.1	0.0	0.0	0.0	9.3
Lane Grp Cap (c), veh/h	0	0	0	766	0	0	0	513
V/C Ratio (X)	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.78
Avail Cap (c_a), veh/h	0	0	0	1195	0	0	0	717
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	10.4	0.0	0.0	0.0	16.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.0	0.0	3.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	10.6	0.0	0.0	0.0	20.4
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	2.2	0.0	0.0	0.0	5.0

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2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	2.2	0.0	0.0	0.0	5.5
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.28
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	16	0	0	14	0	0	0	18
Lane Assignment	R							R
Lanes in Grp	1	0	0	0	0	0	0	1
Grp Vol (v), veh/h	24	0	0	0	0	0	0	183
Grp Sat Flow (s), veh/h/ln	1583	0	0	0	0	0	0	1583
Q Serve Time (g_s), s	0.5	0.0	0.0	0.0	0.0	0.0	0.0	4.8
Cycle Q Clear Time (g_c), s	0.5	0.0	0.0	0.0	0.0	0.0	0.0	4.8
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	579	0	0	0	0	0	0	414
V/C Ratio (X)	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.44
Avail Cap (c_a), veh/h	579	0	0	0	0	0	0	579
Upstream Filter (I)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	10.1	0.0	0.0	0.0	0.0	0.0	0.0	15.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	10.2	0.0	0.0	0.0	0.0	0.0	0.0	15.9
1st-Term Q (Q1), veh/ln	0.5	0.0	0.0	0.0	0.0	0.0	0.0	2.1
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.6	0.0	0.0	0.0	0.0	0.0	0.0	2.2
%ile Storage Ratio (RQ%)	0.37	0.00	0.00	0.00	0.00	0.00	0.00	1.10
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B

Intersection						
Int Delay, s/veh	4.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	197	10	10	388	48	152
Future Vol, veh/h	197	10	10	388	48	152
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	75	75	92	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	214	13	13	422	64	203
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	227	0	669	221
Stage 1	-	-	-	-	221	-
Stage 2	-	-	-	-	448	-
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	-	-	1341	-	423	819
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	644	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1341	-	418	819
Mov Cap-2 Maneuver	-	-	-	-	418	-
Stage 1	-	-	-	-	805	-
Stage 2	-	-	-	-	644	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		14	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	666	-	-	1341	-	
HCM Lane V/C Ratio	0.4	-	-	0.01	-	
HCM Control Delay (s)	14	-	-	7.7	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	1.9	-	-	0	-	

Intersection						
Int Delay, s/veh	4.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	349	362	0	140	36
Future Vol, veh/h	0	349	362	0	140	36
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	0	379	393	0	152	39
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	772	393
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	379	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	0	368	656
Stage 1	0	-	-	0	682	-
Stage 2	0	-	-	0	692	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	368	656
Mov Cap-2 Maneuver	-	-	-	-	368	-
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	692	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		21.7		
HCM LOS	C					
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	404			
HCM Lane V/C Ratio	-	-	0.474			
HCM Control Delay (s)	-	-	21.7			
HCM Lane LOS	-	-	C			
HCM 95th %tile Q(veh)	-	-	2.5			

Intersection

Int Delay, s/veh 8.2

Movement EBL EBR NBL NBT SBT SBRLane Configurations 

Traffic Vol, veh/h 180 0 0 20 20 0

Future Vol, veh/h 180 0 0 20 20 0

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 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 75 75 75 75 75 75

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 240 0 0 27 27 0

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 54 27 27 0 - 0

Stage 1 27 - - - - -

Stage 2 27 - - - - -

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 954 1048 1587 - - -

Stage 1 996 - - - - -

Stage 2 996 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 954 1048 1587 - - -

Mov Cap-2 Maneuver 954 - - - - -

Stage 1 996 - - - - -

Stage 2 996 - - - - -

Approach EB NB SB

HCM Control Delay, s 10 0 0

HCM LOS B

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1587 - 954 - -

HCM Lane V/C Ratio - - 0.252 - -

HCM Control Delay (s) 0 - 10 - -

HCM Lane LOS A - B - -

HCM 95th %tile Q(veh) 0 - 1 - -

HCM 2010 Signalized Intersection Capacity Analysis

1: US 12 & Hillcrest Rd

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Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations									
Traffic Volume (veh/h)	12	132	139	149	72	62			
Future Volume (veh/h)	12	132	139	149	72	62			
Number	7	4	8	18	1	16			
Initial Q, veh	0	0	0	0	0	0			
Ped-Bike Adj (A_pbT)	1.00			1.00	1.00	1.00			
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1961	1961	1863	1863	1863			
Adj Flow Rate, veh/h	16	176	185	199	96	83			
Adj No. of Lanes	1	1	1	1	1	1			
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75			
Percent Heavy Veh, %	2	2	2	2	2	2			
Opposing Right Turn Influence	Yes				Yes				
Cap, veh/h	481	781	469	379	203	182			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Prop Arrive On Green	0.02	0.40	0.24	0.24	0.11	0.11			
Ln Grp Delay, s/veh	5.8	5.0	8.4	9.3	11.9	12.0			
Ln Grp LOS	A	A	A	A	B	B			
Approach Vol, veh/h		192	384		179				
Approach Delay, s/veh		5.1	8.9		11.9				
Approach LOS		A	A		B				
Timer:		1	2	3	4	5	6	7	8
Assigned Phs		6			4			7	8
Case No		9.0			4.0			1.2	7.0
Phs Duration (G+Y+Rc), s		8.8			15.8			3.9	11.9
Change Period (Y+Rc), s		6.0			6.0			3.5	6.0
Max Green (Gmax), s		19.0			29.0			6.5	19.0
Max Allow Headway (MAH), s		3.9			4.9			3.7	4.4
Max Q Clear (g_c+I1), s		3.2			3.5			2.1	4.7
Green Ext Time (g_e), s		0.4			0.8			0.0	1.3
Prob of Phs Call (p_c)		0.71			0.98			0.10	0.98
Prob of Max Out (p_x)		0.00			0.00			0.29	0.01
Left-Turn Movement Data									
Assigned Mvmt		1						7	3
Mvmt Sat Flow, veh/h		1774						1774	0
Through Movement Data									
Assigned Mvmt		6			4				8
Mvmt Sat Flow, veh/h		0			1961				1961
Right-Turn Movement Data									
Assigned Mvmt		16			14				18
Mvmt Sat Flow, veh/h		1583			0				1583
Left Lane Group Data									
Assigned Mvmt		1	0	0	0	0	0	7	3
Lane Assignment		(Pr/Pm)							

HCM 2010 Signalized Intersection Capacity Analysis

1: US 12 & Hillcrest Rd

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Lanes in Grp	1	0	0	0	0	0	1	0
Grp Vol (v), veh/h	96	0	0	0	0	0	16	0
Grp Sat Flow (s), veh/h/ln	1774	0	0	0	0	0	1774	0
Q Serve Time (g_s), s	1.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Cycle Q Clear Time (g_c), s	1.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Perm LT Sat Flow (s_l), veh/h/ln	1774	0	0	0	0	0	995	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	0.0	7.9	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	203	0	0	0	0	0	481	0
V/C Ratio (X)	0.47	0.00	0.00	0.00	0.00	0.00	0.03	0.00
Avail Cap (c_a), veh/h	1368	0	0	0	0	0	920	0
Upstream Filter (I)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	10.2	0.0	0.0	0.0	0.0	0.0	5.8	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	11.9	0.0	0.0	0.0	0.0	0.0	5.8	0.0
1st-Term Q (Q1), veh/ln	0.6	0.0	0.0	0.0	0.0	0.0	0.1	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
%ile Back of Q (50%), veh/ln	0.7	0.0	0.0	0.0	0.0	0.0	0.1	0.0
%ile Storage Ratio (RQ%)	0.33	0.00	0.00	0.00	0.00	0.00	0.04	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	6	0	0	4	0	0	0	8
Lane Assignment	T				T			
Lanes in Grp	0	0	0	1	0	0	0	1
Grp Vol (v), veh/h	0	0	0	176	0	0	0	185
Grp Sat Flow (s), veh/h/ln	0	0	0	1961	0	0	0	1961
Q Serve Time (g_s), s	0.0	0.0	0.0	1.5	0.0	0.0	0.0	2.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	1.5	0.0	0.0	0.0	2.0
Lane Grp Cap (c), veh/h	0	0	0	781	0	0	0	469
V/C Ratio (X)	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.39
Avail Cap (c_a), veh/h	0	0	0	2308	0	0	0	1512
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	4.9	0.0	0.0	0.0	7.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	5.0	0.0	0.0	0.0	8.4
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.8	0.0	0.0	0.0	1.0

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2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.8	0.0	0.0	0.0	1.1
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.06
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	16	0	0	14	0	0	0	18
Lane Assignment	R							R
Lanes in Grp	1	0	0	0	0	0	0	1
Grp Vol (v), veh/h	83	0	0	0	0	0	0	199
Grp Sat Flow (s), veh/h/ln	1583	0	0	0	0	0	0	1583
Q Serve Time (g_s), s	1.2	0.0	0.0	0.0	0.0	0.0	0.0	2.7
Cycle Q Clear Time (g_c), s	1.2	0.0	0.0	0.0	0.0	0.0	0.0	2.7
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	182	0	0	0	0	0	0	379
V/C Ratio (X)	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.53
Avail Cap (c_a), veh/h	1221	0	0	0	0	0	0	1221
Upstream Filter (I)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	10.2	0.0	0.0	0.0	0.0	0.0	0.0	8.2
Incr Delay (d2), s/veh	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	12.0	0.0	0.0	0.0	0.0	0.0	0.0	9.3
1st-Term Q (Q1), veh/ln	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1.2
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1.3
%ile Storage Ratio (RQ%)	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.65
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

Intersection

Int Delay, s/veh 2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	147	57	185	278	10	10
Future Vol, veh/h	147	57	185	278	10	10
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	163	63	206	309	11	11

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	226
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1342
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1342
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.3	15
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	381	-	-	1342	-
HCM Lane V/C Ratio	0.058	-	-	0.153	-
HCM Control Delay (s)	15	-	-	8.2	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.5	-

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	157	451	0	48	12
Future Vol, veh/h	0	157	451	0	48	12
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	0	171	490	0	52	13
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	661	490
Stage 1	-	-	-	-	490	-
Stage 2	-	-	-	-	171	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	0	427	578
Stage 1	0	-	-	0	616	-
Stage 2	0	-	-	0	859	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	427	578
Mov Cap-2 Maneuver	-	-	-	-	427	-
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	859	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		14.3		
HCM LOS	B					
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	451			
HCM Lane V/C Ratio	-	-	0.145			
HCM Control Delay (s)	-	-	14.3			
HCM Lane LOS	-	-	B			
HCM 95th %tile Q(veh)	-	-	0.5			

HCM 2010 TWSC
10: Stagecoach Rd & Ogden Dunes Ent C

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Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	20	20	222
Future Vol, veh/h	0	0	0	20	20	222
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	-	-	-	-	-
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	0	22	22	241
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	165	143	263	0	-	0
Stage 1	143	-	-	-	-	-
Stage 2	22	-	-	-	-	-
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	826	905	1301	-	-	-
Stage 1	884	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	826	905	1301	-	-	-
Mov Cap-2 Maneuver	826	-	-	-	-	-
Stage 1	884	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1301	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM 2010 Signalized Intersection Capacity Analysis

1: US 12 & Hillcrest Rd

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Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations									
Traffic Volume (veh/h)	81	211	351	145	35	22			
Future Volume (veh/h)	81	211	351	145	35	22			
Number	7	4	8	18	1	16			
Initial Q, veh	0	0	0	0	0	0			
Ped-Bike Adj (A_pbT)	1.00			1.00	1.00	1.00			
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1961	1961	1863	1863	1863			
Adj Flow Rate, veh/h	108	281	468	193	47	29			
Adj No. of Lanes	1	1	1	1	1	1			
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75			
Percent Heavy Veh, %	2	2	2	2	2	2			
Opposing Right Turn Influence	Yes				Yes				
Cap, veh/h	302	822	566	457	618	552			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Prop Arrive On Green	0.06	0.42	0.29	0.29	0.35	0.35			
Ln Grp Delay, s/veh	13.0	10.4	24.2	15.5	11.5	11.4			
Ln Grp LOS	B	B	C	B	B	B			
Approach Vol, veh/h		389	661		76				
Approach Delay, s/veh		11.1	21.7		11.5				
Approach LOS		B	C		B				
Timer:		1	2	3	4	5	6	7	8
Assigned Phs		6			4			7	8
Case No		9.0			4.0			1.2	7.0
Phs Duration (G+Y+Rc), s		24.0			27.7			6.7	20.9
Change Period (Y+Rc), s		6.0			6.0			3.5	6.0
Max Green (Gmax), s		18.0			30.0			8.5	18.0
Max Allow Headway (MAH), s		3.9			4.9			3.7	4.6
Max Q Clear (g_c+I1), s		2.9			7.0			4.0	13.5
Green Ext Time (g_e), s		0.1			1.4			0.1	1.4
Prob of Phs Call (p_c)		1.00			1.00			0.79	1.00
Prob of Max Out (p_x)		0.00			0.00			0.45	1.00
Left-Turn Movement Data									
Assigned Mvmt		1						7	3
Mvmt Sat Flow, veh/h		1774						1774	0
Through Movement Data									
Assigned Mvmt		6			4				8
Mvmt Sat Flow, veh/h		0			1961				1961
Right-Turn Movement Data									
Assigned Mvmt		16			14				18
Mvmt Sat Flow, veh/h		1583			0				1583
Left Lane Group Data									
Assigned Mvmt		1	0	0	0	0	0	7	3
Lane Assignment		(Pr/Pm)							

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Lanes in Grp	1	0	0	0	0	0	1	0
Grp Vol (v), veh/h	47	0	0	0	0	0	108	0
Grp Sat Flow (s), veh/h/ln	1774	0	0	0	0	0	1774	0
Q Serve Time (g_s), s	0.9	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Cycle Q Clear Time (g_c), s	0.9	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	1774	0	0	0	0	0	771	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	0.0	16.9	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.9
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	618	0	0	0	0	0	302	0
V/C Ratio (X)	0.08	0.00	0.00	0.00	0.00	0.00	0.36	0.00
Avail Cap (c_a), veh/h	618	0	0	0	0	0	482	0
Upstream Filter (I)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	11.3	0.0	0.0	0.0	0.0	0.0	12.3	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.0	0.0	0.7	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	11.5	0.0	0.0	0.0	0.0	0.0	13.0	0.0
1st-Term Q (Q1), veh/ln	0.4	0.0	0.0	0.0	0.0	0.0	1.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
%ile Back of Q (50%), veh/ln	0.5	0.0	0.0	0.0	0.0	0.0	1.0	0.0
%ile Storage Ratio (RQ%)	0.32	0.00	0.00	0.00	0.00	0.00	0.52	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	6	0	0	4	0	0	0	8
Lane Assignment	T				T			
Lanes in Grp	0	0	0	1	0	0	0	1
Grp Vol (v), veh/h	0	0	0	281	0	0	0	468
Grp Sat Flow (s), veh/h/ln	0	0	0	1961	0	0	0	1961
Q Serve Time (g_s), s	0.0	0.0	0.0	5.0	0.0	0.0	0.0	11.5
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	5.0	0.0	0.0	0.0	11.5
Lane Grp Cap (c), veh/h	0	0	0	822	0	0	0	566
V/C Ratio (X)	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.83
Avail Cap (c_a), veh/h	0	0	0	1138	0	0	0	683
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	10.2	0.0	0.0	0.0	17.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.0	0.0	7.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	10.4	0.0	0.0	0.0	24.2
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	2.7	0.0	0.0	0.0	6.2

HCM 2010 Signalized Intersection Capacity Analysis

1: US 12 & Hillcrest Rd

07/10/2019

2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	1.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	2.7	0.0	0.0	0.0	7.3
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.37
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	16	0	0	14	0	0	0	18
Lane Assignment	R							R
Lanes in Grp	1	0	0	0	0	0	0	1
Grp Vol (v), veh/h	29	0	0	0	0	0	0	193
Grp Sat Flow (s), veh/h/ln	1583	0	0	0	0	0	0	1583
Q Serve Time (g_s), s	0.6	0.0	0.0	0.0	0.0	0.0	0.0	5.1
Cycle Q Clear Time (g_c), s	0.6	0.0	0.0	0.0	0.0	0.0	0.0	5.1
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	552	0	0	0	0	0	0	457
V/C Ratio (X)	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.42
Avail Cap (c_a), veh/h	552	0	0	0	0	0	0	552
Upstream Filter (I)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	11.2	0.0	0.0	0.0	0.0	0.0	0.0	14.9
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	11.4	0.0	0.0	0.0	0.0	0.0	0.0	15.5
1st-Term Q (Q1), veh/ln	0.7	0.0	0.0	0.0	0.0	0.0	0.0	2.2
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.7	0.0	0.0	0.0	0.0	0.0	0.0	2.3
%ile Storage Ratio (RQ%)	0.47	0.00	0.00	0.00	0.00	0.00	0.00	1.16
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 2010 Ctrl Delay	17.3
HCM 2010 LOS	B

Intersection

Int Delay, s/veh 4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	236	10	10	448	48	152
Future Vol, veh/h	236	10	10	448	48	152
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	75	75	92	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	257	13	13	487	64	203

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	270
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1293
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1293
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	15.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	607	-	-	1293	-
HCM Lane V/C Ratio	0.439	-	-	0.01	-
HCM Control Delay (s)	15.5	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	2.2	-	-	0	-

Intersection

Int Delay, s/veh 4.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	388	422	0	140	36
Future Vol, veh/h	0	388	422	0	140	36
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	0	422	459	0	152	39

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 881 459
Stage 1	-	-	- 459 -
Stage 2	-	-	- 422 -
Critical Hdwy	-	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	-	-	- 3.518 3.318
Pot Cap-1 Maneuver	0	-	0 317 602
Stage 1	0	-	0 636 -
Stage 2	0	-	0 662 -
Platoon blocked, %	-	-	
Mov Cap-1 Maneuver	-	-	- 317 602
Mov Cap-2 Maneuver	-	-	- 317 -
Stage 1	-	-	- 636 -
Stage 2	-	-	- 662 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	26.9
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	351
HCM Lane V/C Ratio	-	-	0.545
HCM Control Delay (s)	-	-	26.9
HCM Lane LOS	-	-	D
HCM 95th %tile Q(veh)	-	-	3.1

Intersection

Int Delay, s/veh 8.2

Movement EBL EBR NBL NBT SBT SBRLane Configurations 

Traffic Vol, veh/h 180 0 0 20 20 0

Future Vol, veh/h 180 0 0 20 20 0

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 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 75 75 75 75 75 75

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 240 0 0 27 27 0

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 54 27 27 0 - 0

Stage 1 27 - - - - -

Stage 2 27 - - - - -

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 954 1048 1587 - - -

Stage 1 996 - - - - -

Stage 2 996 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 954 1048 1587 - - -

Mov Cap-2 Maneuver 954 - - - - -

Stage 1 996 - - - - -

Stage 2 996 - - - - -

Approach EB NB SB

HCM Control Delay, s 10 0 0

HCM LOS B

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 1587 - 954 - -

HCM Lane V/C Ratio - - 0.252 - -

HCM Control Delay (s) 0 - 10 - -

HCM Lane LOS A - B - -

HCM 95th %tile Q(veh) 0 - 1 - -