



Technical Memorandum

July 17, 2024

To: Transportation Development Section, Development Services Department, City of San Diego

From: Jacob Swim TE, Michael Baker International

CC: Duncan Budinger, Ambient Communities

Subject: Palm & Hollister Apartments (PRJ-0698277) – Response to EIR Comment

The MTS Palm Avenue Transit Oriented Development (Palm Ave TOD) is immediately southwest of the Palm & Hollister project site and was used in the LMA prepared for the Palm & Hollister project to determine if the additional traffic generated by the Palm Ave TOD would require physical improvements at the main access point or other study locations along Palm Avenue. The Palm Ave TOD was also considered in the Emergency Evacuation Plan prepared for the Palm & Hollister project to determine the estimated evacuation timeframe of both projects during an emergency. During public review of the Palm & Hollister Apartments Draft EIR, the City of San Diego (City) received letter of comment from the developer of the adjacent Palm Ave TOD.

The comment letter states:

“Per our conversation, on page 18 of Appendix S Evacuation Plan, it is stated that our project is 390 multi-family units with 191 parking spaces in addition to some retail and a childcare center. We can confirm that this at one time was a published estimate of the project metrics. As the project has matured and funding opportunities have changed, we’ve modified those metrics to adapt to the latest opportunities. Our current estimates put the count at 504 multi-family units with 161 parking spaces, in addition to some retail and a childcare center. This is our best guess at the latest count for our project, but it may change again in the future.”

The purpose of this technical memo is to address whether the changes to the Palm Ave TOD project used in the staff approved Local Mobility Analysis (LMA) dated January 20, 2023, and the staff approved Emergency Evacuation Plan affect the recommended public improvements outlined in the Draft EIR.

Table 1 provides a breakdown of the changes currently planned to the Palm Ave TOD project. Multi-family residential increased from 390 units to 504 units. In addition, the retail space at the Palm Ave TOD project decreased from 3,400 SF to 2,505 SF and the childcare facility square footage increased from 2,750 SF to 5,000 SF. The staff approved LMA dated January 20, 2023 identifies physical improvements at the Palm Avenue & Harris Avenue-MTS Access intersection in accordance with the City’s *Transportation Study Manual (September 2020)*.

Table 1 – Palm Ave TOD Project Comparison

Use	DEIR LMA & Evacuation Plan	Recently Proposed	Change (+/-)
Multi-Family Residential	390 DU	504 DU	+ 114 DU
Specialty Retail	3,400 SF	2,505 SF	- 895 SF
Day Care Center	2,750 SF	5,000 SF	+ 2,250 SF
Parking Spaces Provided	191 Spaces	161 Spaces	-30 Spaces

DU = Dwelling Unit SF = Square Feet

Therefore, the Palm Avenue & Harris Avenue-MTS Access intersection was re-analyzed assuming the increase in traffic generated by the changes to the Palm Ave TOD project. The re-analysis was to determine how the previous analysis would change with the revised Palm Ave TOD and if the currently proposed improvements in the LMA published with the DEIR remain valid. Proposed improvements at the intersection of Palm Avenue & Hollister include installation of high visibility pedestrian crossings (marked continental crosswalks), signage, and new vehicle and bicycle inductive loop detectors that would not be expected to change the results of the analysis. However, this intersection was re-analyzed due to the increase in traffic from the change to the Palm Ave TOD project.

Table 2 presents the trip generation rates used to estimate the trips generated by the Palm Ave TOD project.

Table 2 – Trip Generation Rates

Land Use	Daily	AM Peak Hour Rate			PM Peak Hour Rate			
	Trip Rate ¹	Total	In	: Out	Total	In	: Out	
Multi-Family Dwelling Unit	6 / DU	8%	20%	: 80%	9%	70%	: 30%	
Specialty Retail	40 / KSF	3%	60%	: 40%	9%	50%	: 50%	
Day Care Center	80 / KSF	19%	50%	: 50%	18%	50%	: 50%	

¹Source: City of San Diego Trip Generation Manual, May 2003
DU = Dwelling Unit; KSF = 1,000 Square Feet

Table 3 provides a summary of the trip generation calculation for the revised Palm Ave TOD project using trip rates from the *City of San Diego Trip Generation Manual*, May 2003.

Table 3 – Trip Generation Table – Revised Palm Ave TOD Project (PTS# 689213)

Land Use	Quantity	Daily Traffic Volume ¹	AM Peak Hour ¹		PM Peak Hour ¹	
			Total	In : Out	Total	In : Out
Multi-Family Residential	504 DU	3,024	242	48 : 194	272	191 : 81
<i>Transit Reduction²</i>		-302	-34	-7 : -27	-38	-27 : -11
Multi-Family Residential Sub-Total		2,722	208	41 : 167	234	164 : 70
Specialty Retail	2.505 KSF	100	3	2 : 1	9	5 : 4
Day Care Center	5.0 KSF	400	76	38 : 38	72	36 : 36
Total Trip Generation (Revised Palm Ave TOD Project)		3,222	287	81 : 206	315	204 : 111
Total Trip Generation (Palm Ave TOD Project in Approved LMA Report)		2,462	207	55 : 152	233	153 : 80
Difference (+/-)		+ 760	+ 80	+26 : +54	+ 82	+51 : +31

¹ Trip generation rates based on City of San Diego Trip Generation Manual, May 2003.

² Transit credit for residential land uses are 10% ADT, 14% AM and 14% PM peak hours per City's Traffic Study Manual. DU = Dwelling Units; KSF = 1,000 Square Feet

As shown in Table 3, the revised Palm Ave TOD project is estimated to generate approximately 3,222 daily vehicle trips with 287 AM peak hour trips (81 inbound and 206 outbound) and 315 PM peak hour trips (204 inbound and 111 outbound). Compared to the Palm Ave TOD project in the approved LMA Report, the net new trips added to the roadway network increase by 760 daily average vehicle trips with 80 AM peak hour trip and 82 PM peak hour trips.

Table 4 presents a comparison of the delay and LOS results from the LMA and the revised Palm Ave TOD analysis. Daily and AM/PM peak hour traffic volumes for the Opening Year 2024 Plus Project condition with the revised Palm Ave TOD project are provided as an attachment to this memo (refer to **Exhibit 12**).

Table 4 – Opening Year 2024 Plus Project LOS & Queue – With Revised Palm Ave TOD Project

ID	Study Intersection	Approach		Movement		OPENING YEAR 2024 PLUS PROJECT							
						WITHOUT IMPROVEMENTS				WITH IMPROVEMENTS			
						AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
						Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
3	Palm Avenue & Hollister Street	All				32.3 (34.6)	C (C)	47.8 (49.2)	D (D)	N/A	N/A	N/A	N/A
4	Palm Avenue & Harris Ave-MTS Access	EB	Left-Turn	110.7 (112.4)	F (F)	112.6 (115.2)	F (F)	42.0 (44.2)	D (D)	41.5 (44.9)	D (D)		
		All		51.0 (52.8)	D (D)	38.7 (39.8)	D (D)	47.3 (49.6)	D (D)	33.4 (36.1)	C (D)		
		EB Left-Turn 95th % Queue		93 feet (98 feet)		90 feet (95 feet)		75 feet (78 feet)		77 feet (82 feet)			
		Exceeded Queue		43 feet (48 feet)		40 feet (45 feet)		25 feet (28 feet)		27 feet (32 feet)			
		EB Left-Turn Available Storage		50 feet				50 feet					

XX = Approved LMA Analysis Results.

(XX) = Includes Revised Palm Ave TOD Project

N/A = Not applicable. Intersection #3 is expected to operate at an acceptable LOS C and D in both the AM and PM peak hour, respectively per the published LMA, as well as with the revised Palm Ave TOD project; therefore, no traffic signal improvements are proposed.

As shown, the proposed improvements for the Palm & Hollister Apartment Project would improve from LOS F to LOS D for the eastbound left turn movement at Palm Avenue and Harris Ave-MTS access for both the approved LMA and with the revised Palm Ave TOD project at Palm Avenue & Harris Avenue-MTS Access. The overall intersection delay would remain at LOS D in both AM and PM peak hour. The Palm & Hollister Apartment Project is recommending the installation of a 5- section signal head for the eastbound left-turn movement at Palm Avenue / Harris Avenue-MTS Access to include a permissive left-turn movement during a flashing yellow arrow. The traffic signal improvements identified in the published LMA for intersection #4 would result in the intersection to continue to operate at an acceptable LOS D with the revised Palm Avenue TOD project.

As shown, the reported 95th percentile queue exceeds the available storage provided for the eastbound left-turn lane at Palm Avenue / Harris Avenue-MTS Access. According to the City’s TSM, lengthening a turn pocket is required if the project adds traffic to a turning movement and causes the 95th percentile queue to exceed the available turn pocket length.

However, lengthening the turn pocket of the eastbound left-turn lane at Palm Avenue / Harris Avenue-MTS Access is not feasible due to the existing railroad crossing and short distance (170 feet) between the two signalized intersections. Therefore, the Project is recommending the installation of a 5-section signal head for the eastbound left-turn movement at Palm Avenue / Harris Avenue-MTS Access to include a permissive left-turn movement during a flashing yellow arrow.

Additionally, the specific countermeasures to improve the safety of motorists, pedestrians and bicyclists at both study intersections #3 and #4 in accordance with the City's *Systemic Safety Analysis Report Program* will be provided by the project.

Table 5 presents a comparison of the Horizon Year 2050 Plus Project LOS and queue results from the LMA published with the DEIR and the revised Palm Ave TOD analysis. Daily and AM/PM peak hour traffic volumes for the Horizon Year 2050 Plus Project condition with the revised Palm Ave TOD project are provided as an attachment to this memo (refer to **Exhibit 14**).

Table 5 – Horizon Year 2050 Plus Project LOS & Queue – With Revised Palm Ave TOD Project

ID	Study Intersection	Approach	Movement	HORIZON YEAR 2050 PLUS PROJECT							
				WITHOUT IMPROVEMENTS				WITH IMPROVEMENTS			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
3	Palm Avenue & Hollister Street	All		30.7 (34.8)	C (C)	78.6 (79.4)	E (E)	N/A	N/A	N/A	N/A
4	Palm Avenue & Harris Ave-MTS Access	EB	Left-Turn	113.4 (116.2)	F (F)	116.3 (119.3)	F (F)	45.0 (49.3)	D (D)	47.3 (48.3)	D (D)
			All	86.4 (89.1)	F (F)	42.1 (45.7)	D (D)	68.2 (69.8)	E (E)	36.2 (39.5)	D (D)
			EB Left-Turn 95th % Queue	96 feet (104 feet)		90 feet (99 feet)		78 feet (85 feet)		79 feet (91 feet)	
			Exceeded Queue	46 feet (54 feet)		40 feet (49 feet)		28 feet (35 feet)		29 feet (41 feet)	
			EB Left-Turn Available Storage	50 feet				50 feet			

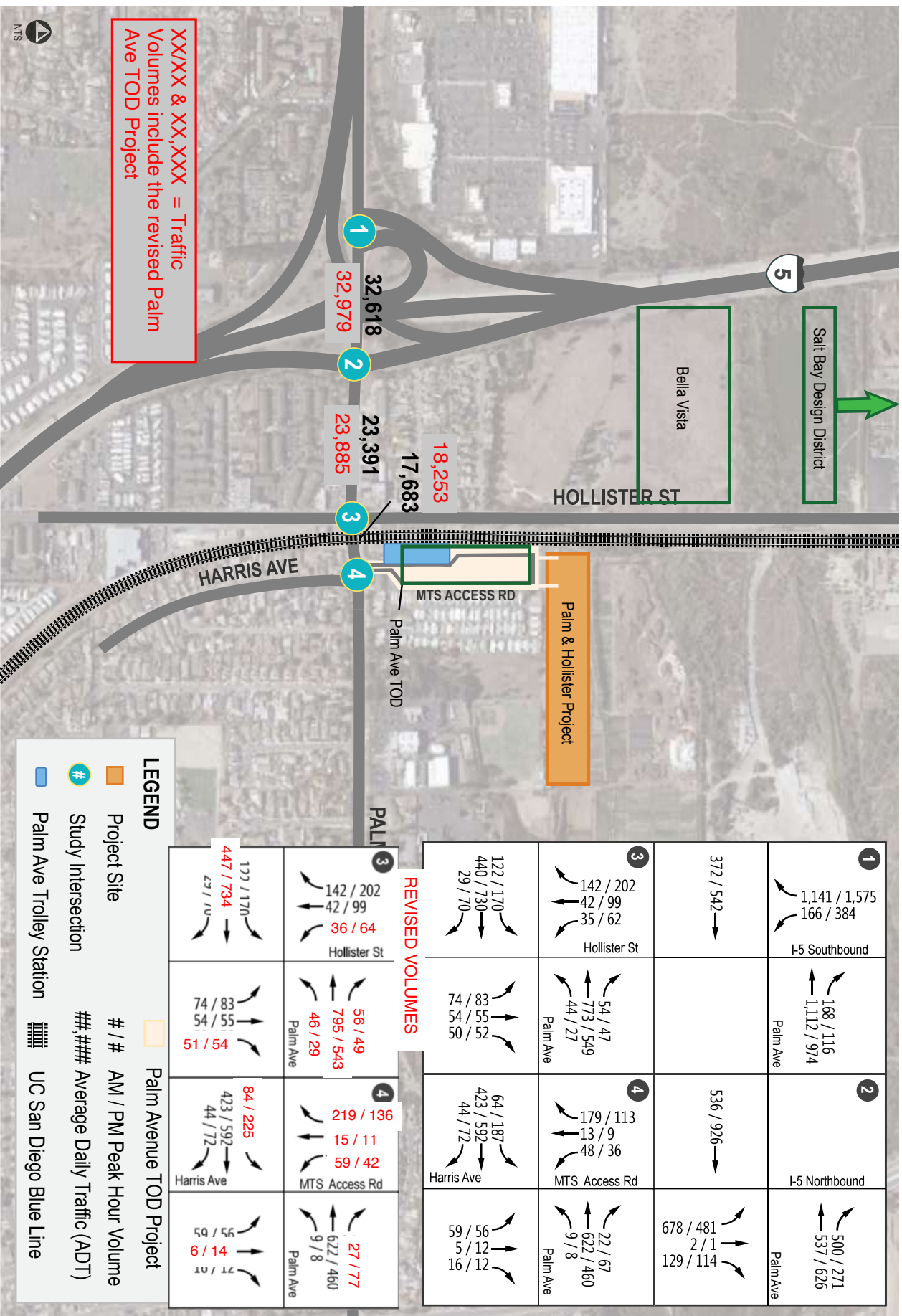
XX = Approved LMA Analysis Results.

(XX) = Includes Revised Palm Ave TOD Project

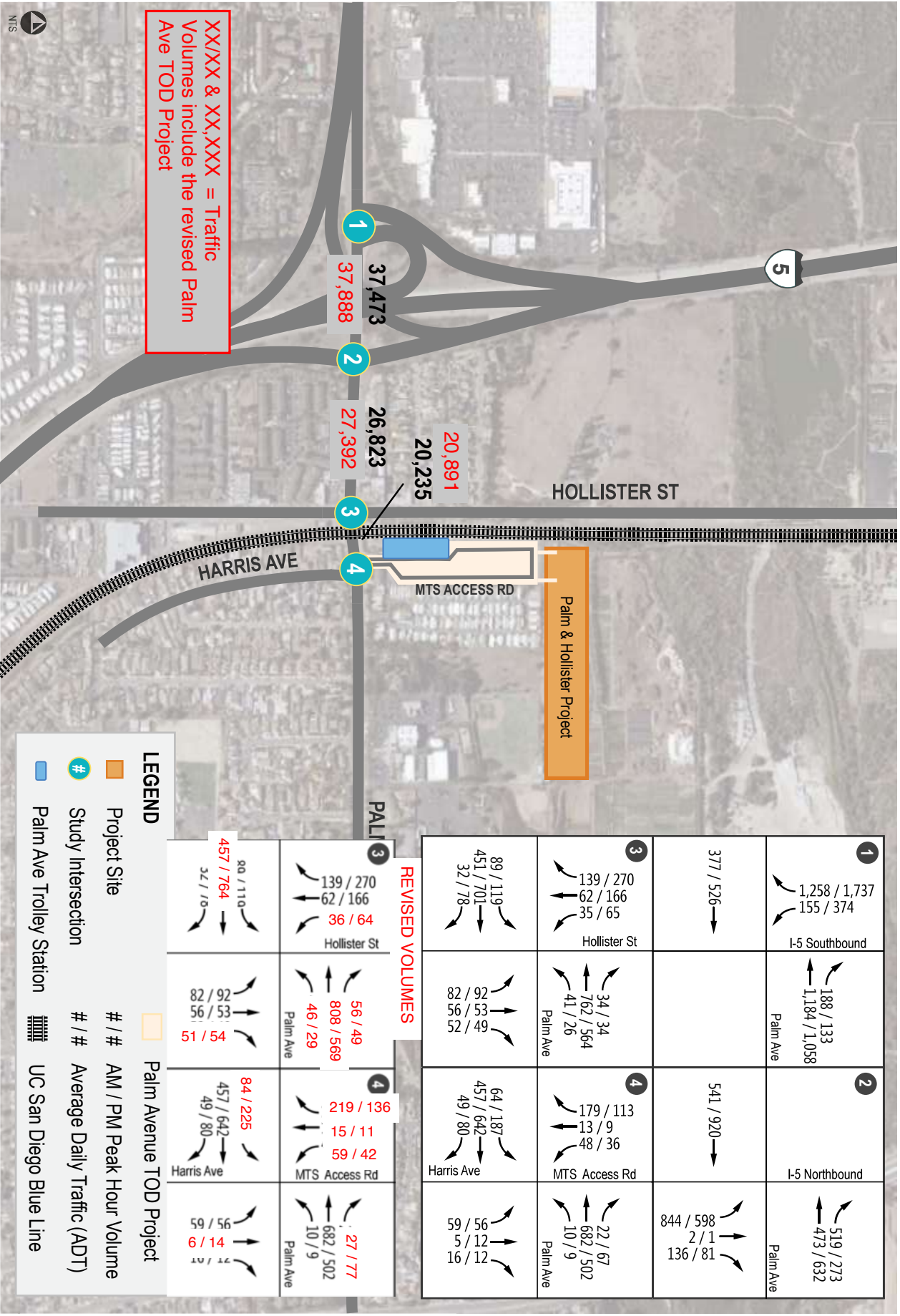
N/A = Not applicable. Per the TSM, traffic signal improvements should be considered if the LOS of service degrades to LOS F for projects within half a mile of transit. Intersection #3 is expected to continue to operate at LOS C and E in both the AM and PM peak hour with the revised Palm Ave TOD project; therefore, no traffic signal improvements are proposed for Intersection #3. The southbound left-turn queue exceeds the existing storage length by approximately 1 car length. However, the project is not proposing to lengthen the turn pocket since it would require removing the existing on-street parking provided for businesses on the west side of Hollister Street.

As shown, the operational analysis results for the revised Palm Avenue TOD project are similar to the operations analysis reported in the approved LMA analysis. Therefore, the recommended public improvements identified in the Palm & Hollister Apartment LMA remain valid and additional improvements are not needed. Intersection #3 is expected to operate at LOS C and E in both the AM and PM peak hour with the revised Palm Ave TOD project. The southbound left-turn queue exceeds the existing storage length by approximately 1 car length. However, the project is not proposing to lengthen the turn pocket since it would require removing the existing on-street parking provided for businesses on the west side of Hollister Street.

Additionally, the reported 95th percentile queue exceeds the available storage provided for the eastbound left-turn lane at Palm Avenue / Harris Avenue-MTS Access. According to the City's TSM, lengthening a turn pocket is required if the project adds traffic to a turning movement and causes the 95th percentile queue to exceed the available turn pocket length. However, lengthening the turn pocket of the eastbound left-turn lane at Palm Avenue / Harris Avenue-MTS Access is not feasible due to the existing railroad crossing and short distance (170 feet) between the two signalized intersections. Therefore, the Project is recommending the installation of a 5-section signal head for the eastbound left-turn movement at Palm Avenue / Harris Avenue-MTS Access to include a permissive left-turn movement during a flashing yellow arrow.



Opening Year 2024 Plus Project ADT & AM / PM Peak Hour Traffic Volumes



XXXX & XX,XXX = Traffic Volumes include the revised Palm Ave TOD Project

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Horizon Year 2050 Plus Project ADT & AM / PM Peak Hour Traffic Volumes

MARCH 2022
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Exhibit 14

3: Hollister Street & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.8	0.8	0.9	3.6	0.5	0.4	3.4	0.2	0.3
Total Del/Veh (s)	85.3	48.7	38.2	76.3	9.8	4.6	60.7	47.2	49.2	51.0	41.2	22.9

3: Hollister Street & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	34.6

3: Hollister Street & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	1.2	0.0	3.6	0.2	0.2	3.0	0.6	0.5
Total Del/Veh (s)	87.8	87.8	81.9	66.2	14.8	18.6	42.8	28.9	28.7	43.7	38.0	31.3

3: Hollister Street & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	49.2

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.7	1.5	1.0	2.5	0.2	0.5	0.1	0.5	0.1	0.1	0.1	0.2
Total Del/Veh (s)	112.4	38.2	27.8	78.6	53.6	54.2	58.1	63.9	33.7	45.1	48.1	59.2

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	52.8

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.5	0.7	0.0	3.9	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2
Total Del/Veh (s)	115.2	32.8	29.4	67.0	30.9	30.7	35.3	33.6	19.4	36.7	40.6	26.8

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	39.8

Intersection: 4: Harris St/Project Drwy & Palm Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	78	182	138	80	373	410	163	114	254
Average Queue (ft)	65	140	128	14	208	214	61	52	117
95th Queue (ft)	98	173	154	55	328	359	120	99	228
Link Distance (ft)		121	121		478	478	281	924	924
Upstream Blk Time (%)		32	35						
Queuing Penalty (veh)		80	87						
Storage Bay Dist (ft)	50			55					
Storage Blk Time (%)	50	47		1	52				
Queuing Penalty (veh)	106	30		4	5				

Intersection: 12: Palm Avenue & Rail xing

Movement	EB	EB	WB	WB	NB	SB
Directions Served	T	T	T	T	T	T
Maximum Queue (ft)	76	86	180	163	51	51
Average Queue (ft)	45	50	148	128	11	16
95th Queue (ft)	72	70	175	185	38	47
Link Distance (ft)	39	39	121	121	143	279
Upstream Blk Time (%)	37	39	23	37		
Queuing Penalty (veh)	98	102	100	160		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 1287

Intersection: 4: Harris St/Project Drwy & Palm Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	84	172	148	27	92	137	70	49	52
Average Queue (ft)	68	150	150	8	63	95	42	24	42
95th Queue (ft)	95	168	144	27	101	139	81	52	59
Link Distance (ft)		121	121		478	478	281	924	924
Upstream Blk Time (%)		48	24						
Queuing Penalty (veh)		201	103						
Storage Bay Dist (ft)	50			55					
Storage Blk Time (%)	64	15			15				
Queuing Penalty (veh)	191	28			1				

Intersection: 12: Palm Avenue & Rail xing

Movement	EB	EB	WB	WB
Directions Served	T	T	T	T
Maximum Queue (ft)	54	55	143	161
Average Queue (ft)	51	58	90	106
95th Queue (ft)	55	63	134	155
Link Distance (ft)	39	39	121	121
Upstream Blk Time (%)	43	36	3	6
Queuing Penalty (veh)	181	153	9	19
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 1292

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.5	0.9	2.3	2.7	0.2	0.4	0.2	0.1	0.1	0.1	0.2	0.2
Total Del/Veh (s)	44.2	39.3	33.6	57.3	48.7	54.8	59.2	25.1	19.7	37.6	55.8	73.2

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	49.6

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.5	0.6	2.6	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1
Total Del/Veh (s)	44.9	35.5	28.1	55.8	36.6	25.3	31.9	41.2	14.5	34.1	29.8	25.4

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	36.1

Intersection: 4: Harris St/Project Drwy & Palm Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	77	184	160	80	345	456	136	149	354
Average Queue (ft)	59	139	120	14	214	257	54	40	142
95th Queue (ft)	78	184	186	50	343	400	108	96	293
Link Distance (ft)		121	121		478	488	281	924	944
Upstream Blk Time (%)		24	25						
Queuing Penalty (veh)		59	63						
Storage Bay Dist (ft)	50			55					
Storage Blk Time (%)	27	43		0	54				
Queuing Penalty (veh)	56	28		2	5				

Intersection: 4: Harris St/Project Drwy & Palm Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	75	162	157	80	337	272	134	76	172
Average Queue (ft)	70	135	133	14	143	150	48	30	70
95th Queue (ft)	82	169	156	49	243	236	89	65	136
Link Distance (ft)		121	121		478	478	281	924	924
Upstream Blk Time (%)		39	39						
Queuing Penalty (veh)		164	165						
Storage Bay Dist (ft)	50			55					
Storage Blk Time (%)	46	47		0	42				
Queuing Penalty (veh)	137	88		0	3				

3: Hollister Street & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.2	4.2	3.7	0.3	0.3	3.4	0.3	0.3
Total Del/Veh (s)	55.2	54.7	36.0	74.4	9.8	7.4	65.1	34.8	24.8	58.4	35.2	19.5

3: Hollister Street & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	0.4
Total Del/Veh (s)	34.8

3: Hollister Street & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0	3.3	0.4	0.2	2.7	0.5	0.5
Total Del/Veh (s)	153.5	151.7	160.0	66.8	9.9	9.8	43.9	39.8	36.4	60.8	30.2	24.8

3: Hollister Street & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	79.4

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	1.5	0.7	5.5	4.7	7.6	0.2	0.1	0.1	0.2	0.1	0.2
Total Del/Veh(s)	116.2	37.0	29.1	128.6	131.6	144.6	61.2	67.7	25.6	67.0	44.1	84.3

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	2.5
Total Del/Veh (s)	89.1

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	6.7	3.2	5.4	3.4	0.2	0.4	0.2	0.2	0.2	0.1	0.1	0.1
Total Del/Veh(s)	119.3	36.6	32.2	78.1	34.6	24.1	35.7	28.1	25.5	67.3	54.0	19.0

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	2.1
Total Del/Veh (s)	45.7

Intersection: 4: Harris St/Project Drwy & Palm Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	75	139	138	80	493	493	93	95	510
Average Queue (ft)	57	105	107	19	400	447	54	60	274
95th Queue (ft)	104	157	157	70	502	516	97	97	488
Link Distance (ft)		121	121		478	478	281	924	924
Upstream Blk Time (%)		20	19		15	17			
Queuing Penalty (veh)		53	51		0	0			
Storage Bay Dist (ft)	50			55					
Storage Blk Time (%)	26	39			81				
Queuing Penalty (veh)	59	25			8				

Intersection: 12: Palm Avenue & Rail xing

Movement	EB	EB	WB	WB	SB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	56	72	180	169	73
Average Queue (ft)	45	54	154	145	41
95th Queue (ft)	62	71	187	166	73
Link Distance (ft)	39	39	121	121	279
Upstream Blk Time (%)	14	23	46	56	
Queuing Penalty (veh)	39	62	214	259	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 1309

Intersection: 4: Harris St/Project Drwy & Palm Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	75	159	139	29	201	185	70	52	78
Average Queue (ft)	74	148	135	9	122	117	51	42	56
95th Queue (ft)	99	166	140	28	230	203	72	59	96
Link Distance (ft)		121	121		478	478	281	924	924
Upstream Blk Time (%)		38	53						
Queuing Penalty (veh)		154	214						
Storage Bay Dist (ft)	50			55					
Storage Blk Time (%)	55	47			35				
Queuing Penalty (veh)	177	87			3				

Intersection: 12: Palm Avenue & Rail xing

Movement	EB	EB	WB	WB	NB	SB
Directions Served	T	T	T	T	T	T
Maximum Queue (ft)	55	55	137	139	27	27
Average Queue (ft)	52	53	97	106	15	10
95th Queue (ft)	56	56	169	150	25	27
Link Distance (ft)	39	39	121	121	143	279
Upstream Blk Time (%)	59	60	25	15		
Queuing Penalty (veh)	242	243	86	51		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 1776

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.8	1.7	0.6	28.0	20.0	18.1	0.2	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	49.3	36.4	22.8	152.5	98.1	77.6	64.7	53.7	19.2	43.9	43.0	175.3

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	9.5
Total Del/Veh (s)	69.8

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	6.7	3.2	5.4	3.4	0.2	0.4	0.2	0.2	0.2	0.1	0.1	0.1
Total Del/Veh (s)	48.3	36.6	32.2	48.1	34.6	17.1	35.7	28.1	17.5	35.6	54.0	19.0

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	2.1
Total Del/Veh (s)	39.5

Intersection: 4: Harris St/Project Drwy & Palm Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	75	161	142	79	530	512	138	99	731
Average Queue (ft)	63	116	118	8	324	350	66	46	274
95th Queue (ft)	85	180	177	43	578	573	121	87	605
Link Distance (ft)		121	121		478	478	281	924	924
Upstream Blk Time (%)		25	28		22	29			
Queuing Penalty (veh)		68	76		0	0			
Storage Bay Dist (ft)	50			55					
Storage Blk Time (%)	22	37		0	58				
Queuing Penalty (veh)	50	24		0	6				

Intersection: 4: Harris St/Project Drwy & Palm Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	85	167	167	80	400	457	160	95	182
Average Queue (ft)	76	144	140	15	142	133	58	36	59
95th Queue (ft)	91	164	154	60	297	304	110	78	117
Link Distance (ft)		121	121		478	478	281	924	924
Upstream Blk Time (%)		53	45						
Queuing Penalty (veh)		214	185						
Storage Bay Dist (ft)	50			55					
Storage Blk Time (%)	67	38		1	40				
Queuing Penalty (veh)	215	71		1	4				

3: Hollister Street & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.8	0.8	0.9	3.6	0.5	0.4	3.4	0.2	0.3
Total Del/Veh (s)	85.3	48.7	38.2	76.3	9.8	4.6	60.7	47.2	49.2	51.0	41.2	22.9

3: Hollister Street & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	34.6

3: Hollister Street & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	1.2	0.0	3.6	0.2	0.2	3.0	0.6	0.5
Total Del/Veh (s)	87.8	87.8	81.9	66.2	14.8	18.6	42.8	28.9	28.7	43.7	38.0	31.3

3: Hollister Street & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	49.2

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.7	1.5	1.0	2.5	0.2	0.5	0.1	0.5	0.1	0.1	0.1	0.2
Total Del/Veh (s)	112.4	38.2	27.8	78.6	53.6	54.2	58.1	63.9	33.7	45.1	48.1	59.2

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	52.8

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.5	0.7	0.0	3.9	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2
Total Del/Veh (s)	115.2	32.8	29.4	67.0	30.9	30.7	35.3	33.6	19.4	36.7	40.6	26.8

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	39.8

Intersection: 4: Harris St/Project Drwy & Palm Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	78	182	138	80	373	410	163	114	254
Average Queue (ft)	65	140	128	14	208	214	61	52	117
95th Queue (ft)	98	173	154	55	328	359	120	99	228
Link Distance (ft)		121	121		478	478	281	924	924
Upstream Blk Time (%)		32	35						
Queuing Penalty (veh)		80	87						
Storage Bay Dist (ft)	50			55					
Storage Blk Time (%)	50	47		1	52				
Queuing Penalty (veh)	106	30		4	5				

Intersection: 12: Palm Avenue & Rail xing

Movement	EB	EB	WB	WB	NB	SB
Directions Served	T	T	T	T	T	T
Maximum Queue (ft)	76	86	180	163	51	51
Average Queue (ft)	45	50	148	128	11	16
95th Queue (ft)	72	70	175	185	38	47
Link Distance (ft)	39	39	121	121	143	279
Upstream Blk Time (%)	37	39	23	37		
Queuing Penalty (veh)	98	102	100	160		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 1287

Intersection: 4: Harris St/Project Drwy & Palm Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	84	172	148	27	92	137	70	49	52
Average Queue (ft)	68	150	150	8	63	95	42	24	42
95th Queue (ft)	95	168	144	27	101	139	81	52	59
Link Distance (ft)		121	121		478	478	281	924	924
Upstream Blk Time (%)		48	24						
Queuing Penalty (veh)		201	103						
Storage Bay Dist (ft)	50			55					
Storage Blk Time (%)	64	15			15				
Queuing Penalty (veh)	191	28			1				

Intersection: 12: Palm Avenue & Rail xing

Movement	EB	EB	WB	WB
Directions Served	T	T	T	T
Maximum Queue (ft)	54	55	143	161
Average Queue (ft)	51	58	90	106
95th Queue (ft)	55	63	134	155
Link Distance (ft)	39	39	121	121
Upstream Blk Time (%)	43	36	3	6
Queuing Penalty (veh)	181	153	9	19
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 1292

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.5	0.9	2.3	2.7	0.2	0.4	0.2	0.1	0.1	0.1	0.2	0.2
Total Del/Veh (s)	44.2	39.3	33.6	57.3	48.7	54.8	59.2	25.1	19.7	37.6	55.8	73.2

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	49.6

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.5	0.6	2.6	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1
Total Del/Veh (s)	44.9	35.5	28.1	55.8	36.6	25.3	31.9	41.2	14.5	34.1	29.8	25.4

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	36.1

Intersection: 4: Harris St/Project Drwy & Palm Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	77	184	160	80	345	456	136	149	354
Average Queue (ft)	59	139	120	14	214	257	54	40	142
95th Queue (ft)	78	184	186	50	343	400	108	96	293
Link Distance (ft)		121	121		478	488	281	924	944
Upstream Blk Time (%)		24	25						
Queuing Penalty (veh)		59	63						
Storage Bay Dist (ft)	50			55					
Storage Blk Time (%)	27	43		0	54				
Queuing Penalty (veh)	56	28		2	5				

Intersection: 4: Harris St/Project Drwy & Palm Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	75	162	157	80	337	272	134	76	172
Average Queue (ft)	70	135	133	14	143	150	48	30	70
95th Queue (ft)	82	169	156	49	243	236	89	65	136
Link Distance (ft)		121	121		478	478	281	924	924
Upstream Blk Time (%)		39	39						
Queuing Penalty (veh)		164	165						
Storage Bay Dist (ft)	50			55					
Storage Blk Time (%)	46	47		0	42				
Queuing Penalty (veh)	137	88		0	3				

3: Hollister Street & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.2	4.2	3.7	0.3	0.3	3.4	0.3	0.3
Total Del/Veh (s)	55.2	54.7	36.0	74.4	9.8	7.4	65.1	34.8	24.8	58.4	35.2	19.5

3: Hollister Street & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	0.4
Total Del/Veh (s)	34.8

3: Hollister Street & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0	3.3	0.4	0.2	2.7	0.5	0.5
Total Del/Veh (s)	153.5	151.7	160.0	66.8	9.9	9.8	43.9	39.8	36.4	60.8	30.2	24.8

3: Hollister Street & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	79.4

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	1.5	0.7	5.5	4.7	7.6	0.2	0.1	0.1	0.2	0.1	0.2
Total Del/Veh(s)	116.2	37.0	29.1	128.6	131.6	144.6	61.2	67.7	25.6	67.0	44.1	84.3

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	2.5
Total Del/Veh (s)	89.1

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	6.7	3.2	5.4	3.4	0.2	0.4	0.2	0.2	0.2	0.1	0.1	0.1
Total Del/Veh(s)	119.3	36.6	32.2	78.1	34.6	24.1	35.7	28.1	25.5	67.3	54.0	19.0

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	2.1
Total Del/Veh (s)	45.7

Intersection: 4: Harris St/Project Drwy & Palm Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	75	139	138	80	493	493	93	95	510
Average Queue (ft)	57	105	107	19	400	447	54	60	274
95th Queue (ft)	104	157	157	70	502	516	97	97	488
Link Distance (ft)		121	121		478	478	281	924	924
Upstream Blk Time (%)		20	19		15	17			
Queuing Penalty (veh)		53	51		0	0			
Storage Bay Dist (ft)	50			55					
Storage Blk Time (%)	26	39			81				
Queuing Penalty (veh)	59	25			8				

Intersection: 12: Palm Avenue & Rail xing

Movement	EB	EB	WB	WB	SB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	56	72	180	169	73
Average Queue (ft)	45	54	154	145	41
95th Queue (ft)	62	71	187	166	73
Link Distance (ft)	39	39	121	121	279
Upstream Blk Time (%)	14	23	46	56	
Queuing Penalty (veh)	39	62	214	259	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 1309

Intersection: 4: Harris St/Project Drwy & Palm Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	75	159	139	29	201	185	70	52	78
Average Queue (ft)	74	148	135	9	122	117	51	42	56
95th Queue (ft)	99	166	140	28	230	203	72	59	96
Link Distance (ft)		121	121		478	478	281	924	924
Upstream Blk Time (%)		38	53						
Queuing Penalty (veh)		154	214						
Storage Bay Dist (ft)	50			55					
Storage Blk Time (%)	55	47			35				
Queuing Penalty (veh)	177	87			3				

Intersection: 12: Palm Avenue & Rail xing

Movement	EB	EB	WB	WB	NB	SB
Directions Served	T	T	T	T	T	T
Maximum Queue (ft)	55	55	137	139	27	27
Average Queue (ft)	52	53	97	106	15	10
95th Queue (ft)	56	56	169	150	25	27
Link Distance (ft)	39	39	121	121	143	279
Upstream Blk Time (%)	59	60	25	15		
Queuing Penalty (veh)	242	243	86	51		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 1776

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.8	1.7	0.6	28.0	20.0	18.1	0.2	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	49.3	36.4	22.8	152.5	98.1	77.6	64.7	53.7	19.2	43.9	43.0	175.3

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	9.5
Total Del/Veh (s)	69.8

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	6.7	3.2	5.4	3.4	0.2	0.4	0.2	0.2	0.2	0.1	0.1	0.1
Total Del/Veh (s)	48.3	36.6	32.2	48.1	34.6	17.1	35.7	28.1	17.5	35.6	54.0	19.0

4: Harris St/Project Drwy & Palm Avenue Performance by movement

Movement	All
Denied Del/Veh (s)	2.1
Total Del/Veh (s)	39.5

Intersection: 4: Harris St/Project Drwy & Palm Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	75	161	142	79	530	512	138	99	731
Average Queue (ft)	63	116	118	8	324	350	66	46	274
95th Queue (ft)	85	180	177	43	578	573	121	87	605
Link Distance (ft)		121	121		478	478	281	924	924
Upstream Blk Time (%)		25	28		22	29			
Queuing Penalty (veh)		68	76		0	0			
Storage Bay Dist (ft)	50			55					
Storage Blk Time (%)	22	37		0	58				
Queuing Penalty (veh)	50	24		0	6				

Intersection: 4: Harris St/Project Drwy & Palm Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LT	R
Maximum Queue (ft)	85	167	167	80	400	457	160	95	182
Average Queue (ft)	76	144	140	15	142	133	58	36	59
95th Queue (ft)	91	164	154	60	297	304	110	78	117
Link Distance (ft)		121	121		478	478	281	924	924
Upstream Blk Time (%)		53	45						
Queuing Penalty (veh)		214	185						
Storage Bay Dist (ft)	50			55					
Storage Blk Time (%)	67	38		1	40				
Queuing Penalty (veh)	215	71		1	4				