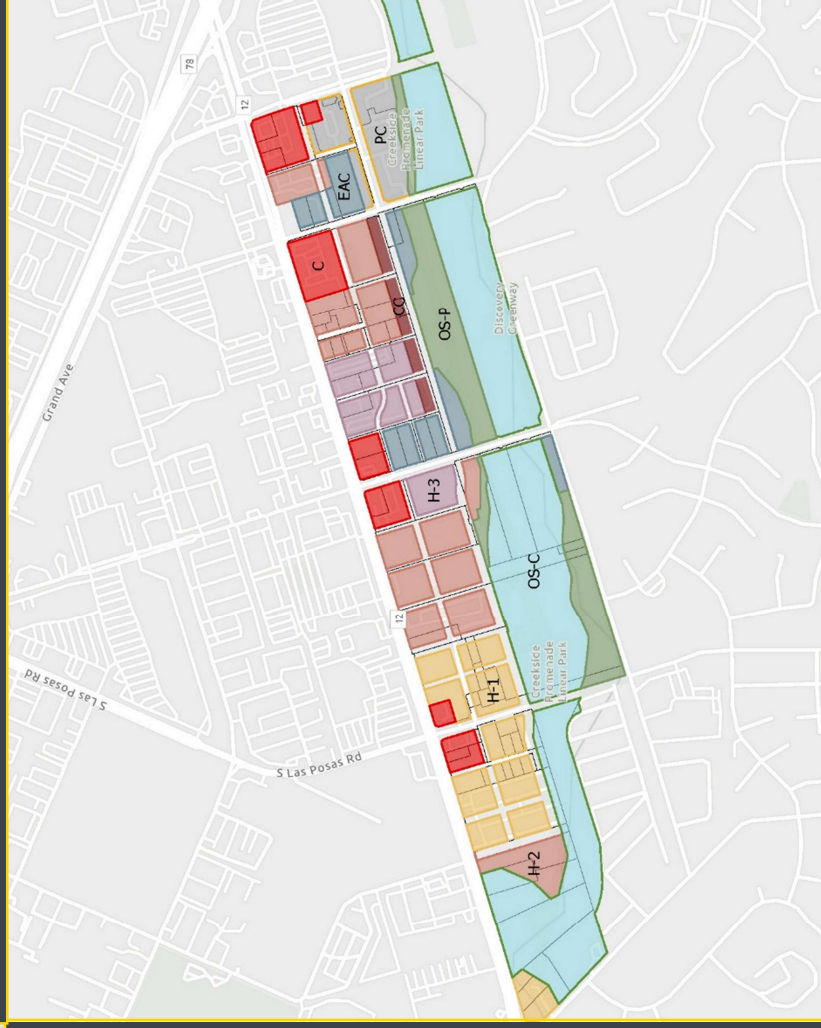
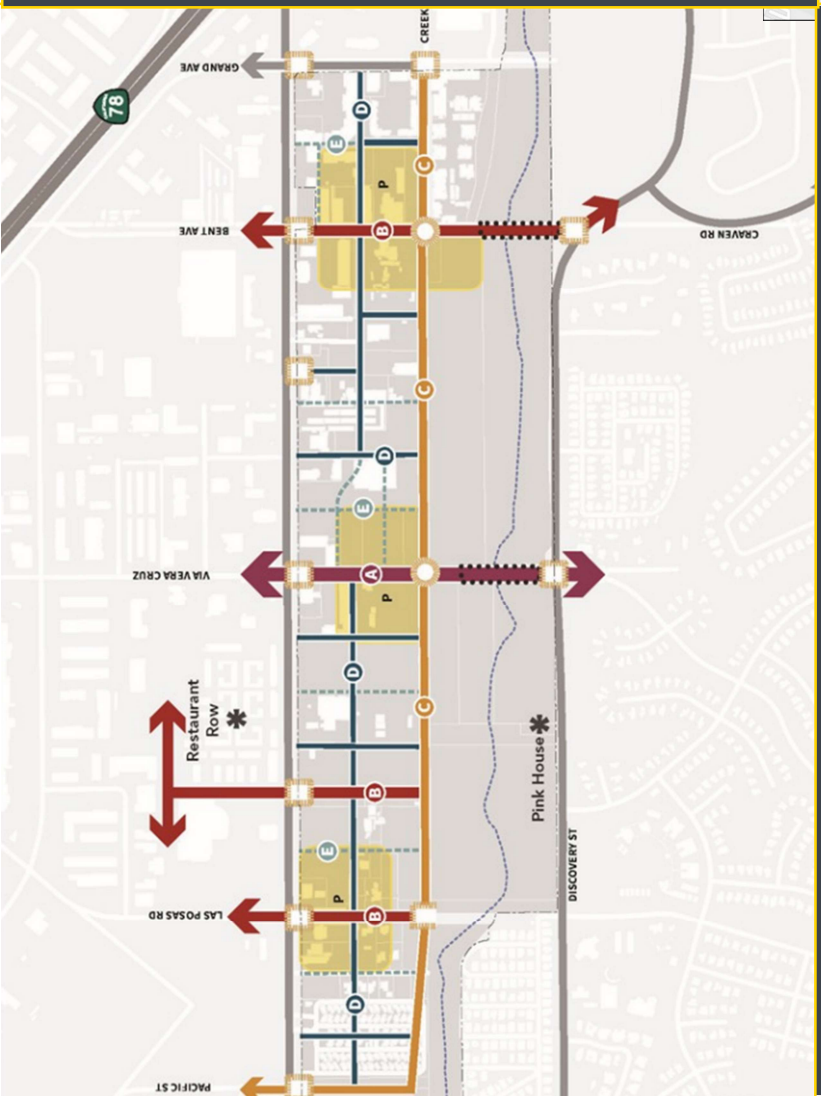
Local Transportation Analysis

San Marcos Creek Specific Plan Update

June 1, 2026





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City of San Marcos

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Executive Summary

The purpose of this Local Transpiration Assessment (LTA) is to identify and document the level of service (LOS) analysis results associated with the proposed San Marcos Creek Specific Plan Update project (Proposed Project) and the surrounding transportation network.

ES.1 Project Setting

The Proposed Project is a specific plan that provides for the planning framework via specific planning policies and development standards within the San Marcos Creek area. The specific plan area is approximately 214 acres and bound by San Marcos Boulevard to the north, Discovery Street to west and south, and Grand Avenue to the east.

The 2007 Specific Plan proposed the following land use intensities:

- 2,300 housing units
- 1,265,000 square feet of retail space
- 589,000 square feet of office space

However, since 2007, changes have occurred which impact the feasibility of the planned development within the San Marcos Creek area. Therefore, the goal of this effort is to update the San Marcos Creek Specific Plan to better reflect current conditions and opportunities. The specific plan now includes the following land use intensities:

- 360,868 square feet of commercial retail space
- 2,296 mixed-used residential units
- 89,385 square feet of mixed-used commercial retail
- 205,603 square feet of residential and commercial uses in Entertainment Arts and Culture
- Open space and passive open space adjacent to the creek

Table ES.1 displays the estimated trip generation for the 2007 Specific Plan. Trip generation rates were derived from *SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates in the San Diego Region, April 2002*.

Table ES.1 Project Trip Generation – 2007 Specific Plan

Land Use	Units	Trip Rate[1]	ADT	AM			PM		
				Trips	In	Out	Trips	In	Out
Mixed-Use: Community Commercial	1,265 KSF	72 / KSF	91,080	3,643	2,186	1,457	9,108	4,554	4,554
Mixed-Use: Office	589 KSF	18 / KSF	10,602	1,484	1,336	148	1,378	276	1,102
Mixed-Used – Multi-Family Residential	2,300 DU	5.4 / DU	12,420	994	199	795	1,118	783	335
Total			**114,102**	**6,121**	**3,721**	**2,400**	**11,604**	**5,613**	**5,991**

Notes:
[1] Assumes 10% daily trip reduction for mixed-use developments where residential and commercial retail are combined per *SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates in the San Diego Region, April 2002*.
SF = Square Feet
KSF = 1,000 SF
DU = Dwelling Unit

As shown, the 2007 Specific Plan is estimated to generate a total of 114,102 daily trips, with 6,121 trips (3,721-in & 2,400-out) generated during the AM peak hour and 11,604 trips (5,613-in & 5,991-out) during the PM peak hour.

Table ES.2 displays the Proposed Project's anticipated trip generation.

Table ES.2 Project Trip Generation – Proposed Project

Land Use	Units	Trip Rate	ADT	AM			PM		
				Trips	In	Out	Trips	In	Out
Mixed-Use: Commercial[1]	566,471 SF	110 / KSF	62,312	1,870	1,122	748	5,609	2,805	2,804
Mixed-Use: Residential Only	2,296 DU	5 / DU	11,480	1,034	310	724	1,493	896	597
Specialty Retail / Strip Commercial	89,385 SF	40 / KSF	3,576	108	65	43	322	161	161
Total			**77,368**	**3,012**	**1,497**	**1,515**	**7,424**	**3,862**	**3,562**

Notes:
[1] Includes 150,021 commercial from the Entertainment Arts and Culture area.
SF = Square Feet
KSF = 1,000 SF
DU = Dwelling Unit

As shown, the Proposed Project is anticipated to generate a total of 77,368 daily trips, with 3,012 trips (1,497-in & 1,515-out) generated during the AM peak hour and 7,424 trips (3,862-in & 3,562-out) during the PM peak hour.

Table ES.3 displays a comparison of the estimated trip generation between the 2007 Specific Plan and the Proposed Project.

Table ES.3 Project Trip Generation Comparison

Land Use	ADT	AM			PM		
		Trips	In	Out	Trips	In	Out
2007 Specific Plan	114,102	6,121	3,721	2,400	11,604	5,613	5,991
Proposed Project	77,368	3,012	1,497	1,515	7,424	3,862	3,562
Net[1]	**-36,734**	**-3,109**	**-2,224**	**-885**	**-4,180**	**-1,751**	**-2,429**

Notes:
[1] Net = Proposed Project – 2007 Specific Plan

As shown, the Proposed Project is anticipated to generate fewer trips than the 2007 Specific Plan with a net difference of 36,734 daily trips, with 3,109 fewer trips (-2,224-in & -885-out) during the AM peak hour and 4,180 trips fewer trips (-1,751-in & -2,429-out) during the PM peak hour. This is consistent with the overall difference in land use intensity with the 2007 Specific Plan assuming much more community commercial and additional mixed-used office land use.

The specific plan area is currently developed with industrial uses, a mobile home park, commercial uses, and shopping centers. Additionally, roadway bridges serving vehicles, pedestrians, and bicyclists have recently been completed along Bent Avenue and Via Vera Cruz that connect San Marcos Boulevard to Discovery Street.

ES.2 Project Study Area

Based on the Proposed Project's trip distribution (displayed in Figure 3.2), and key roadway facilities adjacent to the project site, the following roadway and intersection facilities are included within the project study area:

Roadway Segments

1. Las Posas Road between Grand Avenue and La Mirada Drive
2. Las Posas Road between La Mirada Drive to Linda Vista Drive
3. Las Posas Road between Linda Vista Drive to San Marcos Boulevard
4. Via Vera Cruz between Grand Avenue and Linda Vista Drive
5. Via Vera Cruz between Linda Vista Drive and San Marcos Boulevard
6. Via Vera Cruz between San Marcos Boulevard and Discovery Street
7. Bent Avenue between Grand Avenue and San Marcos Boulevard
8. Bent Avenue between San Marcos Boulevard and Creekside Drive
9. Bent Avenue between Creekside Drive and Discovery Street
10. Grand Avenue between Las Posas Road and Via Vera Cruz
11. Grand Avenue between Via Vera Cruz and Bent Avenue
12. Grand Avenue between Bent Avenue and San Marcos Boulevard
13. Grand Avenue between San Marcos Boulevard and Creekside Drive
14. Grand Avenue between Creekside Drive and Discovery Street
15. Linda Vista Drive between Las Posas Road and Via Vera Cruz

16. Linda Vista Drive between Via Vera Cruz and Grand Avenue
17. San Marcos Boulevard between Knights Realm to Discovery Street
18. San Marcos Boulevard between Discovery Street to Pacific Street
19. San Marcos Boulevard between Pacific Street to Las Posas Road
20. San Marcos Boulevard between Las Posas Road and Via Vera Cruz
21. San Marcos Boulevard between Via Vera Cruz and Bent Avenue
22. San Marcos Boulevard between Bent Avenue and Grand Avenue
23. San Marcos Boulevard between Grand Avenue and State Route 78 (SR-78) Eastbound (EB) Ramps
24. San Marcos Boulevard between SR-78 EB Ramps and Knoll Road / SR-78 Westbound (WB) Off-Ramp
25. San Marcos Boulevard between Knoll Road / SR-78 WB Off-Ramp and Travelers Way
26. Creekside Drive between Bent Avenue and Grand Avenue
27. Discovery Street between Via Vera Cruz and Bent Avenue
28. Discovery Street between Bent Avenue and Craven Road
29. Discovery Street between Craven Road and N City Drive

Intersections:

1. Las Posas Road / SR-78 WB Ramps (Signal)
2. Las Posas Road / Grand Avenue (Signal)
3. Via Vera Cruz / SR-78 EB Ramps / Grand Avenue (Signal)
4. Las Posas Road / La Mirada Drive (Signal)
5. Las Posas Road / Linda Vista Drive (Signal)
6. Via Vera Cruz / Linda Vista Drive (Signal)
7. Linda Vista Dive / Grand Avenue (Side-Street Stop Controlled)
8. Bent Avenue / Grand Avenue (Signal)
9. Discovery Street / San Marcos Boulevard (Signal)
10. Pacific Street / San Marcos Boulevard (Signal)
11. Las Posas Road / San Marcos Boulevard (Signal)
12. Via Vera Cruz / San Marcos Boulevard (Signal)
13. Bent Avenue / San Marcos Boulevard (Signal)
14. Grand Avenue / San Marcos Boulevard (Signal)
15. SR-78 EB Ramps / San Marcos Boulevard (Signal)
16. Knoll Road / SR-78 WB Off-Ramp / San Marcos Boulevard (Signal)
17. Grand Avenue / Creekside Drive (Signal)
18. Via Vera Cruz / Discovery Street (Signal)
19. Bent Avenue / Discovery Street (Signal)
20. Craven Road / Discovery Street (Signal)
21. Exploration Drive / Discovery Street (Signal) (future Grand Avenue bridge connection)

ES.3 LOS Analysis Summary

This section summarizes the analysis results under each analysis scenario.

EXISTING CONDITIONS

The following summarizes the analysis results and findings under Existing Conditions.

Roadway Segment Analysis

The following five (5) roadway segments currently operate at LOS E under Existing Conditions:

- Bent Avenue between San Marcos Boulevard and Creekside Drive – LOS E
- San Marcos Boulevard between Knights Realm and Discovery Street – LOS E
- San Marcos Boulevard between Discovery Street and Pacific Street – LOS E
- San Marcos Boulevard between Pacific Street and Las Posas Road – LOS E
- San Marcos Boulevard between Via Vera Cruz and Bent Avenue – LOS E

Intersection Analysis

The following three (3) intersections currently operate at LOS E or F under Existing Conditions:

3. *Via Vera Cruz / SR-78 EB Ramps / Grand Avenue* – (AM: LOS E, PM: LOS F) – The high delay at this intersection is primarily due to the limited capacity for the north leg of the intersection, which is the SR-78 eastbound off-ramp configured with a left-turn lane and a shared through/right-turn lane configuration.

12. *Via Vera Cruz / San Marcos Boulevard* – (PM: LOS E) – The high delay at this intersection is primarily due to the high vehicular volumes for the westbound through movement. This movement has limited capacity, which is currently serviced by a through lane and a shared through/right-turn lane configuration.

13. *Bent Avenue / San Marcos Boulevard* – (AM: LOS F) - The high delay at this intersection is primarily due to the high vehicular volumes for the eastbound through movement. This movement has limited capacity, which is currently serviced by a through lane and a shared through/right-turn lane configuration.

HORIZON YEAR 2050 CONDITIONS

The following summarizes the analysis results and findings under Horizon Year 2050 Conditions.

Roadway Segment Analysis

The following 13 roadway segments are anticipated to operate at LOS E or F under Horizon Year 2050 Base Conditions:

- Bent Avenue between San Marcos Boulevard and Creekside Drive – LOS F
- Bent Avenue between Creekside Drive and Discovery Street – LOS F
- Grand Avenue between San Marcos Boulevard and Creekside Drive – LOS E
- Linda Vista Drive between Via Vera Cruz and Grand Avenue – LOS F
- San Marcos Boulevard between Knights Realm and Discovery Street – LOS F
- San Marcos Boulevard between Discovery Street and Pacific Street – LOS F
- San Marcos Boulevard between Pacific Street and Las Posas Road – LOS F
- San Marcos Boulevard between Las Posas Road and Via Vera Cruz – LOS F
- San Marcos Boulevard between Via Vera Cruz and Bent Avenue – LOS F

- San Marcos Boulevard between Bent Avenue and Grand Avenue – LOS F
- San Marcos Boulevard between Grand Avenue and SR-78 EB Ramps – LOS F
- San Marcos Boulevard between SR-78 EB Ramps and Knoll Road / SR-78 WB Off-Ramp – LOS F
- Creekside Drive between Bent Avenue and Grand Avenue – LOS F

Intersection Analysis

The following 13 intersections are anticipated to operate at LOS E or F under Horizon Year 2050 Base Conditions:

1. Las Posas Road / SR-78 WB Ramps – (AM: LOS E, PM: LOS E)
2. Las Posas Road / Grand Avenue - (PM: LOS E)
3. Via Vera Cruz / SR-78 EB Ramps / Grand Avenue – (AM: LOS F, PM: LOS F)
4. Las Posas Road / La Mirada Drive – (AM: LOS E)
7. Linda Vista Drive / Grand Avenue – (AM: LOS E, PM: LOS F)
10. Pacific Street / San Marcos Boulevard – (PM: LOS F)
11. Las Posas Road / San Marcos Boulevard – (PM: LOS F)
12. Via Vera Cruz / San Marcos Boulevard – (AM: LOS E, PM: LOS F)
13. Bent Avenue / San Marcos Boulevard – (AM: LOS F, PM: LOS F)
14. Grand Avenue / San Marcos Boulevard – (PM: LOS E)
17. Grand Avenue / Creekside Drive – (PM: LOS F)
18. Via Vera Cruz / Discovery Street – (PM: LOS E)
19. Bent Avenue / Discovery Street – (PM: LOS E)

HORIZON YEAR 2050 with PROJECT CONDITIONS

The following summarizes the analysis results and findings under Horizon Year 2050 with Project Conditions.

Roadway Segment Analysis

The following 13 roadway segments are anticipated to operate at LOS E or F under Horizon Year 2050 with Project Conditions:

- Bent Avenue between Grand Avenue and San Marcos Boulevard – LOS E
- Bent Avenue between San Marcos Boulevard and Creekside Drive – LOS F
- Bent Avenue between Creekside Drive and Discovery Street – LOS F
- Linda Vista Drive between Via Vera Cruz and Grand Avenue – LOS F
- San Marcos Boulevard between Knights Realm and Discovery Street – LOS F
- San Marcos Boulevard between Discovery Street and Pacific Street – LOS E
- San Marcos Boulevard between Pacific Street and Las Posas Road – LOS E
- San Marcos Boulevard between Las Posas Road and Via Vera Cruz – LOS F
- San Marcos Boulevard between Via Vera Cruz and Bent Avenue – LOS F
- San Marcos Boulevard between Bent Avenue and Grand Avenue – LOS E
- San Marcos Boulevard between Grand Avenue and SR-78 EB Ramps – LOS F
- San Marcos Boulevard between SR-78 EB Ramps and Knoll Road / SR-78 WB Off-Ramp – LOS F
- Creekside Drive between Bent Avenue and Grand Avenue – LOS F

Intersection Analysis

The following four intersections are anticipated to operate at LOS E or F under Horizon Year 2050 with Project Conditions:

3. Via Vera Cruz / SR-78 EB Ramps / Grand Avenue – (AM: LOS F, PM: LOS F)
7. Linda Vista Drive / Grand Avenue – (AM: LOS E, PM: LOS F)
12. Via Vera Cruz / San Marcos Boulevard – (PM: LOS F)
13. Bent Avenue / San Marcos Boulevard – (PM: LOS F)

ES.4 Substantial Effects to the Transportation Network

The following 13 study roadway segments are anticipated to operate at LOS E or F under Horizon Year 2050 with Project Conditions and the corresponding improvements would improve operations to LOS D or better:

- *Bent Avenue between Grand Avenue and San Marcos Boulevard* – (LOS E) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio increases by 0.353, which degrades the LOS from acceptable LOS C to LOS E with implementation of the Proposed Project. The classification change from a Four-Lane Secondary Arterial / Collector under Horizon Year 2050 Base Conditions to a Two-Lane Collector under Horizon Year 2050 with Project Conditions causes the operations of the roadway to degrade to subpar levels.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to a Four-Lane Secondary Arterial/Collector to serve the projected vehicle volumes. However, additional right-of-way would be required from existing commercial and industrial developments along Bent Avenue to accommodate the increased travel lanes. Additionally, removal of existing Class II bicycle facilities would be required, which would conflict with the City's Mobility Element Goal M-1 and Policy M-3.1 to provide a comprehensive multimodal circulation system. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *Bent Avenue between San Marcos Boulevard and Creekside Drive* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio increases by 0.633, which exacerbates the LOS at a roadway segment that is already operating at LOS F. The classification change from a Four-Lane Secondary Arterial / Collector under Horizon Year 2050 Base Conditions to a Two-Lane Collector under Horizon Year 2050 with Project Conditions exacerbates the operations of the roadway that is already operating at subpar levels.

  To improve operations to LOS D or better, the roadway segment would need to be improved to a Four-Lane Major Arterial. As shown in Figure 3.4 and 3.5, the Proposed Project will improve this segment to a curb-to-curb width of 80-feet, which will be able to accommodate a raised median and four travel lanes and Class IV Cycle Tracks, and therefore, is a feasible improvement to be implemented by the Proposed Project.

- *Bent Avenue between Creekside Drive and Discovery Street* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.250 resulting in improved traffic operations. The improved operations along this roadway segment, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on

the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

To improve operations to LOS D or better, the roadway segment would need to be improved to a Four-Lane Collector to serve forecasted daily traffic along the segment. However, the majority of this roadway segment is the recently completed Bent Avenue Bridge that connects Creekside Drive and Discovery Street. This bridge is currently configured with an estimated curb-to-curb width of 33-feet with a two-lane undivided roadway and Class II bicycle facilities. Sidewalks are also present along both sides of the bridge. Widening the roadway would include removal of bicycle facilities and narrowing the sidewalks, which would conflict with the City's Mobility Element Goal M-1 and Policy M-3.1 to provide a comprehensive multimodal circulation system. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *Linda Vista Drive between Via Vera Cruz and Grand Avenue* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio does not change as project traffic is not anticipated along this segment. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements by the Proposed Project would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway segment would need to be widened to a Two-Lane Collector with a center lane to serve forecasted daily traffic along the segment. However, the existing curb-to-curb width is approximately 45-feet whereas per the City of San Marcos street cross-section requirements, at least 48-feet is needed for a collector/industrial street. Widening would require removal of parking and right-of-way acquisition from existing businesses along this segment. Therefore, capacity enhancing improvements are not feasible for this study roadway segment.

- *San Marcos Boulevard between Knights Realm and Discovery Street* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.184 resulting in improved traffic operations with the Proposed Project. The improved operations along this roadway segment when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to a 10-Lane Major Arterial to serve the projected vehicle volumes. However, under Horizon Year with Project Conditions, the roadway segment is built out to its ultimate classification as a Six-Lane Major Arterial per the City of San Marcos Mobility Element. Therefore, capacity enhancing improvements are not feasible for this study roadway segment.

- *San Marcos Boulevard between Discovery Street and Pacific Street* – (LOS E) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.191 resulting in improved traffic operations with the Proposed Project. The improved operations along this roadway segment when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to a Six-Lane Major Arterial to serve the projected vehicle volumes. However, under Horizon Year with Project Conditions, the roadway segment is built out to its ultimate classification as a Multi-Way Boulevard per the City of San Marcos Mobility Element. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *San Marcos Boulevard between Pacific Street and Las Posas Road* – (LOS E) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.192 resulting in improved traffic operations. The improved operations along this roadway segment, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to a Six-Lane Major Arterial to serve the projected vehicle volumes. However, under Horizon Year with Project Conditions, the roadway segment is built out to its ultimate classification as a Multi-Way Boulevard per the City of San Marcos Mobility Element. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *San Marcos Boulevard between Las Posas Road and Via Vera Cruz* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.140 resulting in improved traffic operations. The improved operations along this roadway segment, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to an Eight-Lane Major Arterial to serve the projected vehicle volumes. However, under Horizon Year with Project Conditions, the roadway segment is built out to its ultimate classification as a Multi-Way Boulevard per the City of San Marcos Mobility Element. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *San Marcos Boulevard between Via Vera Cruz and Bent Avenue* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.079 resulting in improved traffic operations. The improved operations along this roadway segment, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to an Eight-Lane Major Arterial to serve the projected vehicle volumes. However, under Horizon Year with Project Conditions, the roadway segment is built out to its ultimate classification as a

Multi-Way Boulevard per the City of San Marcos Mobility Element. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *San Marcos Boulevard between Bent Avenue and Grand Avenue* – (LOS E) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.118 resulting in improved traffic operations. The improved operations along this roadway segment, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to an Eight-Lane Major Arterial to serve the projected vehicle volumes. However, under Horizon Year with Project Conditions, the roadway segment is built out to its ultimate classification as a Six-Lane Major Arterial per the City of San Marcos Mobility Element. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *San Marcos Boulevard between Grand Avenue and SR-78 EB Ramps* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.150 resulting in improved traffic operations. The improved operations along this roadway segment, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to an Eight-Lane Expressway to serve the projected vehicle volumes. However, under Horizon Year with Project Conditions, the roadway segment is built out to its ultimate classification as a Six-Lane Prime Arterial per the City of San Marcos Mobility Element. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *San Marcos Boulevard between SR-78 EB Ramps and Knoll Road / SR-78 WB Off-Ramp* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.147 resulting in improved traffic operations. The improved operations along this roadway segment, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to an Eight-Lane Prime Arterial to serve the projected vehicle volumes. However, under Horizon Year with Project Conditions, the roadway segment is built out to its ultimate classification as a Six-Lane Prime Arterial per the City of San Marcos Mobility Element. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *Creekside Drive between Bent Avenue and Grand Avenue* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 2.300 resulting in improved traffic operations. The improved operations along this roadway segment, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to a Two-Lane Collector with center lane to serve the projected vehicle volumes. However, additional right-of-way would be required from existing residential land uses along Creekside Drive to accommodate the increased travel lanes. Additionally, widening the roadway would include removal of on-street parking and narrowing the sidewalks, which would conflict with the City's Mobility Element Goal M-1 and Policy M-3.1 to provide a comprehensive multimodal circulation system. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

It is recommended that individual projects evaluate Transportation Systems Management and Operations (TSMO) solutions that have the potential to improve travel time for the corridors listed above where capacity cannot be increased. TSMO solutions may include but not limited to adaptive signal timing, transit signal priority (TSP), and active transportation demand management.

Improvements were determined to be feasible along Bent Avenue between San Marcos Boulevard and Creekside Drive. **Table ES.4** displays LOS analysis results before and after implementation of the recommended improvement at the study roadway segment under Horizon Year 2050 with Project with Improvement Conditions. Detailed discussion for feasibility of all study roadway segment improvements is provided in Section 5.6.

As shown, Bent Avenue between San Marcos Boulevard and Creekside Drive is expected to improve from LOS F to LOS C with the recommended improvement to a Four-Lane Major Arterial.

Table ES.4 Roadway Segment LOS Results – Horizon Year 2050 with Project with Improvement Conditions

Roadway	Segment	Before Improvement					After Improvement					Δ in V/C
		Cross-Section	Threshold	ADT	V/C	LOS	Cross-Section	Threshold	ADT	V/C	LOS	
Bent Ave	San Marcos Blvd to Creekside Dr	Collector (2 Lanes – Center Lane)	15,000	24,900	1.660	**F**	Major Arterial (4 Lanes)	40,000	24,900	0.623	C	-1.037

Notes:
Bold indicates LOS E or F.
V/C = Volume to Capacity Ratio

Intersection Analysis

Table ES.5 displays all study intersections that are anticipated to operate at LOS E or F under Horizon Year 2050 with Project Conditions.

Table ES.5 Peak Hour Intersection LOS Results – Horizon Year 2050 Conditions

Intersection	Control	Base Conditions				with Project Conditions				Δ in Delay AM/PM
		AM		PM		AM		PM		
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
3: Via Vera Cruz / SR-78 EB Ramps / Grand Avenue[1]	Signal	108.7	**F**	>180.0	**F**	105.6	**F**	150.7	**F**	-3.1 / -44.0
7: Linda Vista Dive / Grand Avenue	SSSC / Signal[2]	48.3	**E**	>180.0	**F**	35.3	**E**	> 180.0	**F**	-13.0 / -79.6
12: Via Vera Cruz / San Marcos Boulevard	Signal[3]	64.3	**E**	145.4	**F**	49.3	D	93.6	**F**	-15.0 / -51.8
13: Bent Avenue / San Marcos Boulevard	Signal[3]	88.5	**F**	129.4	**F**	36.5	D	85.6	**F**	-52.0 / -43.8

Notes:

Bold indicates LOS E or F.

SSSC = Side-Street Stop Controlled. For SSSC intersections, the delay shown is the worst delay experienced by any of the movements.

To improve Horizon Year Base with Project Conditions intersection operations to LOS D or better than pre-project conditions, the improvements described below would be required at all intersections listed in Table ES.5:

3. *Via Vera Cruz / SR-78 EB Ramps / Grand Avenue* – (AM: LOS F, PM: LOS F) - Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the delay decreases by 3.1 seconds and 44.0 seconds during the AM and PM peak hour, respectively. The improved operations at this intersection, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer peak hour vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this intersection.

   To improve Horizon Year Base with Project Conditions intersection LOS to better than pre-project conditions, the following improvements would be required at this intersection:

   - Update the southbound approach to one left-turn, one shared through-right turn lane, and one right-turn lane configuration.

   The improvements listed above would require widening of the Caltrans off ramp for the southbound approach to accommodate the recommended lane configuration. However, this intersection is a Caltrans facility and located outside of the City's jurisdiction. Therefore, improvement implementation would require coordination with Caltrans.

7. *Linda Vista Drive / Grand Avenue* – (AM: LOS E, PM: LOS F) - Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the delay decreases by 13.0 seconds and 79.6 seconds during the AM and PM peak hour, respectively. The improved operations at this intersection when compared to Horizon Year 2050 Base Conditions is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer peak hour vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this intersection.

   To improve Horizon Year Base with Project Conditions intersection operations to LOS D or better, the following improvements would be required at this intersection:

   - Signalization of the Linda Vista Drive and Grand Avenue intersection (expected to run on same signal controller at existing closely spaced signalized intersection of Bent Avenue and Grand Avenue).
   - Maintain existing lane configuration.

   This improvement is scheduled to be identified in the City's future Capital Improvement Program (CIP). There is no right-of-way constraints for the improvements listed above; therefore, the improvements are considered feasible improvements to be implemented by the Proposed Project.

12. *Via Vera Cruz / San Marcos Boulevard* – (PM: LOS F) - Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the delay during the PM peak hour decreases by 51.8 seconds. The improved operations at this intersection when compared to Horizon Year 2050 Base Conditions is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer peak hour vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this intersection.

    To improve Horizon Year Base with Project Conditions intersection operations to LOS D or better, the following improvements would be required at this intersection:

    - Update the southbound approach to dual left-turns, one through, and a shared through/right-turn lane configuration.
    - Update the westbound approach to dual left-turns, dual throughs, and one right-turn lane configuration.
    - Addition of right-turn overlaps for the northbound, eastbound, and westbound approaches. It is important to note that the right-turn overlaps may not be feasible with the multi-way boulevard. Thus, further operational analysis will need to be conducted of the multi-way boulevard that considers these signal improvements.

    The improvements listed above would require narrowing the lane widths from 11 feet to 10 ½ feet for the southbound approach to accommodate the recommended lane configuration. As a result of the narrowing lane widths, the bicycle facilities on the north leg would need to terminate before the intersection. The design of the multi-way boulevard should take into consideration the configuration of the westbound approach, particularly the dual left-turns lanes, as well as the signal right-turn overlaps. These improvements are considered feasible improvements to be implemented by the Proposed Project; however, further operational analysis will need to be conducted of the multi-way boulevard that considers these signal improvements.

13. *Bent Avenue / San Marcos Boulevard* – (PM: LOS F) - Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the delay during the PM peak hour decreases by 43.8 seconds. The improved operations at this intersection when compared to Horizon Year 2050 Base Conditions is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer peak hour vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this intersection.

    To improve Horizon Year Base with Project Conditions intersection operations to LOS D or better, the following improvements would be required at this intersection:

    - Update the southbound approach to one left-turn, one through, and right-turn lane configuration.
    - Update the westbound approach to dual left-turns, dual through, and one right-turn lane configuration.
    - Addition of a right-turn overlap for the eastbound approach. It is important to note that the right-turn overlaps may not be feasible with the multi-way boulevard. Thus, further operational analysis will need to be conducted of the multi-way boulevard that considers these signal improvements.

    The improvements listed above would require narrowing the lane widths from 12 feet to 11 feet for the southbound approach to accommodate the recommended lane configuration. As a result of the narrowing lane widths, the bicycle facilities on the north leg would need to terminate before the intersection. The design of the multi-way boulevard should take into consideration the configuration of the westbound approach, particularly the dual left-turns lanes, as well as the signal right-turn overlaps. These improvements are considered feasible improvements to be implemented by the Proposed Project; however, further operational analysis will need to be conducted of the multi-way boulevard that considers these signal improvements.

Table ES.6 displays LOS analysis results before and after implementation of the recommended improvements at the study intersections under Horizon Year 2050 with Project with Improvement Conditions.

As shown, all study intersections would operate at LOS D or better than pre-project conditions with implementation of the recommended improvements.

Table ES.6 Peak Hour Intersection LOS Results – Horizon Year 2050 with Project with Improvement Conditions

Intersection	Control	Existing Conditions				Horizon Year with Project Before Improvements				Horizon Year with Project After Improvements			
		AM		PM		AM		PM		AM		PM	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
3: Via Vera Cruz / SR-78 EB Ramps / Grand Avenue[1]	Signal	59.1	**E**	101.5	**F**	109.2	**F**	150.7	**F**	52.7	D	75.1	**E**[2]
7: Linda Vista Dive / Grand Avenue	SSSC / Signal[3]	10.5	B	31.2	D	35.3	**E**	> 180.0	**F**	15.4	B	30.1	C
12: Via Vera Cruz / San Marcos Boulevard	Signal[4]	51.0	D	55.1	**E**	49.3	D	93.6	**F**	41.7	D	49.5	D
13: Bent Avenue / San Marcos Boulevard	Signal[4]	84.7	**F**	29.5	C	36.5	D	85.6	**F**	31.8	C	49.9	D

Note:

Bold indicates LOS E or F.

SSSC = Side-Street Stop Controlled. For SSSC intersections, the delay shown is the worst delay experienced by any of the movements.

[1] The improvement recommendations at this intersection will require coordination with Caltrans since the facility is located outside the City's jurisdiction.

[2] Better than pre-project conditions

[3] Improved from existing SSSC to a signalized intersection.

[4] Additional operational analysis will need to be conducted before implementation of the multi-way boulevard with right-turn overlaps.

1.0 Introduction

The purpose of this Local Transpiration Assessment (LTA) is to identify and document the level of service (LOS) analysis results associated with the proposed San Marcos Creek Specific Plan Update project (Proposed Project) for the surrounding transportation network.

1.1 Project Description

The Proposed Project is a specific plan that provides for the planning framework via specific planning policies and development standards within the San Marcos Creek area. The specific plan area is approximately 214 acres and bound by San Marcos Boulevard to the north, Discovery Street to west and south, and Grand Avenue to the east.

The 2007 Specific Plan proposed the following land use intensities:

- 2,300 housing units
- 1,265,000 square feet of retail space
- 589,000 square feet of office space

However, since 2007, changes have occurred which impact the feasibility of the planned development within the San Marcos Creek area. Therefore, the goal of this effort is to update the San Marcos Creek Specific Plan to better reflect current conditions and opportunities. The specific plan now includes the following land use intensities:

- 360,868 square feet of commercial retail space
- 2,296 mixed-used residential units
- 89,385 square feet of mixed-used commercial retail
- 205,603 square feet of residential and commercial uses in Entertainment Arts and Culture
- Open space and passive open space adjacent to the creek

The specific plan area is currently developed with industrial uses, a mobile home park, commercial uses, and shopping centers. Additionally, roadway bridges serving vehicles, pedestrians, and bicyclists have recently been completed along Bent Avenue and Via Vera Cruz that connect San Marcos Boulevard to Discovery Street. The project location is displayed in **Figure 1.1**.

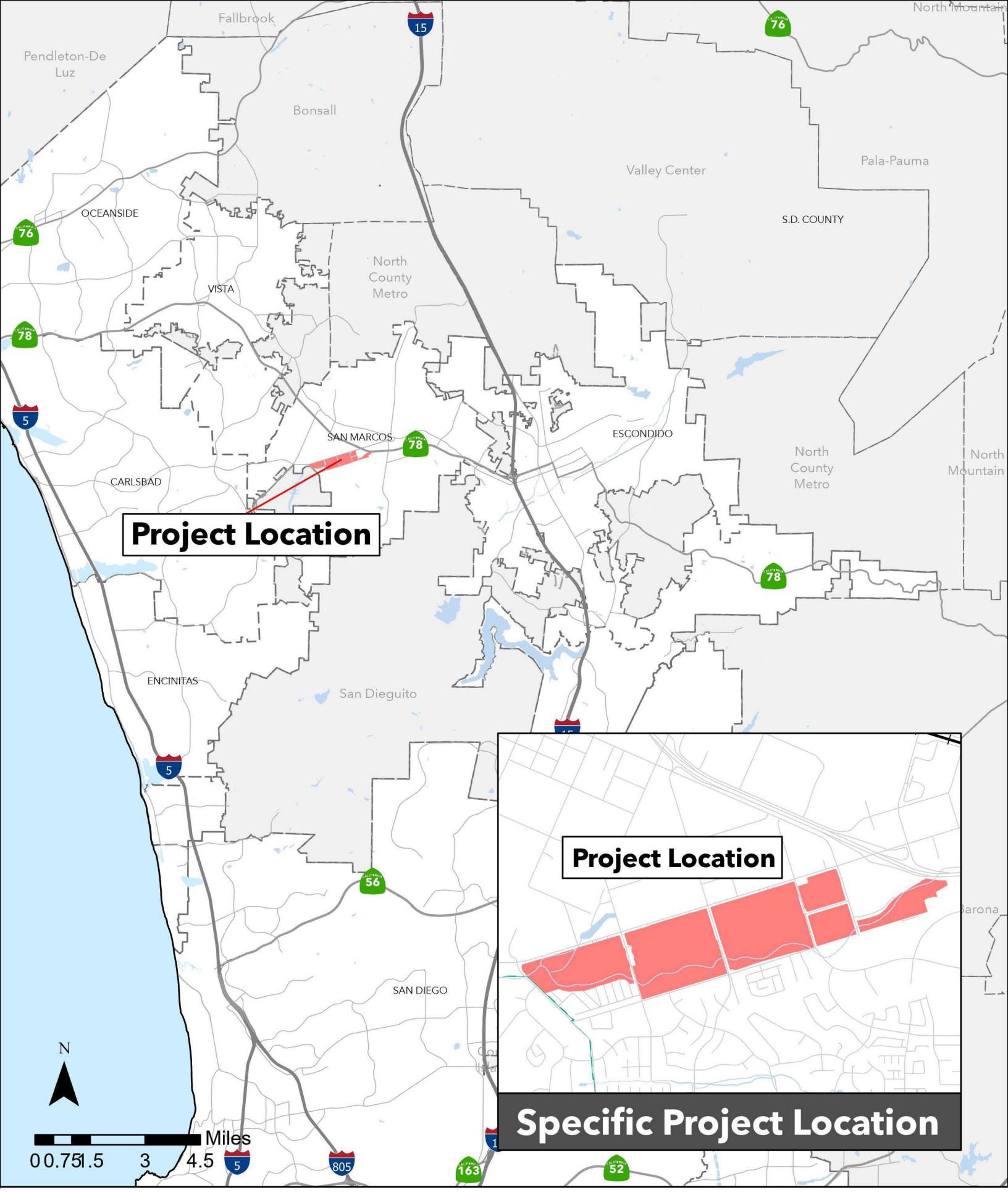


Figure 1.1
Project Location

1.2 Report Organization

Following this Introduction chapter, this report is organized into the following sections:

2.0 *Analysis Methodology* - This chapter describes the methodologies and standards utilized to analyze the transportation related conditions within the project study area.

3.0 *Proposed Project* - This chapter describes the Proposed Project including project trip generation, trip distribution, and project features.

4.0 *Existing Conditions* - This chapter describes the conditions and operations of the existing transportation network adjacent to the Proposed Project and provides analysis results under Existing Conditions.

5.0 *Horizon Year 2050 Conditions* – This chapter describes the projected long-range conditions and operations of the transportation network adjacent to the Proposed Project. Analysis results are provided for Horizon Year 2050 Base Conditions assuming the 2007 Specific Plan, as well as Horizon Year 2050 with Project Conditions with the new specific plan.

2.0 Analysis Methodology

This study was performed in accordance with analysis requirements per the *City of San Marcos Transportation Impact Analysis Guidelines* (TIAG) dated November 2020. Detailed information on intersection analysis methodologies, standards, and thresholds is discussed in the following sections.

2.1 Level of Service Definition

Level of Service (LOS) is a quantitative measure describing operational conditions within a traffic stream, and the motorist's and/or passengers' perception of operations. A LOS definition generally describes these conditions in terms of such factors as delay, speed, travel time, freedom to maneuver, interruptions in traffic flow, queuing, comfort, and convenience. **Table 2.1** describes generalized definitions of the various LOS categories (A through F) as applied to roadway operations.

Table 2.1 Level of Service Definitions

LOS Category	Definition of Operation
A	This LOS represents a completely free-flow condition, where the operation of vehicles is virtually unaffected by the presence of other vehicles and only constrained by the geometric features of the highway and by driver preferences.
B	This LOS represents a relatively free-flow condition, although the presence of other vehicles becomes noticeable. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.
C	At this LOS the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream is clearly affected by other vehicles.
D	At this LOS, the ability to maneuver is notably restricted due to traffic congestion, and only minor disruptions can be absorbed without extensive queues forming and the service deteriorating.
E	This LOS represents operations at or near capacity. LOS E is an unstable level, with vehicles operating with minimum spacing for maintaining uniform flow. At LOS E, disruptions cannot be dissipated readily thus causing deterioration down to LOS F.
F	At this LOS, forced or breakdown of traffic flow occurs, although operations appear to be at capacity, queues form behind these breakdowns. Operations within queues are highly unstable, with vehicles experiencing brief periods of movement followed by stoppages.

Source: Highway Capacity Manual 7th Edition

2.2 Roadway Segment Level of Service Standards and Thresholds

Roadway segment LOS standards and thresholds provide the basis for analysis of arterial roadway segment performance. The analysis of roadway segment LOS is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes. **Tables 2.2** presents the roadway segment capacity and LOS standards for the City of San Marcos, which were utilized to analyze roadways in this report. The actual capacity of a roadway facility varies according to its physical attributes. LOS D is considered acceptable within the City of San Marcos. Typically, the performance and level of service of a roadway segment is heavily influenced by the ability of the arterial intersections to accommodate peak hour volumes.

Table 2.2 City of San Marcos – Roadway Classifications and LOS Standards

Facility Type	Lane Configuration	ADT Capacity				
		LOS A	LOS B	LOS C	LOS D	LOS E
Expressway	6 Lanes	< 30,000	< 42,000	< 60,000	< 70,000	< 80,000
Prime Arterial	6 Lanes	< 25,000	< 35,000	< 50,000	< 55,000	< 60,000
Major Arterial	6 Lanes - Divided	< 20,000	< 28,000	< 40,000	< 45,000	< 50,000
Multi-Way Boulevard[1]	4 Lanes + 2 Multi-Way Lanes	< 19,300	< 26,700	< 38,200	< 43,300	< 48,000
Major Arterial	4 Lanes - Divided	< 15,000	< 21,000	< 30,000	< 35,000	< 40,000
Major Arterial	3 Lanes – One-Way	< 12,500	< 16,500	< 22,500	< 25,000	< 27,500
Major Arterial	2 Lanes – One-Way	<10,000	<13,000	<17,500	<20,000	<22,500
Secondary Arterial / Collector	4 Lanes – Center Lane	< 10,000	< 14,000	< 20,000	< 25,000	< 30,000
Collector	4 Lanes – w/o Center Lane	< 5,000	< 7,000	< 10,000	< 13,000	< 15,000
Collector	2 Lanes – Center Lane	< 5,000	< 7,000	< 10,000	< 13,000	< 15,000
Collector	2 Lanes – No Fronting Property	< 4,000	< 5,500	< 7,500	< 9,000	< 10,000
Collector	2 Lanes – Commercial Fronting	< 2,500	< 3,500	< 5,000	< 6,500	< 8,000
Collector	2 Lanes – Multi-Family	< 2,500	< 3,500	< 5,000	< 6,500	< 8,000
Collector	3 Lanes – One-Way	< 11,000	< 14,000	< 19,000	< 22,500	< 26,000
Collector	2 Lanes – One-Way	< 7,500	< 9,500	< 12,500	< 15,000	< 17,500
Collector	1 Lanes – One-Way	< 2,500	< 3,500	< 5,000	< 6,500	< 7,500
Sub-Collector	2 Lanes – Single Family	-	-	< 2,200	-	-

Source: City of San Marcos Transportation Impact Analysis Guidelines November 2020

Notes:

[1] It is important to note that the capacity of the four travel lanes along the Multi-Way Boulevard may be affected by vehicular trips entering and exiting the multi-way lane. A subsequent corridor study should be conducted to determine the operational capacity of the Multi-Way Boulevard that includes the effects of ingress/egress movements.

These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway facility varies according to its physical attributes. Typically, the performance and LOS of a roadway segment is heavily influenced by the ability of its intersections to accommodate peak hour traffic volumes. For the purposes of this traffic analysis, LOS D is considered acceptable for circulation element roadway segments.

2.3 Peak Hour Intersection Level of Service Standards and Thresholds

This section presents the methodologies used to perform peak hour intersection capacity analysis for signalized and unsignalized intersections.

Signalized Intersection Analysis

The analysis of signalized intersections utilized the operational analysis procedure as outlined in the Highway Capacity Manual (HCM) 7th Edition signalized intersection analysis methodology. This method defines LOS in terms of delay, or more specifically, average stopped delay per vehicle. Delay is a measure of driver and/or passenger discomfort, frustration, fuel consumption, and lost travel time. This technique uses 1,900 vehicles per hour per lane (VPHPL) as the maximum saturation volume of an intersection. This saturation volume is adjusted to account for lane width, on-street parking, pedestrians, traffic composition

(i.e., percentage trucks) and shared lane movements (i.e., through and right-turn movements originating from the same lane). The LOS criteria used for the analysis of signalized intersections are described in **Table 2.3**, identifying the thresholds of control delays and the associated LOS. The computerized analysis of intersection operations was performed utilizing the Synchro Version 12 traffic analysis software by Cubic Transportation Systems.

Table 2.3 Signalized Intersection LOS Operational Analysis Method

Average Stopped Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
<10	*LOS A* describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
>10– 20	*LOS B* describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
>20 – 35	*LOS C* describes operations with higher delays, which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
>35– 55	*LOS D* describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.
>55 – 80	*LOS E* is considered the limit of acceptable delay. Individual cycle failures are frequent occurrences.
>80	*LOS F* describes a condition of excessively high delay, considered to most drivers. This condition often occurs when arrival flow rates exceed the LOS D capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.

Source: Highway Capacity Manual 7th Edition

Unsignalized Intersection Analysis

Side-street stop-controlled intersections were analyzed using the Highway Capacity Manual 7th Edition (Section 20) Two-Way Stop-Controlled Intersection analysis methodology. The Synchro Version 12 software supports this methodology and was utilized to produce LOS results. The LOS for a two-way stop-controlled (SSSC) intersection is determined by the computed or measured control delay and is defined for each minor movement. **Table 2.4** summarizes the LOS criteria for unsignalized intersections.

Table 2.4 LOS Criteria for Stop-Controlled Unsignalized Intersections

Average Stopped Delay Per Vehicle (sec/veh)	LOS
<10	A
>10 to <15	B
>15 to <25	C
>25 to <35	D
>35 to <50	E
>50	F

Source: Highway Capacity Manual 7th Edition

2.4 City of San Marcos LOS Standards

This section outlines City's Circulation Element Goals and Policies that are relevant to the Proposed Project. The City of San Marcos strives to maintain intersection and roadway segment operations LOS standards based on the following:

- *Goal M-1:* Provide a comprehensive multimodal circulation system that serves the City land uses and provides for the safe and effective movement of people and goods.
- *Policy M-3.1:* Develop an integrated, multimodal circulation system that accommodates transit, bicycles, pedestrians, and vehicles; provides opportunities to reduce air pollution and greenhouse gas emissions; and reinforces the role of the street as a public space that unites the City.
- *Policy M-1.4:* LOS D or better for Vehicles as a prioritized mode – Generally provides facilities that have minimum vehicle congestion during peak periods. Most motorists are delayed less than 55 seconds at a signal (or less than one signalized cycle)

Based on the goals and policies listed above, LOS D or better is considered acceptable for study roadway segments and intersections. The City of San Marcos TIAG provides the following thresholds to determine if the Proposed Project is required to provide improvements for study area facilities:

- Implementation of the Proposed Project triggers a roadway segment operating at acceptable LOS to operate at LOS and increases the volume/capacity (V/C) ratio by more than 0.02.
- Implementation of the Proposed Project increases the V/C ratio for a study roadway segment that is already operating at LOS by more than 0.02.
- Implementation of the Proposed Project triggers an intersection operating at acceptable LOS to operate at LOS and increases the average delay per vehicle by more than 2.0 seconds.
- Implementation of the Proposed Project increases the average delay for a study intersection that is already operating at LOS by more than 2.0 seconds.

Improvements should be identified to increase performance to acceptable or pre-project conditions under each scenario.

3.0 Proposed Project

This section describes the Proposed Project, including land uses, estimated trip generation, trip distribution, and project features.

3.1 Project Land Uses

The Proposed Project entails the development of the San Marcos Creek Specific Plan area on approximately 214 acres of land. The Proposed Project site layout is displayed in **Figure 3.1**.

3.2 Proposed Project Trip Generation

Table 3.1 displays the estimated trip generation for the 2007 Specific Plan. Trip generation rates were derived from *SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates in the San Diego Region, April 2002*.

Table 3.1 Project Trip Generation – 2007 Specific Plan

Land Use	Units	Trip Rate[1]	ADT	AM			PM		
				Trips	In	Out	Trips	In	Out
Mixed-Use: Community Commercial	1,265 KSF	72 / KSF	91,080	3,643	2,186	1,457	9,108	4,554	4,554
Mixed-Use: Office	589 KSF	18 / KSF	10,602	1,484	1,336	148	1,378	276	1,102
Mixed-Used – Multi-Family Residential	2,300 DU	5.4 / DU	12,420	994	199	795	1,118	783	335
Total			114,102	6,121	3,721	2,400	11,604	5,613	5,991

Notes:

[1] Assumes 10% daily trip reduction for mixed-use developments where residential and commercial retail are combined per *SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates in the San Diego Region, April 2002*.

SF = Square Feet

KSF = 1,000 SF

DU = Dwelling Unit

As shown, the 2007 Specific Plan is estimated to generate a total of 114,102 daily trips, with 6,121 trips (3,721-in & 2,400-out) generated during the AM peak hour and 11,604 trips (5,613-in & 5,991-out) during the PM peak hour.

Table 3.2 displays the Proposed Project's anticipated trip generation.

Table 3.2 Project Trip Generation – Proposed Project

Land Use	Units	Trip Rate	ADT	AM			PM		
				Trips	In	Out	Trips	In	Out
Mixed-Use: Commercial[1]	566,471 SF	110 / KSF	62,312	1,870	1,122	748	5,609	2,805	2,804
Mixed-Use: Residential Only	2,296 DU	5 / DU	11,480	1,034	310	724	1,493	896	597
Specialty Retail / Strip Commercial	89,385 SF	40 / KSF	3,576	108	65	43	322	161	161
Total			**77,368**	**3,012**	**1,497**	**1,515**	**7,424**	**3,862**	**3,562**

Notes:
[1] Includes 205,603 square feet commercial from the Entertainment Arts and Culture area.
SF = Square Feet
KSF = 1,000 SF
DU = Dwelling Unit

As shown, the Proposed Project is anticipated to generate a total of 77,368 daily trips, with 3,012 trips (1,497-in & 1,515-out) generated during the AM peak hour and 7,424 trips (3,862-in & 3,562-out) during the PM peak hour.

Table 3.3 displays a comparison of the estimated trip generation between the 2007 Specific Plan and the Proposed Project.

Table 3.3 Project Trip Generation Comparison

Land Use	ADT	AM			PM		
		Trips	In	Out	Trips	In	Out
2007 Specific Plan	114,102	6,121	3,721	2,400	11,604	5,613	5,991
Proposed Project	77,368	3,012	1,497	1,515	7,424	3,862	3,562
Net[1]	**-36,734**	**-3,109**	**-2,224**	**-885**	**-4,180**	**-1,751**	**-2,429**

Notes:
[1] Net = Proposed Project – 2007 Specific Plan

As shown, the Proposed Project is anticipated to generate fewer trips than the 2007 Specific Plan with a net difference of 36,734 daily trips, with 3,109 fewer trips (-2,224-in & -885-out) during the AM peak hour and 4,180 trips fewer trips (-1,751-in & -2,429-out) during the PM peak hour. This is consistent with the overall difference in land use intensity with the 2007 Specific Plan assuming much more community commercial and additional mixed-used office land use.

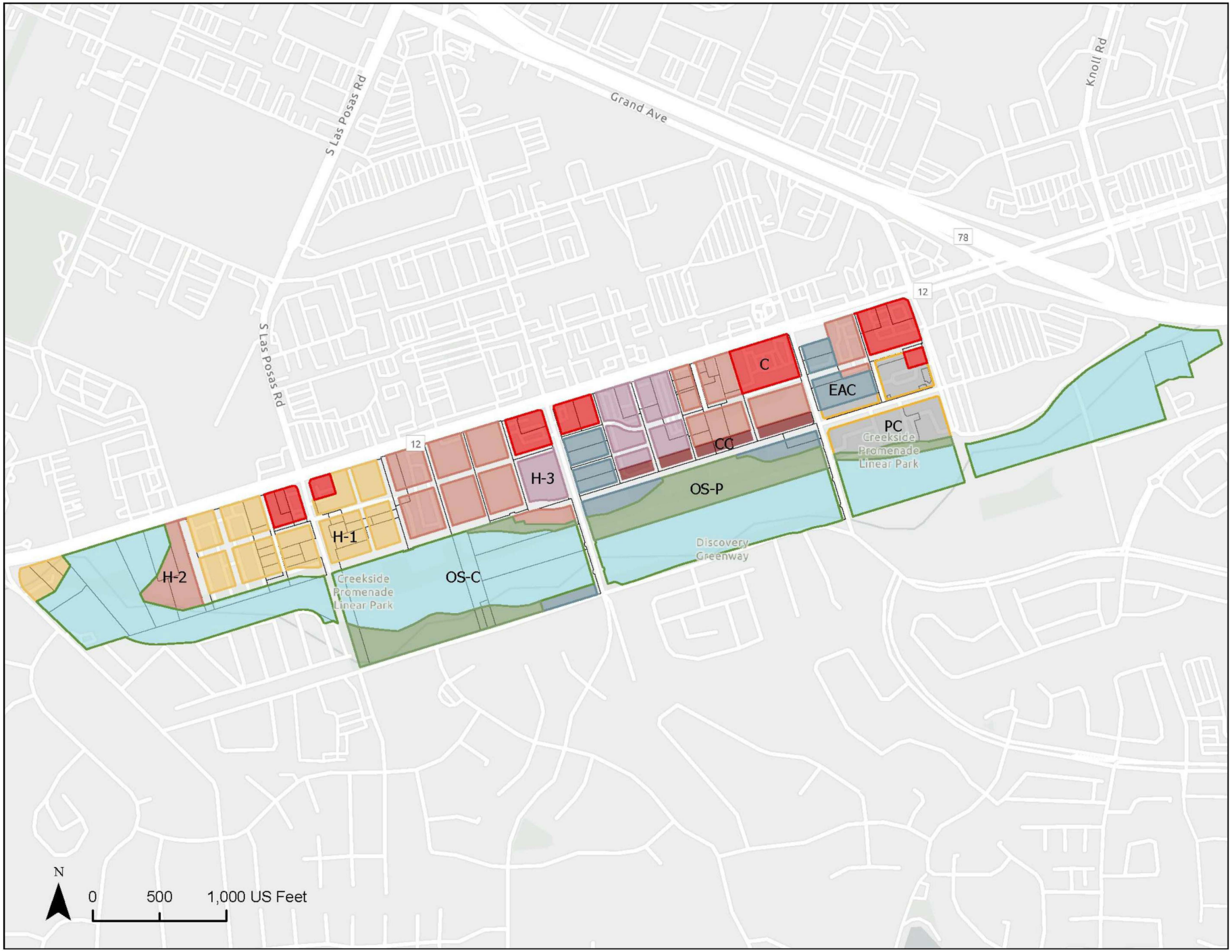


Figure 3.1

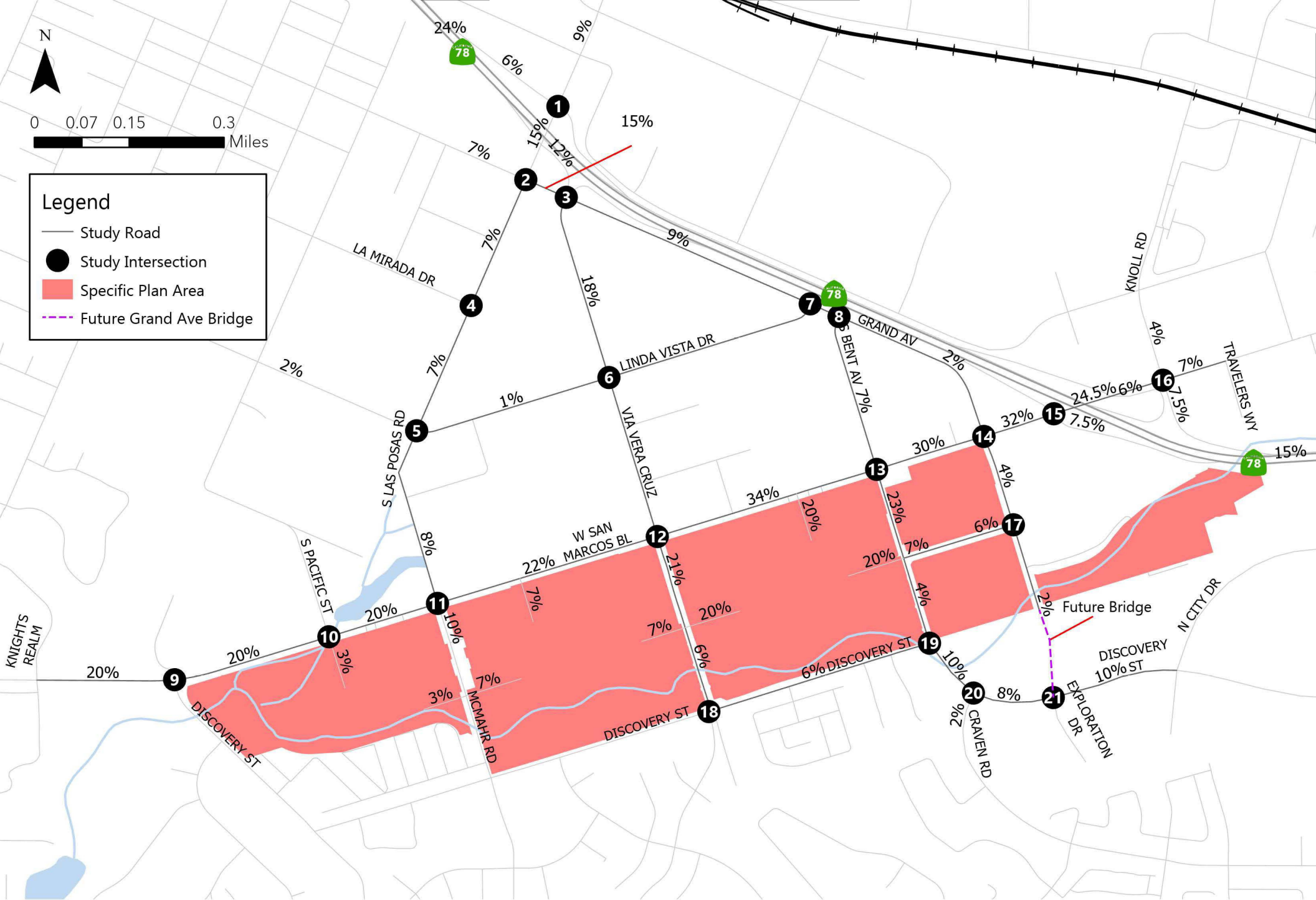
Proposed Project Site Layout

3.3 Project Trip Distribution & Assignment

The trip distribution for the Proposed Project was developed based on the geographical location of the project, the characteristics of the proposed land use, existing travel patterns at adjacent major intersections, nearest freeway facilities, location of major shopping centers, and project access. Trip distribution patterns were determined as follows:

- 24% of the Proposed Project trips were assigned to SR-78 to the west of the project site.
- 20% of the Proposed Project trips were assigned along San Marcos Boulevard west of Discovery Street.
- 15% of the Proposed Project trips were assigned to SR-78 to the east of the project site.
- 9% of the Proposed Project trips were assigned along Las Posas Road to the north of the SR-78 WB ramps.
- 7% of the Proposed Project trips were assigned along Grand Avenue to the west of Las Posas Road.
- 7% of the Proposed Project trips were assigned along San Marcos Boulevard to the east of the SR-78 WB ramps.
- 6% of the Proposed Project trips were assigned along Via Vera Cruz south of the project site.
- 4% of the Proposed Project trips were assigned along Knoll Road north of San Marcos Boulevard.
- 4% of the Proposed Project trips were assigned along Bent Avenue south of the project site.
- 2% of the Proposed Project trips were assigned along Linda Vista Drive west of Las Posas Road.
- 2% of the Proposed Project trips were assigned along Grand Avenue south of the project site (assumes buildout of the Grand Avenue bridge under Horizon Year Conditions).

The Proposed Project trip distribution is displayed in **Figure 3.2.**


N
0 0.07 0.15 0.3
Miles
Legend
Study Road
Study Intersection
Specific Plan Area
Future Grand Ave Bridge
LA MIRADA DR
LINDA VISTA DR
S LAS POSAS RD
VIA VERA CRUZ
S BENT AV
GRAND AV
KNOLL RD
TRAVELERS WY
W SAN MARCOS BL
S PACIFIC ST
KNIGHTS REALM
DISCOVERY ST
MCMAHR RD
CRAVEN RD
EXPLORATION DR
N CITY DR
Future Bridge
24%
6%
9%
15%
12%
7%
18%
2%
1%
8%
22%
34%
30%
32%
24.5%
7.5%
4%
23%
21%
10%
3%
20%
78

3.4 Project Study Area

As per Section 3.1 of the *City of San Marcos Transportation Impact Analysis Guidelines, November 2020*, it is recommended that the geographic area to examine in the LTA include the following for roadways:

- Project driveways
- Signalized and unsignalized intersections along and adjacent to the project site
- Any classified (non-residential) roadway segments that are linked to the intersections that are being studied

Based on the Proposed Project's trip distribution (displayed in Figure 3.2), and key roadway facilities adjacent to the project site, the following roadway and intersection facilities will be included within the project study area:

Roadway Segments

1. Las Posas Road between Grand Avenue and La Mirada Drive
2. Las Posas Road between La Mirada Drive to Linda Vista Drive
3. Las Posas Road between Linda Vista Drive to San Marcos Boulevard
4. Via Vera Cruz between Grand Avenue and Linda Vista Drive
5. Via Vera Cruz between Linda Vista Drive and San Marcos Boulevard
6. Via Vera Cruz between San Marcos Boulevard and Discovery Street
7. Bent Avenue between Grand Avenue and San Marcos Boulevard
8. Bent Avenue between San Marcos Boulevard and Creekside Drive
9. Bent Avenue between Creekside Drive and Discovery Street
10. Grand Avenue between Las Posas Road and Via Vera Cruz
11. Grand Avenue between Via Vera Cruz and Bent Avenue
12. Grand Avenue between Bent Avenue and San Marcos Boulevard
13. Grand Avenue between San Marcos Boulevard and Creekside Drive
14. Grand Avenue between Creekside Drive and Discovery Street
15. Linda Vista Drive between Las Posas Road and Via Vera Cruz
16. Linda Vista Drive between Via Vera Cruz and Grand Avenue
17. San Marcos Boulevard between Knights Realm to Discovery Street
18. San Marcos Boulevard between Discovery Street to Pacific Street
19. San Marcos Boulevard between Pacific Street to Las Posas Road
20. San Marcos Boulevard between Las Posas Road and Via Vera Cruz
21. San Marcos Boulevard between Via Vera Cruz and Bent Avenue
22. San Marcos Boulevard between Bent Avenue and Grand Avenue
23. San Marcos Boulevard between Grand Avenue and State Route 78 (SR-78) Eastbound (EB) Ramps
24. San Marcos Boulevard between SR-78 EB Ramps and Knoll Road / SR-78 Westbound (WB) Off-Ramp
25. San Marcos Boulevard between Knoll Road / SR-78 WB Off-Ramp and Travelers Way
26. Creekside Drive between Bent Avenue and Grand Avenue
27. Discovery Street between Via Vera Cruz and Bent Avenue
28. Discovery Street between Bent Avenue and Craven Road
29. Discovery Street between Craven Road and N City Drive

Intersections:

1. Las Posas Road / SR-78 WB Ramps (Signal)
2. Las Posas Road / Grand Avenue (Signal)
3. Via Vera Cruz / SR-78 EB Ramps / Grand Avenue (Signal)
4. Las Posas Road / La Mirada Drive (Signal)
5. Las Posas Road / Linda Vista Drive (Signal)
6. Via Vera Cruz / Linda Vista Drive (Signal)
7. Linda Vista Dive / Grand Avenue (Side-Street Stop Controlled)
8. Bent Avenue / Grand Avenue (Signal)
9. Discovery Street / San Marcos Boulevard (Signal)
10. Pacific Street / San Marcos Boulevard (Signal)
11. Las Posas Road / San Marcos Boulevard (Signal)
12. Via Vera Cruz / San Marcos Boulevard (Signal)
13. Bent Avenue / San Marcos Boulevard (Signal)
14. Grand Avenue / San Marcos Boulevard (Signal)
15. SR-78 EB Ramps / San Marcos Boulevard (Signal)
16. Knoll Road / SR-78 WB Off-Ramp / San Marcos Boulevard (Signal)
17. Grand Avenue / Creekside Drive (Signal)
18. Via Vera Cruz / Discovery Street (Signal)
19. Bent Avenue / Discovery Street (Signal)
20. Craven Road / Discovery Street (Signal)
21. Exploration Drive / Discovery Street (Signal) (future Grand Avenue bridge connection)

The Proposed Project study area is shown in **Figure 3.3**.

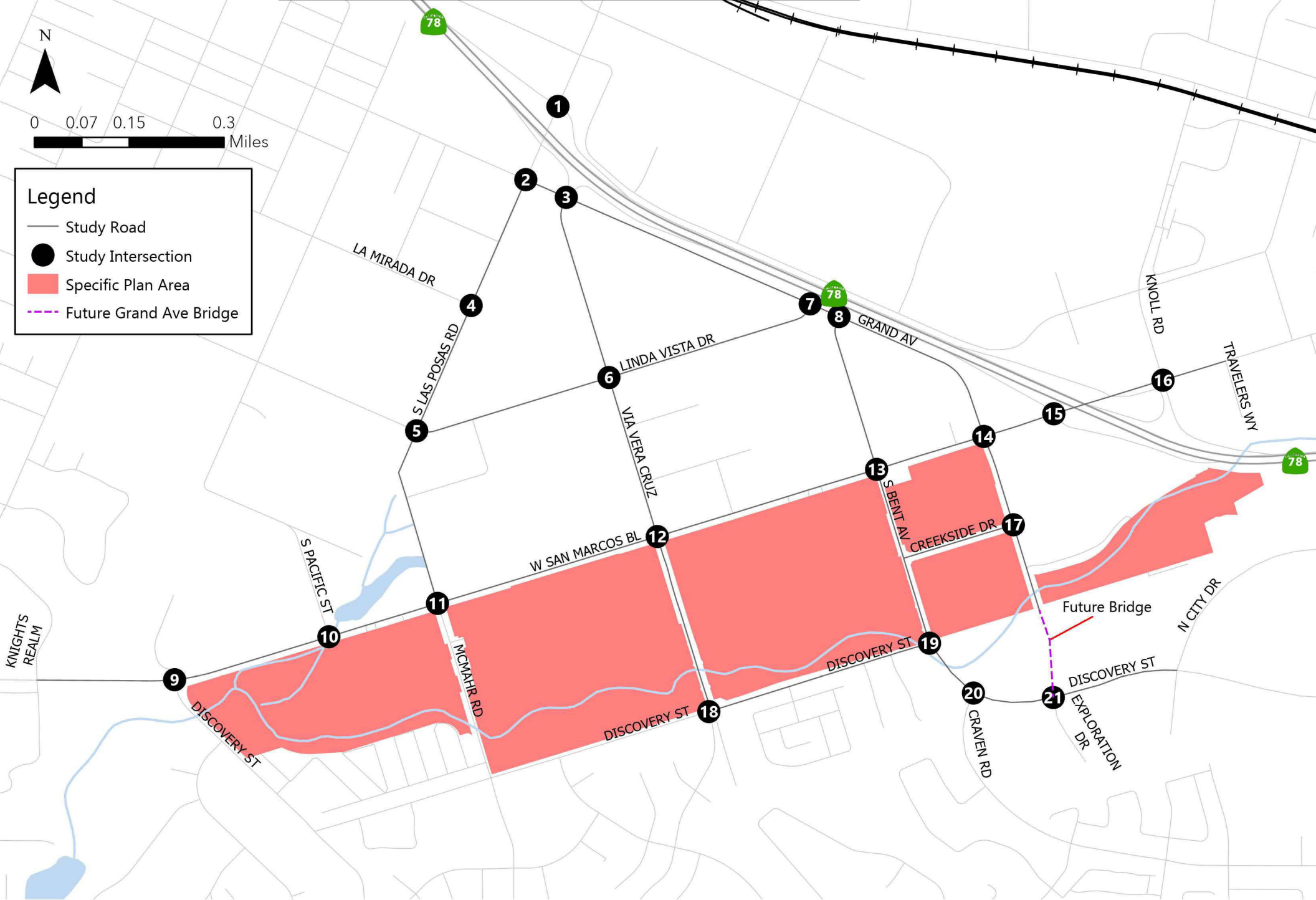


Figure 3.3
Proposed Project Study Area

3.5 Vehicular Mobility

This section describes the proposed roadway and intersection improvements within the project study area. Planned bicycle facilities are discussed as it relates to the roadway improvements for study facilities; however, the full set of bicycle improvements per the Proposed Project is discussed in Section 4.2. It is important to note that the proposed roadway and intersection improvements are not associated with mitigating project impacts (relating to level of service) but rather set design standards to accommodate the proposed land use. Improvement recommendations to mitigate project impacts are discussed in Section 5.6.

Roadway Modifications

The changes per the Proposed Project to project study area roadway segments are listed below:

- *Via Vera Cruz between San Marcos Boulevard and Discovery Street* – This segment will be maintained as a Secondary Collector with four travel lanes and a center left-turn lane. However, the overall right-of-way will be expanded to improve the existing bicycle facilities from Class II Bicycle Lanes to Class IV Cycle Tracks with on-street parking. This would require widening existing curb-to-curb width from 64-feet to 90-feet.
- *Bent Avenue between San Marcos Boulevard and Creekside Drive* – This segment is planned to be widened from the existing Collector configuration with two travel lanes, to a two-lane roadway with a center left-turn lane. Class IV Cycle Tracks with on-street parking are also proposed along this segment. This would require widening existing curb-to-curb width from existing 32-feet to 80-feet.
- *Creekside Drive extension between Bent Avenue and Pacific Street* – Creekside Drive between Bent Avenue and Grand Avenue is currently a Two-Lane Collector with fronting multi-family development. As part of the Proposed Project, Creekside Drive will be extended westward from Bent Avenue to Pacific Street with two travel lanes and on-street parking. This will require a curb-to-curb width of 70-feet. This improvement was identified as a mitigation measure for the 2007 Specific Plan.
- *McMahr Road between San Marcos Boulevard and Creekside Drive* – McMahr Road is the southern leg of the Las Posas Road and San Marcos Boulevard intersection with the roadway terminating in a residential area. As part of the specific plan, McMahr Road will be extended to connect to the Creekside Drive extension as a Two-Lane Collector roadway with a center left-turn lane. Class IV Cycle Tracks with on-street parking is proposed along this segment. This would require a curb-to-curb width of 80-feet.
- *Pacific Street between San Marcos Boulevard and Creekside Drive* – Pacific Street south of San Marcos Boulevard is currently closed to vehicular traffic. As part of the Proposed Project, Pacific Street will be extended from San Marcos Boulevard to the Creekside Drive extension with two travel lanes and on-street parking, which will require a curb-to-curb width of 70-feet.

- *San Marcos Boulevard between Discovery Street and Bent Avenue* – This segment is located outside of the specific plan area. However, the City's General Plan identified this segment planned to be improved from its existing Major Arterial configuration with four travel lanes and a raised median to a Multi-Way Boulevard. The City's San Marcos Boulevard Multi-Way Complete Streets project plans to transform the roadway to provide complete streets elements, including a multiway path on both sides of the roadway to provide a safe space for pedestrians, bicyclists, and vehicles accessing the commercial and residential uses. The existing curb to curb width along this segment varies between 80' and 94'. Implementation of the Multi-Way Boulevard would require a width of up to 158'.

A summary of the roadway modifications is provided in **Table 3.4**. The proposed roadway classifications are displayed in **Figure 3.4** and the bicycle classifications in **Figure 3.5**.

Table 3.4 Proposed Roadway Modifications

Roadway	Segment	Existing Functional Classification	Proposed Classification	Existing Bicycle Facility	Proposed Bicycle Facility	Existing Curb-to-Curb	Proposed Curb-to-Curb	Proposed On-Street Parking
Via Vera Cruz	San Marcos Blvd to Discover St	Secondary Arterial / Collector (4 Lanes – Center Lane)	Secondary Arterial / Collector (4 Lanes – Center Lane)	Class II	Class IV	64'	90'	Yes
Bent Ave	San Marcos Blvd to Creekside Dr	Collector (2 Lanes – Commercial Fronting)	Collector (2 Lanes – Center Lane)	Class II (east side only)	Class IV	32'	80'	Yes
Creekside Dr	Pacific St to Bent Ave	Does not exist	Collector (2 Lanes)	Does not exist	Class III	Does not exist	70'	Yes
McMahr Road	San Marcos Blvd to Creekside Dr	Does not exist	Collector (2 Lanes – Center Lane)	Does not exist	Class IV	Does not exist	80'	Yes
Pacific Street	San Marcos Blvd to Creekside Dr	Does not exist	Collector (2 Lanes)	Does not exist	Class III	Does not exist	70'	Yes
San Marcos Blvd	Knights Realm to Discovery St	Major Arterial (5 Lanes – Raised Median)	Major Arterial (6 Lanes – Raised Median)	Class II	Class II	88'	94'	No
San Marcos Blvd	Discovery St to Bent Ave	Major Arterial (4 Lanes – Raised Median)	Multi-Way Boulevard	Class II	Class II	80'	125'-150'	Yes

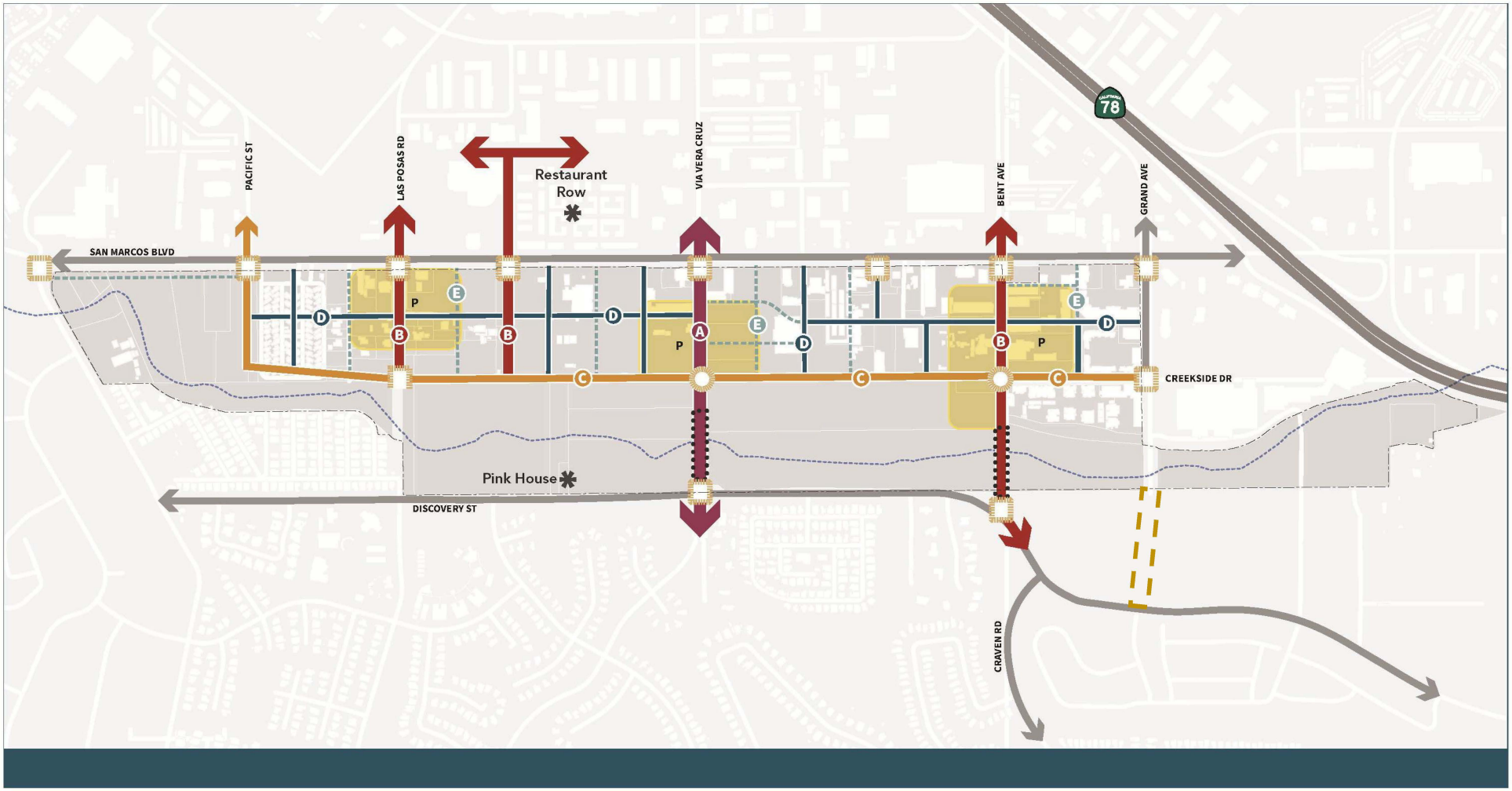


Figure 3.4

Planned Roadway Network Classifications

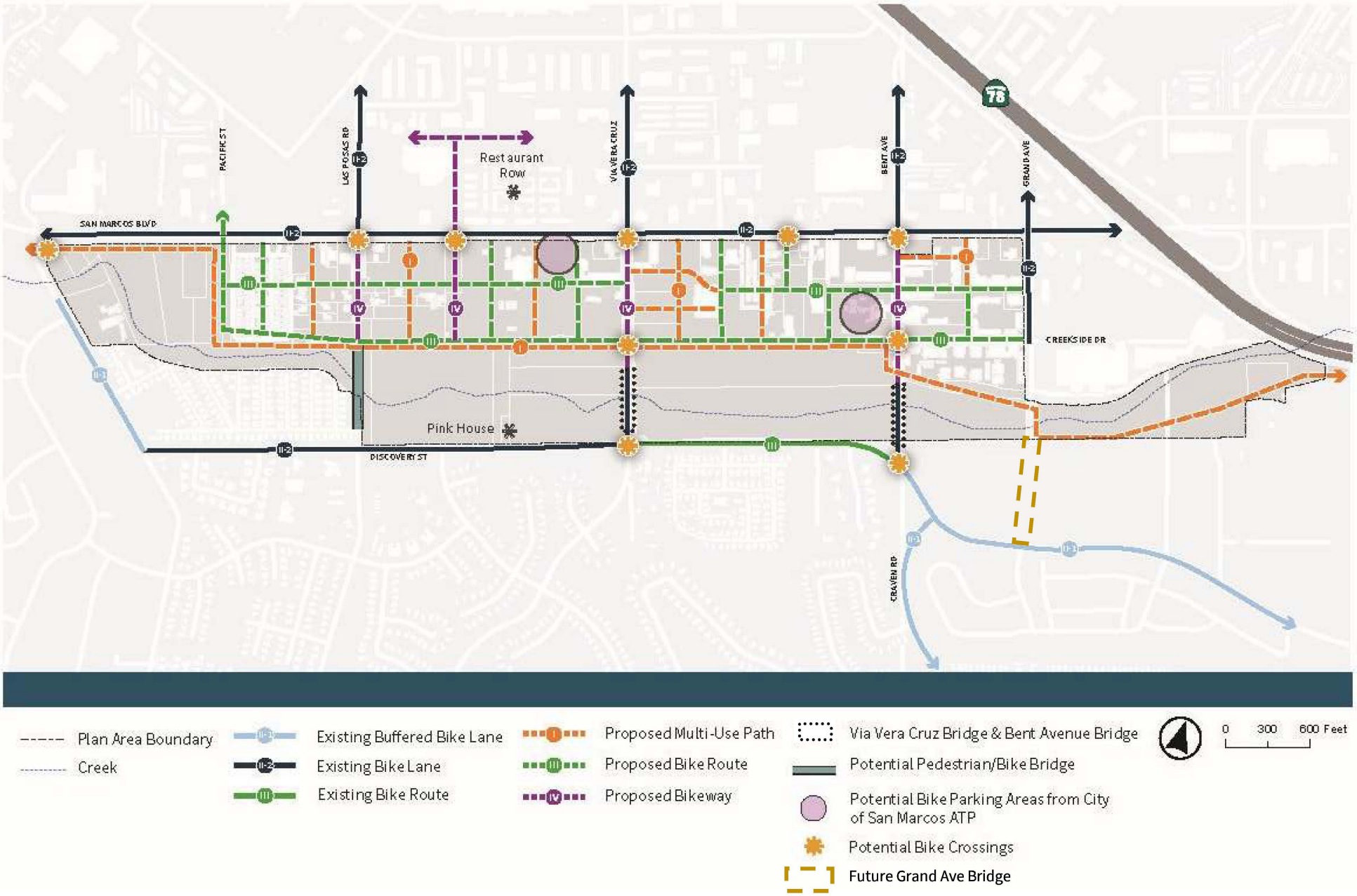


Figure 3.5

Planned Bicycle Network Classifications

Intersection Modifications

To provide for buildout of roadway segments and bicycle classifications per the Proposed Project and the City's General Plan, several project study area intersections would require modifications. A summary of the modifications is provided in **Table 3.5,** which includes lane geometry and signal modifications. It is important to note that the 2007 Specific Plan assumed lane configurations that differ from the Proposed Project. Relevant excerpts for 2007 Specific Plan lane configuration assumptions are provided in **Appendix A**.

Table 3.5 Proposed Intersection Modifications

#	Intersection	Improvement	Geometry Modification[1]	Signal Modification[2]
9	Discovery St / San Marcos Blvd	The lane configuration for the westbound approach is maintained with a left-turn lane, two through lanes, and a right-turn. The westbound approach is now configured as Multi-Way Boulevard.	Yes	Yes
10	Pacific St / San Marcos Blvd	Add a right-turn lane for the eastbound and westbound directions since San Marcos Blvd is improved to a Multi-Way Boulevard. Pacific Street south of San Marcos Boulevard is extended to connect to the Creekside Drive extension. The south leg at this intersection will be configured with one receiving lane and one northbound shared left-through-right turn lane.	Yes	Yes
11	Las Posas Rd / San Marcos Blvd	Add a right-turn lane for the eastbound direction and maintain the lane configuration for the westbound approach (left-turn lane, two through lanes, and a right-turn lane) since San Marcos Blvd is improved to a Multi-Way Boulevard. The south leg of this intersection will be extended to connect to the Creekside Drive extension and will maintain the existing lane configuration of a left-turn, through, and right-turn lane configuration.	Yes	Yes
12	Via Vera Cruz / San Marcos Blvd[3, 4]	Add a right-turn lane for the eastbound and westbound directions since San Marcos Blvd is improved to a Multi-Way Boulevard. A second northbound left-turn lane and a northbound right-turn lane will be added to the intersection. The full lane configuration for the northbound approach will be dual left-turn lanes, dual through lanes, and a right-turn lane.	Yes	Yes
13	Bent Ave / San Marcos Blvd[5]	Add a right-turn lane in the eastbound direction. The eastbound approach is now configured as Multi-Way Boulevard. A second northbound left-turn lane will be added to the intersection. The full lane configuration for the northbound approach will be dual left-turn lanes, one through lane, and a right-turn lane.	Yes	Yes

Notes:

[1] Geometry modifications are changes to the intersection configuration, which include the following examples: restriping, lane addition or removal, repurposing lanes, new intersection legs, new turn pockets, and channelization of turning movements.

[2] Signal modifications are changes to the phasing and key timings which includes the following examples: change in left-turn phasing (i.e., protected phasing, permissive phasing) and the addition or removal of a right-turn overlap.

[3] The Proposed Project calls for a 90-foot curb-to-curb width for the northbound approach.

[4] The intersection would be able to accommodate lane configuration specified. Center left-turn lane or parking would end before intersection to accommodate lane configuration. Storage lanes for left or right turns would begin/widen towards the approach at the intersection.

[5] The Proposed Project calls for an 80-foot curb-to-curb width for the northbound approach.

4.0 Existing Conditions

This section describes key study intersections, existing roadways, peak hour intersection traffic volumes, and intersection LOS analysis results under Existing Conditions.

4.1 Existing Roadway Network

The specific plan area is currently developed with industrial uses, a mobile home park, commercial uses, and shopping centers. Access to the Proposed Project from the transportation network is provided via Las Posas Road, Discover Street, Via Vera Cruz, Bent Avenue, Grand Avenue, Linda Vista Drive, or San Marcos Boulevard. These roadways will either provide a direct connection to Proposed Project site or provide a critical link between the Proposed Project and the regional transportation network, including SR-78. Descriptions of these transportation network facilities are provided below:

Las Posas Road – Within the project study area, Las Posas Road is a six-lane north-south roadway north of SR-78 westbound ramps, a five-lane roadway between SR-78 westbound ramps and La Mirada Drive which is separated by a raised median, and a four-lane roadway between La Mirada Drive and San Marcos Boulevard separated by a center left-turn lane. The roadway is bordered by commercial and industrial land uses with a posted speed limit of 40 miles per hour (mph). Sidewalks and Class II Bike Lanes are present on both sides of the roadway. North County Transit District (NCTD) bus routes 347 and 445 travel along Las Posas Road within the study area with transit stops at San Marcos Boulevard, Linda Vista Drive, La Mirada Drive, Grand Avenue, and Descanso Avenue. The *City of San Marcos Mobility Element, February 2012* classifies Las Posas Road north of SR-78 as a Six-Lane Arterial Roadway and a Four-Lane Arterial Roadway south of SR-78.

Via Vera Cruz – Between Grand Avenue and Discovery Street, Via Vera Cruz is a four-lane north-south roadway separated by a center left-turn lane. The posted speed limit between Grand Avenue and San Marcos Boulevard is 40 mph. The roadway is bordered primarily by commercial land uses with some industrial land use on the northern side of the project study area. Sidewalks and Class II Bike Lanes are present on both sides of the roadway except along the east side of the roadway between Linda Vista Drive and 240-feet sound of Commerce Street. There are no existing transit services that travel along Via Vera Cruz within the project study area. The *City of San Marcos Mobility Element, February 2012* classifies Via Vera Cruz as a Four-Lane Arterial Roadway.

Bent Avenue – Between Grand Avenue and San Marcos Boulevard, Bent Avenue is a two-lane north-south roadway separated by a center left-turn lane, and transitions to a two-lane undivided roadway south of San Marcos Boulevard to Discovery Street. The roadway is bordered by commercial and industrial lane uses. Sidewalks and Class II Bike Lanes are present on both sides of the roadway except for the east side of the roadway from 120-feet south of San Marcos Boulevard and Creekside Drive. There are no existing transit services that travel along Bent Avenue within the project study area. The roadway within the study is not identified as a circulation element within the *City of San Marcos Mobility Element, February 2012*.

Grand Avenue – Within the project study area, Grand Avenue is a four-lane east-west roadway separated by a center left-turn lane which transitions to a north-south roadway just north of San Marcos Boulevard with a raised median. The posted speed limit is 40 mph west of Las Posas Road and 45 mph between Las Posas Road and San Marcos Boulevard. The roadway is bordered primarily by SR-78 to the north and industrial land uses to the south. Between Las Posas Road and San Marcos Boulevard, sidewalks are present intermittently on the south side of the roadway with no facilities provided on the northside, which is

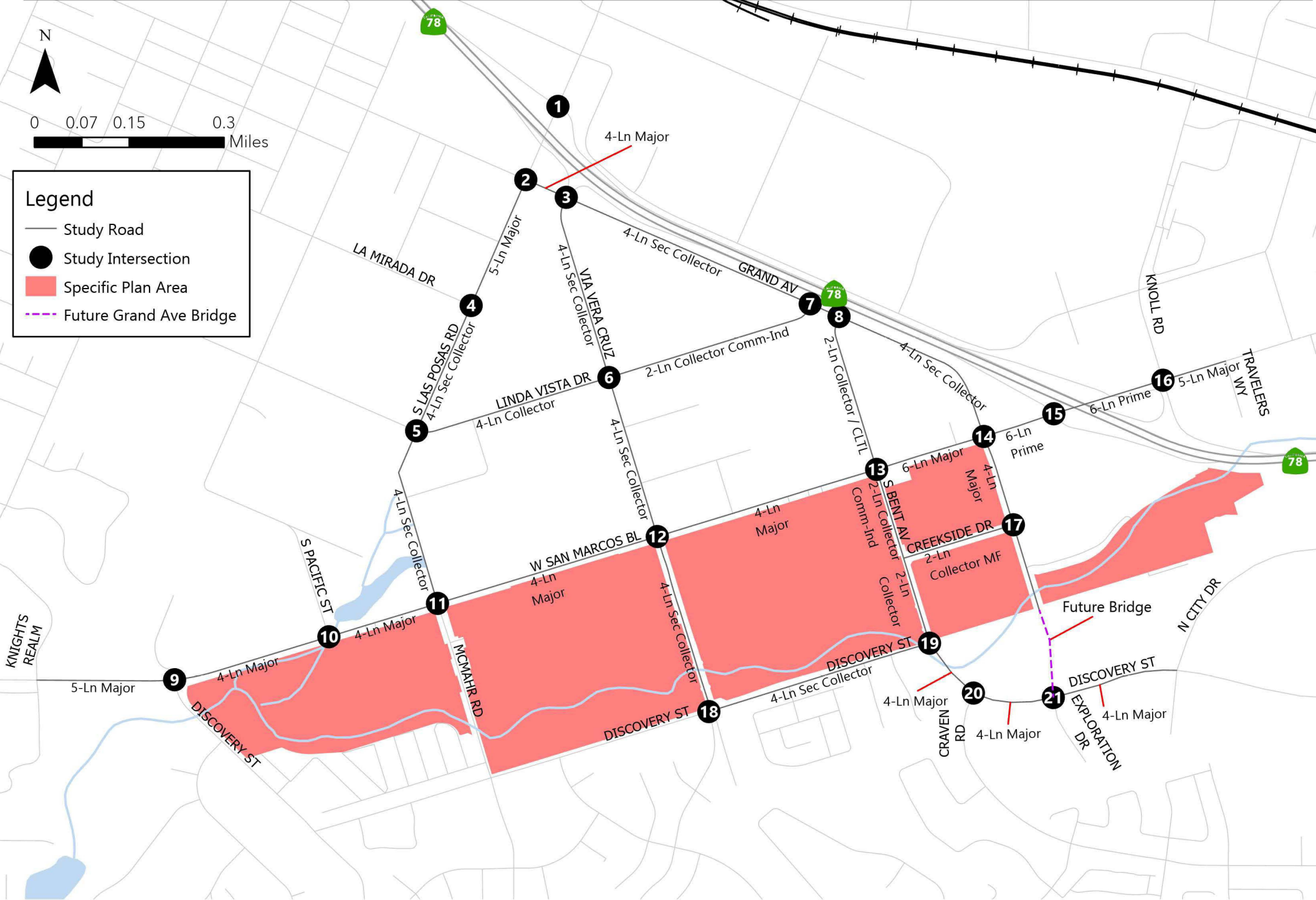
adjacent to SR-78. Sidewalks and Class II Bike Lanes are present on both sides of the roadway south of San Marcos Boulevard. There are currently no transit services that travel along Grand Avenue within the project study area. The *City of San Marcos Mobility Element, February 2012* classifies Grand Avenue as a Four-Lane Arterial Roadway between Pacific Street and Via Vera Cruz, a Complete Street between Via Vera Cruz and San Marcos Boulevard, and a Four-Lane Arterial Roadway south of San Marcos Boulevard. Additionally, a bridge is planned along Grand Avenue to connect between Creekside Drive and Discovery Street which is assumed under the Horizon Year scenario analysis.

Linda Vista Drive – Between Las Posas Road and Via Vera Cruz, Linda Vista Drive is a four-lane east-west undivided roadway, then transitions to a two-lane undivided roadway between Via Vera Cruz and Grand Avenue. The roadway is bordered by commercial and industrial lane uses with a posted speed limit of 35 mph. Sidewalks are present intermittently on both sides of the roadway with no bicycle or transit facilities. The *City of San Marcos Mobility Element, February 2012* classifies Linda Vista Drive as a Four-Lane Arterial Roadway between Las Posas Road and Via Vera Cruz and a complete street between Via Vera Cruz and Grand Avenue.

San Marcos Boulevard – San Marcos Boulevard is a five-lane east-west roadway separated by a raised median between Knights Realm and Discovery Street, a four-lane roadway separated by a raised median between Discovery Street and Bent Avenue, a six-lane roadway with a raised median between Bent Avenue and Knoll Road, and a five-lane roadway with a raised median between Knoll Road and Travelers Way. The posted speed limit is 45 mph west of Via Vera Cruz and 40 mph between Via Vera Cruz and Travelers Way. The roadway is bordered primarily by commercial land use. Sidewalks and Class II Bike Lanes are present on both sides of the roadway except for missing sidewalks on the south side between 230-feet east of Grand Avenue and Knoll Road. NCTD bus route 445 travels along San Marcos Boulevard within the study area with transit stops at Discovery Street and Pacific Street. Additionally, NCTD bus route 347 travels along San Marcos Boulevard within the study area with transit stops at Via Vera Cruz, Bent Avenue, and Travelers Way. The *City of San Marcos Mobility Element, February 2012* classifies San Marcos Boulevard as a Six-Lane Arterial Roadway between Knights Realm and Pacific Street, a Multi-Way Boulevard that includes a multiway path on the both sides of the roadway to provide a safe space for pedestrians, bicyclists, and vehicles accessing the commercial and residential uses between Discovery Street and Bent Avenue, and Six-Lane Arterial Roadway between Bent Avenue and Travelers Way.

Discovery Street – Discovery Street is a four-lane east-west roadway separated by a center left-turn lane between Via Vera Cruz and Bent Avenue which transitions to a raised median between Bent Avenue and N City Drive. The roadway is bordered by open space to the north and residential land uses to the south with a posted speed limit of 40 mph. Sidewalks and Class II Bike Lanes are present on both sides of the roadway with no transit facilities. The *City of San Marcos Mobility Element, February 2012* classifies Discovery Street as a Four-Lane Arterial Roadway.

As documented in Section 3.4, 29 roadway segments and 21 intersections are included as part of the study area. **Figure 4.1** displays the existing functional classifications of the study area roadways and **Figure 4.2** displays the existing geometric configurations of the study area intersections.


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Legend
Study Road
Study Intersection
Specific Plan Area
Future Grand Ave Bridge
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LA MIRADA DR
5-Ln Major
VIA VERA CRUZ
4-Ln Sec Collector
GRAND AV
78
KNOLL RD
S LAS POSAS RD
4-Ln Sec Collector
LINDA VISTA DR
4-Ln Collector
2-Ln Collector Comm-Ind
2-Ln Collector / CLTL
6-Ln Prime
5-Ln Major
TRAVELERS WY
6-Ln Major
S BENT AV
2-Ln Collector Comm-Ind
4-Ln Major
CREEKSIDE DR
2-Ln Collector MF
W SAN MARCOS BL
S PACIFIC ST
MCMAHR RD
DISCOVERY ST
KNIGHTS REALM
5-Ln Major
Future Bridge
N CITY DR
CRAVEN RD
EXPLORATION DR

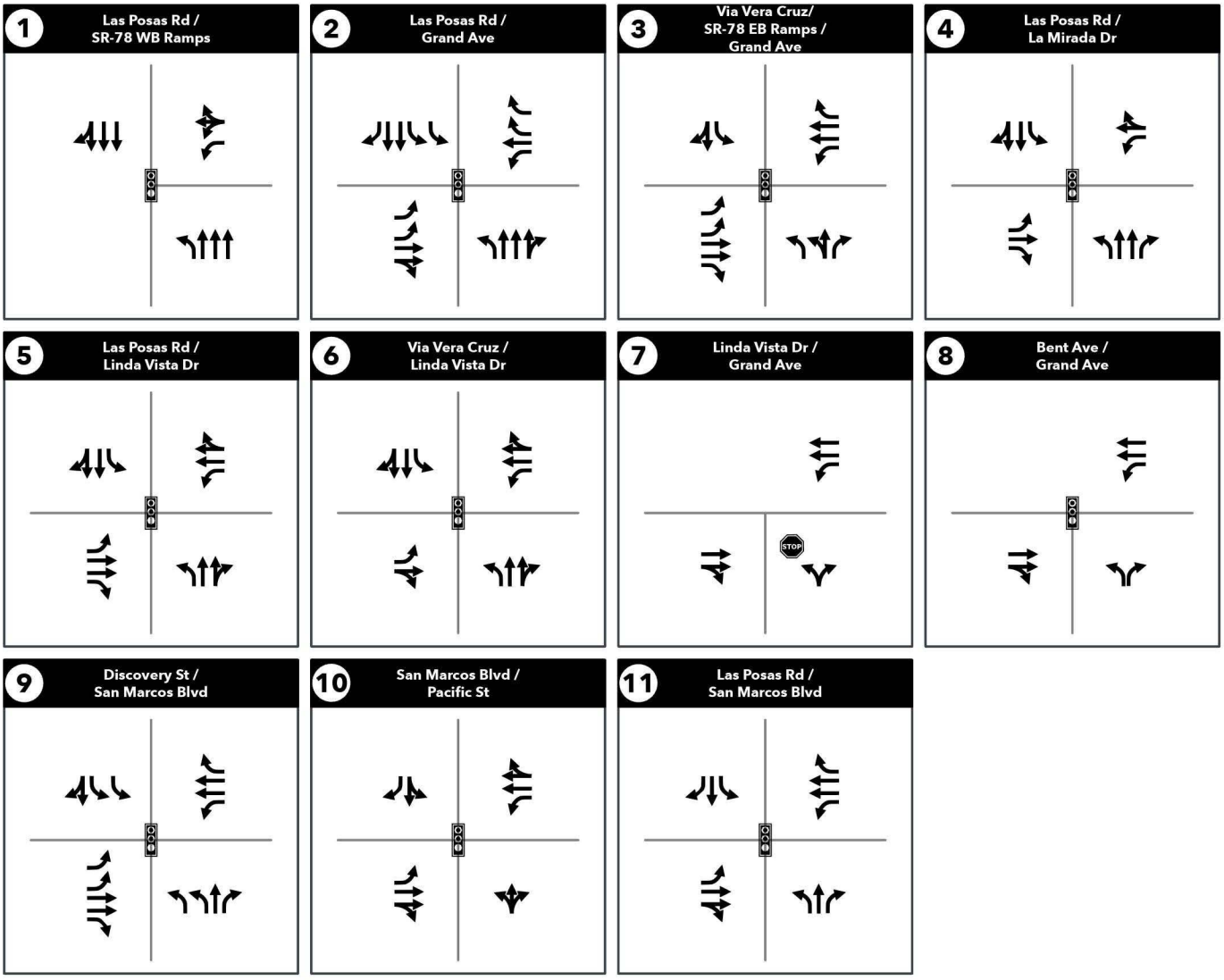


Figure 4.2

Intersection Geometrics
Existing Conditions

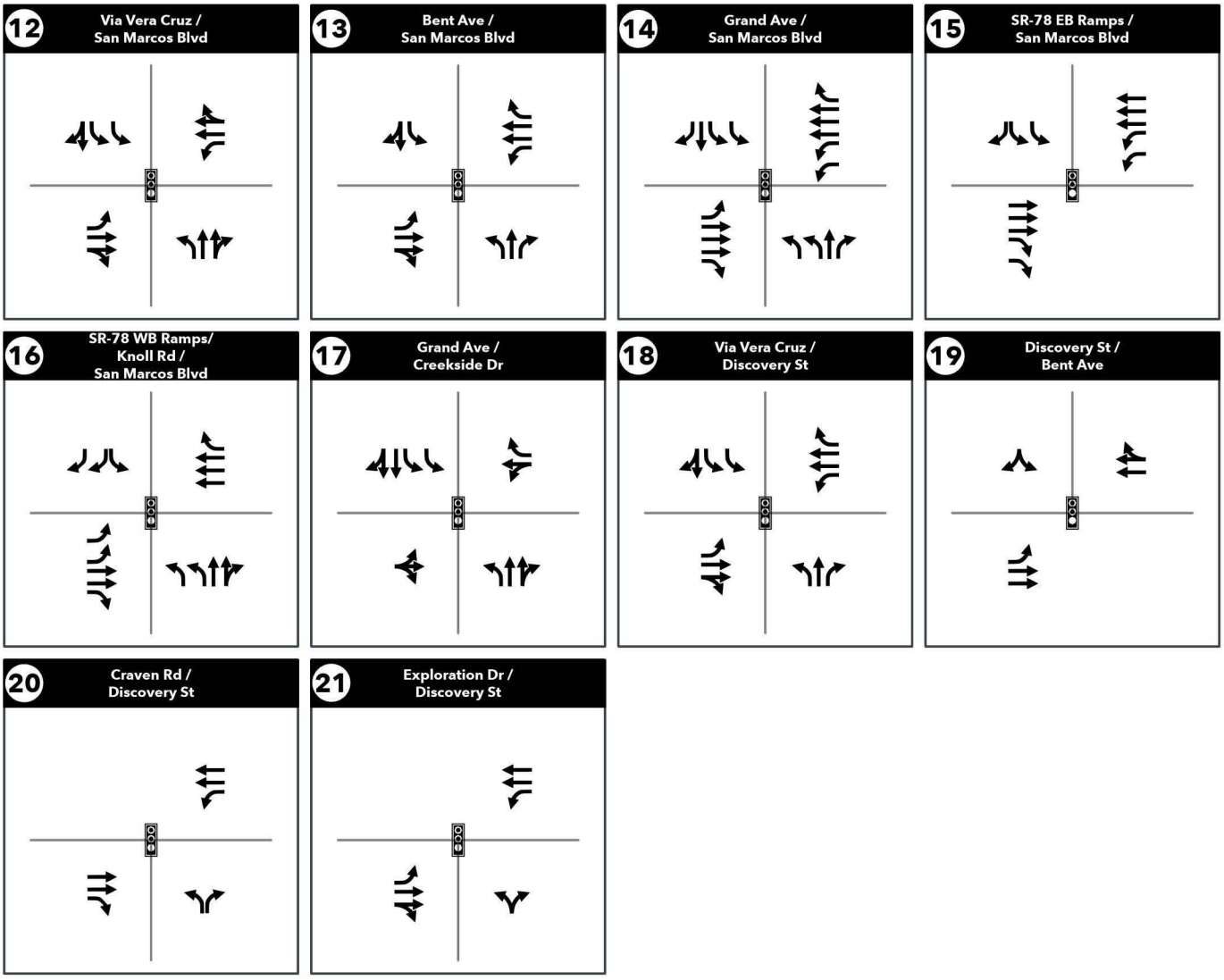


Figure 4.2
Intersection Geometrics
Existing Conditions

4.2 Active Transportation

This section discusses the project study area's active transportation modes. **Figure 4.3** displays the transit facilities within the project study area while **Figure 4.4** displays the active transportation facilities.

Transit Access

Within the vicinity of the project site, there are four separate transit stops along the project frontage servicing the following routes:

- *NCTD Bus Route 347* – Within the project study area, this bus route runs in the east-west direction along San Marcos Boulevard and connects Cal State San Marcos to Palomar College. During weekdays, bus operations commence at 5:16 AM and end at 7:45 PM with approximately 30-minute headways. The bus route is also operational on Saturdays with bus operations commencing at 7:20 AM and ending at 7:08 PM with approximately 60-minute headways. The nearest transit stop to the project site along San Marcos Boulevard are located at Via Vera Cruz and Bent Avenue.
- *NCTD Bus Route 445* – Within the project study area, this bus route runs in the east-west direction along San Marcos Boulevard and connects the Carlsbad Poinsettia COASTER to Palomar College. This route only operates on weekdays with headways that are dependent on the arrival/departure schedule of the COASTER between 6:49 AM and 6:59 PM. The nearest transit stops to the project site along San Marcos Boulevard are located at Discovery Street and Pacific Street.

Based on the Proposed Project site plan, the Proposed Project would not conflict with any existing or planned transit facilities. However, San Marcos Boulevard is outside of the specific planning area and assumed to improve transit services and amenities via the proposed Multi-Way. Therefore, it is recommended that the roadway widening while maintaining transit operations is taken into consideration by the Proposed Project when designing the project frontage.

North County Transit District (NCTD) bus schedules are provided in **Appendix B.**

Bicycle

Class II bicycle facilities are currently present along the Proposed Project's frontage on San Marcos Boulevard, Discovery Street, and Grand Avenue, as well as within the specific planning area along Bent Avenue and Via Vera Cruz. Per the City of San Marcos Active Transportation Plan (June 2024), the following bicycle facilities are proposed:

- San Marcos Boulevard – Class IV Cycle Tracks (one-way) on both sides of the roadway between Discovery Street and Grand Avenue.
- Discovery Street – Class IV Cycle Tracks (one-way) on both sides of the roadway between McMahr Road and Craven Road.
- Las Posas Road – Class IV Cycle Tracks (one-way) on both sides of the roadway north of San Marcos Boulevard.
- Via Vera Cruz – Class IV Cycle Tracks (one-way) on both sides of the roadway north of San Marcos Boulevard.
- Bent Avenue – Class II Buffered Bike Lanes on both sides of the roadway between Grand Avenue and San Marcos Boulevard.
- Grand Avenue – Class I Multi-Use Path on west side of roadway and Class II Buffered Bike Lane on east side of roadway north of San Marcos Boulevard.

The Proposed Project will provide the following bicycle improvements along the project frontage and within the specific planning area:

- Class IV Cycle Tracks along McMahr between San Marcos Boulevard and Creekside Drive – it is important to note that the City ATP previously identified this facility as a Class I multi-use path.
- Class IV Cycle Tracks along Via Vera Cruz between San Marcos Boulevard and Creekside Drive
- Class IV Cycle Tracks along Bent Avenue between San Marcos Boulevard and Creekside Drive – it is important to note that the City ATP previously identified this facility as a Class II bicycle facility.
- Class III Bike Route along Pacific Street between San Marcos Boulevard and Creekside Drive – The City ATP does not identify any bicycle facilities for this segment.
- Class II Bike Route along Creekside Drive between Pacific Street and Grand Avenue – it is important to note that the City ATP previously identified this facility as a buffered Class II bicycle facility.
- Class I Multi-Use path that connects from the northwest corner of the specific planning area to the southeast, with most of the path in a parallel configuration with Creekside Drive.

In addition to the bicycle facility improvements listed above, the Proposed Project will have internal Class I Multi-Use Paths and Class III Bike Route facilities throughout the specific plan areas that will provide connection internally and to external facilities.

Based on the Proposed Project's site plan, the Proposed Project would not conflict with existing or planned bicycle facilities, but instead, enhance the bicycle network and improve connections to existing and planned facilities. As discussed in Section 3.5, several existing roadways would require widening the existing curb-to-curb length to accommodate the proposed bicycle facilities including Via Vera Cruz and Bent Avenue.

Pedestrian

Along the project frontage and within the specific planning site, sidewalks are present along San Marcos Boulevard, Discovery Street, Via Vera Cruz, and Grand Avenue. Bent Avenue has sidewalks on both sides of the road except for the eastside of the segment between San Marcos Boulevard and Creekside Drive.

As shown in Figure 3.4 and Figure 3.5, the Proposed Project will construct an internal network of curb-less/rolled curb pedestrian streets, pedestrian paseo/promenade, and multi-use paths throughout to accommodate pedestrian foot traffic. Based on the Proposed Project site plan, the Proposed Project would not conflict with existing or planned pedestrian facilities.

4.3 Existing Intersection and Roadway Volumes

Figure 4.5 displays the existing daily traffic volumes for study area roadway segments and **Figure 4.6** displays the AM/PM peak hour turning movements for the study intersections. Study area roadway and intersection traffic counts were conducted in October 2025 and May 2026 when schools were in session and weather conditions were normal. Traffic count worksheets are provided in **Appendix C**.

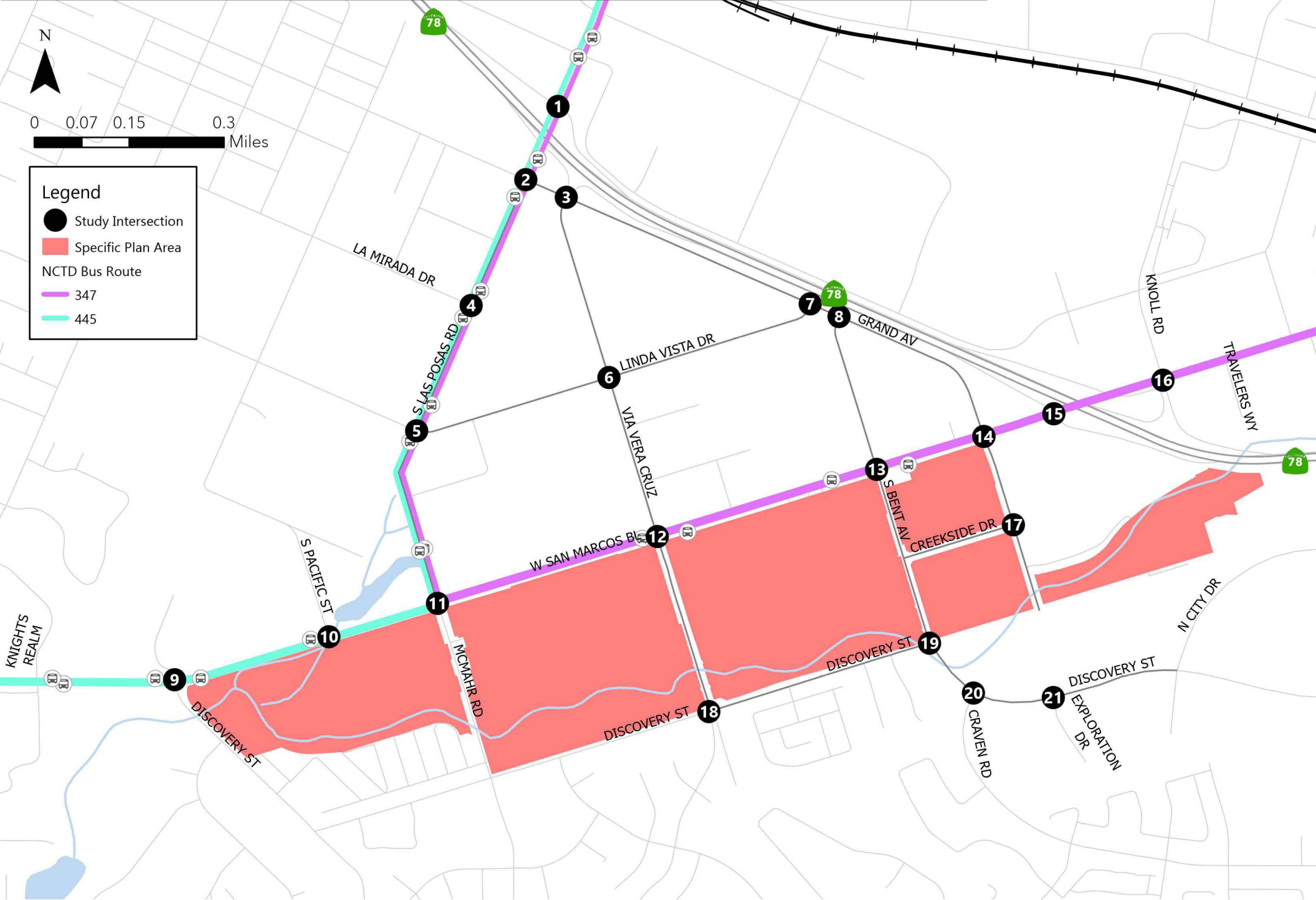


Figure 4.3
Transit Facilities Map - Existing Conditions

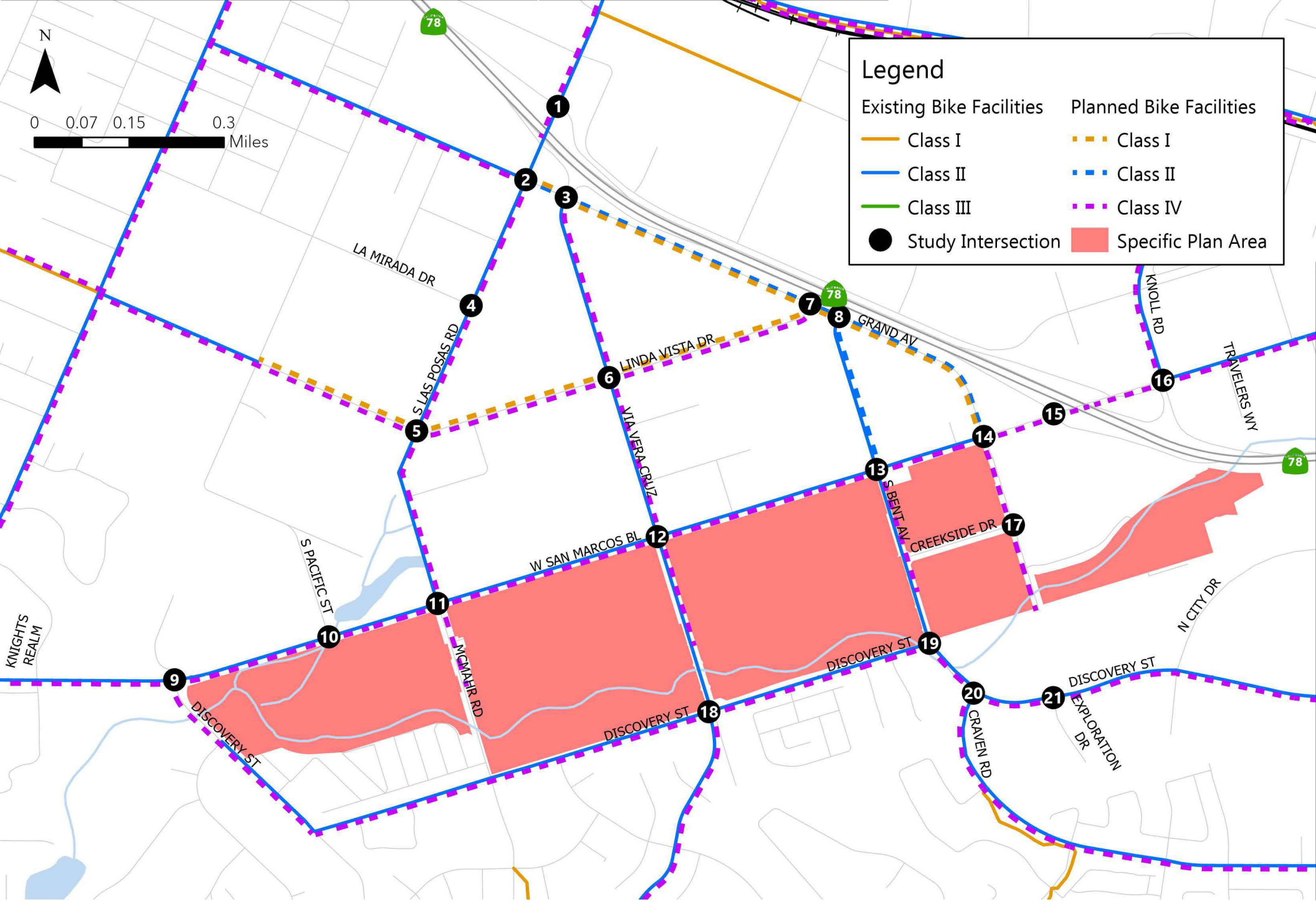


Figure 4.4
Active Transportation Facilities Map - Existing and Planned Conditions

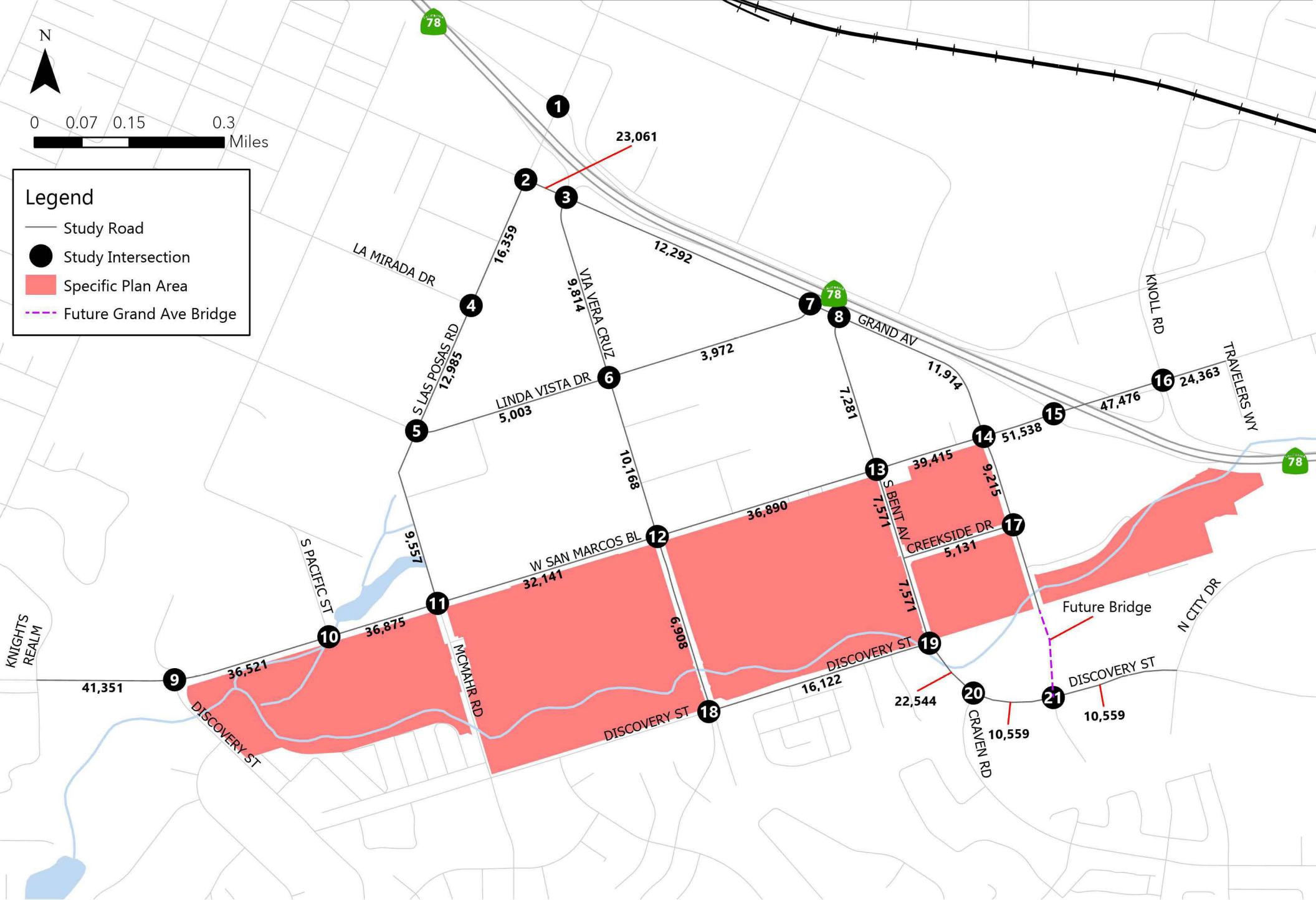


Figure 4.5

Roadway Average Daily Traffic - Existing Conditions

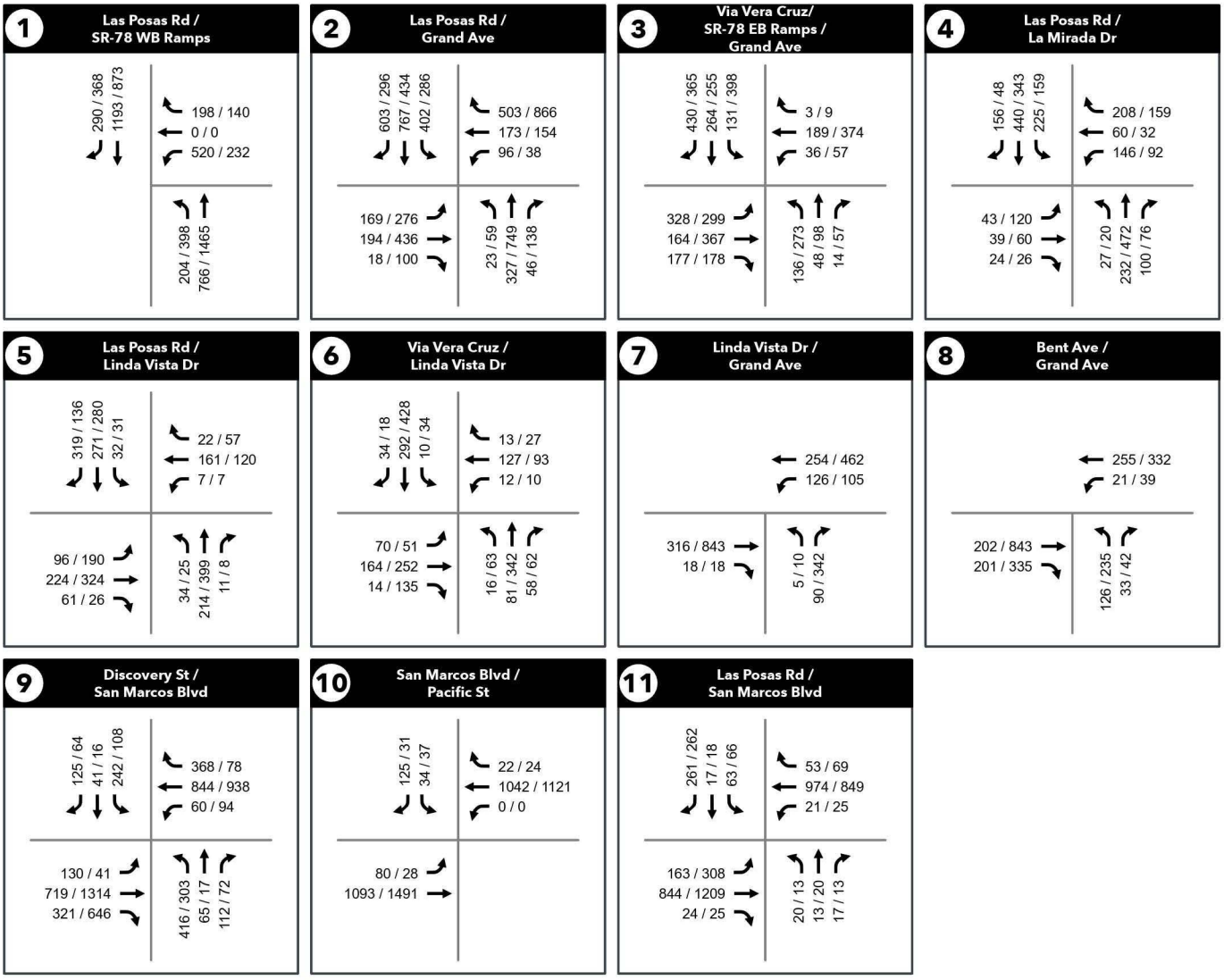


Figure 4.6
Peak Hour Intersection Traffic Volumes
Existing Conditions

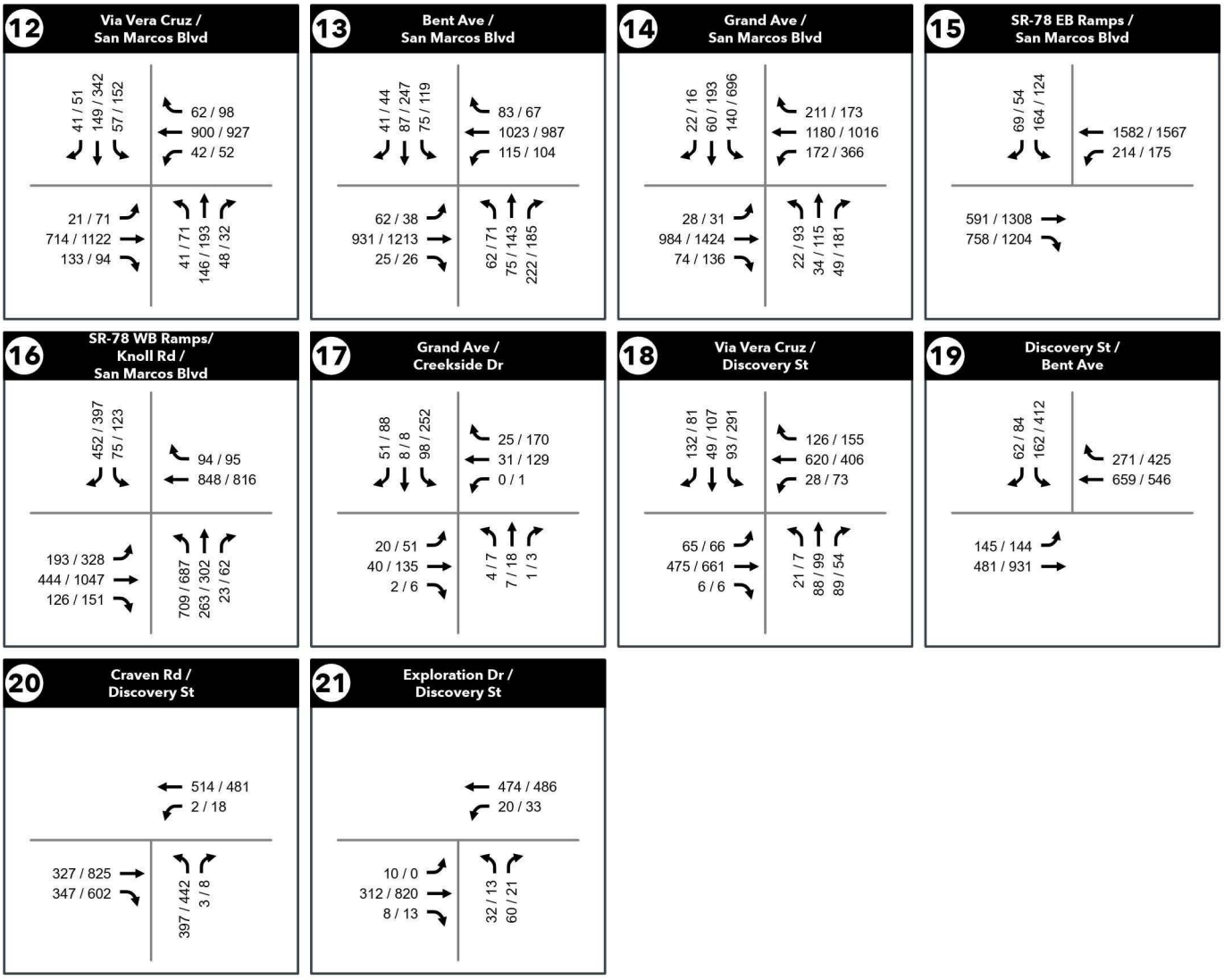


Figure 4.6
Peak Hour Intersection Traffic Volumes
Existing Conditions

4.4 Existing Level of Service Analysis

LOS analyses under Existing Conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment and intersection LOS analysis results are discussed separately below.

Roadway Segment Analysis

Table 4.1 displays roadway segment LOS analysis results for the study roadway segments under Existing Conditions.

Table 4.1 Roadway Segment LOS Results - Existing Conditions

Roadway	Segment	Cross-Section	Threshold (LOS E)	ADT	V/C	LOS
Las Posas Rd	Grand Ave to La Mirada Dr	Major Arterial (5 Lanes – Raised Median)	45,000	16,359	0.364	A
Las Posas Rd	La Mirada Dr to Linda Vista Dr	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	12,985	0.433	B
Las Posas Rd	Linda Vista Dr to San Marcos Blvd	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	9,557	0.319	A
Via Vera Cruz	Grand Ave to Linda Vista Dr	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	9,814	0.327	A
Via Vera Cruz	Linda Vista Dr to San Marcos Blvd	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	10,168	0.339	B
Via Vera Cruz	San Marcos Blvd to Discovery St	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	6,908	0.230	A
Bent Ave	Grand Ave to San Marcos Blvd	Collector (2 Lanes – Center Lane)	15,000	7,281	0.485	C
Bent Ave	San Marcos Blvd to Creekside Dr	Collector (2 Lanes – Commercial Fronting)	8,000	7,571	0.946	**E**
Bent Ave	Creekside Dr to Discovery St	Collector (2 Lanes – No Fronting Property)	10,000	7,571	0.757	D
Grand Ave	Las Posas Rd to Via Vera Cruz	Major Arterial (4 Lanes)	40,000	23,061	0.577	C
Grand Ave	Via Vera Cruz to Bent Ave	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	12,292	0.410	B
Grand Ave	Bent Ave to San Marcos Blvd	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	11,914	0.397	B
Grand Ave	San Marcos Blvd to Creekside Dr	Major Arterial (4 Lanes – Raised Median)	40,000	9,215	0.230	A
Grand Ave	Creekside Dr to Discovery St	DNE[1]				
Linda Vista Dr	Las Posas Rd to Via Vera Cruz	Collector (4 Lanes)	15,000	5,003	0.334	B
Linda Vista Dr	Via Vera Cruz to Grand Ave	Collector (2 Lanes – Commercial Fronting)	8,000	3,972	0.497	C
San Marcos Blvd	Knights Realm to Discovery St	Major Arterial (5 Lanes – Raised Median)	45,000	41,351	0.919	**E**
San Marcos Blvd	Discovery St to Pacific St	Major Arterial (4 Lanes – Raised Median)	40,000	36,521	0.913	**E**
San Marcos Blvd	Pacific St to Las Posas Rd	Major Arterial (4 Lanes – Raised Median)	40,000	36,875	0.922	**E**

Table 4.1 Roadway Segment LOS Results - Existing Conditions

Roadway	Segment	Cross-Section	Threshold (LOS E)	ADT	V/C	LOS
San Marcos Blvd	Las Posas Rd to Via Vera Cruz	Major Arterial (4 Lanes – Raised Median)	40,000	32,141	0.804	D
San Marcos Blvd	Via Vera Cruz to Bent Ave	Major Arterial (4 Lanes – Raised Median)	40,000	36,890	0.922	**E**
San Marcos Blvd	Bent Ave to Grand Ave	Major Arterial (6 Lanes – Raised Median)	50,000	39,415	0.788	C
San Marcos Blvd	Grand Ave to SR-78 EB Ramps	Major Arterial (6 Lanes – Raised Median)	60,000	51,538	0.859	D
San Marcos Blvd	SR-78 EB Ramps to Knoll Road / SR-78 WB Off-Ramp	Major Arterial (6 Lanes – Raised Median)	60,000	47,476	0.791	C
San Marcos Blvd	Knoll Rd / SR-78 WB Off-Ramp to Travelers Wy	Major Arterial (5 Lanes – Raised Median)	45,000	24,363	0.541	B
Creekside Dr	Bent Ave to Grand Ave	Collector (2-Lanes – Multi-Family)	8,000	5,131	0.641	D
Discovery St	Via Vera Cruz to Bent Ave	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	16,122	0.537	C
Discovery St	Bent Ave to Craven Rd	Major Arterial (4 Lanes – Raised Median)	40,000	22,544	0.564	C
Discovery St	Craven Rd to N City Dr	Major Arterial (4 Lanes – Raised Median)	40,000	10,559	0.264	A

Notes:
Bold indicates LOS E or F.
V/C = Volume to Capacity Ratio
DNE = Does Not Exist
[1] Bridge connection between Creekside Drive and Discovery Street. Assumed under Horizon Year analysis scenarios.

As shown in Table 4.1, all the study roadway segments currently operate at acceptable LOS D or better with the exception of the following five (5) roadway segments:

- Bent Avenue between San Marcos Boulevard and Creekside Drive – LOS E
- San Marcos Boulevard between Knights Realm and Discovery Street – LOS E
- San Marcos Boulevard between Discovery Street and Pacific Street – LOS E
- San Marcos Boulevard between Pacific Street and Las Posas Road – LOS E
- San Marcos Boulevard between Via Vera Cruz and Bent Avenue – LOS E

Intersection Analysis

Table 4.2 displays intersection LOS and average vehicle delay results for the study area intersections under Existing Conditions. LOS calculation worksheets are provided in **Appendix D**.

Table 4.2 Peak Hour Intersection LOS Results - Existing Conditions

Intersection	Control	AM		PM	
		Delay	LOS	Delay	LOS
1: Las Posas Road / SR-78 WB Ramps	Signal	40.6	D	22.5	C
2: Las Posas Road / Grand Avenue	Signal	19.7	B	41.7	D
3: Via Vera Cruz / SR-78 EB Ramps / Grand Avenue	Signal	59.1	**E**	101.5	**F**
4: Las Posas Road / La Mirada Drive	Signal	48.5	D	33.8	C
5: Las Posas Road / Linda Vista Drive	Signal	25.3	C	26.9	C
6: Via Vera Cruz / Linda Vista Drive	Signal	17.5	B	22.4	C
7: Linda Vista Dive / Grand Avenue	SSSC	10.5	B	31.2	D
8: Bent Avenue / Grand Avenue	Signal	8.9	A	16.1	B
9: Discovery Street / San Marcos Boulevard	Signal	44.1	D	22.9	C
10: Pacific Street / San Marcos Boulevard	Signal	19.9	B	12.8	B
11: Las Posas Road / San Marcos Boulevard	Signal	20.1	C	42.0	D
12: Via Vera Cruz / San Marcos Boulevard	Signal	51.0	D	55.1	**E**
13: Bent Avenue / San Marcos Boulevard	Signal	84.7	**F**	29.5	C
14: Grand Avenue / San Marcos Boulevard	Signal	17.0	B	36.3	D
15: SR-78 EB Ramps / San Marcos Boulevard	Signal	9.7	A	10.6	B
16: Knoll Road / SR-78 WB Off-Ramp / San Marcos Boulevard	Signal	24.4	C	25.5	C
17: Grand Avenue / Creekside Drive	Signal	10.0	A	12.0	B
18: Via Vera Cruz / Discovery St	Signal	21.0	C	30.7	C
19: Bent Ave / Discovery St	Signal	12.5	B	25.1	C
20: Craven Rd / Discovery St	Signal	19.2	B	22.8	C
21: Exploration Dr / Discovery St	Signal	10.0	B	10.3	B

Note:
Bold indicates LOS E or F.
SSSC = Side-Street Stop Controlled. For SSSC intersections, the delay shown is the worst delay experienced by any of the movements.

As shown in Table 4.2, all study area intersections currently operate at LOS D or better with the exception of the following three (3) intersections:

3. *Via Vera Cruz / SR-78 EB Ramps / Grand Avenue* – (AM: LOS E, PM: LOS F) – The high delay at this intersection is primarily due to the limited capacity for the north leg of the intersection, which is the SR-78 eastbound off-ramp configured with a left-turn lane and a shared through/right-turn lane configuration.
12. *Via Vera Cruz / San Marcos Boulevard – (PM: LOS E)* – The high delay at this intersection is primarily due to the high vehicular volumes for the westbound through movement. This movement has limited capacity, which is currently serviced by a through lane and a shared through/right-turn lane configuration.
13. *Bent Avenue / San Marcos Boulevard – (AM: LOS F)* - The high delay at this intersection is primarily due to the high vehicular volumes for the eastbound through movement. This movement has limited capacity, which is currently serviced by a through lane and a shared through/right-turn lane configuration.

5.0 Horizon Year 2050 Conditions

This section provides a description of Horizon Year 2050 Traffic Conditions network, both with and without the Proposed Project. Scenarios analyzed in this section include:

- Horizon Year 2050 Base Conditions (assumes buildout of the 2007 Specific Plan)
- Horizon Year 2050 with Project Conditions

5.1 Horizon Year 2050 Roadway Network

The future roadway network assumes buildout of the 2007 Specific Plan. When compared to the existing transportation network, the following roadway improvements were assumed under Horizon Year 2050 Base Conditions:

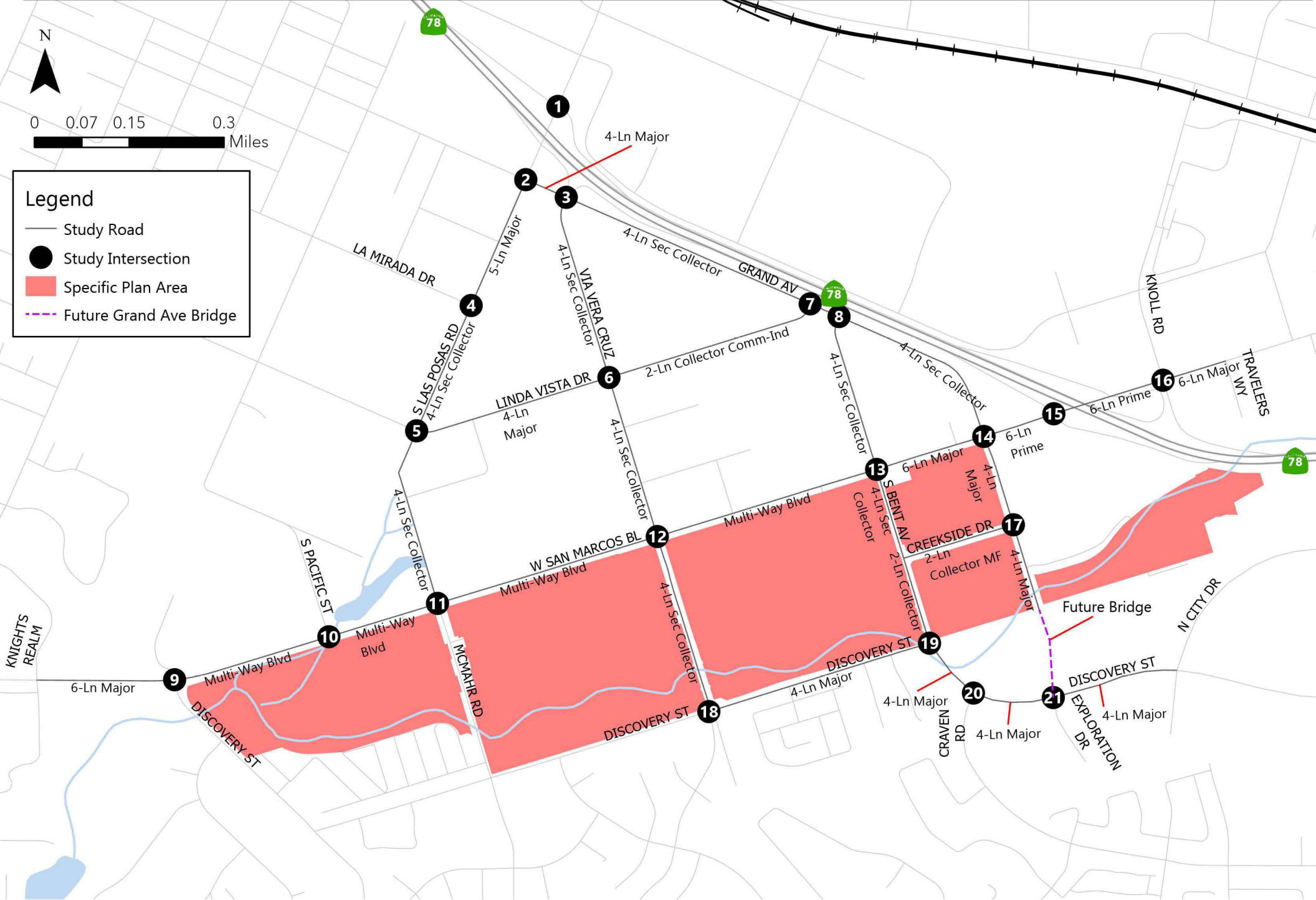
- *Bent Avenue between Grand Avenue to Creekside Drive* – Improved to a 4-Lane Secondary Arterial/Collector
- *Linda Vista Drive between Las Posas Road to Via Vera Cruz* – Improved to a 4-Lane Major Arterial
- *Grand Avenue between Creekside Drive and Discovery Street* – Improved to a 4-Lane Major Arterial with a constructed bridge.
- *San Marcos Boulevard between Knights Realm to Discovery Street* – Improved to a 6-Lane Major Arterial
- *San Marcos Boulevard between Discovery Street to Bent Avenue* – Improved to a Multi-Way Boulevard
- *San Marcos Boulevard between Knoll Road / SR-78 WB Off-Ramp to Travelers Way* – Improved to a 6-Lane Major Arterial

Additionally, it is important to note the traffic study for the 2007 Specific Plan identified the following mitigation measure:

- *Extend Creekside Drive west from Bent Avenue to McMahr Road* – The addition of a second two-lane Collector, parallel with Main Street (an additional internal roadway), would absorb some of the traffic volumes that are forecast on Main Street and improve daily traffic operations on Main Street to acceptable operations.

The mitigation measure listed above is currently identified as a project feature as described in Section 3.5.

Figure 5.1 displays the functional classifications of the study area roadways and **Figure 5.2** displays the geometric configurations of the study area intersections under Horizon Year 2050 Base Conditions. Excerpts from the City of San Marcos Mobility Element and the traffic study prepared for the 2007 Specific Plan is provided in Appendix A.


N
0 0.07 0.15 0.3
Miles
Legend
Study Road
Study Intersection
Specific Plan Area
Future Grand Ave Bridge
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21
4-Ln Major
LA MIRADA DR
5-Ln Major
4-Ln Sec Collector
GRAND AV
VIA VERA CRUZ
S LAS POSAS RD
2-Ln Collector Comm-Ind
LINDA VISTA DR
4-Ln Major
KNOLL RD
TRAVELERS WY
6-Ln Major
6-Ln Prime
6-Ln Major
S BENT AV
CREEKSIDE DR
2-Ln Collector MF
4-Ln Major
Future Bridge
N CITY DR
S PACIFIC ST
W SAN MARCOS BL
Multi-Way Blvd
MCMAHR RD
DISCOVERY ST
KNIGHTS REALM
6-Ln Major
CRAVEN RD
EXPLORATION DR

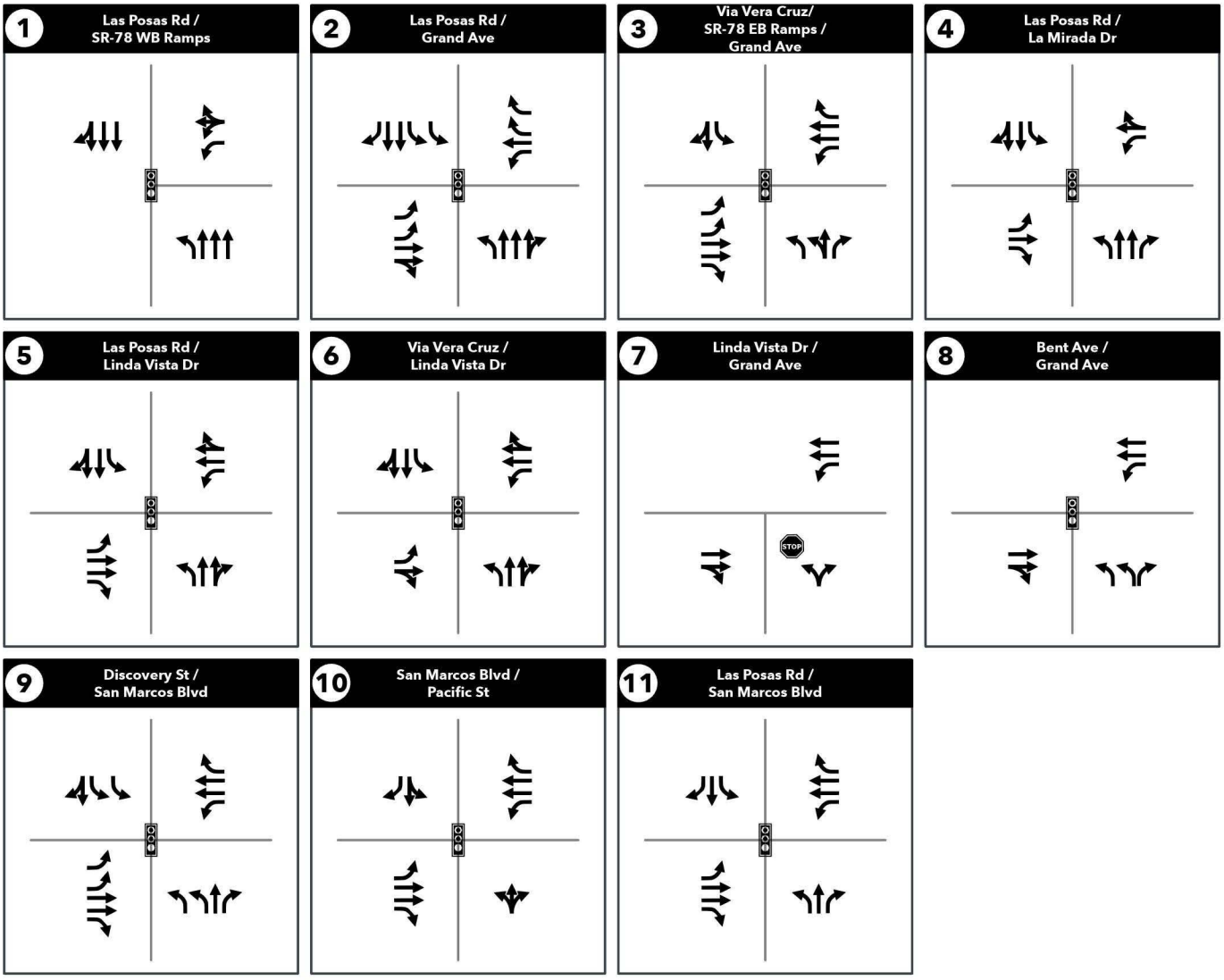


Figure 5.2
Intersection Geometrics
Horizon Year 2050 Conditions

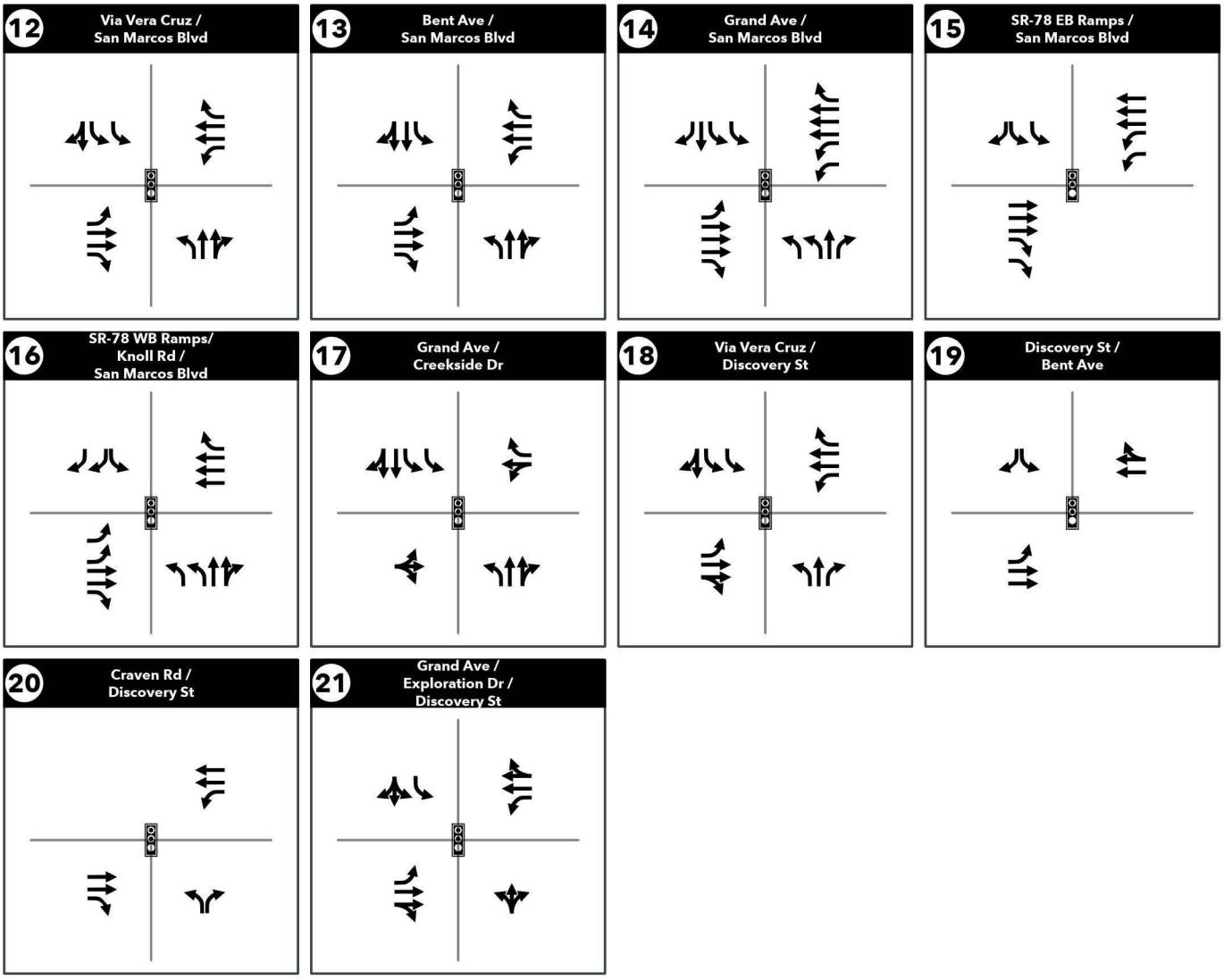


Figure 5.2
Intersection Geometrics
Horizon Year 2050 Conditions

5.2 Horizon Year 2050 Intersection and Roadway Volumes

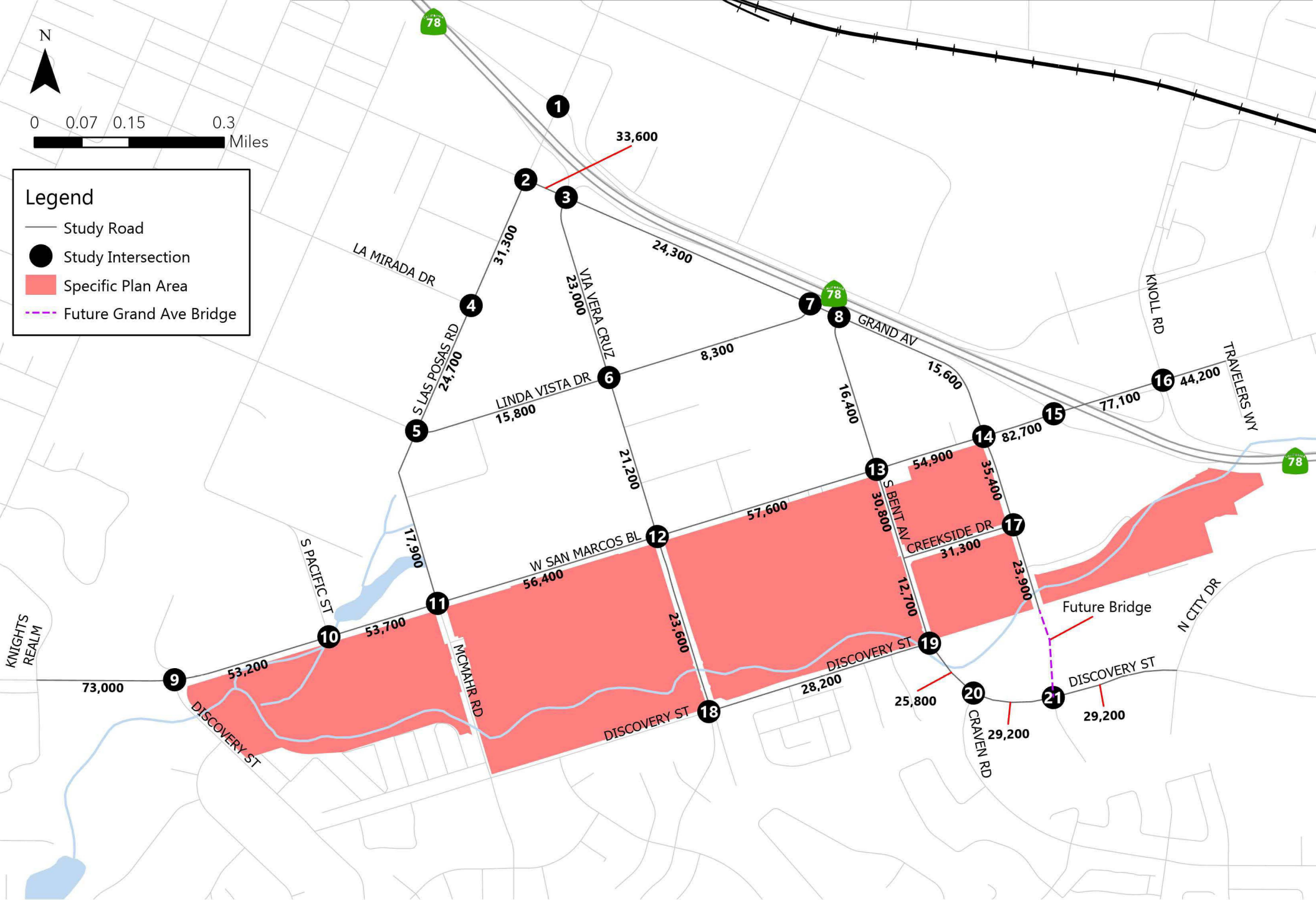
The traffic study prepared for the 2007 Specific Plan analyzed the future year conditions under Horizon Year 2030 with and without implementation of the project. Additionally, those volumes analyzed under these scenarios were developed utilizing the latest model at the time of preparation, which was the SANDAG Series 10 North San Diego County subarea traffic model that assumed Horizon Year 2030 General Plan land uses. Since the 2007 Environmental Impact Report (EIR) was based on a different Horizon Year scenario, an outdated SANDAG model, and outdated General Plan land uses, the Horizon Year 2050 Base Conditions roadway network volumes were developed utilizing an updated SANDAG regional model as described in the following sections below.

The future year forecast roadway volumes under Horizon Year 2050 Base Conditions were derived utilizing the SANDAG Series 14 ABM2/2019 RTP model via the Transportation Forecast Information Center (TFIC), the trip distribution assumptions for the specific plan area displayed in Figure 3.2, and the estimated trip generation for the 2007 Specific Plan displayed in Table 3.1. To establish the baseline for the Horizon Year 2050 Base Conditions, the forecasting procedure known as the "difference method" was utilized. This method compares the daily trips generated for each of the specific plan area's traffic analysis zones (TAZ)[1] of the SANDAG model to the trip generation of the 2007 Specific Plan, then assigns that difference to the transportation network based on the trip distribution assumptions per Figure 3.2.
The analysis for developing the Horizon Year 2050 Base Conditions is provided in **Appendix E**.

Horizon Year 2050 intersection peak hour turning movement volumes were developed by utilizing the National Cooperative Highway Research Program (NCHRP) Report 255 methodology for estimating intersection turning movements. This methodology describes the use of growth factors, based on the comparison of existing daily traffic and estimated Horizon Year 2050 daily traffic, which are applied to existing peak hour intersection approach and departure volumes. Manual adjustments were also made to ensure that traffic volumes among adjacent intersections were reasonably balanced.

Figure 5.3 displays the daily traffic volumes for the study area roadway segments and **Figure 5.4** displays the AM/PM peak hour turning movements for the study area intersections under Horizon Year 2050 Base Conditions.

[1] TAZs within the specific planning area include 1030, 1041, 1061, and 1076.



San Marcos Creek Specific Plan

Figure 5.3

Roadway Average Daily Traffic - Horizon Year 2050 Conditions

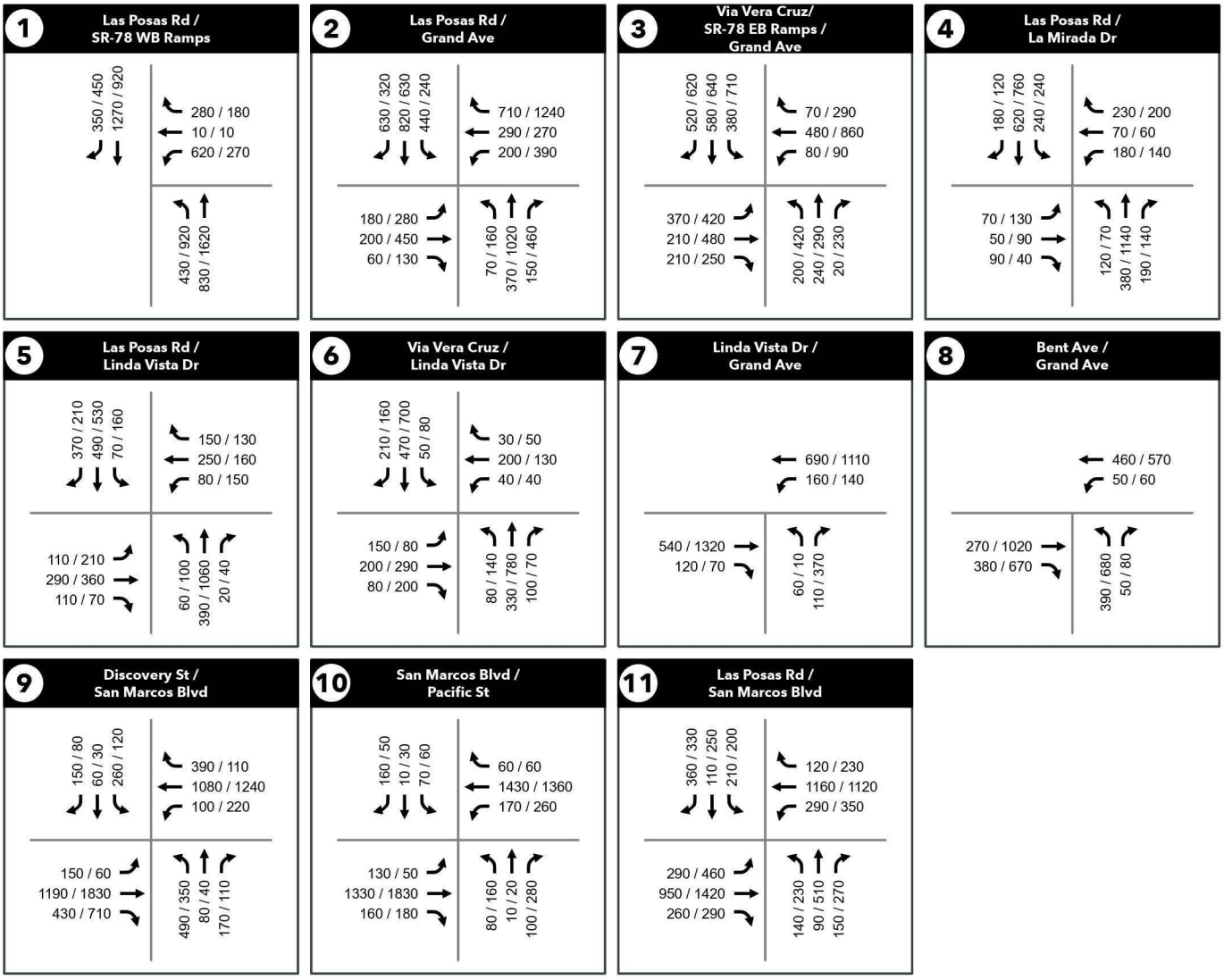


Figure 5.4
Peak Hour Intersection Traffic Volumes
Horizon Year 2050 Conditions

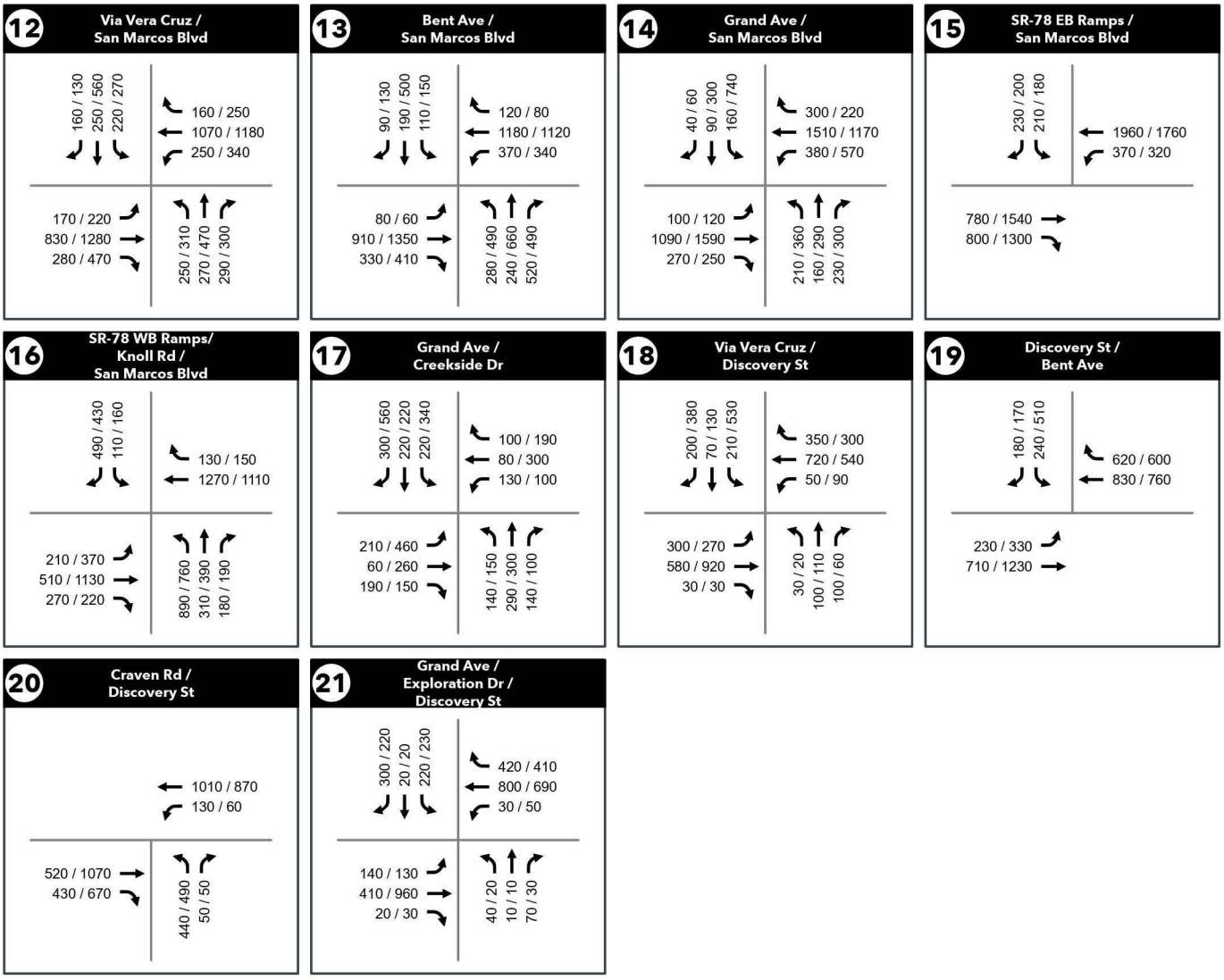


Figure 5.4
Peak Hour Intersection Traffic Volumes
Horizon Year 2050 Conditions

5.3 Horizon Year 2050 Level of Service Analysis

LOS analyses under Horizon Year 2050 Base Conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment and intersection LOS analysis results are discussed separately below.

Roadway Segment Analysis

Table 5.1 displays roadway segment LOS analysis results for the study roadway segments under Horizon Year 2050 Base Conditions.

Table 5.1 Roadway Segment LOS Results – Horizon Year 2050 Base Conditions

Roadway	Segment	Cross-Section	Threshold (LOS E)	ADT	V/C	LOS
Las Posas Rd	Grand Ave to La Mirada Dr	Major Arterial (5 Lanes – Raised Median)	45,000	31,300	0.696	C
Las Posas Rd	La Mirada Dr to Linda Vista Dr	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	24,700	0.823	D
Las Posas Rd	Linda Vista Dr to San Marcos Blvd	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	17,900	0.597	C
Via Vera Cruz	Grand Ave to Linda Vista Dr	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	23,000	0.767	D
Via Vera Cruz	Linda Vista Dr to San Marcos Blvd	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	21,200	0.707	D
Via Vera Cruz	San Marcos Blvd to Discovery St	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	23,600	0.787	D
Bent Ave	Grand Ave to San Marcos Blvd	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	16,400	0.547	C
Bent Ave	San Marcos Blvd to Creekside Dr	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	30,800	1.027	**F**
Bent Ave	Creekside Dr to Discovery St	Collector (2 Lanes – No Fronting Property)	10,000	12,700	1.270	**F**
Grand Ave	Las Posas Rd to Via Vera Cruz	Major Arterial (4 Lanes – Raised Median)	40,000	33,600	0.840	D
Grand Ave	Via Vera Cruz to Bent Ave	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	24,300	0.810	D
Grand Ave	Bent Ave to San Marcos Blvd	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	15,600	0.520	C
Grand Ave	San Marcos Blvd to Creekside Dr	Major Arterial (4 Lanes – Raised Median)	40,000	35,400	0.885	**E**
Grand Ave	Creekside Dr to Discovery St	Major Arterial (4 Lanes – Raised Median)	40,000	23,900	0.598	C
Linda Vista Dr	Las Posas Rd to Via Vera Cruz	Major Arterial (4 Lanes – Raised Median)	40,000	15,800	0.395	B
Linda Vista Dr	Via Vera Cruz to Grand Ave	Collector (2 Lanes – Commercial Fronting)	8,000	8,300	1.038	**F**
San Marcos Blvd	Knights Realm to Discovery St	Major Arterial (6 Lanes – Raised Median)	50,000	73,000	1.460	**F**
San Marcos Blvd	Discovery St to Pacific St	Multi-Way Boulevard (4 Lanes + 2 Multi-Way Lanes)	48,000	53,200	1.108	**F**
San Marcos Blvd	Pacific St to Las Posas Rd	Multi-Way Boulevard (4 Lanes + 2 Multi-Way Lanes)	48,000	53,700	1.119	**F**

Table 5.1 Roadway Segment LOS Results – Horizon Year 2050 Base Conditions

Roadway	Segment	Cross-Section	Threshold (LOS E)	ADT	V/C	LOS
San Marcos Blvd	Las Posas Rd to Via Vera Cruz	Multi-Way Boulevard (4 Lanes + 2 Multi-Way Lanes)	48,000	56,400	1.175	**F**
San Marcos Blvd	Via Vera Cruz to Bent Ave	Multi-Way Boulevard (4 Lanes + 2 Multi-Way Lanes)	48,000	57,600	1.200	**F**
San Marcos Blvd	Bent Ave to Grand Ave	Major Arterial (6 Lanes – Raised Median)	50,000	54,900	1.098	**F**
San Marcos Blvd	Grand Ave to SR-78 EB Ramps	Prime Arterial (6 Lanes – Raised Median)	60,000	82,700	1.378	**F**
San Marcos Blvd	SR-78 EB Ramps to Knoll Road / SR-78 WB Off-Ramp	Prime Arterial (6 Lanes – Raised Median)	60,000	77,100	1.285	**F**
San Marcos Blvd	Knoll Rd / SR-78 WB Off-Ramp to Travelers Wy	Major Arterial (6 Lanes – Raised Median)	50,000	44,200	0.884	D
Creekside Dr	Bent Ave to Grand Ave	Collector (2-Lanes – Multi-Family)	8,000	31,300	3.913	**F**
Discovery St	Via Vera Cruz to Bent Ave	Major Arterial (4 Lanes – Raised Median)	40,000	28,200	0.705	C
Discovery St	Bent Ave to Craven Rd	Major Arterial (4 Lanes – Raised Median)	40,000	25,800	0.645	C
Discovery St	Craven Rd to N City Dr	Major Arterial (4 Lanes – Raised Median)	40,000	29,200	0.730	C

Notes:
Bold indicates LOS E or F.
V/C = Volume to Capacity Ratio

As shown in Table 5.1, half of the study roadway segments are anticipated to operate at LOS E or F under Horizon Year 2050 Base Conditions, including the following 13 roadway segments:

- Bent Avenue between San Marcos Boulevard and Creekside Drive – LOS F
- Bent Avenue between Creekside Drive and Discovery Street – LOS F
- Grand Avenue between San Marcos Boulevard and Creekside Drive – LOS E
- Linda Vista Drive between Via Vera Cruz and Grand Avenue – LOS F
- San Marcos Boulevard between Knights Realm and Discovery Street – LOS F
- San Marcos Boulevard between Discovery Street and Pacific Street – LOS F
- San Marcos Boulevard between Pacific Street and Las Posas Road – LOS F
- San Marcos Boulevard between Las Posas Road and Via Vera Cruz – LOS F
- San Marcos Boulevard between Via Vera Cruz and Bent Avenue – LOS F
- San Marcos Boulevard between Bent Avenue and Grand Avenue – LOS F
- San Marcos Boulevard between Grand Avenue and SR-78 EB Ramps – LOS F
- San Marcos Boulevard between SR-78 EB Ramps and Knoll Road / SR-78 WB Off-Ramp – LOS F
- Creekside Drive between Bent Avenue and Grand Avenue – LOS F

Intersection Analysis

Table 5.2 displays intersection LOS and average vehicle delay results for the study area intersections under Horizon Year 2050 Base Conditions. LOS calculation worksheets are provided in **Appendix F**.

Table 5.2 Peak Hour Intersection LOS Results – Horizon Year 2050 Base Conditions

Intersection	Control	AM		PM	
		Delay	LOS	Delay	LOS
1: Las Posas Road / SR-78 WB Ramps	Signal	62.9	**E**	64.9	**E**
2: Las Posas Road / Grand Avenue	Signal	42.1	D	65.1	**E**
3: Via Vera Cruz / SR-78 EB Ramps / Grand Avenue	Signal	108.7	**F**	>180.0	**F**
4: Las Posas Road / La Mirada Drive	Signal	63.5	**E**	39.7	D
5: Las Posas Road / Linda Vista Drive	Signal	29.4	C	41.5	D
6: Via Vera Cruz / Linda Vista Drive	Signal	24.0	C	46.3	D
7: Linda Vista Dive / Grand Avenue	SSSC	48.3	**E**	>180.0	**F**
8: Bent Avenue / Grand Avenue	Signal	11.5	B	35.0	C
9: Discovery Street / San Marcos Boulevard	Signal	51.2	D	54.0	D
10: Pacific Street / San Marcos Boulevard	Signal	43.6	D	112.0	**F**
11: Las Posas Road / San Marcos Boulevard	Signal	33.4	C	103.8	**F**
12: Via Vera Cruz / San Marcos Boulevard	Signal	64.3	**E**	145.4	**F**
13: Bent Avenue / San Marcos Boulevard	Signal	88.5	**F**	129.4	**F**
14: Grand Avenue / San Marcos Boulevard	Signal	29.3	C	76.1	**E**
15: SR-78 EB Ramps / San Marcos Boulevard	Signal	12.1	B	16.5	B
16: Knoll Road / SR-78 WB Off-Ramp / San Marcos Boulevard	Signal	31.7	C	33.7	C
17: Grand Avenue / Creekside Drive	Signal	30.9	C	>180.0	**F**
18: Via Vera Cruz / Discovery St	Signal	51.2	D	56.2	**E**
19: Bent Ave / Discovery St	Signal	15.6	B	59.4	**E**
20: Craven Rd / Discovery St	Signal	20.5	C	25.8	C
21: Exploration Dr / Discovery St	Signal	39.9	D	27.9	C

Note:
Bold indicates LOS E or F.
SSSC = Side-Street Stop Controlled. For SSSC intersections, the delay shown is the worst delay experienced by any of the movements.

As shown in Table 5.2, the following 13 intersections are anticipated to operate at LOS E or F under Horizon Year 2050 Base Conditions:

1. Las Posas Road / SR-78 WB Ramps – (AM: LOS E, PM: LOS E)
2. Las Posas Road / Grand Avenue - (PM: LOS E)
3. Via Vera Cruz / SR-78 EB Ramps / Grand Avenue – (AM: LOS F, PM: LOS F)
4. Las Posas Road / La Mirada Drive – (AM: LOS E)
7. Linda Vista Drive / Grand Avenue – (AM: LOS E, PM: LOS F)
10. Pacific Street / San Marcos Boulevard – (PM: LOS F)
11. Las Posas Road / San Marcos Boulevard – (PM: LOS F)

12. Via Vera Cruz / San Marcos Boulevard – (AM: LOS E, PM: LOS F)
13. Bent Avenue / San Marcos Boulevard – (AM: LOS F, PM: LOS F)
14. Grand Avenue / San Marcos Boulevard – (PM: LOS E)
17. Grand Avenue / Creekside Drive – (PM: LOS F)
18. Via Vera Cruz / Discovery Street – (PM: LOS E)
19. Bent Avenue / Discovery Street – (PM: LOS E)

5.4 Horizon Year 2050 with Project Roadway Network

Roadway and intersection geometrics under the Horizon Year 2050 with Project Conditions were assumed to be identical to Horizon Year 2050 geometrics (displayed in Figure 5.1 and 5.2), with the exception of the following four (4) segments:

- *Bent Avenue between Grand Avenue to San Marcos Boulevard* – Maintained as existing 2-Lane Collector with center left-turn lane.
- *Bent Avenue between San Marcos Boulevard to Creekside Drive* – Improved to a 2-Lane Collector with center left-turn lane.
- *Bent Avenue between Creekside Drive and Discovery Street* – Maintained as existing 2-Lane Collector without fronting property (recently completed bridge).
- *Grand Avenue between Creekside Drive and Discovery Street* – Improved to a 4-Lane Major Arterial with a constructed bridge.

As described in Section 3.5, the Proposed Project plans to widen Bent Avenue between San Marcos Boulevard and Creekside Drive from existing Collector configuration with two lanes to a two-lane roadway with a center left-turn lane configuration. As part of the widening, other travel modes will be accommodated such as Class IV Cycle Tracks for bicycles and sidewalks for pedestrians on both sides of the roadways along this segment.

5.5 Horizon Year 2050 with Project Intersection and Roadway Volumes

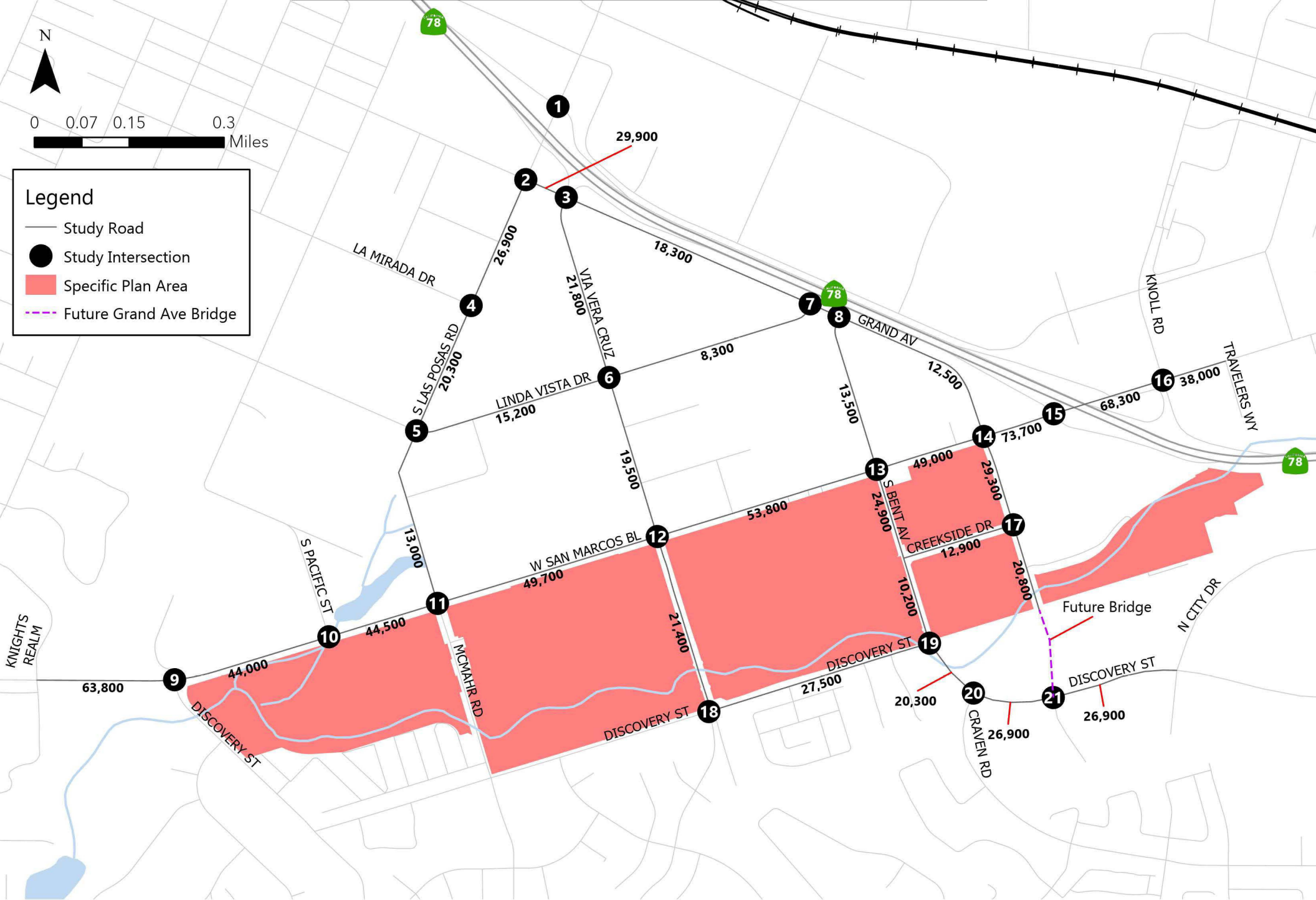
The future year forecast roadway volumes under Horizon Year 2050 with Project Conditions were derived utilizing the SANDAG Series 14 ABM2/2019 RTP model via the Transportation Forecast Information Center (TFIC), the trip distribution assumptions for the specific plan area displayed in Figure 3.2, and the estimated trip generation for the Proposed Project displayed in Table 3.2.

The future year forecast roadway volumes under Horizon Year 2050 with Project Conditions were derived utilizing the SANDAG Series 14 ABM2/2019 RTP model via the TFIC, the trip distribution assumptions for the specific plan area displayed in Figure 3.2, and the estimated trip generation for the Proposed Project displayed in Table 3.2. Similar to the development of forecast roadway volumes under Horizon Year 2050 Base Conditions, the forecasting procedure known as the "difference method" was utilized. This method compares the daily trips generated for each of the specific plan area's traffic analysis zones (TAZ)[2] of the SANDAG model to the trip generation of the Proposed Project, then assigns that difference to the transportation network based on the trip distribution assumptions per Figure 3.2. The analysis for developing the Horizon Year 2050 with Project Conditions volumes is provided in **Appendix G**.

[2] TAZs within the specific planning area include 1030, 1041, 1061, and 1076.

Horizon Year 2050 with Project intersection peak hour turning movement volumes were developed by utilizing the National Cooperative Highway Research Program (NCHRP) Report 255 methodology for estimating intersection turning movements. This methodology describes the use of growth factors, based on the comparison of existing daily traffic and estimated Horizon Year 2050 with Project daily traffic, which are applied to existing peak hour intersection approach and departure volumes. Manual adjustments were also made to ensure that traffic volumes among adjacent intersections were reasonably balanced.

Figure 5.5 displays the daily traffic volumes for the study area roadway segments and **Figure 5.6** displays the AM/PM peak hour turning movements for the study area intersections under Horizon Year 2050 with Project Conditions.


N
0 0.07 0.15 0.3
Miles
Legend
Study Road
Study Intersection
Specific Plan Area
Future Grand Ave Bridge
78
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
29,900
LA MIRADA DR
26,900
18,300
VIA VERA CRUZ
21,800
S LAS POSAS RD
20,300
LINDA VISTA DR
15,200
8,300
GRAND AV
12,500
KNOLL RD
TRAVELERS WY
38,000
68,300
73,700
13,500
19,500
49,000
29,300
S BENT AV
24,900
53,800
CREEKSIDE DR
12,900
20,800
13,000
W SAN MARCOS BL
49,700
10,200
S PACIFIC ST
44,500
21,400
MCMAHR RD
KNIGHTS REALM
63,800
44,000
DISCOVERY ST
27,500
20,300
CRAVEN RD
26,900
Future Bridge
N CITY DR
26,900

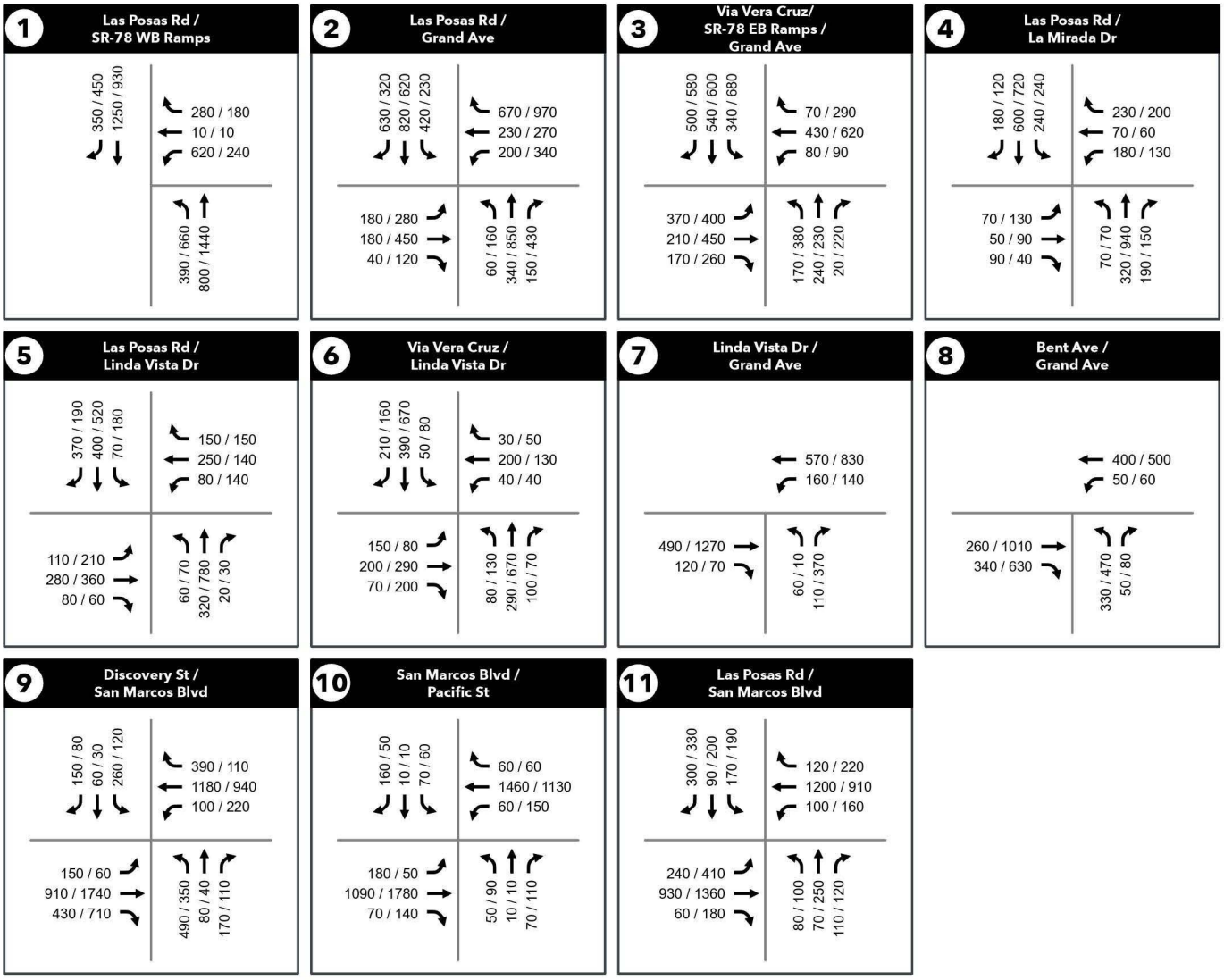


Figure 5.6
Peak Hour Intersection Traffic Volumes
Horizon Year 2050 with Project Conditions

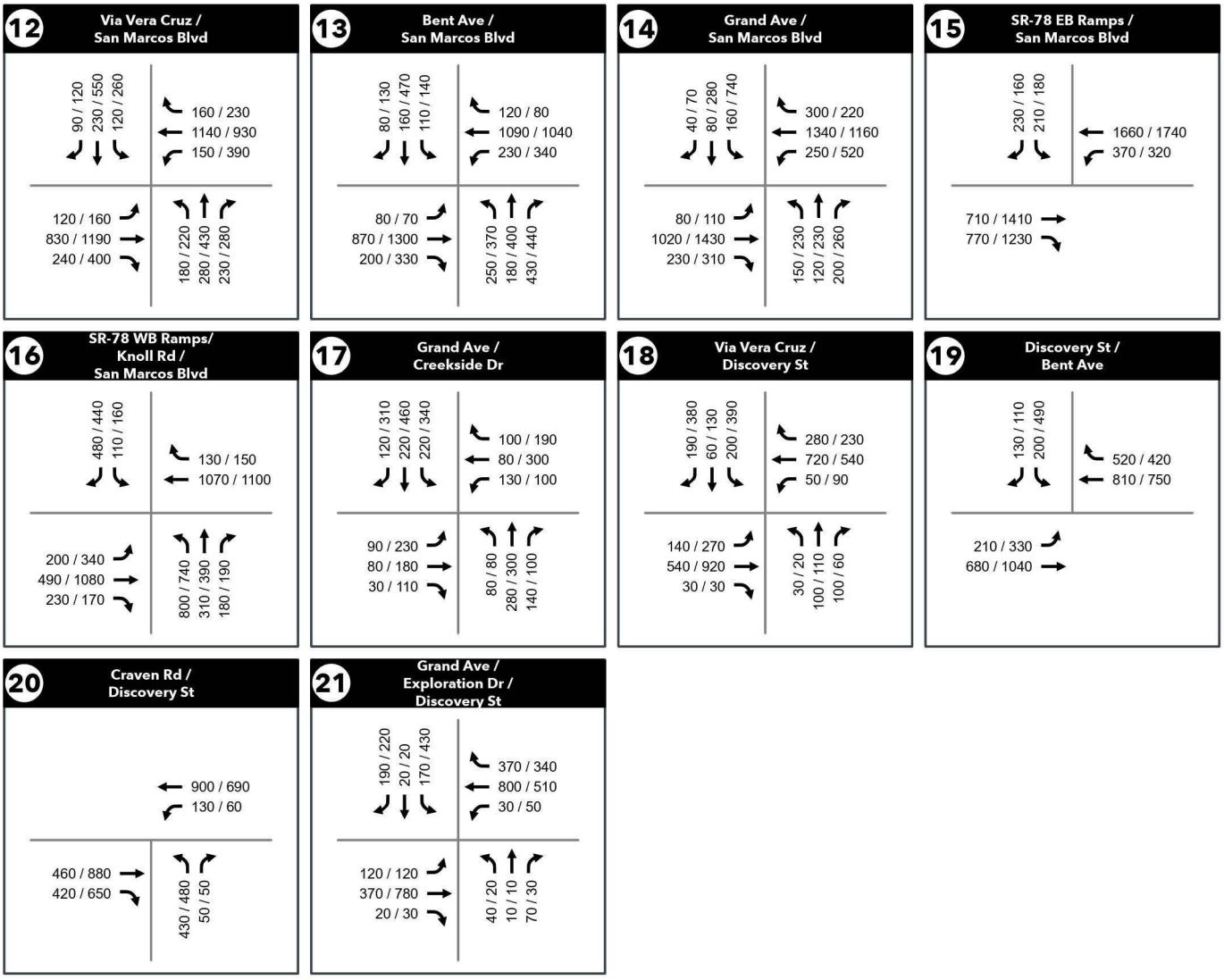


Figure 5.6
Peak Hour Intersection Traffic Volumes
Horizon Year 2050 with Project Conditions

5.6 Horizon Year 2050 with Project Level of Service Analysis

LOS analyses under Horizon Year 2050 with Project Conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment and intersection LOS analysis results are discussed separately below.

It is important to note that the analysis provided within this study is a plan-to-plan analysis that compares the analysis results between the 2007 Specific Plan and the Proposed Project. However, the 2007 Specific Plan Scenario is primarily a hypothetical scenario and does not provide a ground-to-plan comparison. The ground-to-plan analysis that compares existing conditions to future year conditions with implementation of the Proposed Project is provided in **Appendix H**.

Roadway Segment Analysis

Table 5.3 displays roadway segment LOS analysis results for the study roadway segments under Horizon Year 2050 with Project Conditions. As discussed in Section 3.5, the only roadway segment mitigation measure required for the 2007 Specific Plan is as follows:

- *Extend Creekside Drive west from Bent Avenue to McMahr Road* – The addition of a second two-lane Collector parallel with Main Street (an additional internal roadway) would absorb some of the traffic volumes that are forecast on Main Street and improve daily traffic operations on Main Street to acceptable levels of service. This is identified as a project feature for the Proposed Project.

As shown in Table 5.3, the following 13 study roadway segments are anticipated to operate at LOS E or F under Horizon Year 2050 with Project Conditions:

- *Bent Avenue between Grand Avenue and San Marcos Boulevard* – (LOS E) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio increases by 0.353, which degrades the LOS from acceptable LOS C to LOS E with implementation of the Proposed Project. The classification change from a Four-Lane Secondary Arterial / Collector under Horizon Year 2050 Base Conditions to a Two-Lane Collector under Horizon Year 2050 with Project Conditions causes the operations of the roadway to degrade to subpar levels.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to a Four-Lane Secondary Arterial/Collector to serve the projected vehicle volumes. However, additional right-of-way would be required from existing commercial and industrial developments along Bent Avenue to accommodate the increased travel lanes. Additionally, removal of existing Class II bicycle facilities would be required, which would conflict with the City's Mobility Element Goal M-1 and Policy M-3.1 to provide a comprehensive multimodal circulation system. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *Bent Avenue between San Marcos Boulevard and Creekside Drive* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio increases by 0.633, which exacerbates the LOS at a roadway segment that is already operating at LOS F. The classification change from a Four-Lane Secondary Arterial / Collector under Horizon Year 2050 Base Conditions to a Two-Lane Collector under Horizon Year 2050 with Project Conditions exacerbates the operations of the roadway that is already operating at subpar levels.

To improve operations to LOS D or better, the roadway segment would need to be improved to a Four-Lane Major Arterial. As shown in Figure 3.4 and 3.5, the Proposed Project will improve this segment to a curb-to-curb width of 80-feet, which will be able to accommodate a raised median and four travel lanes and Class IV Cycle Tracks, and therefore, is a feasible improvement to be implemented by the Proposed Project.

- *Bent Avenue between Creekside Drive and Discovery Street* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.250 resulting in improved traffic operations. The improved operations along this roadway segment, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve operations to LOS D or better, the roadway segment would need to be improved to a Four-Lane Collector to serve forecasted daily traffic along the segment. However, the majority of this roadway segment is the recently completed Bent Avenue Bridge that connects Creekside Drive and Discovery Street. This bridge is currently configured with an estimated curb-to-curb width of 33-feet with a two-lane undivided roadway and Class II bicycle facilities. Sidewalks are also present along both sides of the bridge. Widening the roadway would include removal of bicycle facilities and narrowing the sidewalks, which would conflict with the City's Mobility Element Goal M-1 and Policy M-3.1 to provide a comprehensive multimodal circulation system. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *Linda Vista Drive between Via Vera Cruz and Grand Avenue* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio does not change as project traffic is not anticipated along this segment. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements by the Proposed Project would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway segment would need to be widened to a Two-Lane Collector with a center lane to serve forecasted daily traffic along the segment. However, the existing curb-to-curb width is approximately 45-feet whereas per the City of San Marcos street cross-section requirements, at least 48-feet is needed for a collector/industrial street. Widening would require removal of parking and right-of-way acquisition from existing businesses along this segment. Therefore, capacity enhancing improvements are not feasible for this study roadway segment.

- *San Marcos Boulevard between Knights Realm and Discovery Street* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.184 resulting in improved traffic operations with the Proposed Project. The improved operations along this roadway segment when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to a 10-Lane Major Arterial to serve the projected vehicle volumes. However, under Horizon Year

with Project Conditions, the roadway segment is built out to its ultimate classification as a Six-Lane Major Arterial per the City of San Marcos Mobility Element. Therefore, capacity enhancing improvements are not feasible for this study roadway segment.

- *San Marcos Boulevard between Discovery Street and Pacific Street* – (LOS E) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.191 resulting in improved traffic operations with the Proposed Project. The improved operations along this roadway segment when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to a Six-Lane Major Arterial to serve the projected vehicle volumes. However, under Horizon Year with Project Conditions, the roadway segment is built out to its ultimate classification as a Multi-Way Boulevard per the City of San Marcos Mobility Element. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *San Marcos Boulevard between Pacific Street and Las Posas Road* – (LOS E) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.192 resulting in improved traffic operations. The improved operations along this roadway segment, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to a Six-Lane Major Arterial to serve the projected vehicle volumes. However, under Horizon Year with Project Conditions, the roadway segment is built out to its ultimate classification as a Multi-Way Boulevard per the City of San Marcos Mobility Element. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *San Marcos Boulevard between Las Posas Road and Via Vera Cruz* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.140 resulting in improved traffic operations. The improved operations along this roadway segment, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to an Eight-Lane Major Arterial to serve the projected vehicle volumes. However, under Horizon Year with Project Conditions, the roadway segment is built out to its ultimate classification as a Multi-Way Boulevard per the City of San Marcos Mobility Element. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *San Marcos Boulevard between Via Vera Cruz and Bent Avenue* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.079 resulting in improved traffic operations. The improved operations along this roadway segment, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to an Eight-Lane Major Arterial to serve the projected vehicle volumes. However, under Horizon Year with Project Conditions, the roadway segment is built out to its ultimate classification as a Multi-Way Boulevard per the City of San Marcos Mobility Element. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *San Marcos Boulevard between Bent Avenue and Grand Avenue* – (LOS E) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.118 resulting in improved traffic operations. The improved operations along this roadway segment, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to an Eight-Lane Major Arterial to serve the projected vehicle volumes. However, under Horizon Year with Project Conditions, the roadway segment is built out to its ultimate classification as a Six-Lane Major Arterial per the City of San Marcos Mobility Element. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *San Marcos Boulevard between Grand Avenue and SR-78 EB Ramps* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.150 resulting in improved traffic operations. The improved operations along this roadway segment, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to an Eight-Lane Expressway to serve the projected vehicle volumes. However, under Horizon Year with Project Conditions, the roadway segment is built out to its ultimate classification as a Six-Lane Prime Arterial per the City of San Marcos Mobility Element. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *San Marcos Boulevard between SR-78 EB Ramps and Knoll Road / SR-78 WB Off-Ramp* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 0.147 resulting in improved traffic operations. The improved operations along this roadway segment, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily

vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to an Eight-Lane Prime Arterial to serve the projected vehicle volumes. However, under Horizon Year with Project Conditions, the roadway segment is built out to its ultimate classification as a Six-Lane Prime Arterial per the City of San Marcos Mobility Element. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

- *Creekside Drive between Bent Avenue and Grand Avenue* – (LOS F) Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the V/C ratio decreases by 2.300 resulting in improved traffic operations. The improved operations along this roadway segment, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer daily vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this roadway segment.

  To improve Horizon Year Base and With Project Conditions operations to LOS D or better, additional capacity (i.e., travel lanes) would be required. The roadway would need to be widened to a Two-Lane Collector with center lane to serve the projected vehicle volumes. However, additional right-of-way would be required from existing residential land uses along Creekside Drive to accommodate the increased travel lanes. Additionally, widening the roadway would include removal of on-street parking and narrowing the sidewalks, which would conflict with the City's Mobility Element Goal M-1 and Policy M-3.1 to provide a comprehensive multimodal circulation system. Therefore, capacity enhancing improvements are not recommended for this study roadway segment.

It is recommended that individual projects evaluate Transportation Systems Management and Operations (TSMO) solutions that have the potential to improve travel time for the corridors listed above where capacity cannot be increased. TSMO solutions may include but not limited to adaptive signal timing, transit signal priority (TSP), and active transportation demand management.

Table 5.4 displays LOS analysis results before and after implementation of the recommended improvement at the study roadway segment under Horizon Year 2050 with Project with Improvement Conditions.

As shown, Bent Avenue between San Marcos Boulevard and Creekside Drive is expected to improve from LOS F to LOS C with the recommended improvement to a Four-Lane Major Arterial.

Table 5.3 Roadway Segment LOS Results – Horizon Year 2050 with Project Conditions

Roadway	Segment	Cross-Section	Threshold (LOS E)	ADT	V/C	LOS	V/C w/o Project	LOS w/o Project	ΔV/C	I?
Las Posas Rd	Grand Ave to La Mirada Dr	Major Arterial (5 Lanes – Raised Median)	45,000	26,900	0.598	C	0.696	C	-0.098	N
Las Posas Rd	La Mirada Dr to Linda Vista Dr	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	20,300	0.677	D	0.823	D	-0.146	N
Las Posas Rd	Linda Vista Dr to San Marcos Blvd	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	13,000	0.433	B	0.597	C	-0.164	N
Via Vera Cruz	Grand Ave to Linda Vista Dr	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	21,800	0.727	D	0.767	D	-0.040	N
Via Vera Cruz	Linda Vista Dr to San Marcos Blvd	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	19,500	0.650	C	0.707	D	-0.057	N
Via Vera Cruz	San Marcos Blvd to Discovery St	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	21,400	0.713	D	0.787	D	-0.074	N
Bent Ave	Grand Ave to San Marcos Blvd	Collector (2 Lanes – Center Lane)	15,000	13,500	0.900	**E**	0.547	C	0.353	**Y**
Bent Ave	San Marcos Blvd to Creekside Dr	Collector (2 Lanes – Center Lane)	15,000	24,900	1.660	**F**	1.027	**F**	0.633	**Y**
Bent Ave	Creekside Dr to Discovery St	Collector (2 Lanes – No Fronting Property)	10,000	10,200	1.020	**F**	1.270	**F**	-0.250	N
Grand Ave	Las Posas Rd to Via Vera Cruz	Major Arterial (4 Lanes – Raised Median)	40,000	29,900	0.748	C	0.840	D	-0.092	N
Grand Ave	Via Vera Cruz to Bent Ave	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	18,300	0.610	C	0.810	D	-0.200	N
Grand Ave	Bent Ave to San Marcos Blvd	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	12,500	0.417	B	0.520	C	-0.103	N
Grand Ave	San Marcos Blvd to Creekside Dr	Major Arterial (4 Lanes – Raised Median)	40,000	29,300	0.733	C	0.885	**E**	-0.152	N
Grand Ave	Creekside Dr to Discovery St	Major Arterial (4 Lanes – Raised Median)	40,000	20,800	0.520	B	0.598	C	-0.078	N
Linda Vista Dr	Las Posas Rd to Via Vera Cruz	Major Arterial (4 Lanes – Raised Median)	40,000	15,200	0.380	B	0.395	B	-0.015	N
Linda Vista Dr	Via Vera Cruz to Grand Ave	Collector (2 Lanes – Commercial Fronting)	8,000	8,300	1.038	**F**	1.038	**F**	0.000	N

Table 5.3 Roadway Segment LOS Results – Horizon Year 2050 with Project Conditions

Roadway	Segment	Cross-Section	Threshold (LOS E)	ADT	V/C	LOS	V/C w/o Project	LOS w/o Project	ΔV/C	I?
San Marcos Blvd	Knights Realm to Discovery St	Major Arterial (6 Lanes – Raised Median)	50,000	63,800	1.276	**F**	1.460	**F**	-0.184	N
San Marcos Blvd	Discovery St to Pacific St	Multi-Way Boulevard (4 Lanes + 2 Multi-Way Lanes)	48,000	44,000	0.917	**E**	1.108	**F**	-0.191	N
San Marcos Blvd	Pacific St to Las Posas Rd	Multi-Way Boulevard (4 Lanes + 2 Multi-Way Lanes)	48,000	44,500	0.927	**E**	1.119	**F**	-0.192	N
San Marcos Blvd	Las Posas Rd to Via Vera Cruz	Multi-Way Boulevard (4 Lanes + 2 Multi-Way Lanes)	48,000	49,700	1.035	**F**	1.175	**F**	-0.140	N
San Marcos Blvd	Via Vera Cruz to Bent Ave	Multi-Way Boulevard (4 Lanes + 2 Multi-Way Lanes)	48,000	53,800	1.121	**F**	1.200	**F**	-0.079	N
San Marcos Blvd	Bent Ave to Grand Ave	Major Arterial (6 Lanes – Raised Median)	50,000	49,000	0.980	**E**	1.098	**F**	-0.118	N
San Marcos Blvd	Grand Ave to SR-78 EB Ramps	Major Arterial (6 Lanes – Raised Median)	60,000	73,700	1.228	**F**	1.378	**F**	-0.150	N
San Marcos Blvd	SR-78 EB Ramps to Knoll Road / SR-78 WB Off-Ramp	Major Arterial (6 Lanes – Raised Median)	60,000	68,300	1.138	**F**	1.285	**F**	-0.147	N
San Marcos Blvd	Knoll Rd / SR-78 WB Off-Ramp to Travelers Wy	Major Arterial (6 Lanes – Raised Median)	50,000	38,000	0.760	C	0.884	D	-0.124	N
Creekside Dr	Bent Ave to Grand Ave	Collector (2-Lanes – Multi-Family)	8,000	12,900	1.613	**F**	3.913	**F**	-2.300	N
Discovery St	Via Vera Cruz to Bent Ave	Major Arterial (4 Lanes – Raised Median)	40,000	27,500	0.688	C	0.705	C	-0.017	N
Discovery St	Bent Ave to Craven Rd	Major Arterial (4 Lanes – Raised Median)	40,000	20,300	0.508	B	0.645	C	-0.137	N
Discovery St	Craven Rd to N City Dr	Major Arterial (4 Lanes – Raised Median)	40,000	26,900	0.673	C	0.730	C	-0.057	N

Notes:
Bold indicates LOS E or F.
V/C = Volume to Capacity Ratio
I? = Improvement Required?

Table 5.4 Roadway Segment LOS Results – Horizon Year 2050 with Project with Improvement Conditions

Roadway	Segment	Before Improvement					After Improvement					Δ in V/C
		Cross-Section	Threshold	ADT	V/C	LOS	Cross-Section	Threshold	ADT	V/C	LOS	
Bent Ave	San Marcos Blvd to Creekside Dr	Collector (2 Lanes – Center Lane)	15,000	24,900	1.660	**F**	Major Arterial (4 Lanes)	40,000	24,900	0.623	C	-1.037

Notes:
Bold indicates LOS E or F.
V/C = Volume to Capacity Ratio

Intersection Analysis

Table 5.5 displays intersection LOS and average vehicle delay results for the study area intersections under Horizon Year 2050 with Project Conditions. LOS calculation worksheets are provided in **Appendix I**.

The traffic study prepared for the 2007 Specific Plan identified all study intersections operating at LOS D or better with implementation of the previous plan and no mitigation measures were required. However, it is important to note the analysis conducted for the 2007 Specific Plan was based on the outdated SANDAG Series 10 North San Diego County subarea traffic model and outdated General Plan land uses.

As shown in Table 5.5, the following four (4) intersections are anticipated to operate at LOS E or F under Horizon Year 2050 with Project Conditions:

3. *Via Vera Cruz / SR-78 EB Ramps / Grand Avenue* – (AM: LOS F, PM: LOS F) - Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the delay decreases by 3.1 seconds and 44.0 seconds during the AM and PM peak hour, respectively. The improved operations at this intersection, when compared to Horizon Year 2050 Base Conditions, is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer peak hour vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this intersection.

   To improve Horizon Year Base with Project Conditions intersection LOS to better than pre-project conditions, the following improvements would be required at this intersection:

   - Update the southbound approach to one left-turn, one shared through-right turn lane, and one right-turn lane configuration.

   The improvements listed above would require widening of the Caltrans off ramp for the southbound approach to accommodate the recommended lane configuration. However, this intersection is a Caltrans facility and located outside of the City's jurisdiction. Therefore, improvement implementation would require coordination with Caltrans.

7. *Linda Vista Drive / Grand Avenue* – (AM: LOS E, PM: LOS F) - Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the delay decreases by 13.0 seconds and 79.6 seconds during the AM and PM peak hour, respectively. The improved operations at this intersection when compared to Horizon Year 2050 Base Conditions is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer peak hour vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this intersection.

   To improve Horizon Year Base with Project Conditions intersection operations to LOS D or better, the following improvements would be required at this intersection:

   - Signalization of the Linda Vista Drive and Grand Avenue intersection (expected to run on same signal controller at existing closely spaced signalized intersection of Bent Avenue and Grand Avenue).
   - Maintain existing lane configuration.

   This improvement is scheduled to be identified in the City's future Capital Improvement Program (CIP). The peak hour signal warrant is provided in **Appendix J**. There is no right-of-way constraints

for the improvements listed above; therefore, the improvements are considered feasible improvements to be implemented by the Proposed Project.

12. *Via Vera Cruz / San Marcos Boulevard* – (PM: LOS F) - Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the delay during the PM peak hour decreases by 51.8 seconds. The improved operations at this intersection when compared to Horizon Year 2050 Base Conditions is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer peak hour vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this intersection.

    To improve Horizon Year Base with Project Conditions intersection operations to LOS D or better, the following improvements would be required at this intersection:

    - Update the southbound approach to dual left-turns, one through, and a shared through/right-turn lane configuration.
    - Update the westbound approach to dual left-turns, dual throughs, and one right-turn lane configuration.
    - Addition of right-turn overlaps for the northbound, eastbound, and westbound approaches. It is important to note that the right-turn overlaps may not be feasible with the multi-way boulevard. Thus, further operational analysis will need to be conducted of the multi-way boulevard that considers these signal improvements.

    The improvements listed above would require narrowing the lane widths from 11 feet to 10 ½ feet for the southbound approach to accommodate the recommended lane configuration. As a result of the narrowing lane widths, the bicycle facilities on the north leg would need to terminate before the intersection. The design of the multi-way boulevard should take into consideration the configuration of the westbound approach, particularly the dual left-turns lanes, as well as the signal right-turn overlaps. These improvements are considered feasible improvements to be implemented by the Proposed Project; however, further operational analysis will need to be conducted of the multi-way boulevard that considers these signal improvements.

13. *Bent Avenue / San Marcos Boulevard* – (PM: LOS F) - Compared to Horizon Year 2050 Base Conditions (i.e. the 2007 Specific Plan), the delay during the PM peak hour decreases by 43.8 seconds. The improved operations at this intersection when compared to Horizon Year 2050 Base Conditions is due to the reduced land use intensity between the 2007 Specific Plan and the Proposed Project, resulting in fewer peak hour vehicular trips. Therefore, based on the City of San Marcos LOS standards and criteria outlined in Section 2.4, improvements would not be required at this intersection.

    To improve Horizon Year Base with Project Conditions intersection operations to LOS D or better, the following improvements would be required at this intersection:

    - Update the southbound approach to one left-turn, one through, and right-turn lane configuration.
    - Update the westbound approach to dual left-turns, dual through, and one right-turn lane configuration.
    - Addition of a right-turn overlap for the eastbound approach. It is important to note that the right-turn overlaps may not be feasible with the multi-way boulevard. Thus, further operational analysis will need to be conducted of the multi-way boulevard that considers these signal improvements.

    The improvements listed above would require narrowing the lane widths from 12 feet to 11 feet for the southbound approach to accommodate the recommended lane configuration. As a result of the narrowing lane widths, the bicycle facilities on the north leg would need to terminate before the intersection. The design of the multi-way boulevard should take into consideration the configuration of the westbound approach, particularly the dual left-turns lanes, as well as the signal right-turn overlaps. These improvements are considered feasible improvements to be implemented by the Proposed Project; however, further operational analysis will need to be conducted of the multi-way boulevard that considers these signal improvements.

Table 5.6 displays LOS analysis results before and after implementation of the recommended improvements at the study intersections under Horizon Year 2050 with Project with Improvement Conditions. LOS calculation worksheets are provided in Appendix J.

As shown, all study intersections would operate at LOS D or better than pre-project conditions with implementation of the recommended improvements.

Table 5.5 Peak Hour Intersection LOS Results – Horizon Year 2050 with Project Conditions

Intersection	Control	AM		PM		Delay w/o Project AM/PM	LOS w/o Project AM/PM	Δ in Delay AM/PM	I?
		Delay	LOS	Delay	LOS				
1: Las Posas Road / SR-78 WB Ramps	Signal	53.0	D	36.5	D	62.9 / 64.9	**E** / **E**	-9.9 / -28.4	N
2: Las Posas Road / Grand Avenue	Signal	41.1	D	54.1	D	42.1 / 65.1	D / **E**	-1.0 / -11.0	N
3: Via Vera Cruz / SR-78 EB Ramps / Grand Avenue	Signal	105.6	**F**	150.7	**F**	108.7 / >180.0	**F** / **F**	-3.1 / -44.0	N
4: Las Posas Road / La Mirada Drive	Signal	51.0	D	38.9	D	63.5 / 39.7	**E** / D	-12.5 / -0.8	N
5: Las Posas Road / Linda Vista Drive	Signal	32.0	C	41.1	D	29.4 / 41.5	C / D	2.6 / -0.4	N
6: Via Vera Cruz / Linda Vista Drive	Signal	23.3	C	43.0	D	24.0 / 46.3	C / D	-0.7 / -3.3	N
7: Linda Vista Dive / Grand Avenue	SSSC	35.3	**E**	> 180.0	**F**	48.3 / >180.0	**E** / **F**	-13.0 / -79.6	N
8: Bent Avenue / Grand Avenue	Signal	12.7	B	39.8	D	11.5 / 35.0	B / C	1.2 / 4.8	N
9: Discovery Street / San Marcos Boulevard	Signal	47.8	D	47.4	D	51.2 / 54.0	D / D	-3.4 / -6.6	N
10: Pacific Street / San Marcos Boulevard	Signal	24.3	C	47.6	D	43.6 / 112.0	D / **F**	-19.3 / -64.4	N
11: Las Posas Road / San Marcos Boulevard	Signal	28.6	C	53.9	D	33.4 / 103.8	C / **F**	-4.8 / -49.9	N
12: Via Vera Cruz / San Marcos Boulevard	Signal	49.3	D	93.6	**F**	64.3 / 145.4	**E** / **F**	-15.0 / -51.8	N
13: Bent Avenue / San Marcos Boulevard	Signal	36.5	D	85.6	**F**	88.5 / 129.4	**F** / **F**	-52.0 / -43.8	N
14: Grand Avenue / San Marcos Boulevard	Signal	24.9	C	46.0	D	29.3 / 76.1	C / **E**	-4.4 / -30.1	N
15: SR-78 EB Ramps / San Marcos Boulevard	Signal	12.3	B	13.9	B	12.1 / 16.5	B / B	0.2 / -2.6	N
16: Knoll Road / SR-78 WB Off-Ramp / San Marcos Boulevard	Signal	29.6	C	33.1	C	31.7 / 33.7	C / C	-2.1 / -0.6	N
17: Grand Avenue / Creekside Drive	Signal	16.0	B	51.2	D	30.9 / >180.0	C / **F**	-14.9 / -143.3	N
18: Via Vera Cruz / Discovery St	Signal	26.1	C	53.0	D	51.2 / 56.2	D / **E**	-25.1 / -3.2	N
19: Bent Ave / Discovery St	Signal	14.6	B	51.3	D	15.6 / 59.4	B / **E**	-1.0 / -8.1	N
20: Craven Rd / Discovery St	Signal	20.5	C	41.5	D	20.5 / 25.8	C / C	0.0 / 15.7	N
21: Exploration Dr / Discovery St	Signal	25.6	C	31.6	C	39.9 / 27.9	D / C	-14.3 / 3.7	N

Note:
Bold indicates LOS E or F.
SSSC = Side-Street Stop Controlled. For SSSC intersections, the delay shown is the worst delay experienced by any of the movements.

Table 5.6 Peak Hour Intersection LOS Results – Horizon Year 2050 with Project with Improvements Conditions

Intersection	Control	Existing Conditions				Horizon Year with Project Before Improvements				Horizon Year with Project After Improvements			
		AM		PM		AM		PM		AM		PM	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
3: Via Vera Cruz / SR-78 EB Ramps / Grand Avenue[1]	Signal	59.1	**E**	101.5	**F**	109.2	**F**	150.7	**F**	52.7	D	75.1	**E**[2]
7: Linda Vista Dive / Grand Avenue	SSSC / Signal[3]	10.5	B	31.2	D	35.3	**E**	> 180.0	**F**	15.4	B	30.1	C
12: Via Vera Cruz / San Marcos Boulevard	Signal[4]	51.0	D	55.1	**E**	49.3	D	93.6	**F**	41.7	D	49.5	D
13: Bent Avenue / San Marcos Boulevard	Signal[4]	84.7	**F**	29.5	C	36.5	D	85.6	**F**	31.8	C	49.9	D

Note:

Bold indicates LOS E or F.

SSSC = Side-Street Stop Controlled. For SSSC intersections, the delay shown is the worst delay experienced by any of the movements.

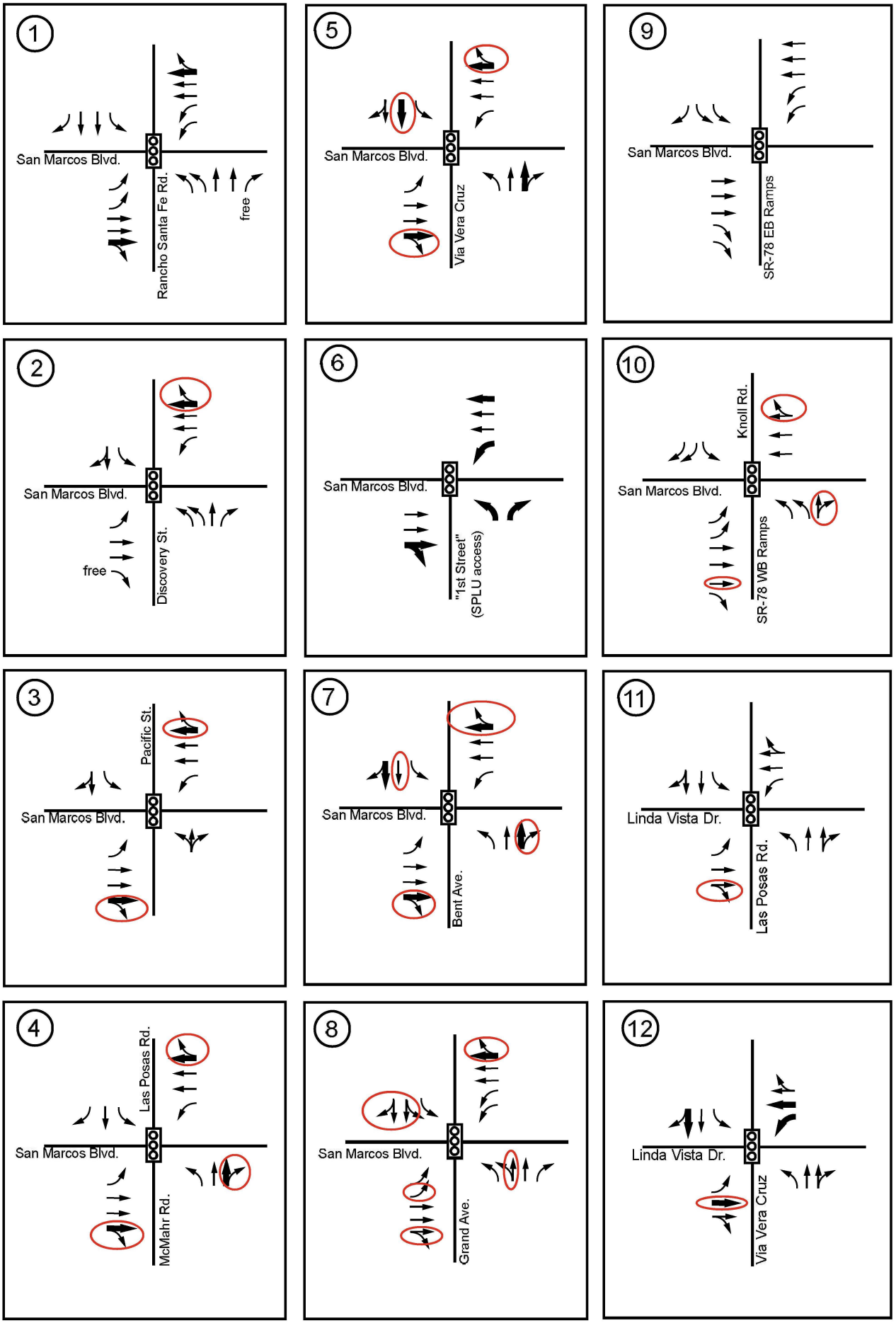
[1] The improvement recommendations at this intersection will require coordination with Caltrans since the facility is located outside the City's jurisdiction.

[2] Better than pre-project conditions

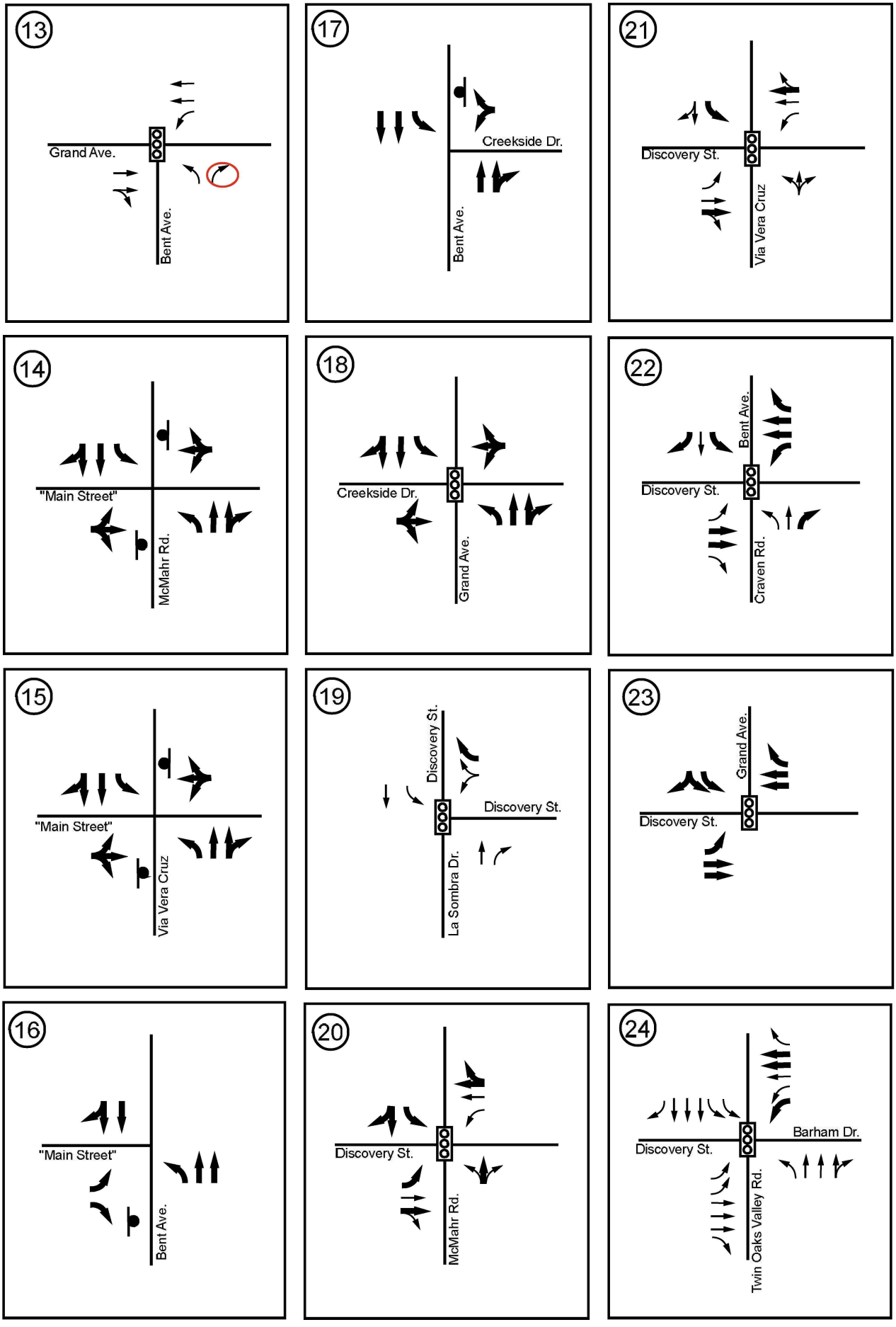
[3] Improved from existing SSSC to a signalized intersection.

[4] Additional operational analysis will need to be conducted before implementation of the multi-way boulevard with right-turn overlaps.

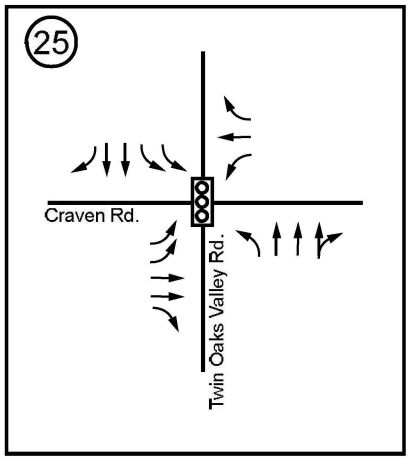
Appendix A: Excerpts from the City of San Marcos Mobility Element and the Traffic Study Prepared for the 2007 Specific Plan



HORIZON YEAR 2030 INTERSECTION LANE GEOMETRIES - SPECIFIC PLAN LAND USES



HORIZON YEAR 2030 INTERSECTION LANE GEOMETRIES - SPECIFIC PLAN LAND USES



LEGEND

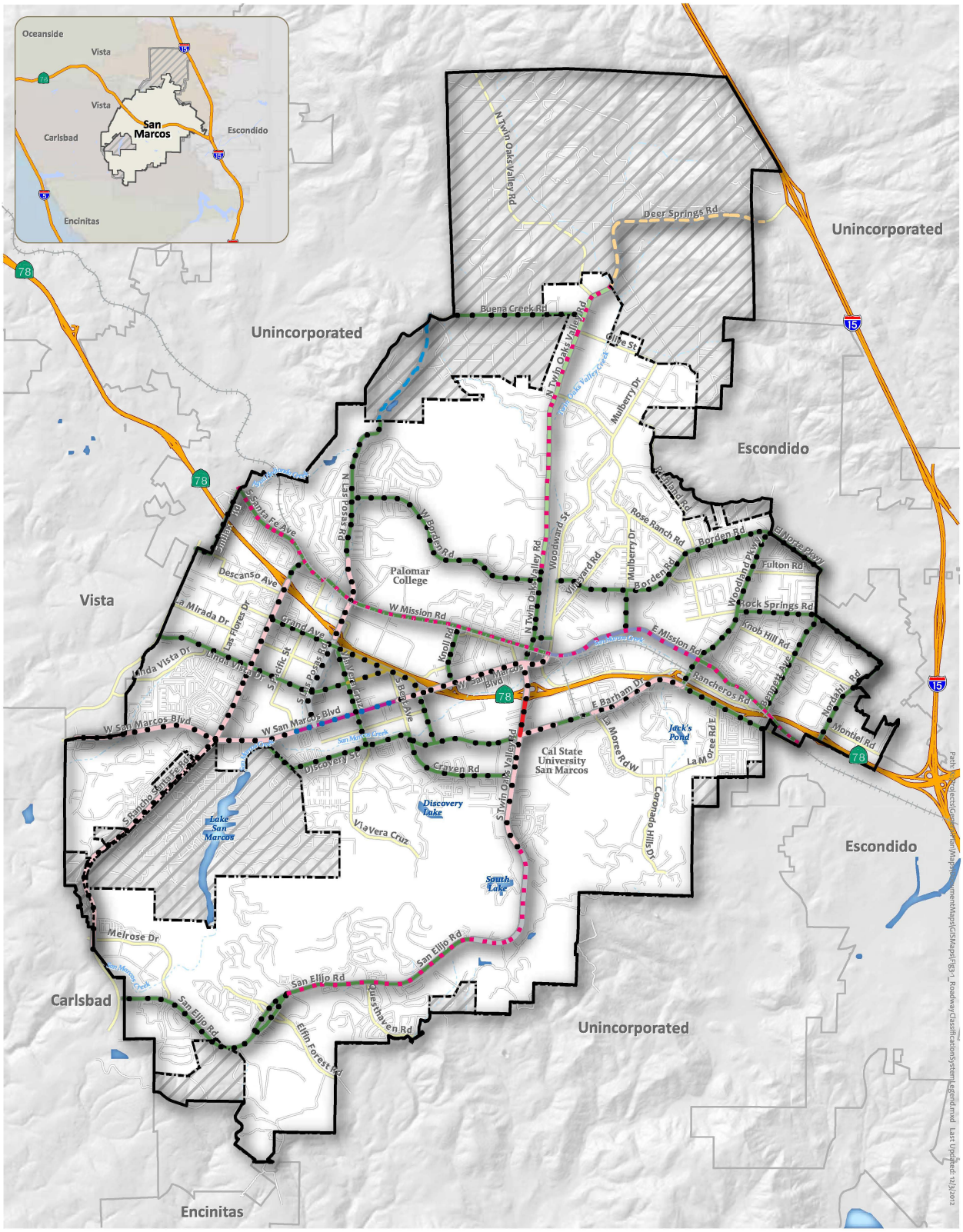
- Signalized Intersection
- Stop Sign
- free Free Right-Turn Lane
- Future Roadway Improvement

HORIZON YEAR 2030 INTERSECTION LANE GEOMETRIES - SPECIFIC PLAN LAND USES

Table 9
Horizon Year 2030 Daily Roadway Segment Conditions
General Plan Land Uses vs. Specific Plan Land Uses

Street	Location	Class (# Lanes)	Daily Capacity	Year 2030 GPLU			Year 2030 SPLU			Change in V/C
				ADT	V/C	LOS	ADT	V/C	LOS	
San Marcos Boulevard	Rancho Santa Fe Road to Discovery Street	Prime (6)	60,000	53,800	0.897	D	54,623	0.910	D	0.014
	Discovery Street to Pacific Street	Prime (6)	60,000	43,500	0.725	C	42,608	0.710	C	-0.015
	Pacific Street to Las Posas Road	Prime (6)	60,000	48,300	0.805	C	47,657	0.794	C	-0.011
	Las Posas Road to Via Vera Cruz	Prime (6)	60,000	31,500	0.525	B	37,684	0.628	C	0.103
	Via Vera Cruz to Bent Avenue	Prime (6)	60,000	38,500	0.642	C	38,274	0.638	C	-0.004
	Bent Avenue to Grand Avenue	Prime (6)	60,000	41,500	0.692	C	41,260	0.688	C	-0.004
	Grand Avenue to SR-78	Prime (6)	60,000	51,800	0.863	D	54,763	0.913	D	0.049
"Main Street"	McMahr Road to Via Vera Cruz	Collector (2)	8,000	–	–	–	**7,692**	**0.961**	**E**	–
	Via Vera Cruz to Bent Avenue	Collector (2)	8,000	–	–	–	**7,794**	**0.974**	**E**	–
Creekside Drive	Bent Avenue to Grand Avenue	Collector (2)	8,000	–	–	–	5,366	0.671	D	–
Discovery Street	San Marcos Boulevard to La Sombra Drive	Secondary (3)	22,500	16,600	0.738	C	18,747	0.833	D	0.095
	La Sombra Drive to McMahr Road	Secondary (3)	22,500	13,600	0.604	C	15,487	0.688	C	0.084
	McMahr Road to Via Vera Cruz	Secondary (4)	30,000	19,100	0.637	C	18,337	0.611	C	-0.025
	Via Vera Cruz to Bent Avenue	Secondary (4)	30,000	23,500	0.783	D	22,887	0.763	D	-0.020
	Bent Avenue to Grand Avenue	Major (4)	40,000	20,300	0.508	B	22,712	0.568	C	0.060
	Grand Avenue to Twin Oaks Valley Road	Prime (6)	60,000	38,200	0.637	C	38,963	0.649	C	0.013
Pacific Street	Linda Vista Drive to San Marcos Boulevard	Secondary (4)	30,000	4,200	0.140	A	4,442	0.148	A	0.008
Las Posas / McMahr Road	Linda Vista Drive to San Marcos Boulevard	Secondary (4)	30,000	21,800	0.727	D	21,787	0.726	D	-0.001
	San Marcos Boulevard to Discovery Street	Secondary (4)	30,000	8,000	0.267	A	2,876	0.096	A	-0.171
Via Vera Cruz	Linda Vista Drive to San Marcos Boulevard	Secondary (4)	30,000	9,400	0.313	A	8,298	0.277	A	-0.037
	San Marcos Boulevard to Discovery Street	Secondary (4)	30,000	7,300	0.243	A	9,156	0.305	A	0.062
Bent Avenue / Craven Road	Grand Avenue to San Marcos Boulevard	Secondary (4)	30,000	5,500	0.183	A	6,448	0.215	A	0.032
	San Marcos Boulevard to Discovery Street	Secondary (4)	30,000	3,300	0.110	A	13,494	0.450	B	0.340
	South of Discovery Street (Craven Road)	Secondary (4)	30,000	12,900	0.430	B	13,479	0.449	B	0.019
Grand Avenue	Bent Avenue to San Marcos Boulevard	Secondary (4)	30,000	21,300	0.710	D	21,835	0.728	D	0.018
	San Marcos Boulevard to Discovery Street	Major (4)	40,000	15,000	0.375	A	10,656	0.266	A	-0.109

Note: Deficient roadway segment operation shown in **bold**.



3 MOBILITY ELEMENT

FIGURE 3-1

City of San Marcos

Roadway Classifications

San Marcos City Limits
Sphere of Influence
Planning Area
Major Hydrologic Features
Creeks
Railroad
Freeway
Highway
Major Road
Minor Road

Roadway Classifications
2 Lanes with Right-of-Way consistent with County of San Diego's General Plan
4 Lanes with Right-of-Way consistent with County of San Diego's General Plan
Arterial Enhanced
Complete Street
4 Lanes (Rural)
4 Lanes
4 Lanes +
Multi-Way Boulevard
6 Lanes
6 Lanes +

Street Typology*
Arterial with Class II or III Bicycle Facilities and Sidewalks
Arterial with Enhanced Bicycle/Pedestrian Facilities
Multi-Way

* See the Street Design Manual for additional street typology assignments

0 0.25 0.5 1 Miles

SOURCES OF DATA:
City of San Marcos 12/12

Every effort has been made to assure the accuracy of the maps and data provided; however, some information may not be accurate or current. The City of San Marcos assumes no responsibility arising from use of this information and incorporates by reference its disclaimer regarding the lack of any warranties, whether expressed or implied, concerning the use of the same. For additional information, see the Disclaimer of the City's website.

Appendix B: North County Transit District Bus Schedules

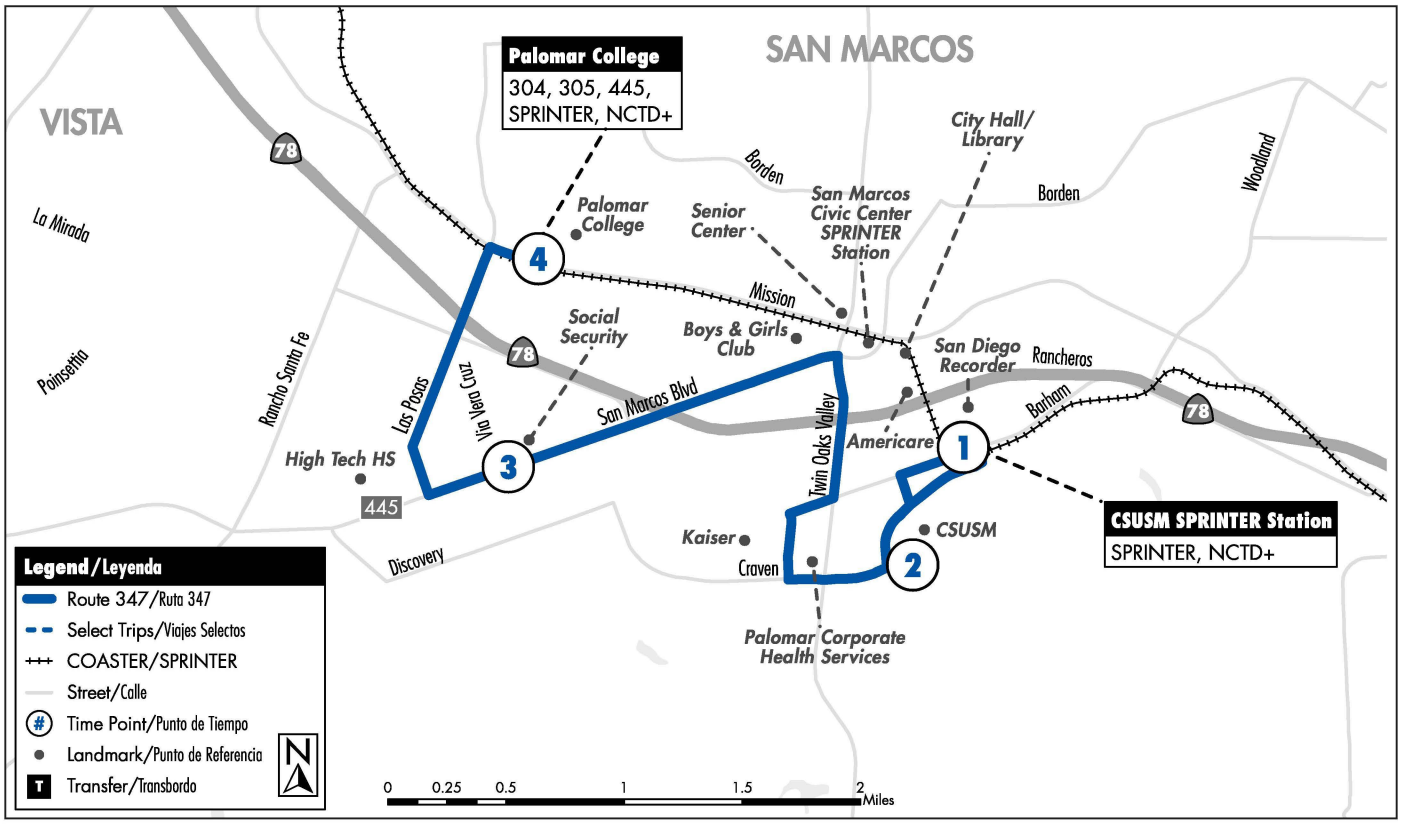
347 | Cal State San Marcos to Palomar College

Cal State San Marcos a Palomar College

M-F • SA
L-V • SÁ

Destinations/Destinos

- Cal State University San Marcos
- Palomar College
- Cal State San Marcos SPRINTER Station
- Boys & Girls Club
- Social Security Administration
- Connors Park



347 | Cal State San Marcos to Palomar College

Cal State San Marcos a Palomar College

Monday - Friday
Westbound to Palomar College
Lunes a Viernes • Dirección hacia el oeste a Palomar College

CSUSM SPRINTER Station	CSUSM Craven Circle	San Marcos Bl. & Via Vera Cruz	Palomar College Transit Center
1	2	3	4
5:16a	5:18a	5:26a	5:33a
5:46a	5:48a	5:57a	6:04a
6:16a	6:18a	6:28a	6:35a
6:46a	6:48a	6:59a	7:06a
7:15a	7:18a	7:29a	7:36a
7:47a	7:50a	8:01a	8:08a
8:16a	8:19a	8:30a	8:38a
8:47a	8:50a	9:01a	9:09a
9:17a	9:20a	9:31a	9:39a
9:47a	9:50a	10:01a	10:09a
10:17a	10:20a	10:31a	10:39a
10:47a	10:50a	11:02a	11:10a
11:17a	11:20a	11:32a	11:40a
11:47a	11:50a	**12:02p**	**12:10p**
12:17p	**12:20p**	**12:32p**	**12:40p**
12:47p	**12:50p**	**1:02p**	**1:11p**
1:17p	**1:20p**	**1:32p**	**1:41p**
1:47p	**1:50p**	**2:02p**	**2:11p**
2:17p	**2:20p**	**2:32p**	**2:41p**
2:47p	**2:50p**	**3:02p**	**3:11p**
3:18p	**3:21p**	**3:34p**	**3:43p**
3:48p	**3:51p**	**4:04p**	**4:13p**
4:18p	**4:21p**	**4:34p**	**4:43p**
4:49p	**4:52p**	**5:05p**	**5:14p**
5:18p	**5:21p**	**5:34p**	**5:43p**
5:48p	**5:51p**	**6:02p**	**6:10p**
6:15p	**6:17p**	**6:28p**	**6:36p**
6:45p	**6:47p**	**6:58p**	**7:06p**

Monday - Friday
Eastbound to Cal State San Marcos
Lunes a Viernes • Dirección hacia el este a Cal State San Marcos

Palomar College Transit Center	San Marcos Bl. & Via Vera Cruz	CSUSM Craven Circle	CSUSM SPRINTER Station
4	3	2	1
5:54a	5:59a	6:08a	6:13a
6:23a	6:28a	6:38a	6:43a
6:51a	6:57a	7:07a	7:12a
7:21a	7:27a	7:39a	7:44a
7:49a	7:56a	8:08a	8:13a
8:19a	8:26a	8:39a	8:44a
8:49a	8:56a	9:09a	9:14a
9:19a	9:26a	9:39a	9:44a
9:49a	9:56a	10:09a	10:14a
10:19a	10:26a	10:39a	10:44a
10:49a	10:56a	11:09a	11:14a
11:19a	11:26a	11:39a	11:44a
11:49a	11:56a	**12:09p**	**12:14p**
12:19p	**12:26p**	**12:39p**	**12:44p**
12:49p	**12:56p**	**1:09p**	**1:14p**
1:19p	**1:26p**	**1:39p**	**1:44p**
1:49p	**1:56p**	**2:09p**	**2:14p**
2:18p	**2:26p**	**2:39p**	**2:44p**
2:48p	**2:57p**	**3:10p**	**3:15p**
3:17p	**3:26p**	**3:40p**	**3:45p**
3:47p	**3:56p**	**4:10p**	**4:15p**
4:17p	**4:26p**	**4:41p**	**4:46p**
4:47p	**4:55p**	**5:10p**	**5:15p**
5:18p	**5:26p**	**5:40p**	**5:45p**
5:49p	**5:56p**	**6:07p**	**6:12p**
6:19p	**6:26p**	**6:37p**	**6:42p**
6:51p	**6:57p**	**7:08p**	**7:13p**
7:23p	**7:29p**	**7:40p**	**7:45p**

347 | Cal State San Marcos to Palomar College

Cal State San Marcos a Palomar College

Saturday
Westbound to Palomar College
Sábado • Dirección hacia el oeste a Palomar College

CSUSM SPRINTER Station	CSUSM Craven Circle	San Marcos Bl. & Via Vera Cruz	Palomar College Transit Center
1	**2**	**3**	**4**
7:48a	7:51a	8:01a	8:08a
8:48a	8:51a	9:01a	9:08a
9:47a	9:50a	10:01a	10:08a
10:47a	10:50a	11:01a	11:08a
11:48a	11:51a	**12:02p**	**12:09p**
12:50p	**12:53p**	**1:04p**	**1:11p**
1:50p	**1:53p**	**2:04p**	**2:11p**
2:48p	**2:51p**	**3:02p**	**3:09p**
3:48p	**3:51p**	**4:01p**	**4:08p**
4:48p	**4:51p**	**5:01p**	**5:08p**
5:49p	**5:52p**	**6:01p**	**6:08p**
6:49p	**6:52p**	**7:01p**	**7:08p**

Saturday
Eastbound to Cal State San Marcos
Sábado • Dirección hacia el este a Cal State San Marcos

Palomar College Transit Center	San Marcos Bl. & Via Vera Cruz	CSUSM Craven Circle	CSUSM SPRINTER Station
4	**3**	**2**	**1**
7:20a	7:25a	7:34a	7:38a
8:20a	8:26a	8:35a	8:39a
9:20a	9:26a	9:36a	9:40a
10:20a	10:27a	10:38a	10:42a
11:20a	11:27a	11:38a	11:42a
12:20p	**12:27p**	**12:40p**	**12:44p**
1:20p	**1:27p**	**1:40p**	**1:44p**
2:20p	**2:26p**	**2:38p**	**2:42p**
3:20p	**3:26p**	**3:37p**	**3:41p**
4:20p	**4:26p**	**4:37p**	**4:41p**
5:20p	**5:26p**	**5:37p**	**5:41p**
6:20p	**6:26p**	**6:37p**	**6:41p**

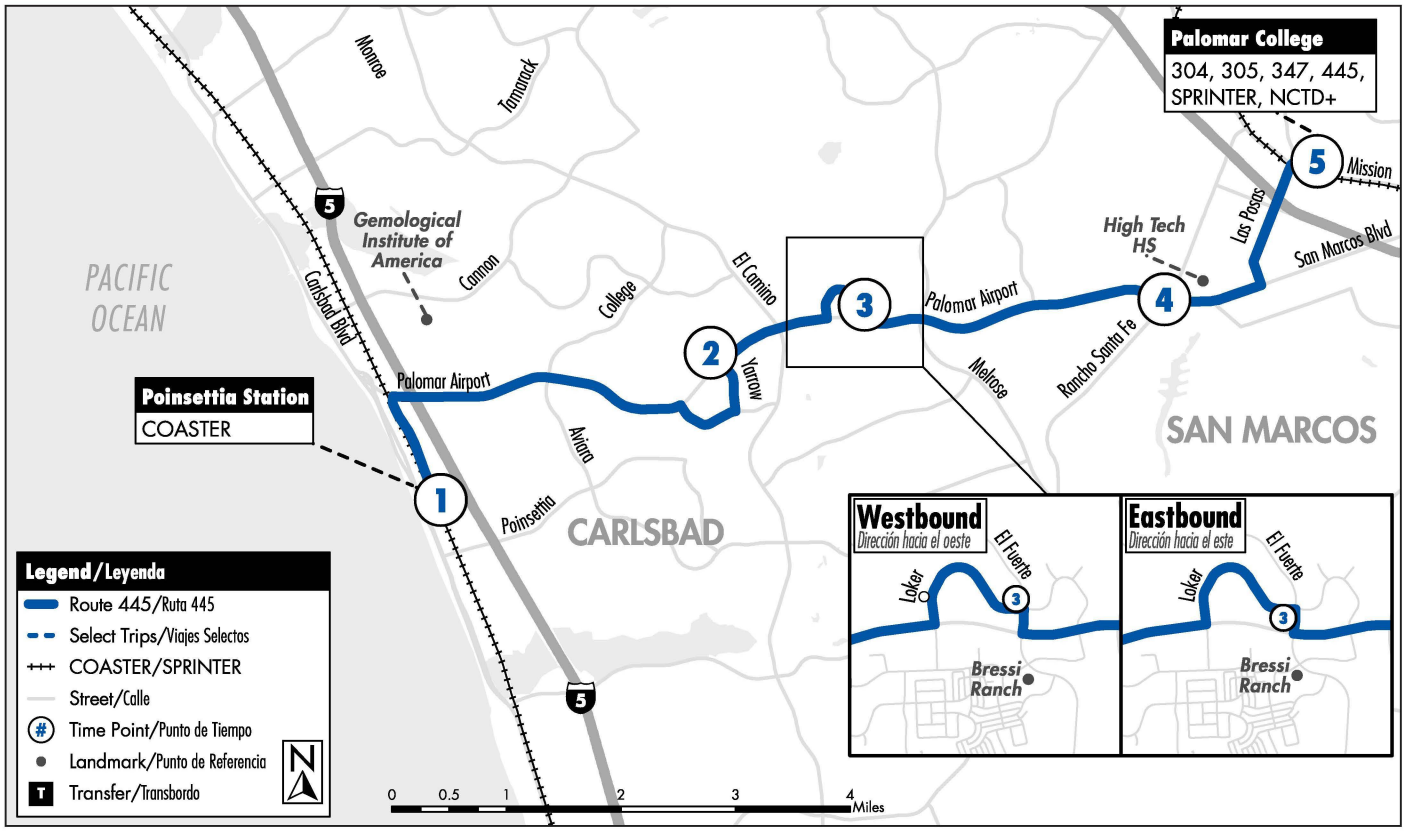
445 | Carlsbad Poinsettia COASTER to Palomar College

Conexión Carlsbad Poinsettia COASTER a Palomar College

M-F
L-V

Destinations/Destinos

- McClellan Palomar Airport
- Palomar College
- San Marcos High School
- High Tech High School – North County
- Carlsbad Poinsettia COASTER Station



445 | Carlsbad Poinsettia COASTER to Palomar College

Conexión Carlsbad Poinsettia COASTER a Palomar College

Monday - Friday
Eastbound to Palomar College

Lunes a Viernes • Dirección hacia el este a Palomar College

ARRIVING SB COASTER **From Oceanside** *Llegada SB COASTER desde Oceanside*	**ARRIVING** NB COASTER **From San Diego** *Llegada NB COASTER desde San Diego*	Carlsbad Poinsettia Station	Palomar Airport Rd. & Yarrow Dr.	Loker Ave. & El Fuerte St.	San Marcos Blvd. & Rancho Santa Fe Rd.	Palomar College Transit Center
COASTER	COASTER	1	2	3	4	5
6:49a	7:11a	7:16a	7:31a	7:39a	7:48a	8:02a
7:49a	8:31a	8:36a	8:51a	8:57a	9:06a	9:19a
–	9:11a	9:16a	9:31a	9:37a	9:46a	9:59a
–	10:11a	10:16a	10:31a	10:37a	10:46a	10:59a
3:49p	**4:31p**	**4:36p**	**4:49p**	**4:56p**	**5:06p**	**5:19p**
4:49p	**5:11p**	**5:16p**	**5:29p**	**5:36p**	**5:46p**	**5:59p**
5:49p	**6:11p**	**6:16p**	**6:29p**	**6:36p**	**6:46p**	**6:59p**

Monday - Friday
Westbound to Carlsbad Poinsettia Station

Lunes a Viernes • Dirección hacia el oeste a la Estación Carlsbad Poinsettia

Palomar College Transit Center	San Marcos Blvd. & Rancho Santa Fe Rd.	Loker Ave. & El Fuerte St.	Palomar Airport Rd. & Yarrow Dr.	Carlsbad Poinsettia Station	**DEPARTING** NB COASTER **To Oceanside** *SALIDA NB COASTER a Oceanside*	**DEPARTING** SB COASTER **To San Diego** *SALIDA SB COASTER a San Diego*
5	4	3	2	1	COASTER	COASTER
6:55a	7:05a	7:13a	7:20a	7:36a	–	7:49a
7:31a	7:45a	7:54a	8:01a	8:16a	8:31a	8:29a
8:31a	8:45a	8:54a	9:01a	9:16a	–	9:29a
2:56p	**3:05p**	**3:12p**	**3:19p**	**3:36p**	**4:31p**	**3:49p**
3:36p	**3:45p**	**3:52p**	**3:59p**	**4:16p**	**5:11p**	**4:49p**
3:56p	**4:05p**	**4:12p**	**4:19p**	**4:36p**	**–**	**–**
4:58p	**5:07p**	**5:13p**	**5:20p**	**5:36p**	**6:11p**	**5:49p**

Bus may wait up to ten minutes for a late arriving COASTER train.
El autobús puede esperar hasta diez minutos en caso que un tren COASTER esté atrasado.

Appendix C: Traffic Counts

Wednesday, October 29, 2025 AREA: SAN MARCOS 2 PROJECT: ETD25-1031-01

LAS POSAS RD-BETWEEN LA MIRADA DR AND GRAND AVE

AM	NB		SB		EB	WB		PM	NB		SB		EB	WB	
00:00	11		13					12:00	138		126				
00:15	14		9					12:15	146		148				
00:30	6		6					12:30	100		138				
00:45	12	43	7	35			78	12:45	103	487	159	571			1058
01:00	8		10					13:00	118		151				
01:15	5		8					13:15	130		114				
01:30	3		8					13:30	125		112				
01:45	11	27	13	39			66	13:45	125	498	136	513			1011
02:00	6		6					14:00	137		132				
02:15	6		9					14:15	134		151				
02:30	3		7					14:30	167		152				
02:45	3	18	7	29			47	14:45	155	593	140	575			1168
03:00	0		5					15:00	172		128				
03:15	9		10					15:15	164		152				
03:30	5		19					15:30	191		156				
03:45	0	14	13	47			61	15:45	198	725	128	564			1289
04:00	5		9					16:00	257		124				
04:15	7		22					16:15	218		129				
04:30	5		16					16:30	201		133				
04:45	10	27	48	95			122	16:45	207	883	119	505			1388
05:00	6		58					17:00	173		135				
05:15	11		69					17:15	184		150				
05:30	17		97					17:30	218		125				
05:45	24	58	105	329			387	17:45	163	738	104	514			1252
06:00	33		67					18:00	139		145				
06:15	18		92					18:15	141		115				
06:30	28		106					18:30	117		117				
06:45	36	115	122	387			502	18:45	124	521	115	492			1013
07:00	53		129					19:00	91		100				
07:15	60		122					19:15	106		89				
07:30	78		160					19:30	80		117				
07:45	94	285	227	638			923	19:45	76	353	146	452			805
08:00	79		191					20:00	79		120				
08:15	102		176					20:15	71		105				
08:30	95		144					20:30	73		93				
08:45	78	354	122	633			987	20:45	93	316	105	423			739
09:00	68		117					21:00	86		93				
09:15	78		128					21:15	52		114				
09:30	83		120					21:30	57		45				
09:45	98	327	107	472			799	21:45	54	249	43	295			544
10:00	84		104					22:00	36		25				
10:15	71		125					22:15	42		22				
10:30	82		119					22:30	22		15				
10:45	96	333	136	484			817	22:45	26	126	21	83			209
11:00	99		122					23:00	16		23				
11:15	122		114					23:15	23		13				
11:30	131		117					23:30	13		14				
11:45	124	476	128	481			957	23:45	18	70	17	67			137
Total Vol.		2077		3669			**5746**		5559		5054				**10613**

Daily Totals

NB	SB	EB	WB	**Combined**
7636	8723			**16359**

	AM			**PM**		
Split %	36.1%	63.9%	**35.1%**	52.4%	47.6%	**64.9%**
Peak Hour	11:30	07:30	**07:45**	16:00	12:15	**15:30**
Volume	539	754	**1108**	883	596	**1401**
P.H.F.	0.92	0.83	**0.86**	0.85	0.94	**0.92**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Wednesday, October 29, 2025 AREA: SAN MARCOS 2 PROJECT: ETD25-1031-01

LAS POSAS RD-BETWEEN LINDA VISTA DR AND LA MIRADA DR

AM	NB		SB		EB	WB		PM	NB		SB		EB	WB	
00:00	9		14					12:00	108		89				
00:15	10		6					12:15	110		107				
00:30	6		4					12:30	84		112				
00:45	11	36	7	31			67	12:45	80	382	120	428			810
01:00	9		8					13:00	77		133				
01:15	4		4					13:15	87		91				
01:30	2		5					13:30	84		99				
01:45	6	21	10	27			48	13:45	96	344	102	425			769
02:00	6		9					14:00	76		118				
02:15	5		8					14:15	98		115				
02:30	2		6					14:30	125		111				
02:45	0	13	7	30			43	14:45	110	409	135	479			888
03:00	0		4					15:00	109		109				
03:15	11		10					15:15	128		118				
03:30	4		16					15:30	135		135				
03:45	0	15	11	41			56	15:45	140	512	113	475			987
04:00	2		8					16:00	173		106				
04:15	6		16					16:15	153		95				
04:30	3		12					16:30	165		129				
04:45	7	18	30	66			84	16:45	154	645	110	440			1085
05:00	6		27					17:00	122		119				
05:15	7		32					17:15	133		129				
05:30	11		56					17:30	169		127				
05:45	19	43	76	191			234	17:45	138	562	84	459			1021
06:00	24		40					18:00	105		97				
06:15	12		75					18:15	101		100				
06:30	24		80					18:30	108		107				
06:45	30	90	95	290			380	18:45	102	416	111	415			831
07:00	39		106					19:00	65		79				
07:15	43		108					19:15	84		68				
07:30	64		138					19:30	50		97				
07:45	71	217	166	518			735	19:45	73	272	129	373			645
08:00	63		182					20:00	56		127				
08:15	83		157					20:15	53		92				
08:30	81		119					20:30	59		70				
08:45	66	293	102	560			853	20:45	63	231	97	386			617
09:00	52		99					21:00	73		79				
09:15	61		105					21:15	44		93				
09:30	56		101					21:30	45		49				
09:45	75	244	97	402			646	21:45	39	201	33	254			455
10:00	59		94					22:00	22		27				
10:15	55		108					22:15	44		25				
10:30	57		105					22:30	18		17				
10:45	64	235	116	423			658	22:45	15	99	21	90			189
11:00	65		109					23:00	13		20				
11:15	91		97					23:15	17		15				
11:30	103		103					23:30	13		9				
11:45	90	349	108	417			766	23:45	16	59	15	59			118
Total Vol.		1574		2996			**4570**			4132		4283			**8415**

Daily Totals

NB	SB	EB	WB	**Combined**
5706	7279			**12985**

	AM			**PM**		
Split %	34.4%	65.6%	**35.2%**	49.1%	50.9%	**64.8%**
Peak Hour	11:30	07:30	**07:30**	16:00	14:45	**16:00**
Volume	411	643	**924**	645	497	**1085**
P.H.F.	0.93	0.88	**0.94**	0.95	0.92	**0.92**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Wednesday, October 29, 2025 AREA: SAN MARCOS 2 PROJECT: ETD25-1031-01

LAS POSAS RD-BETWEEN SAN MARCOS BLVD AND LINDA VISTA DR

AM	NB		SB		EB	WB		PM	NB		SB		EB	WB	
00:00	13		17					12:00	95		69				
00:15	4		4					12:15	86		83				
00:30	5		6					12:30	82		87				
00:45	3	25	5	32			57	12:45	61	324	89	328			652
01:00	6		8					13:00	70		100				
01:15	2		3					13:15	53		74				
01:30	1		4					13:30	72		70				
01:45	3	12	8	23			35	13:45	82	277	76	320			597
02:00	3		8					14:00	53		96				
02:15	2		3					14:15	64		87				
02:30	0		5					14:30	79		84				
02:45	0	5	3	19			24	14:45	86	282	114	381			663
03:00	2		0					15:00	88		82				
03:15	8		7					15:15	92		78				
03:30	1		16					15:30	110		87				
03:45	1	12	8	31			43	15:45	111	401	67	314			715
04:00	2		6					16:00	93		75				
04:15	5		7					16:15	108		78				
04:30	2		7					16:30	102		74				
04:45	12	21	18	38			59	16:45	100	403	88	315			718
05:00	3		22					17:00	90		99				
05:15	8		18					17:15	89		92				
05:30	9		43					17:30	122		93				
05:45	17	37	43	126			163	17:45	95	396	75	359			755
06:00	19		24					18:00	87		77				
06:15	7		52					18:15	76		84				
06:30	21		55					18:30	68		79				
06:45	32	79	55	186			265	18:45	72	303	89	329			632
07:00	34		66					19:00	58		61				
07:15	31		80					19:15	78		55				
07:30	55		101					19:30	38		82				
07:45	63	183	87	334			517	19:45	48	222	110	308			530
08:00	57		93					20:00	46		105				
08:15	73		94					20:15	39		79				
08:30	72		62					20:30	51		64				
08:45	51	253	58	307			560	20:45	44	180	101	349			529
09:00	42		54					21:00	49		78				
09:15	48		58					21:15	29		91				
09:30	46		56					21:30	24		59				
09:45	58	194	48	216			410	21:45	19	121	34	262			383
10:00	47		47					22:00	10		27				
10:15	45		62					22:15	22		23				
10:30	47		59					22:30	9		22				
10:45	52	191	78	246			437	22:45	12	53	21	93			146
11:00	55		71					23:00	15		19				
11:15	71		66					23:15	9		14				
11:30	77		72					23:30	12		12				
11:45	70	273	81	290			563	23:45	8	44	15	60			104
Total Vol.		1285		1848			**3133**			3006		3418			**6424**

Daily Totals

NB	SB	EB	WB	**Combined**
4291	5266			**9557**

	AM			**PM**		
Split %	41.0%	59.0%	**32.8%**	46.8%	53.2%	**67.2%**
Peak Hour	11:45	07:30	**11:45**	15:30	14:00	**16:45**
Volume	333	375	**653**	422	381	**773**
P.H.F.	0.88	0.93	**0.97**	0.92	0.84	**0.90**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Wednesday, October 15, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

VIA VERA CRUZ - B/W GRAND AVE AND LINDA VISTA DR

AM	NB		SB		EB	WB		PM	NB		SB		EB	WB	
00:00	6		0					12:00	107		97				
00:15	5		7					12:15	102		106				
00:30	9		2					12:30	98		107				
00:45	2	22	4	13			35	12:45	97	404	94	404			808
01:00	3		9					13:00	113		89				
01:15	4		3					13:15	102		95				
01:30	1		2					13:30	94		98				
01:45	1	9	4	18			27	13:45	85	394	100	382			776
02:00	2		0					14:00	101		96				
02:15	2		2					14:15	101		105				
02:30	1		0					14:30	127		88				
02:45	0	5	0	2			7	14:45	109	438	139	428			866
03:00	0		0					15:00	81		85				
03:15	0		2					15:15	108		109				
03:30	3		1					15:30	110		97				
03:45	2	5	5	8			13	15:45	102	401	120	411			812
04:00	3		2					16:00	131		123				
04:15	1		3					16:15	107		113				
04:30	6		4					16:30	123		137				
04:45	5	15	5	14			29	16:45	119	480	123	496			976
05:00	4		8					17:00	112		108				
05:15	10		6					17:15	94		110				
05:30	12		20					17:30	94		103				
05:45	15	41	39	73			114	17:45	88	388	107	428			816
06:00	16		10					18:00	95		115				
06:15	6		24					18:15	67		86				
06:30	8		29					18:30	71		74				
06:45	27	57	62	125			182	18:45	55	288	71	346			634
07:00	17		38					19:00	47		61				
07:15	32		54					19:15	40		62				
07:30	33		78					19:30	35		54				
07:45	41	123	106	276			399	19:45	36	158	39	216			374
08:00	44		72					20:00	34		37				
08:15	58		78					20:15	30		36				
08:30	55		73					20:30	30		39				
08:45	55	212	78	301			513	20:45	32	126	23	135			261
09:00	63		83					21:00	17		26				
09:15	64		63					21:15	20		32				
09:30	64		83					21:30	24		21				
09:45	73	264	68	297			561	21:45	27	88	23	102			190
10:00	67		58					22:00	32		14				
10:15	81		71					22:15	10		11				
10:30	73		79					22:30	6		12				
10:45	89	310	66	274			584	22:45	5	53	3	40			93
11:00	88		88					23:00	9		5				
11:15	78		99					23:15	7		8				
11:30	56		83					23:30	5		8				
11:45	104	326	94	364			690	23:45	6	27	6	27			54
Total Vol.		1389		1765			**3154**		3245		3415				**6660**

Daily Totals

NB	SB	EB	WB	**Combined**
4634	5180			**9814**

	AM			**PM**		
Split %	44.0%	56.0%	**32.1%**	48.7%	51.3%	**67.9%**
Peak Hour	11:45	11:45	**11:45**	16:00	16:00	**16:00**
Volume	411	404	**815**	480	496	**976**
P.H.F.	0.96	0.94	**0.98**	0.92	0.91	**0.94**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Wednesday, October 15, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

VIA VERA CRUZ - B/W LINDA VISTA DR AND SAN MARCOS BLVD

AM	NB		SB		EB	WB		PM	NB		SB		EB	WB	
00:00	7		0					12:00	111		104				
00:15	4		2					12:15	106		118				
00:30	4		2					12:30	110		113				
00:45	4	19	4	8			27	12:45	105	432	112	447			879
01:00	1		6					13:00	109		86				
01:15	3		3					13:15	94		108				
01:30	1		0					13:30	77		97				
01:45	0	5	2	11			16	13:45	79	359	100	391			750
02:00	2		0					14:00	95		103				
02:15	2		2					14:15	105		106				
02:30	1		0					14:30	116		96				
02:45	0	5	0	2			7	14:45	92	408	155	460			868
03:00	0		1					15:00	53		113				
03:15	0		1					15:15	110		109				
03:30	3		2					15:30	102		110				
03:45	2	5	3	7			12	15:45	102	367	137	469			836
04:00	1		2					16:00	110		151				
04:15	1		4					16:15	87		162				
04:30	6		4					16:30	126		170				
04:45	6	14	2	12			26	16:45	115	438	142	625			1063
05:00	3		5					17:00	109		160				
05:15	10		7					17:15	97		146				
05:30	7		11					17:30	98		131				
05:45	17	37	18	41			78	17:45	89	393	119	556			949
06:00	19		5					18:00	82		136				
06:15	11		19					18:15	67		87				
06:30	7		23					18:30	69		94				
06:45	21	58	44	91			149	18:45	56	274	79	396			670
07:00	26		35					19:00	48		57				
07:15	33		52					19:15	36		72				
07:30	44		72					19:30	39		52				
07:45	59	162	100	259			421	19:45	30	153	52	233			386
08:00	64		68					20:00	31		39				
08:15	75		71					20:15	30		41				
08:30	65		84					20:30	22		35				
08:45	67	271	80	303			574	20:45	26	109	22	137			246
09:00	72		73					21:00	17		28				
09:15	67		49					21:15	18		28				
09:30	56		85					21:30	27		27				
09:45	76	271	59	266			537	21:45	24	86	25	108			194
10:00	75		58					22:00	26		17				
10:15	91		70					22:15	8		8				
10:30	71		81					22:30	3		12				
10:45	97	334	84	293			627	22:45	5	42	6	43			85
11:00	71		82					23:00	9		6				
11:15	85		107					23:15	7		11				
11:30	56		93					23:30	6		6				
11:45	108	320	111	393			713	23:45	6	28	4	27			55
Total Vol.		1501		1686			**3187**		3089		3892				**6981**

Daily Totals

NB	SB	EB	WB	**Combined**
4590	5578			**10168**

	AM			**PM**		
Split %	47.1%	52.9%	**31.3%**	44.2%	55.8%	**68.7%**
Peak Hour	11:45	11:45	**11:45**	16:30	16:15	**16:15**
Volume	435	446	**881**	447	634	**1071**
P.H.F.	0.98	0.94	**0.98**	0.91	0.93	**0.90**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Wednesday, October 15, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

VIA VERA CRUZ - B/W SAN MARCOS BLVD AND DISCOVERY ST

AM	NB		SB		EB	WB		PM	NB		SB		EB	WB	
00:00	1		0					12:00	51		52				
00:15	4		3					12:15	50		76				
00:30	2		0					12:30	54		71				
00:45	1	8	0	3			11	12:45	51	206	63	262			468
01:00	0		0					13:00	56		55				
01:15	1		0					13:15	40		68				
01:30	1		1					13:30	46		57				
01:45	1	3	1	2			5	13:45	49	191	52	232			423
02:00	0		0					14:00	45		63				
02:15	1		1					14:15	46		69				
02:30	1		1					14:30	45		72				
02:45	1	3	0	2			5	14:45	62	198	104	308			506
03:00	1		1					15:00	55		91				
03:15	1		0					15:15	95		98				
03:30	0		1					15:30	70		85				
03:45	0	2	1	3			5	15:45	65	285	111	385			670
04:00	2		0					16:00	77		110				
04:15	3		0					16:15	57		119				
04:30	5		3					16:30	63		142				
04:45	4	14	1	4			18	16:45	70	267	109	480			747
05:00	5		0					17:00	49		141				
05:15	5		0					17:15	48		157				
05:30	4		3					17:30	63		121				
05:45	18	32	7	10			42	17:45	53	213	85	504			717
06:00	12		5					18:00	44		104				
06:15	10		7					18:15	43		80				
06:30	14		8					18:30	42		86				
06:45	24	60	17	37			97	18:45	40	169	75	345			514
07:00	28		23					19:00	40		47				
07:15	30		22					19:15	30		43				
07:30	34		41					19:30	20		45				
07:45	71	163	55	141			304	19:45	22	112	33	168			280
08:00	82		58					20:00	28		45				
08:15	78		89					20:15	18		29				
08:30	74		74					20:30	16		34				
08:45	56	290	53	274			564	20:45	19	81	21	129			210
09:00	42		32					21:00	8		24				
09:15	51		41					21:15	8		23				
09:30	34		44					21:30	9		25				
09:45	29	156	45	162			318	21:45	13	38	19	91			129
10:00	40		49					22:00	6		14				
10:15	35		37					22:15	6		13				
10:30	46		40					22:30	5		11				
10:45	40	161	44	170			331	22:45	4	21	7	45			66
11:00	51		42					23:00	7		9				
11:15	38		65					23:15	4		4				
11:30	44		65					23:30	7		5				
11:45	64	197	65	237			434	23:45	4	22	4	22			44
Total Vol.		1089		1045			**2134**			1803		2971			**4774**

Daily Totals

NB	SB	EB	WB	**Combined**
2892	4016			**6908**

	AM			**PM**		
Split %	51.0%	49.0%	**30.9%**	37.8%	62.2%	**69.1%**
Peak Hour	07:45	07:45	**07:45**	15:15	16:30	**16:30**
Volume	305	276	**581**	307	549	**779**
P.H.F.	0.93	0.78	**0.87**	0.78	0.87	**0.95**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Thursday, October 9, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

BENT AVE- B/W GRAND AVE AND SAN MARCOS BLVD

AM	NB		SB		EB	WB		PM	NB		SB		EB	WB	
00:00	4		12					12:00	97		82				
00:15	0		1					12:15	85		75				
00:30	0		5					12:30	67		81				
00:45	1	5	1	19			24	12:45	73	322	69	307			629
01:00	2		0					13:00	71		80				
01:15	1		1					13:15	70		77				
01:30	1		1					13:30	62		78				
01:45	10	14	3	5			19	13:45	78	281	82	317			598
02:00	5		0					14:00	73		74				
02:15	0		1					14:15	65		74				
02:30	2		6					14:30	72		87				
02:45	2	9	4	11			20	14:45	69	279	84	319			598
03:00	0		0					15:00	62		86				
03:15	0		0					15:15	60		102				
03:30	0		0					15:30	69		100				
03:45	0	0	4	4			4	15:45	81	272	109	397			669
04:00	0		1					16:00	70		95				
04:15	1		2					16:15	83		102				
04:30	4		2					16:30	59		102				
04:45	5	10	7	12			22	16:45	49	261	102	401			662
05:00	4		2					17:00	62		102				
05:15	3		3					17:15	60		97				
05:30	1		4					17:30	78		104				
05:45	6	14	11	20			34	17:45	45	245	104	407			652
06:00	15		16					18:00	42		86				
06:15	14		14					18:15	47		69				
06:30	19		22					18:30	31		53				
06:45	20	68	40	92			160	18:45	26	146	37	245			391
07:00	34		42					19:00	25		28				
07:15	37		37					19:15	30		27				
07:30	42		34					19:30	13		16				
07:45	59	172	56	169			341	19:45	11	79	22	93			172
08:00	43		55					20:00	10		17				
08:15	55		59					20:15	20		18				
08:30	60		53					20:30	18		14				
08:45	66	224	65	232			456	20:45	10	58	11	60			118
09:00	67		58					21:00	6		17				
09:15	56		55					21:15	11		8				
09:30	43		72					21:30	10		7				
09:45	63	229	51	236			465	21:45	9	36	11	43			79
10:00	60		51					22:00	7		8				
10:15	54		42					22:15	5		6				
10:30	67		69					22:30	6		4				
10:45	70	251	66	228			479	22:45	2	20	3	21			41
11:00	84		64					23:00	3		3				
11:15	64		67					23:15	3		1				
11:30	76		78					23:30	4		4				
11:45	95	319	90	299			618	23:45	4	14	8	16			30
Total Vol.		1315		1327			**2642**			2013		2626			**4639**

Daily Totals

NB	SB	EB	WB	**Combined**
3328	3953			**7281**

	AM			PM		
Split %	49.8%	50.2%	**36.3%**	43.4%	56.6%	**63.7%**
Peak Hour	11:30	11:45	**11:30**	12:00	15:45	**15:30**
Volume	353	328	**678**	322	408	**709**
P.H.F.	0.91	0.91	**0.92**	0.81	0.94	**0.93**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Thursday, October 9, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

BENT AVE - B/W SAN MARCOS BLVD AND CREEKSIDE DR

AM	NB		SB	EB	WB		PM	NB		SB	EB	WB	
00:00	2		13				12:00	85		62			
00:15	1		4				12:15	78		53			
00:30	2		5				12:30	86		48			
00:45	4	9	5	27		36	12:45	65	314	54	217		531
01:00	3		5				13:00	71		57			
01:15	0		0				13:15	85		62			
01:30	3		1				13:30	67		47			
01:45	4	10	1	7		17	13:45	73	296	51	217		513
02:00	2		2				14:00	61		59			
02:15	0		2				14:15	60		63			
02:30	3		1				14:30	76		70			
02:45	2	7	1	6		13	14:45	83	280	77	269		549
03:00	1		2				15:00	74		89			
03:15	0		0				15:15	77		82			
03:30	1		0				15:30	91		101			
03:45	0	2	1	3		5	15:45	106	348	98	370		718
04:00	2		0				16:00	101		86			
04:15	2		2				16:15	100		84			
04:30	5		1				16:30	84		105			
04:45	11	20	4	7		27	16:45	71	356	76	351		707
05:00	9		3				17:00	106		106			
05:15	16		2				17:15	81		83			
05:30	20		3				17:30	97		97			
05:45	23	68	13	21		89	17:45	74	358	65	351		709
06:00	25		8				18:00	67		66			
06:15	19		14				18:15	59		53			
06:30	30		21				18:30	60		53			
06:45	37	111	44	87		198	18:45	67	253	40	212		465
07:00	57		27				19:00	52		35			
07:15	77		20				19:15	39		42			
07:30	68		28				19:30	37		30			
07:45	91	293	43	118		411	19:45	33	161	29	136		297
08:00	75		35				20:00	26		29			
08:15	92		48				20:15	32		24			
08:30	89		46				20:30	39		17			
08:45	69	325	41	170		495	20:45	29	126	14	84		210
09:00	79		30				21:00	18		9			
09:15	72		30				21:15	23		22			
09:30	58		29				21:30	9		19			
09:45	67	276	37	126		402	21:45	10	60	12	62		122
10:00	69		29				22:00	15		16			
10:15	91		37				22:15	15		15			
10:30	65		50				22:30	11		11			
10:45	78	303	37	153		456	22:45	5	46	6	48		94
11:00	66		45				23:00	4		6			
11:15	68		46				23:15	4		3			
11:30	74		42				23:30	8		3			
11:45	88	296	40	173		469	23:45	5	21	5	17		38
Total Vol.		1720		898		**2618**			2619		2334		**4953**

Daily Totals

NB	SB	EB	WB	**Combined**
4339	3232			**7571**

	AM			**PM**		
Split %	65.7%	34.3%	**34.6%**	52.9%	47.1%	**65.4%**
Peak Hour	07:45	11:45	**11:45**	15:30	15:45	**15:30**
Volume	347	203	**540**	398	373	**767**
P.H.F.	0.94	0.82	**0.92**	0.94	0.89	**0.94**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Wednesday, October 15, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

GRAND AVE - B/W LAS POSAS RD AND VIA VERA CRUZ

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			10		17			12:00			180		216		
00:15			13		17			12:15			193		268		
00:30			7		15			12:30			203		230		
00:45			8	38	7	56	94	12:45			226	802	209	923	1725
01:00			6		24			13:00			184		224		
01:15			7		14			13:15			193		207		
01:30			10		11			13:30			226		187		
01:45			4	27	5	54	81	13:45			181	784	247	865	1649
02:00			5		8			14:00			199		177		
02:15			4		6			14:15			176		234		
02:30			16		3			14:30			199		246		
02:45			10	35	6	23	58	14:45			218	792	256	913	1705
03:00			4		5			15:00			183		226		
03:15			8		6			15:15			188		252		
03:30			15		13			15:30			207		280		
03:45			19	46	9	33	79	15:45			232	810	232	990	1800
04:00			9		9			16:00			234		274		
04:15			14		21			16:15			212		248		
04:30			14		13			16:30			209		305		
04:45			20	57	27	70	127	16:45			198	853	276	1103	1956
05:00			32		31			17:00			207		317		
05:15			29		34			17:15			212		265		
05:30			60		43			17:30			166		288		
05:45			51	172	54	162	334	17:45			144	729	281	1151	1880
06:00			77		46			18:00			159		326		
06:15			62		88			18:15			151		258		
06:30			80		81			18:30			146		172		
06:45			111	330	130	345	675	18:45			141	597	157	913	1510
07:00			105		127			19:00			124		169		
07:15			104		130			19:15			120		144		
07:30			111		164			19:30			110		92		
07:45			135	455	225	646	1101	19:45			93	447	121	526	973
08:00			155		232			20:00			106		91		
08:15			185		194			20:15			86		89		
08:30			144		155			20:30			109		72		
08:45			151	635	187	768	1403	20:45			91	392	91	343	735
09:00			116		202			21:00			69		81		
09:15			136		237			21:15			57		63		
09:30			149		168			21:30			57		61		
09:45			136	537	201	808	1345	21:45			51	234	62	267	501
10:00			164		186			22:00			43		71		
10:15			155		175			22:15			43		32		
10:30			143		159			22:30			28		33		
10:45			171	633	258	778	1411	22:45			26	140	21	157	297
11:00			186		181			23:00			13		25		
11:15			192		169			23:15			16		23		
11:30			178		159			23:30			20		22		
11:45			187	743	211	720	1463	23:45			13	62	27	97	159
Total Vol.				3708		4463	**8171**					6642		8248	**14890**

Daily Totals

NB	SB	EB	WB	Combined
		10350	12711	**23061**

	AM			PM		
Split %	45.4%	54.6%	**35.4%**	44.6%	55.4%	**64.6%**
Peak Hour	11:45	11:45	**11:45**	15:45	16:30	**16:30**
Volume	763	925	**1688**	887	1163	**1989**
P.H.F.	0.94	0.86	**0.92**	0.95	0.92	**0.95**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Wednesday, October 15, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

GRAND AVE - B/W VIA VERA CRUZ AND BENT AVE

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			3		9			12:00			123		124		
00:15			1		7			12:15			114		126		
00:30			2		5			12:30			113		131		
00:45			1	7	0	21	28	12:45			132	482	105	486	968
01:00			2		7			13:00			94		113		
01:15			2		2			13:15			118		139		
01:30			3		4			13:30			107		108		
01:45			1	8	3	16	24	13:45			105	424	100	460	884
02:00			9		3			14:00			99		91		
02:15			2		3			14:15			84		107		
02:30			2		1			14:30			117		107		
02:45			4	17	0	7	24	14:45			189	489	109	414	903
03:00			1		1			15:00			188		92		
03:15			1		3			15:15			197		123		
03:30			6		4			15:30			214		107		
03:45			6	14	2	10	24	15:45			204	803	106	428	1231
04:00			5		1			16:00			213		109		
04:15			2		12			16:15			220		98		
04:30			2		1			16:30			242		101		
04:45			11	20	4	18	38	16:45			230	905	118	426	1331
05:00			12		6			17:00			221		132		
05:15			7		6			17:15			247		135		
05:30			9		8			17:30			202		105		
05:45			23	51	8	28	79	17:45			204	874	93	465	1339
06:00			24		19			18:00			166		103		
06:15			39		36			18:15			182		98		
06:30			43		19			18:30			103		82		
06:45			67	173	30	104	277	18:45			73	524	69	352	876
07:00			46		33			19:00			60		85		
07:15			69		38			19:15			49		65		
07:30			70		49			19:30			51		56		
07:45			69	254	61	181	435	19:45			34	194	65	271	465
08:00			88		50			20:00			39		49		
08:15			86		49			20:15			30		44		
08:30			87		43			20:30			28		46		
08:45			132	393	76	218	611	20:45			40	137	42	181	318
09:00			96		60			21:00			27		44		
09:15			70		60			21:15			20		25		
09:30			80		71			21:30			10		24		
09:45			64	310	84	275	585	21:45			22	79	25	118	197
10:00			80		73			22:00			19		19		
10:15			85		80			22:15			10		14		
10:30			89		84			22:30			13		14		
10:45			89	343	99	336	679	22:45			10	52	9	56	108
11:00			92		103			23:00			8		12		
11:15			92		87			23:15			4		9		
11:30			107		105			23:30			4		11		
11:45			98	389	123	418	807	23:45			7	23	6	38	61
Total Vol.				1979		1632	**3611**					4986		3695	**8681**

Daily Totals

NB	SB	EB	WB	Combined
		6965	5327	**12292**

	AM			PM		
Split %	54.8%	45.2%	**29.4%**	57.4%	42.6%	**70.6%**
Peak Hour	11:45	11:45	**11:45**	16:30	16:45	**16:30**
Volume	448	504	**952**	940	490	**1426**
P.H.F.	0.91	0.96	**0.96**	0.95	0.91	**0.93**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Thursday, October 9, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

GRAND AVE- B/W BENT AVE AND SAN MARCOS BLVD

AM	NB		SB		EB	WB		PM	NB		SB		EB	WB	
00:00	7		7					12:00	101		131				
00:15	7		8					12:15	118		134				
00:30	3		5					12:30	94		115				
00:45	11	28	6	26			54	12:45	102	415	102	482			897
01:00	17		6					13:00	103		145				
01:15	11		2					13:15	102		113				
01:30	1		6					13:30	94		110				
01:45	3	32	5	19			51	13:45	83	382	114	482			864
02:00	4		3					14:00	101		150				
02:15	6		0					14:15	65		145				
02:30	0		5					14:30	90		161				
02:45	3	13	2	10			23	14:45	72	328	224	680			1008
03:00	2		4					15:00	102		185				
03:15	0		2					15:15	78		190				
03:30	2		9					15:30	78		211				
03:45	13	17	5	20			37	15:45	105	363	220	806			1169
04:00	6		5					16:00	90		230				
04:15	7		8					16:15	90		235				
04:30	8		5					16:30	87		236				
04:45	11	32	11	29			61	16:45	92	359	227	928			1287
05:00	18		10					17:00	76		216				
05:15	16		5					17:15	77		225				
05:30	40		11					17:30	82		176				
05:45	48	122	19	45			167	17:45	81	316	151	768			1084
06:00	41		22					18:00	76		115				
06:15	41		34					18:15	70		99				
06:30	44		55					18:30	67		92				
06:45	61	187	60	171			358	18:45	60	273	78	384			657
07:00	53		36					19:00	63		65				
07:15	77		47					19:15	63		59				
07:30	65		57					19:30	49		75				
07:45	87	282	36	176			458	19:45	35	210	69	268			478
08:00	67		57					20:00	45		64				
08:15	84		68					20:15	34		58				
08:30	77		70					20:30	32		47				
08:45	89	317	59	254			571	20:45	39	150	40	209			359
09:00	69		52					21:00	31		40				
09:15	56		70					21:15	31		42				
09:30	59		60					21:30	27		34				
09:45	67	251	66	248			499	21:45	29	118	22	138			256
10:00	65		56					22:00	20		18				
10:15	53		76					22:15	19		19				
10:30	72		81					22:30	15		20				
10:45	80	270	82	295			565	22:45	15	69	18	75			144
11:00	73		87					23:00	13		16				
11:15	84		104					23:15	15		10				
11:30	106		98					23:30	15		13				
11:45	106	369	113	402			771	23:45	7	50	7	46			96
Total Vol.		1920		1695			**3615**			3033		5266			**8299**

Daily Totals

NB	SB	EB	WB	**Combined**
4953	6961			**11914**

	AM			**PM**		
Split %	53.1%	46.9%	**30.3%**	36.5%	63.5%	**69.7%**
Peak Hour	11:30	11:45	**11:45**	12:15	16:00	**15:45**
Volume	431	493	**912**	417	928	**1293**
P.H.F.	0.91	0.92	**0.90**	0.88	0.98	**0.99**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Thursday, October 9, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

GRAND AVE - B/W SAN MARCOS BLVD AND CREEKSIDE DR

AM	NB		SB		EB	WB		PM	NB		SB		EB	WB	
00:00	6		12					12:00	107		111				
00:15	4		11					12:15	105		121				
00:30	6		15					12:30	93		127				
00:45	10	26	7	45			71	12:45	85	390	115	474			864
01:00	4		6					13:00	95		113				
01:15	6		3					13:15	84		131				
01:30	3		9					13:30	76		100				
01:45	2	15	7	25			40	13:45	87	342	125	469			811
02:00	5		6					14:00	80		109				
02:15	5		2					14:15	59		101				
02:30	1		3					14:30	74		94				
02:45	1	12	3	14			26	14:45	79	292	111	415			707
03:00	3		5					15:00	76		84				
03:15	2		2					15:15	68		80				
03:30	3		3					15:30	59		75				
03:45	2	10	6	16			26	15:45	67	270	90	329			599
04:00	5		7					16:00	94		99				
04:15	2		5					16:15	87		97				
04:30	4		7					16:30	75		94				
04:45	5	16	8	27			43	16:45	72	328	97	387			715
05:00	4		9					17:00	73		74				
05:15	6		8					17:15	59		97				
05:30	8		13					17:30	70		101				
05:45	8	26	11	41			67	17:45	78	280	110	382			662
06:00	8		20					18:00	87		96				
06:15	14		19					18:15	98		104				
06:30	19		28					18:30	88		99				
06:45	20	61	23	90			151	18:45	88	361	88	387			748
07:00	14		27					19:00	71		97				
07:15	10		27					19:15	72		74				
07:30	25		24					19:30	86		76				
07:45	20	69	37	115			184	19:45	62	291	59	306			597
08:00	13		33					20:00	79		53				
08:15	17		37					20:15	58		58				
08:30	21		56					20:30	50		44				
08:45	21	72	59	185			257	20:45	51	238	41	196			434
09:00	26		49					21:00	35		41				
09:15	31		66					21:15	42		48				
09:30	38		67					21:30	49		27				
09:45	37	132	89	271			403	21:45	33	159	29	145			304
10:00	43		65					22:00	18		25				
10:15	44		94					22:15	19		20				
10:30	62		83					22:30	16		26				
10:45	56	205	78	320			525	22:45	11	64	15	86			150
11:00	49		96					23:00	10		17				
11:15	64		128					23:15	9		17				
11:30	67		118					23:30	4		15				
11:45	73	253	134	476			729	23:45	15	38	15	64			102
Total Vol.		897		1625			**2522**			3053		3640			**6693**

Daily Totals

NB	SB	EB	WB	**Combined**
3950	5265			**9215**

	AM			**PM**		
Split %	35.6%	64.4%	**27.4%**	45.6%	54.4%	**72.6%**
Peak Hour	11:45	11:45	**11:45**	12:00	12:30	**12:00**
Volume	378	493	**871**	390	486	**864**
P.H.F.	0.88	0.92	**0.96**	0.93	0.93	**0.96**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Wednesday, October 29, 2025 AREA: SAN MARCOS 2 PROJECT: ETD25-1031-01

LINDA VISTA DR-BETWEEN LAS POSAS RD AND VIA VERA CRUZ

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			0		1			12:00			38		43		
00:15			1		5			12:15			42		44		
00:30			1		6			12:30			44		36		
00:45			2	4	0	12	16	12:45			38	162	39	162	324
01:00			2		0			13:00			41		31		
01:15			0		1			13:15			39		38		
01:30			1		0			13:30			45		42		
01:45			2	5	2	3	8	13:45			45	170	22	133	303
02:00			0		2			14:00			57		40		
02:15			1		1			14:15			50		46		
02:30			0		0			14:30			78		40		
02:45			1	2	0	3	5	14:45			74	259	36	162	421
03:00			0		0			15:00			71		37		
03:15			0		1			15:15			74		43		
03:30			0		2			15:30			90		45		
03:45			0	0	4	7	7	15:45			114	349	49	174	523
04:00			1		2			16:00			111		51		
04:15			2		3			16:15			88		35		
04:30			0		2			16:30			78		40		
04:45			7	10	7	14	24	16:45			76	353	44	170	523
05:00			2		6			17:00			90		52		
05:15			4		4			17:15			107		34		
05:30			2		15			17:30			73		36		
05:45			14	22	22	47	69	17:45			45	315	42	164	479
06:00			14		15			18:00			49		30		
06:15			21		16			18:15			37		19		
06:30			15		17			18:30			36		23		
06:45			25	75	32	80	155	18:45			27	149	15	87	236
07:00			12		31			19:00			33		19		
07:15			26		51			19:15			20		8		
07:30			28		43			19:30			16		14		
07:45			81	147	48	173	320	19:45			18	87	9	50	137
08:00			52		53			20:00			18		9		
08:15			69		45			20:15			8		13		
08:30			68		43			20:30			16		8		
08:45			46	235	49	190	425	20:45			8	50	5	35	85
09:00			39		34			21:00			10		4		
09:15			31		32			21:15			13		6		
09:30			25		30			21:30			11		3		
09:45			35	130	34	130	260	21:45			4	38	5	18	56
10:00			26		31			22:00			6		4		
10:15			29		43			22:15			1		2		
10:30			34		30			22:30			4		4		
10:45			29	118	28	132	250	22:45			3	14	1	11	25
11:00			41		30			23:00			5		1		
11:15			44		35			23:15			2		2		
11:30			44		36			23:30			3		1		
11:45			58	187	44	145	332	23:45			3	13	3	7	20
Total Vol.				935		936	**1871**					1959		1173	**3132**

Daily Totals

NB	SB	EB	WB	Combined
		2894	2109	**5003**

	AM			PM		
Split %	50.0%	50.0%	**37.4%**	62.5%	37.5%	**62.6%**
Peak Hour	07:45	07:15	**07:45**	15:30	15:15	**15:30**
Volume	270	195	**459**	403	188	**583**
P.H.F.	0.83	0.92	**0.89**	0.88	0.92	**0.89**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Wednesday, October 15, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

LINDA VISTA DR - B/W VIA VERA CRUZ AND GRAND AVE

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			0		0			12:00			28		23		
00:15			4		1			12:15			27		35		
00:30			0		2			12:30			41		29		
00:45			1	5	0	3	8	12:45			43	139	27	114	253
01:00			0		2			13:00			30		36		
01:15			0		0			13:15			40		19		
01:30			2		1			13:30			35		32		
01:45			3	5	0	3	8	13:45			51	156	33	120	276
02:00			0		0			14:00			39		29		
02:15			0		0			14:15			35		25		
02:30			0		0			14:30			51		30		
02:45			0	0	0	0		14:45			57	182	31	115	297
03:00			2		1			15:00			64		22		
03:15			0		0			15:15			59		19		
03:30			1		1			15:30			80		18		
03:45			0	3	3	5	8	15:45			84	287	28	87	374
04:00			1		1			16:00			76		24		
04:15			1		3			16:15			83		22		
04:30			1		5			16:30			80		28		
04:45			1	4	2	11	15	16:45			84	323	19	93	416
05:00			3		7			17:00			62		28		
05:15			4		4			17:15			65		21		
05:30			7		12			17:30			82		26		
05:45			12	26	18	41	67	17:45			55	264	17	92	356
06:00			9		18			18:00			31		15		
06:15			17		20			18:15			23		15		
06:30			10		22			18:30			27		14		
06:45			17	53	31	91	144	18:45			16	97	14	58	155
07:00			16		29			19:00			15		8		
07:15			21		28			19:15			14		6		
07:30			35		48			19:30			14		4		
07:45			39	111	44	149	260	19:45			13	56	4	22	78
08:00			48		34			20:00			12		2		
08:15			54		38			20:15			10		9		
08:30			56		31			20:30			10		7		
08:45			51	209	36	139	348	20:45			6	38	3	21	59
09:00			49		43			21:00			4		5		
09:15			35		33			21:15			3		5		
09:30			43		29			21:30			3		3		
09:45			37	164	31	136	300	21:45			1	11	1	14	25
10:00			29		27			22:00			5		2		
10:15			34		25			22:15			3		3		
10:30			27		19			22:30			3		3		
10:45			30	120	29	100	220	22:45			7	18	3	11	29
11:00			44		37			23:00			1		0		
11:15			38		34			23:15			2		0		
11:30			32		22			23:30			2		1		
11:45			35	149	28	121	270	23:45			0	5	0	1	6
Total Vol.				849		799	**1648**					1576		748	**2324**

Daily Totals

NB	SB	EB	WB	Combined
		2425	1547	**3972**

	AM			PM		
Split %	51.5%	48.5%	**41.5%**	67.8%	32.2%	**58.5%**
Peak Hour	08:15	07:30	**08:15**	15:30	12:15	**15:45**
Volume	210	164	**358**	323	127	**425**
P.H.F.	0.94	0.85	**0.97**	0.96	0.88	**0.95**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Wednesday, October 29, 2025 AREA: SAN MARCOS 2 PROJECT: ETD25-1031-01

SAN MARCOS BLVD-BETWEEN RANCHO SANTA FE RD AND DISCOVERY ST

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			46		31			12:00			322		294		
00:15			42		15			12:15			332		291		
00:30			48		28			12:30			287		299		
00:45			27	163	21	95	258	12:45			385	1326	317	1201	2527
01:00			22		17			13:00			376		269		
01:15			22		16			13:15			326		309		
01:30			28		22			13:30			332		295		
01:45			11	83	24	79	162	13:45			393	1427	280	1153	2580
02:00			19		15			14:00			345		310		
02:15			14		19			14:15			406		279		
02:30			10		26			14:30			426		343		
02:45			15	58	31	91	149	14:45			458	1635	289	1221	2856
03:00			13		25			15:00			395		308		
03:15			20		34			15:15			441		299		
03:30			11		60			15:30			441		266		
03:45			16	60	42	161	221	15:45			465	1742	282	1155	2897
04:00			16		38			16:00			500		299		
04:15			29		47			16:15			465		328		
04:30			35		113			16:30			501		319		
04:45			32	112	171	369	481	16:45			481	1947	321	1267	3214
05:00			40		164			17:00			539		298		
05:15			53		162			17:15			481		329		
05:30			62		311			17:30			503		352		
05:45			89	244	291	928	1172	17:45			459	1982	311	1290	3272
06:00			98		244			18:00			415		272		
06:15			115		283			18:15			434		277		
06:30			148		342			18:30			387		250		
06:45			155	516	346	1215	1731	18:45			322	1558	245	1044	2602
07:00			173		371			19:00			260		230		
07:15			193		410			19:15			283		201		
07:30			234		423			19:30			214		187		
07:45			259	859	386	1590	2449	19:45			218	975	171	789	1764
08:00			245		391			20:00			222		151		
08:15			348		316			20:15			203		156		
08:30			315		331			20:30			191		153		
08:45			356	1264	347	1385	2649	20:45			182	798	142	602	1400
09:00			257		329			21:00			180		137		
09:15			239		309			21:15			151		135		
09:30			262		296			21:30			126		128		
09:45			251	1009	288	1222	2231	21:45			117	574	97	497	1071
10:00			242		262			22:00			125		71		
10:15			249		276			22:15			106		73		
10:30			241		288			22:30			95		46		
10:45			296	1028	291	1117	2145	22:45			96	422	70	260	682
11:00			293		252			23:00			71		49		
11:15			287		294			23:15			80		57		
11:30			337		278			23:30			56		38		
11:45			330	1247	315	1139	2386	23:45			55	262	46	190	452
Total Vol.				6643		9391	**16034**					14648		10669	**25317**

Daily Totals

NB	SB	EB	WB	Combined
		21291	20060	**41351**

	AM			PM		
Split %	41.4%	58.6%	**38.8%**	57.9%	42.1%	**61.2%**
Peak Hour	11:30	07:15	**08:00**	16:45	16:45	**16:45**
Volume	1321	1610	**2649**	2004	1300	**3304**
P.H.F.	0.98	0.95	**0.94**	0.93	0.92	**0.97**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Wednesday, October 29, 2025 AREA: SAN MARCOS 2 PROJECT: ETD25-1031-01

SAN MARCOS BLVD-BETWEEN DISCOVERY ST AND PACIFIC ST

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			38		29			12:00			305		253		
00:15			40		15			12:15			289		268		
00:30			38		20			12:30			259		280		
00:45			25	141	19	83	224	12:45			311	1164	277	1078	2242
01:00			20		12			13:00			314		269		
01:15			17		15			13:15			287		292		
01:30			25		17			13:30			286		284		
01:45			11	73	29	73	146	13:45			363	1250	268	1113	2363
02:00			18		14			14:00			287		298		
02:15			14		14			14:15			337		280		
02:30			11		25			14:30			341		315		
02:45			14	57	31	84	141	14:45			381	1346	289	1182	2528
03:00			11		23			15:00			342		283		
03:15			23		33			15:15			394		281		
03:30			8		60			15:30			411		278		
03:45			11	53	37	153	206	15:45			391	1538	233	1075	2613
04:00			12		33			16:00			400		265		
04:15			28		54			16:15			355		290		
04:30			21		102			16:30			393		272		
04:45			32	93	157	346	439	16:45			370	1518	274	1101	2619
05:00			43		161			17:00			406		271		
05:15			48		155			17:15			337		295		
05:30			61		298			17:30			387		310		
05:45			80	232	266	880	1112	17:45			346	1476	283	1159	2635
06:00			92		228			18:00			348		245		
06:15			103		269			18:15			339		261		
06:30			138		333			18:30			318		229		
06:45			144	477	326	1156	1633	18:45			258	1263	221	956	2219
07:00			154		314			19:00			215		174		
07:15			177		343			19:15			257		180		
07:30			216		382			19:30			180		153		
07:45			231	778	324	1363	2141	19:45			188	840	158	665	1505
08:00			221		345			20:00			214		148		
08:15			312		294			20:15			157		134		
08:30			303		263			20:30			160		122		
08:45			298	1134	264	1166	2300	20:45			188	719	122	526	1245
09:00			229		295			21:00			170		108		
09:15			207		285			21:15			129		124		
09:30			230		280			21:30			118		121		
09:45			221	887	275	1135	2022	21:45			114	531	98	451	982
10:00			232		250			22:00			112		65		
10:15			229		263			22:15			96		69		
10:30			230		266			22:30			79		41		
10:45			260	951	268	1047	1998	22:45			92	379	59	234	613
11:00			278		240			23:00			63		48		
11:15			262		271			23:15			75		45		
11:30			302		247			23:30			50		33		
11:45			304	1146	286	1044	2190	23:45			51	239	40	166	405
Total Vol.				6022		8530	**14552**					12263		9706	**21969**

Daily Totals

NB	SB	EB	WB	Combined
		18285	18236	**36521**

	AM			PM		
Split %	41.4%	58.6%	**39.8%**	55.8%	44.2%	**60.2%**
Peak Hour	11:30	07:15	**07:30**	15:15	14:00	**14:45**
Volume	1200	1394	**2325**	1596	1182	**2659**
P.H.F.	0.98	0.91	**0.96**	0.97	0.94	**0.96**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Wednesday, October 29, 2025 AREA: SAN MARCOS 2 PROJECT: ETD25-1031-01

SAN MARCOS BLVD-BETWEEN PACIFIC ST AND LAS POSAS RD

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			38		29			12:00			306		244		
00:15			43		16			12:15			287		259		
00:30			37		19			12:30			280		269		
00:45			24	142	18	82	224	12:45			302	1175	281	1053	2228
01:00			19		14			13:00			317		280		
01:15			21		16			13:15			300		296		
01:30			25		17			13:30			302		270		
01:45			12	77	28	75	152	13:45			350	1269	272	1118	2387
02:00			19		15			14:00			306		283		
02:15			15		11			14:15			365		281		
02:30			11		27			14:30			322		304		
02:45			11	56	31	84	140	14:45			392	1385	290	1158	2543
03:00			13		24			15:00			371		269		
03:15			24		30			15:15			365		275		
03:30			9		62			15:30			414		278		
03:45			13	59	37	153	212	15:45			427	1577	211	1033	2610
04:00			12		39			16:00			391		256		
04:15			23		59			16:15			379		284		
04:30			39		104			16:30			379		273		
04:45			37	111	164	366	477	16:45			375	1524	276	1089	2613
05:00			46		169			17:00			405		270		
05:15			50		161			17:15			367		297		
05:30			69		291			17:30			387		299		
05:45			99	264	259	880	1144	17:45			351	1510	271	1137	2647
06:00			90		227			18:00			366		231		
06:15			111		275			18:15			339		255		
06:30			140		340			18:30			327		225		
06:45			164	505	320	1162	1667	18:45			265	1297	221	932	2229
07:00			168		310			19:00			235		169		
07:15			176		344			19:15			267		175		
07:30			223		373			19:30			186		150		
07:45			250	817	319	1346	2163	19:45			197	885	159	653	1538
08:00			241		302			20:00			206		144		
08:15			318		263			20:15			167		136		
08:30			312		238			20:30			160		122		
08:45			306	1177	249	1052	2229	20:45			189	722	123	525	1247
09:00			249		292			21:00			177		111		
09:15			227		283			21:15			129		132		
09:30			250		283			21:30			122		119		
09:45			231	957	277	1135	2092	21:45			119	547	97	459	1006
10:00			232		243			22:00			123		66		
10:15			239		260			22:15			94		65		
10:30			241		273			22:30			84		41		
10:45			283	995	276	1052	2047	22:45			94	395	59	231	626
11:00			277		244			23:00			69		48		
11:15			269		273			23:15			76		47		
11:30			334		248			23:30			55		33		
11:45			299	1179	291	1056	2235	23:45			49	249	42	170	419
Total Vol.				6339		8443	**14782**					12535		9558	**22093**

Daily Totals

NB	SB	EB	WB	Combined
		18874	18001	**36875**

	AM			PM		
Split %	42.9%	57.1%	**40.1%**	56.7%	43.3%	**59.9%**
Peak Hour	11:30	06:45	**07:30**	15:30	14:00	**16:45**
Volume	1226	1347	**2289**	1611	1158	**2676**
P.H.F.	0.92	0.90	**0.96**	0.94	0.95	**0.98**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Wednesday, October 15, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

SAN MARCOS BLVD- B/W LAS POSAS RD AND VIA VERA CRUZ

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			33		24			12:00			254		214		
00:15			41		18			12:15			274		239		
00:30			34		16			12:30			269		220		
00:45			34	142	20	78	220	12:45			257	1054	234	907	1961
01:00			24		12			13:00			251		233		
01:15			14		18			13:15			260		236		
01:30			8		15			13:30			271		232		
01:45			15	61	17	62	123	13:45			302	1084	199	900	1984
02:00			24		14			14:00			284		163		
02:15			15		9			14:15			282		208		
02:30			17		12			14:30			326		191		
02:45			6	62	24	59	121	14:45			319	1211	257	819	2030
03:00			9		12			15:00			327		242		
03:15			10		32			15:15			241		272		
03:30			11		49			15:30			363		221		
03:45			20	50	66	159	209	15:45			317	1248	208	943	2191
04:00			15		49			16:00			295		258		
04:15			24		64			16:15			335		278		
04:30			23		102			16:30			293		244		
04:45			40	102	179	394	496	16:45			314	1237	266	1046	2283
05:00			42		130			17:00			316		262		
05:15			61		189			17:15			324		237		
05:30			75		238			17:30			325		276		
05:45			75	253	261	818	1071	17:45			293	1258	201	976	2234
06:00			87		181			18:00			268		228		
06:15			135		226			18:15			264		219		
06:30			124		317			18:30			285		202		
06:45			156	502	263	987	1489	18:45			254	1071	190	839	1910
07:00			150		262			19:00			214		187		
07:15			172		321			19:15			234		189		
07:30			200		322			19:30			192		137		
07:45			236	758	272	1177	1935	19:45			170	810	148	661	1471
08:00			204		206			20:00			177		109		
08:15			230		163			20:15			161		123		
08:30			302		217			20:30			149		122		
08:45			248	984	214	800	1784	20:45			146	633	115	469	1102
09:00			234		267			21:00			156		92		
09:15			230		240			21:15			112		102		
09:30			208		225			21:30			139		91		
09:45			192	864	277	1009	1873	21:45			137	544	98	383	927
10:00			184		204			22:00			123		67		
10:15			238		231			22:15			109		54		
10:30			218		256			22:30			100		60		
10:45			252	892	233	924	1816	22:45			75	407	55	236	643
11:00			205		237			23:00			89		43		
11:15			239		204			23:15			55		24		
11:30			287		265			23:30			63		19		
11:45			217	948	237	943	1891	23:45			51	258	33	119	377
Total Vol.				5618		7410	**13028**					10815		8298	**19113**

		Daily Totals		
NB	SB	EB	WB	**Combined**
		16433	15708	**32141**

	AM			**PM**		
Split %	43.1%	56.9%	**40.5%**	56.6%	43.4%	**59.5%**
Peak Hour	11:30	07:00	**11:30**	15:30	16:15	**16:45**
Volume	1032	1177	**1987**	1310	1050	**2320**
P.H.F.	0.90	0.91	**0.90**	0.90	0.94	**0.97**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Thursday, October 9, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

SAN MARCOS BLVD - B/W VIA VERA CRUZ AND BENT AVE

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			36		16			12:00			298		250		
00:15			36		20			12:15			321		308		
00:30			38		20			12:30			285		313		
00:45			38	148	23	79	227	12:45			331	1235	276	1147	2382
01:00			31		28			13:00			356		299		
01:15			19		21			13:15			350		260		
01:30			16		14			13:30			357		279		
01:45			12	78	9	72	150	13:45			355	1418	258	1096	2514
02:00			16		10			14:00			368		253		
02:15			10		12			14:15			386		296		
02:30			16		8			14:30			345		241		
02:45			9	51	19	49	100	14:45			344	1443	270	1060	2503
03:00			11		15			15:00			339		247		
03:15			12		26			15:15			332		255		
03:30			13		56			15:30			324		218		
03:45			22	58	68	165	223	15:45			329	1324	251	971	2295
04:00			25		53			16:00			323		284		
04:15			19		57			16:15			329		268		
04:30			43		123			16:30			314		264		
04:45			34	121	163	396	517	16:45			356	1322	271	1087	2409
05:00			48		142			17:00			317		252		
05:15			61		189			17:15			342		243		
05:30			76		271			17:30			337		284		
05:45			78	263	255	857	1120	17:45			345	1341	263	1042	2383
06:00			114		228			18:00			349		240		
06:15			112		220			18:15			342		233		
06:30			122		337			18:30			288		240		
06:45			151	499	304	1089	1588	18:45			267	1246	200	913	2159
07:00			177		240			19:00			288		200		
07:15			202		375			19:15			244		172		
07:30			207		309			19:30			269		139		
07:45			227	813	305	1229	2042	19:45			224	1025	154	665	1690
08:00			235		251			20:00			208		147		
08:15			273		245			20:15			192		145		
08:30			285		269			20:30			194		121		
08:45			247	1040	316	1081	2121	20:45			170	764	115	528	1292
09:00			248		314			21:00			175		106		
09:15			251		300			21:15			201		117		
09:30			224		312			21:30			120		127		
09:45			246	969	304	1230	2199	21:45			143	639	97	447	1086
10:00			259		275			22:00			137		75		
10:15			301		281			22:15			122		57		
10:30			251		291			22:30			106		59		
10:45			287	1098	310	1157	2255	22:45			122	487	62	253	740
11:00			285		271			23:00			87		53		
11:15			294		297			23:15			75		38		
11:30			336		281			23:30			99		33		
11:45			322	1237	325	1174	2411	23:45			66	327	33	157	484
Total Vol.				6375		8578	**14953**					12571		9366	**21937**

Daily Totals

NB	SB	EB	WB	Combined
		18946	17944	**36890**

	AM			PM		
Split %	42.6%	57.4%	**40.5%**	57.3%	42.7%	**59.5%**
Peak Hour	11:30	06:30	**11:30**	13:30	12:15	**13:30**
Volume	1277	1256	**2441**	1466	1196	**2552**
P.H.F.	0.95	0.84	**0.94**	0.95	0.96	**0.94**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Thursday, October 9, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

SAN MARCOS BLVD - B/W BENT AVE AND GRAND AVE

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			35		20			12:00			333		277		
00:15			39		24			12:15			361		332		
00:30			36		23			12:30			325		306		
00:45			35	145	25	92	237	12:45			336	1355	307	1222	2577
01:00			30		28			13:00			375		298		
01:15			18		22			13:15			400		295		
01:30			20		13			13:30			399		269		
01:45			14	82	19	82	164	13:45			374	1548	287	1149	2697
02:00			13		15			14:00			389		279		
02:15			10		14			14:15			389		302		
02:30			20		10			14:30			392		268		
02:45			12	55	19	58	113	14:45			396	1566	281	1130	2696
03:00			11		16			15:00			376		268		
03:15			11		28			15:15			378		253		
03:30			13		57			15:30			351		235		
03:45			20	55	66	167	222	15:45			355	1460	283	1039	2499
04:00			23		58			16:00			358		296		
04:15			20		58			16:15			373		269		
04:30			38		124			16:30			370		261		
04:45			31	112	179	419	531	16:45			410	1511	308	1134	2645
05:00			52		161			17:00			381		260		
05:15			63		188			17:15			381		249		
05:30			93		276			17:30			357		271		
05:45			91	299	255	880	1179	17:45			385	1504	271	1051	2555
06:00			128		257			18:00			370		235		
06:15			122		246			18:15			376		241		
06:30			129		352			18:30			331		234		
06:45			141	520	322	1177	1697	18:45			269	1346	194	904	2250
07:00			170		260			19:00			294		200		
07:15			228		378			19:15			246		165		
07:30			258		334			19:30			278		150		
07:45			248	904	303	1275	2179	19:45			229	1047	155	670	1717
08:00			247		273			20:00			252		149		
08:15			286		278			20:15			200		137		
08:30			345		289			20:30			204		130		
08:45			285	1163	372	1212	2375	20:45			176	832	111	527	1359
09:00			279		326			21:00			191		107		
09:15			289		303			21:15			203		113		
09:30			255		304			21:30			138		133		
09:45			279	1102	313	1246	2348	21:45			135	667	108	461	1128
10:00			291		293			22:00			140		71		
10:15			323		273			22:15			128		54		
10:30			303		310			22:30			109		63		
10:45			331	1248	329	1205	2453	22:45			121	498	65	253	751
11:00			308		309			23:00			82		50		
11:15			320		298			23:15			80		44		
11:30			352		269			23:30			101		32		
11:45			354	1334	343	1219	2553	23:45			70	333	31	157	490
Total Vol.				7019		9032	**16051**					13667		9697	**23364**

Daily Totals

NB	SB	EB	WB	Combined
		20686	18729	**39415**

	AM			PM		
Split %	43.7%	56.3%	**40.7%**	58.5%	41.5%	**59.3%**
Peak Hour	11:30	06:30	**11:45**	14:00	12:15	**13:00**
Volume	1400	1312	**2631**	1566	1243	**2697**
P.H.F.	0.97	0.87	**0.94**	0.99	0.94	**0.97**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Thursday, October 9, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

SAN MARCOS BLVD - B/W GRAND AVE AND SR-78 EB

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			56		37			12:00			410		464		
00:15			55		39			12:15			383		441		
00:30			45		42			12:30			418		444		
00:45			46	202	39	157	359	12:45			415	1626	451	1800	3426
01:00			25		33			13:00			418		474		
01:15			33		29			13:15			423		379		
01:30			22		24			13:30			409		379		
01:45			19	99	26	112	211	13:45			441	1691	408	1640	3331
02:00			18		25			14:00			444		379		
02:15			16		26			14:15			435		365		
02:30			32		14			14:30			488		392		
02:45			21	87	20	85	172	14:45			481	1848	380	1516	3364
03:00			15		17			15:00			541		365		
03:15			18		35			15:15			495		354		
03:30			23		64			15:30			565		337		
03:45			21	77	76	192	269	15:45			596	2197	394	1450	3647
04:00			22		68			16:00			559		374		
04:15			20		69			16:15			551		393		
04:30			37		145			16:30			587		379		
04:45			43	122	195	477	599	16:45			564	2261	410	1556	3817
05:00			49		196			17:00			547		364		
05:15			78		213			17:15			550		375		
05:30			78		345			17:30			538		411		
05:45			105	310	298	1052	1362	17:45			540	2175	390	1540	3715
06:00			157		325			18:00			495		363		
06:15			136		312			18:15			490		381		
06:30			184		403			18:30			417		329		
06:45			220	697	408	1448	2145	18:45			400	1802	297	1370	3172
07:00			216		375			19:00			360		302		
07:15			260		461			19:15			350		263		
07:30			280		412			19:30			304		231		
07:45			281	1037	408	1656	2693	19:45			280	1294	242	1038	2332
08:00			300		349			20:00			275		205		
08:15			280		366			20:15			275		215		
08:30			345		402			20:30			262		204		
08:45			327	1252	473	1590	2842	20:45			234	1046	179	803	1849
09:00			277		437			21:00			251		163		
09:15			296		402			21:15			222		193		
09:30			309		419			21:30			169		170		
09:45			299	1181	437	1695	2876	21:45			159	801	168	694	1495
10:00			326		377			22:00			192		111		
10:15			354		384			22:15			156		82		
10:30			342		431			22:30			138		89		
10:45			333	1355	457	1649	3004	22:45			127	613	90	372	985
11:00			364		436			23:00			103		76		
11:15			361		419			23:15			108		63		
11:30			342		453			23:30			88		52		
11:45			404	1471	479	1787	3258	23:45			85	384	40	231	615
Total Vol.				7890		11900	**19790**					17738		14010	**31748**

Daily Totals

NB	SB	EB	WB	Combined
		25628	25910	**51538**

	AM			PM		
Split %	39.9%	60.1%	**38.4%**	55.9%	44.1%	**61.6%**
Peak Hour	11:45	11:30	**11:45**	15:45	12:15	**15:45**
Volume	1615	1837	**3443**	2293	1810	**3833**
P.H.F.	0.97	0.96	**0.97**	0.96	0.95	**0.97**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Thursday, October 9, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

SAN MARCOS BLVD - B/W SR-78 EB AND WB RAMPS

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			32		47			12:00			247		511		
00:15			46		53			12:15			256		553		
00:30			19		59			12:30			246		490		
00:45			19	116	40	199	315	12:45			265	1014	485	2039	3053
01:00			22		42			13:00			276		533		
01:15			13		41			13:15			266		470		
01:30			26		37			13:30			294		433		
01:45			18	79	31	151	230	13:45			273	1109	479	1915	3024
02:00			11		29			14:00			284		454		
02:15			10		35			14:15			309		423		
02:30			6		21			14:30			332		480		
02:45			13	40	31	116	156	14:45			361	1286	454	1811	3097
03:00			10		35			15:00			330		450		
03:15			10		47			15:15			322		443		
03:30			10		68			15:30			320		436		
03:45			13	43	86	236	279	15:45			332	1304	473	1802	3106
04:00			13		75			16:00			381		489		
04:15			16		99			16:15			377		459		
04:30			12		170			16:30			348		490		
04:45			20	61	214	558	619	16:45			349	1455	479	1917	3372
05:00			31		247			17:00			383		481		
05:15			35		243			17:15			378		457		
05:30			53		382			17:30			336		478		
05:45			53	172	364	1236	1408	17:45			347	1444	431	1847	3291
06:00			68		368			18:00			341		431		
06:15			88		389			18:15			329		437		
06:30			98		480			18:30			288		398		
06:45			105	359	498	1735	2094	18:45			217	1175	379	1645	2820
07:00			116		499			19:00			231		370		
07:15			167		545			19:15			224		316		
07:30			180		529			19:30			253		285		
07:45			219	682	523	2096	2778	19:45			208	916	305	1276	2192
08:00			188		454			20:00			219		273		
08:15			191		471			20:15			174		294		
08:30			203		535			20:30			176		260		
08:45			188	770	581	2041	2811	20:45			174	743	234	1061	1804
09:00			163		531			21:00			181		242		
09:15			188		469			21:15			174		248		
09:30			145		492			21:30			138		221		
09:45			157	653	490	1982	2635	21:45			135	628	191	902	1530
10:00			178		432			22:00			112		144		
10:15			189		441			22:15			105		121		
10:30			191		502			22:30			82		100		
10:45			212	770	506	1881	2651	22:45			84	383	109	474	857
11:00			200		490			23:00			57		101		
11:15			193		486			23:15			66		86		
11:30			232		472			23:30			68		61		
11:45			219	844	522	1970	2814	23:45			52	243	49	297	540
Total Vol.				4589		14201	**18790**					11700		16986	**28686**

Daily Totals				
NB	SB	EB	WB	**Combined**
		16289	31187	**47476**

	AM			PM		
Split %	24.4%	75.6%	**39.6%**	40.8%	59.2%	**60.4%**
Peak Hour	11:45	08:15	**11:45**	16:30	12:15	**16:00**
Volume	968	2118	**3044**	1458	2061	**3372**
P.H.F.	0.95	0.91	**0.94**	0.95	0.93	**0.97**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Thursday, October 9, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

SAN MARCOS BLVD - B/W KNOLL RD AND TRAVELERS WAY

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			26		19			12:00			171		222		
00:15			32		22			12:15			164		204		
00:30			29		25			12:30			197		164		
00:45			20	107	10	76	183	12:45			203	735	207	797	1532
01:00			27		15			13:00			185		181		
01:15			14		16			13:15			202		165		
01:30			26		11			13:30			202		174		
01:45			14	81	11	53	134	13:45			193	782	189	709	1491
02:00			10		13			14:00			223		164		
02:15			10		6			14:15			246		135		
02:30			9		9			14:30			281		167		
02:45			14	43	16	44	87	14:45			249	999	188	654	1653
03:00			15		8			15:00			283		175		
03:15			18		12			15:15			261		154		
03:30			8		17			15:30			273		211		
03:45			11	52	28	65	117	15:45			292	1109	213	753	1862
04:00			5		21			16:00			303		230		
04:15			13		31			16:15			293		193		
04:30			7		53			16:30			297		224		
04:45			13	38	59	164	202	16:45			300	1193	190	837	2030
05:00			34		79			17:00			287		233		
05:15			26		84			17:15			315		198		
05:30			43		112			17:30			277		236		
05:45			54	157	100	375	532	17:45			292	1171	204	871	2042
06:00			62		115			18:00			280		181		
06:15			68		127			18:15			246		171		
06:30			101		155			18:30			225		133		
06:45			87	318	173	570	888	18:45			181	932	147	632	1564
07:00			90		169			19:00			179		142		
07:15			124		232			19:15			155		135		
07:30			135		231			19:30			172		107		
07:45			145	494	215	847	1341	19:45			164	670	127	511	1181
08:00			160		210			20:00			139		115		
08:15			125		209			20:15			144		107		
08:30			148		234			20:30			124		112		
08:45			159	592	226	879	1471	20:45			133	540	101	435	975
09:00			102		156			21:00			121		94		
09:15			141		157			21:15			126		100		
09:30			112		173			21:30			90		87		
09:45			127	482	157	643	1125	21:45			84	421	67	348	769
10:00			129		156			22:00			76		63		
10:15			130		161			22:15			80		59		
10:30			117		163			22:30			52		29		
10:45			120	496	167	647	1143	22:45			65	273	30	181	454
11:00			149		157			23:00			46		37		
11:15			131		191			23:15			42		20		
11:30			171		183			23:30			47		17		
11:45			160	611	186	717	1328	23:45			39	174	11	85	259
Total Vol.			3471		5080		**8551**				8999		6813		**15812**

Daily Totals

NB	SB	EB	WB	Combined
		12470	11893	**24363**

	AM			PM		
Split %	40.6%	59.4%	**35.1%**	56.9%	43.1%	**64.9%**
Peak Hour	11:45	07:15	**08:00**	16:30	17:00	**15:45**
Volume	692	888	**1471**	1199	871	**2045**
P.H.F.	0.88	0.96	**0.96**	0.95	0.92	**0.96**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Thursday, October 9, 2025 AREA: SAN MARCOS PROJECT: ETD25-1010-02

CREEKSIDE DR - B/W BENT AVE AND GRAND AVE

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			2		7			12:00			72		44		
00:15			2		1			12:15			69		57		
00:30			2		3			12:30			60		59		
00:45			1	7	5	16	23	12:45			40	241	78	238	479
01:00			3		4			13:00			63		60		
01:15			2		0			13:15			42		47		
01:30			2		1			13:30			44		51		
01:45			0	7	1	6	13	13:45			32	181	58	216	397
02:00			0		3			14:00			47		48		
02:15			0		1			14:15			60		61		
02:30			2		1			14:30			42		56		
02:45			1	3	0	5	8	14:45			39	188	52	217	405
03:00			0		1			15:00			39		52		
03:15			0		0			15:15			49		55		
03:30			0		1			15:30			44		61		
03:45			2	2	0	2	4	15:45			62	194	42	210	404
04:00			0		1			16:00			47		62		
04:15			0		1			16:15			61		59		
04:30			0		0			16:30			60		67		
04:45			2	2	5	7	9	16:45			57	225	51	239	464
05:00			5		2			17:00			52		64		
05:15			0		2			17:15			64		63		
05:30			4		4			17:30			62		53		
05:45			4	13	5	13	26	17:45			58	236	67	247	483
06:00			4		10			18:00			58		70		
06:15			9		6			18:15			50		51		
06:30			8		8			18:30			44		72		
06:45			9	30	10	34	64	18:45			40	192	64	257	449
07:00			14		17			19:00			36		51		
07:15			8		23			19:15			26		42		
07:30			9		24			19:30			27		40		
07:45			21	52	29	93	145	19:45			24	113	47	180	293
08:00			22		23			20:00			35		39		
08:15			14		30			20:15			33		22		
08:30			13		31			20:30			23		23		
08:45			23	72	27	111	183	20:45			23	114	21	105	219
09:00			14		24			21:00			10		23		
09:15			20		35			21:15			19		11		
09:30			29		31			21:30			12		21		
09:45			32	95	33	123	218	21:45			6	47	21	76	123
10:00			28		27			22:00			4		16		
10:15			34		30			22:15			4		12		
10:30			36		28			22:30			10		15		
10:45			37	135	35	120	255	22:45			5	23	11	54	77
11:00			43		38			23:00			6		14		
11:15			35		36			23:15			0		8		
11:30			59		32			23:30			5		6		
11:45			52	189	44	150	339	23:45			1	12	11	39	51
Total Vol.				607		680	**1287**					1766		2078	**3844**

Daily Totals

NB	SB	EB	WB	Combined
		2373	2758	**5131**

	AM			PM		
Split %	47.2%	52.8%	**25.1%**	45.9%	54.1%	**74.9%**
Peak Hour	11:45	11:45	**11:45**	17:15	17:45	**17:15**
Volume	253	204	**457**	242	260	**495**
P.H.F.	0.88	0.86	**0.91**	0.95	0.90	**0.97**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Tuesday, May 5, 2026 AREA: SAN MARCOS PROJECT: ETD26-0508-01

DISCOVERY - VIA VERA CRUZ TO BENT

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			8		4			12:00			119		103		
00:15			4		7			12:15			127		97		
00:30			6		3			12:30			140		84		
00:45			4	22	4	18	40	12:45			119	505	80	364	869
01:00			3		3			13:00			126		81		
01:15			2		2			13:15			126		102		
01:30			1		4			13:30			117		105		
01:45			4	10	3	12	22	13:45			132	501	100	388	889
02:00			1		3			14:00			142		107		
02:15			0		0			14:15			126		105		
02:30			0		3			14:30			155		114		
02:45			2	3	2	8	11	14:45			196	619	148	474	1093
03:00			0		3			15:00			236		127		
03:15			2		1			15:15			254		147		
03:30			0		3			15:30			256		143		
03:45			3	5	3	10	15	15:45			242	988	146	563	1551
04:00			1		2			16:00			288		148		
04:15			1		6			16:15			291		139		
04:30			1		9			16:30			235		126		
04:45			7	10	10	27	37	16:45			278	1092	152	565	1657
05:00			4		15			17:00			244		171		
05:15			1		22			17:15			253		178		
05:30			11		28			17:30			241		133		
05:45			14	30	29	94	124	17:45			184	922	116	598	1520
06:00			5		31			18:00			168		117		
06:15			10		37			18:15			158		105		
06:30			27		65			18:30			151		129		
06:45			56	98	77	210	308	18:45			179	656	99	450	1106
07:00			59		93			19:00			159		81		
07:15			77		100			19:15			108		70		
07:30			95		135			19:30			69		63		
07:45			107	338	180	508	846	19:45			84	420	66	280	700
08:00			123		152			20:00			76		45		
08:15			167		172			20:15			73		50		
08:30			188		173			20:30			53		55		
08:45			161	639	161	658	1297	20:45			75	277	46	196	473
09:00			117		110			21:00			68		51		
09:15			113		95			21:15			48		54		
09:30			85		93			21:30			61		24		
09:45			93	408	98	396	804	21:45			38	215	19	148	363
10:00			93		88			22:00			32		16		
10:15			108		84			22:15			18		12		
10:30			69		76			22:30			13		16		
10:45			68	338	83	331	669	22:45			17	80	13	57	137
11:00			90		79			23:00			11		13		
11:15			103		76			23:15			9		6		
11:30			97		102			23:30			13		9		
11:45			109	399	132	389	788	23:45			10	43	11	39	82
Total Vol.				2300		2661	**4961**					6318		4122	**10440**

Daily Totals

NB	SB	EB	WB	Combined
		8618	6783	**15401**

	AM			PM		
Split %	46.4%	53.6%	**32.2%**	60.5%	39.5%	**67.8%**
Peak Hour	08:00	07:45	**08:00**	16:00	16:45	**16:00**
Volume	639	677	**1297**	1092	634	**1657**
P.H.F.	0.85	0.94	**0.90**	0.94	0.89	**0.95**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Wednesday, May 6, 2026 AREA: SAN MARCOS PROJECT: ETD26-0508-01

DISCOVERY - VIA VERA CRUZ TO BENT

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			3		12			12:00			122		106		
00:15			7		9			12:15			137		112		
00:30			10		4			12:30			115		111		
00:45			4	24	9	34	58	12:45			136	510	95	424	934
01:00			3		1			13:00			137		95		
01:15			2		2			13:15			118		100		
01:30			4		5			13:30			142		134		
01:45			2	11	1	9	20	13:45			134	531	123	452	983
02:00			1		3			14:00			129		114		
02:15			0		1			14:15			209		122		
02:30			0		3			14:30			181		105		
02:45			2	3	1	8	11	14:45			195	714	125	466	1180
03:00			2		4			15:00			190		105		
03:15			0		2			15:15			199		137		
03:30			4		3			15:30			264		153		
03:45			2	8	4	13	21	15:45			269	922	134	529	1451
04:00			4		2			16:00			290		159		
04:15			4		2			16:15			266		118		
04:30			4		7			16:30			253		134		
04:45			9	21	13	24	45	16:45			242	1051	138	549	1600
05:00			4		14			17:00			262		136		
05:15			7		18			17:15			259		109		
05:30			12		33			17:30			251		113		
05:45			20	43	28	93	136	17:45			226	998	108	466	1464
06:00			17		29			18:00			197		103		
06:15			30		32			18:15			139		96		
06:30			36		65			18:30			158		87		
06:45			47	130	81	207	337	18:45			117	611	71	357	968
07:00			57		83			19:00			78		75		
07:15			70		91			19:15			87		62		
07:30			100		175			19:30			70		50		
07:45			128	355	199	548	903	19:45			87	322	74	261	583
08:00			150		218			20:00			101		49		
08:15			189		160			20:15			70		58		
08:30			179		159			20:30			64		48		
08:45			131	649	106	643	1292	20:45			71	306	39	194	500
09:00			99		97			21:00			69		32		
09:15			90		102			21:15			56		48		
09:30			71		92			21:30			47		35		
09:45			82	342	82	373	715	21:45			44	216	27	142	358
10:00			96		82			22:00			44		21		
10:15			89		97			22:15			31		17		
10:30			83		99			22:30			29		21		
10:45			98	366	89	367	733	22:45			27	131	9	68	199
11:00			95		74			23:00			11		11		
11:15			99		115			23:15			12		10		
11:30			80		114			23:30			17		9		
11:45			126	400	108	411	811	23:45			11	51	10	40	91
Total Vol.				2352		2730	**5082**					6363		3948	**10311**

	Daily Totals				
	NB	SB	EB	WB	**Combined**
			8715	6678	**15393**

	AM			**PM**		
Split %	46.3%	53.7%	**33.0%**	61.7%	38.3%	**67.0%**
Peak Hour	08:00	07:30	**07:45**	15:30	15:15	**15:30**
Volume	649	752	**1382**	1089	583	**1653**
P.H.F.	0.86	0.86	**0.94**	0.94	0.92	**0.92**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Thursday, May 7, 2026 AREA: SAN MARCOS PROJECT: ETD26-0508-01

DISCOVERY - VIA VERA CRUZ TO BENT

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			10		10			12:00			130		107		
00:15			10		3			12:15			120		91		
00:30			4		6			12:30			133		104		
00:45			2	26	5	24	50	12:45			160	543	101	403	946
01:00			0		4			13:00			125		100		
01:15			3		1			13:15			146		121		
01:30			6		6			13:30			108		98		
01:45			4	13	3	14	27	13:45			155	534	106	425	959
02:00			3		6			14:00			130		106		
02:15			2		2			14:15			165		110		
02:30			0		3			14:30			178		150		
02:45			1	6	6	17	23	14:45			188	661	139	505	1166
03:00			1		1			15:00			235		130		
03:15			1		1			15:15			306		132		
03:30			1		1			15:30			285		147		
03:45			5	8	3	6	14	15:45			289	1115	122	531	1646
04:00			1		3			16:00			299		155		
04:15			3		4			16:15			295		132		
04:30			5		9			16:30			259		120		
04:45			5	14	13	29	43	16:45			289	1142	144	551	1693
05:00			5		10			17:00			286		127		
05:15			13		16			17:15			286		131		
05:30			23		35			17:30			240		142		
05:45			24	65	29	90	155	17:45			199	1011	113	513	1524
06:00			15		25			18:00			236		99		
06:15			19		31			18:15			161		79		
06:30			43		65			18:30			137		90		
06:45			76	153	72	193	346	18:45			112	646	102	370	1016
07:00			67		95			19:00			116		74		
07:15			87		97			19:15			129		82		
07:30			91		164			19:30			108		67		
07:45			130	375	185	541	916	19:45			108	461	72	295	756
08:00			146		197			20:00			99		61		
08:15			178		167			20:15			84		52		
08:30			190		139			20:30			64		59		
08:45			148	662	144	647	1309	20:45			63	310	48	220	530
09:00			85		95			21:00			73		30		
09:15			89		83			21:15			48		38		
09:30			106		99			21:30			51		23		
09:45			92	372	104	381	753	21:45			46	218	24	115	333
10:00			95		82			22:00			47		29		
10:15			81		94			22:15			36		24		
10:30			78		109			22:30			24		20		
10:45			93	347	103	388	735	22:45			18	125	20	93	218
11:00			87		107			23:00			25		24		
11:15			99		102			23:15			13		8		
11:30			116		104			23:30			14		8		
11:45			112	414	126	439	853	23:45			8	60	11	51	111
Total Vol.				2455		2769	**5224**					6826		4072	**10898**

Daily Totals

NB	SB	EB	WB	Combined
		9281	6841	**16122**

	AM			PM		
Split %	47.0%	53.0%	**32.4%**	62.6%	37.4%	**67.6%**
Peak Hour	08:00	07:30	**07:45**	15:15	15:15	**15:15**
Volume	662	713	**1332**	1179	556	**1735**
P.H.F.	0.87	0.90	**0.97**	0.96	0.90	**0.96**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Tuesday, May 5, 2026 AREA: SAN MARCOS PROJECT: ETD26-0508-01

DISCOVERY - BENT TO CRAVEN

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			4		9			12:00			82		207		
00:15			7		18			12:15			157		160		
00:30			4		4			12:30			152		138		
00:45			3	18	7	38	56	12:45			163	554	151	656	1210
01:00			3		4			13:00			163		149		
01:15			3		3			13:15			150		165		
01:30			2		6			13:30			157		150		
01:45			4	12	6	19	31	13:45			181	651	152	616	1267
02:00			2		3			14:00			199		167		
02:15			3		5			14:15			157		183		
02:30			0		5			14:30			200		187		
02:45			1	6	4	17	23	14:45			223	779	209	746	1525
03:00			1		3			15:00			261		191		
03:15			1		4			15:15			295		212		
03:30			0		3			15:30			317		242		
03:45			0	2	3	13	15	15:45			297	1170	218	863	2033
04:00			2		6			16:00			332		232		
04:15			1		7			16:15			331		194		
04:30			1		14			16:30			320		232		
04:45			6	10	17	44	54	16:45			360	1343	214	872	2215
05:00			5		21			17:00			332		240		
05:15			2		27			17:15			303		282		
05:30			5		37			17:30			316		205		
05:45			6	18	42	127	145	17:45			246	1197	167	894	2091
06:00			10		44			18:00			250		173		
06:15			22		58			18:15			214		143		
06:30			28		83			18:30			223		183		
06:45			20	80	100	285	365	18:45			256	943	140	639	1582
07:00			18		123			19:00			211		123		
07:15			17		143			19:15			150		107		
07:30			21		197			19:30			104		107		
07:45			37	93	231	694	787	19:45			112	577	110	447	1024
08:00			42		213			20:00			114		76		
08:15			40		237			20:15			97		87		
08:30			52		221			20:30			75		86		
08:45			39	173	183	854	1027	20:45			88	374	70	319	693
09:00			27		161			21:00			105		76		
09:15			31		145			21:15			62		106		
09:30			31		157			21:30			86		52		
09:45			30	119	162	625	744	21:45			58	311	33	267	578
10:00			26		162			22:00			44		23		
10:15			28		158			22:15			33		27		
10:30			33		140			22:30			28		29		
10:45			31	118	159	619	737	22:45			33	138	27	106	244
11:00			35		126			23:00			18		17		
11:15			42		130			23:15			16		11		
11:30			52		173			23:30			26		20		
11:45			68	197	223	652	849	23:45			21	81	14	62	143
Total Vol.				846		3987	**4833**					8118		6487	**14605**

Daily Totals

NB	SB	EB	WB	Combined
		8964	10474	**19438**

	AM			PM		
Split %	17.5%	82.5%	**24.9%**	55.6%	44.4%	**75.1%**
Peak Hour	11:45	07:45	**11:45**	16:00	16:30	**16:30**
Volume	459	902	**1187**	1343	968	**2283**
P.H.F.	0.73	0.95	**0.94**	0.93	0.86	**0.98**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Wednesday, May 6, 2026 AREA: SAN MARCOS PROJECT: ETD26-0508-01

DISCOVERY - BENT TO CRAVEN

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			10		13			12:00			148		181		
00:15			17		16			12:15			167		190		
00:30			14		12			12:30			161		190		
00:45			7	48	7	48	96	12:45			179	655	169	730	1385
01:00			4		6			13:00			168		165		
01:15			4		6			13:15			149		164		
01:30			7		6			13:30			199		186		
01:45			4	19	5	23	42	13:45			165	681	204	719	1400
02:00			4		7			14:00			173		162		
02:15			6		1			14:15			234		176		
02:30			1		6			14:30			195		193		
02:45			1	12	2	16	28	14:45			252	854	205	736	1590
03:00			1		5			15:00			248		180		
03:15			0		1			15:15			253		181		
03:30			4		4			15:30			309		253		
03:45			6	11	4	14	25	15:45			314	1124	219	833	1957
04:00			3		4			16:00			326		249		
04:15			4		2			16:15			335		210		
04:30			4		13			16:30			328		224		
04:45			9	20	19	38	58	16:45			322	1311	231	914	2225
05:00			8		23			17:00			339		220		
05:15			6		27			17:15			333		206		
05:30			7		42			17:30			331		192		
05:45			21	42	37	129	171	17:45			299	1302	169	787	2089
06:00			26		44			18:00			251		162		
06:15			43		44			18:15			214		159		
06:30			52		83			18:30			198		142		
06:45			67	188	118	289	477	18:45			166	829	126	589	1418
07:00			60		114			19:00			119		124		
07:15			82		136			19:15			124		99		
07:30			108		219			19:30			112		102		
07:45			138	388	282	751	1139	19:45			121	476	111	436	912
08:00			148		264			20:00			135		100		
08:15			201		211			20:15			121		91		
08:30			182		186			20:30			104		79		
08:45			154	685	172	833	1518	20:45			97	457	71	341	798
09:00			123		163			21:00			105		59		
09:15			104		156			21:15			75		69		
09:30			90		129			21:30			84		53		
09:45			108	425	147	595	1020	21:45			72	336	46	227	563
10:00			107		149			22:00			61		39		
10:15			118		176			22:15			58		25		
10:30			95		180			22:30			48		32		
10:45			123	443	168	673	1116	22:45			38	205	19	115	320
11:00			132		154			23:00			22		18		
11:15			136		182			23:15			30		15		
11:30			109		202			23:30			23		18		
11:45			161	538	182	720	1258	23:45			20	95	19	70	165
Total Vol.				2819		4129	**6948**					8325		6497	**14822**

	Daily Totals				
	NB	SB	EB	WB	**Combined**
			11144	10626	**21770**

	AM			**PM**		
Split %	40.6%	59.4%	**31.9%**	56.2%	43.8%	**68.1%**
Peak Hour	08:00	07:30	**07:45**	16:45	15:30	**16:00**
Volume	685	976	**1612**	1325	931	**2225**
P.H.F.	0.85	0.87	**0.96**	0.98	0.92	**0.97**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Thursday, May 7, 2026 AREA: SAN MARCOS PROJECT: ETD26-0508-01

DISCOVERY - BENT TO CRAVEN

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			17		16			12:00			151		217		
00:15			23		10			12:15			181		160		
00:30			6		9			12:30			174		156		
00:45			8	54	10	45	99	12:45			191	697	179	712	1409
01:00			6		6			13:00			191		165		
01:15			7		5			13:15			172		181		
01:30			8		5			13:30			148		153		
01:45			7	28	3	19	47	13:45			200	711	175	674	1385
02:00			8		8			14:00			164		161		
02:15			4		4			14:15			228		177		
02:30			2		6			14:30			205		194		
02:45			4	18	6	24	42	14:45			225	822	235	767	1589
03:00			3		3			15:00			301		202		
03:15			4		2			15:15			362		229		
03:30			4		4			15:30			342		247		
03:45			5	16	3	12	28	15:45			377	1382	213	891	2273
04:00			3		3			16:00			352		226		
04:15			4		5			16:15			324		218		
04:30			2		12			16:30			319		217		
04:45			8	17	30	50	67	16:45			367	1362	217	878	2240
05:00			8		20			17:00			362		229		
05:15			9		24			17:15			351		201		
05:30			17		46			17:30			342		192		
05:45			27	61	38	128	189	17:45			292	1347	181	803	2150
06:00			22		41			18:00			306		150		
06:15			28		47			18:15			240		143		
06:30			49		83			18:30			190		156		
06:45			75	174	97	268	442	18:45			156	892	151	600	1492
07:00			75		122			19:00			178		117		
07:15			103		134			19:15			163		128		
07:30			113		226			19:30			125		95		
07:45			142	433	236	718	1151	19:45			143	609	110	450	1059
08:00			146		270			20:00			131		113		
08:15			205		222			20:15			129		99		
08:30			180		196			20:30			94		87		
08:45			176	707	209	897	1604	20:45			99	453	68	367	820
09:00			101		158			21:00			103		57		
09:15			104		137			21:15			59		58		
09:30			140		156			21:30			77		43		
09:45			119	464	178	629	1093	21:45			70	309	41	199	508
10:00			112		148			22:00			63		47		
10:15			108		172			22:15			46		36		
10:30			111		180			22:30			46		32		
10:45			113	444	169	669	1113	22:45			34	189	37	152	341
11:00			109		177			23:00			35		29		
11:15			122		177			23:15			19		13		
11:30			146		167			23:30			20		21		
11:45			124	501	210	731	1232	23:45			13	87	21	84	171
Total Vol.				2917		4190	**7107**					8860		6577	**15437**

			Daily Totals		
	NB	SB	EB	WB	**Combined**
			11777	10767	**22544**

	AM			**PM**		
Split %	41.0%	59.0%	**31.5%**	57.4%	42.6%	**68.5%**
Peak Hour	08:00	07:30	**08:00**	15:15	15:15	**15:15**
Volume	707	954	**1604**	1433	915	**2348**
P.H.F.	0.86	0.88	**0.94**	0.95	0.93	**0.99**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Tuesday, May 5, 2026 AREA: SAN MARCOS PROJECT: ETD26-0508-01

DISCOVERY - EAST OF CRAVEN

AM	NB	SB	EB		WB			PM	NB	SB	EB		WB		
00:00			7		7			12:00			69		94		
00:15			7		9			12:15			87		69		
00:30			3		2			12:30			69		65		
00:45			3	20	3	21	41	12:45			76	301	72	300	601
01:00			3		3			13:00			66		79		
01:15			4		3			13:15			59		71		
01:30			2		2			13:30			60		71		
01:45			4	13	4	12	25	13:45			90	275	72	293	568
02:00			2		0			14:00			90		79		
02:15			4		4			14:15			75		82		
02:30			0		0			14:30			92		78		
02:45			2	8	1	5	13	14:45			138	395	99	338	733
03:00			2		2			15:00			162		104		
03:15			1		1			15:15			178		100		
03:30			1		2			15:30			140		117		
03:45			0	4	0	5	9	15:45			149	629	95	416	1045
04:00			3		1			16:00			180		106		
04:15			2		3			16:15			176		81		
04:30			3		5			16:30			164		100		
04:45			7	15	8	17	32	16:45			195	715	91	378	1093
05:00			7		8			17:00			171		107		
05:15			2		12			17:15			161		143		
05:30			7		10			17:30			171		92		
05:45			10	26	17	47	73	17:45			113	616	80	422	1038
06:00			15		24			18:00			125		79		
06:15			22		29			18:15			119		83		
06:30			30		39			18:30			103		103		
06:45			29	96	53	145	241	18:45			133	480	66	331	811
07:00			38		60			19:00			77		56		
07:15			34		80			19:15			64		45		
07:30			37		105			19:30			55		48		
07:45			68	177	120	365	542	19:45			45	241	58	207	448
08:00			77		120			20:00			55		37		
08:15			89		110			20:15			43		47		
08:30			102		111			20:30			27		43		
08:45			78	346	92	433	779	20:45			54	179	40	167	346
09:00			46		80			21:00			53		45		
09:15			63		85			21:15			29		58		
09:30			54		79			21:30			40		33		
09:45			62	225	65	309	534	21:45			33	155	13	149	304
10:00			59		81			22:00			21		11		
10:15			55		73			22:15			18		17		
10:30			58		73			22:30			14		17		
10:45			59	231	67	294	525	22:45			20	73	19	64	137
11:00			48		59			23:00			4		13		
11:15			64		69			23:15			7		7		
11:30			74		82			23:30			8		10		
11:45			55	241	96	306	547	23:45			15	34	10	40	74
Total Vol.				1402		1959	**3361**					4093		3105	**7198**

Daily Totals

NB	SB	EB	WB	Combined
		5495	5064	**10559**

	AM			PM		
Split %	41.7%	58.3%	**31.8%**	56.9%	43.1%	**68.2%**
Peak Hour	08:00	07:45	**07:45**	16:00	16:30	**16:30**
Volume	346	461	**797**	715	441	**1132**
P.H.F.	0.85	0.96	**0.94**	0.92	0.77	**0.93**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Wednesday, May 6, 2026 AREA: SAN MARCOS PROJECT: ETD26-0508-01

DISCOVERY - EAST OF CRAVEN

AM	NB	SB	EB	WB		PM	NB	SB	EB	WB	
00:00			5			12:00			82		
00:15			12			12:15			83		
00:30			9			12:30			84		
00:45			3	29	29	12:45			80	329	329
01:00			1			13:00			88		
01:15			0			13:15			70		
01:30			2			13:30			95		
01:45			1	4	4	13:45			72	325	325
02:00			2			14:00			79		
02:15			2			14:15			138		
02:30			1			14:30			121		
02:45			2	7	7	14:45			152	490	490
03:00			0			15:00			136		
03:15			0			15:15			127		
03:30			3			15:30			138		
03:45			5	8	8	15:45			161	562	562
04:00			3			16:00			199		
04:15			3			16:15			196		
04:30			2			16:30			171		
04:45			7	15	15	16:45			185	751	751
05:00			4			17:00			188		
05:15			4			17:15			191		
05:30			4			17:30			179		
05:45			10	22	22	17:45			166	724	724
06:00			12			18:00			122		
06:15			28			18:15			90		
06:30			27			18:30			92		
06:45			30	97	97	18:45			53	357	357
07:00			21			19:00			49		
07:15			38			19:15			53		
07:30			55			19:30			60		
07:45			67	181	181	19:45			48	210	210
08:00			70			20:00			63		
08:15			85			20:15			62		
08:30			101			20:30			52		
08:45			71	327	327	20:45			42	219	219
09:00			59			21:00			39		
09:15			58			21:15			34		
09:30			53			21:30			46		
09:45			49	219	219	21:45			40	159	159
10:00			43			22:00			36		
10:15			61			22:15			29		
10:30			46			22:30			26		
10:45			61	211	211	22:45			21	112	112
11:00			62			23:00			11		
11:15			70			23:15			15		
11:30			51			23:30			8		
11:45			85	268	268	23:45			11	45	45
Total Vol.			1388		**1388**				4283		**4283**

			Daily Totals		
NB	SB	EB	WB	**Combined**	
		5671		**5671**	

	AM		**PM**	
Split %	100.0%	**24.5%**	100.0%	**75.5%**
Peak Hour	11:45	**11:45**	16:00	**16:00**
Volume	334	**334**	751	**751**
P.H.F.	0.98	**0.98**	0.94	**0.94**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

Thursday, May 7, 2026 AREA: SAN MARCOS PROJECT: ETD26-0508-01

DISCOVERY - EAST OF CRAVEN

AM	NB	SB	EB		WB	PM	NB	SB	EB		WB
00:00			9			12:00			71		
00:15			8			12:15			84		
00:30			3			12:30			76		
00:45			4	24	24	12:45			83	314	314
01:00			4			13:00			81		
01:15			3			13:15			87		
01:30			5			13:30			77		
01:45			7	19	19	13:45			95	340	340
02:00			6			14:00			92		
02:15			2			14:15			129		
02:30			2			14:30			126		
02:45			2	12	12	14:45			134	481	481
03:00			2			15:00			165		
03:15			2			15:15			216		
03:30			2			15:30			168		
03:45			4	10	10	15:45			190	739	739
04:00			2			16:00			216		
04:15			2			16:15			185		
04:30			2			16:30			166		
04:45			3	9	9	16:45			231	798	798
05:00			3			17:00			195		
05:15			6			17:15			207		
05:30			10			17:30			177		
05:45			14	33	33	17:45			151	730	730
06:00			11			18:00			161		
06:15			18			18:15			126		
06:30			25			18:30			93		
06:45			24	78	78	18:45			70	450	450
07:00			25			19:00			80		
07:15			47			19:15			73		
07:30			53			19:30			68		
07:45			77	202	202	19:45			64	285	285
08:00			76			20:00			62		
08:15			91			20:15			52		
08:30			89			20:30			48		
08:45			88	344	344	20:45			47	209	209
09:00			53			21:00			52		
09:15			58			21:15			23		
09:30			80			21:30			36		
09:45			56	247	247	21:45			28	139	139
10:00			48			22:00			33		
10:15			50			22:15			27		
10:30			61			22:30			20		
10:45			56	215	215	22:45			19	99	99
11:00			63			23:00			17		
11:15			68			23:15			12		
11:30			73			23:30			9		
11:45			70	274	274	23:45			5	43	43
Total Vol.			1467		**1467**				4627		**4627**

	Daily Totals				
	NB	SB	EB	WB	**Combined**
			6094		**6094**

	AM		PM	
Split %	100.0%	**24.1%**	100.0%	**75.9%**
Peak Hour	08:00	**08:00**	16:45	**16:45**
Volume	344	**344**	810	**810**
P.H.F.	0.95	**0.95**	0.88	**0.88**

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

DATE:	LOCATION:	SAN MARCOS CREEK	PROJECT #:	ETD24-1010-02
10/9/25	NORTH & SOUTH:	LAS POSAS RD	LOCATION #:	1
THURSDAY	EAST & WEST:	SR-78 WB	CONTROL:	SIGNAL

NOTES:

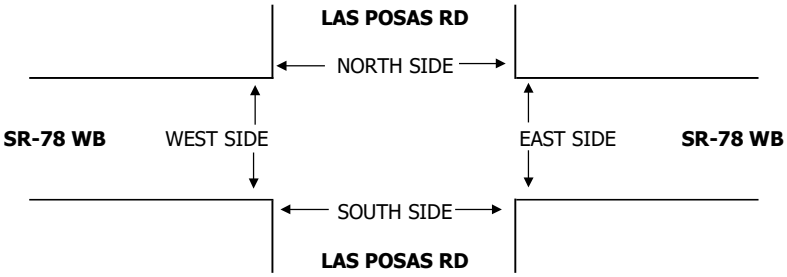
INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND LAS POSAS RD			SOUTHBOUND LAS POSAS RD			EASTBOUND SR-78 WB			WESTBOUND SR-78 WB			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
AM	7:00 AM	36	110			209	65				80		39	539
	7:15 AM	26	143			207	83				74	1	40	574
	7:30 AM	41	157			273	72				102		48	693
	7:45 AM	49	214			357	67				138		55	880
	8:00 AM	57	198			287	88				147		48	825
	8:15 AM	57	197			276	63				133		47	773
	8:30 AM	60	180			225	82				91		40	678
	8:45 AM	54	152			186	82				105		42	621
	VOLUMES	380	1,351	0	0	2,020	602	0	0	0	870	1	359	5,583
	APPROACH %	22%	78%	0%	0%	77%	23%	0%	0%	0%	71%	0%	29%	
	APP/DEPART	1,731	/	1,710	2,622	/	2,890	0	/	0	1,230	/	983	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	204	766	0	0	1,193	290	0	0	0	520	0	198	3,171
	APPROACH %	21%	79%	0%	0%	80%	20%	0%	0%	0%	72%	0%	28%	
	PEAK HR FACTOR		0.922			0.874			0.000			0.921		0.901
	APP/DEPART	970	/	964	1,483	/	1,713	0	/	0	718	/	494	0
PM	4:00 PM	105	345			163	79				84		51	827
	4:15 PM	113	382			180	86				51		40	852
	4:30 PM	97	393			202	93				69		29	883
	4:45 PM	101	373			220	83				50		40	867
	5:00 PM	106	357			231	97				50		33	874
	5:15 PM	94	342			220	95				63		38	852
	5:30 PM	96	370			166	79				50		43	804
	5:45 PM	78	348			192	97				72		61	848
	VOLUMES	790	2,910	0	0	1,574	709	0	0	0	489	0	335	6,807
	APPROACH %	21%	79%	0%	0%	69%	31%	0%	0%	0%	59%	0%	41%	
	APP/DEPART	3,700	/	3,245	2,283	/	2,063	0	/	0	824	/	1,499	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	398	1,465	0	0	873	368	0	0	0	232	0	140	3,476
	APPROACH %	21%	79%	0%	0%	70%	30%	0%	0%	0%	62%	0%	38%	
	PEAK HR FACTOR		0.941			0.946			0.000			0.921		0.984
	APP/DEPART	1,863	/	1,605	1,241	/	1,105	0	/	0	372	/	766	0

U-TURNS

	NB	SB	EB	WB	TTL
	X	X	X	X	
AM					0
					0
					0
	1				1
					0
					0
					0
					0
	1	0	0	0	1
PM					0
	1				1
					0
					0
	1				1
					0
	3				3
					0
	5	0	0	0	5



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM			1	1	2					0					0
	7:15 AM			1	1	2					0					0
	7:30 AM			1	1	2					0				1	1
	7:45 AM					0					0				3	3
	8:00 AM					0					0				1	1
	8:15 AM					0					0			2		2
	8:30 AM			1	1	2					0			2		2
	8:45 AM			1	1	2					0			1		1
	TOTAL	0	0	5	5	10	0	0	0	0	0	0	0	5	5	10
PM	4:00 PM			2		2					0					0
	4:15 PM				1	1					0			1		1
	4:30 PM			1	2	3					0				2	2
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM			1		1					0			1	1	2
	5:30 PM					0					0					0
	5:45 PM				1	1					0					0
	TOTAL	0	0	4	4	8	0	0	0	0	0	0	0	2	3	5

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

DATE:	LOCATION:	SAN MARCOS CREEK	PROJECT #:	ETD24-1010-02
10/9/25	NORTH & SOUTH:	LAS POSAS RD	LOCATION #:	1
THURSDAY	EAST & WEST:	GRAND AVE	CONTROL:	SIGNAL

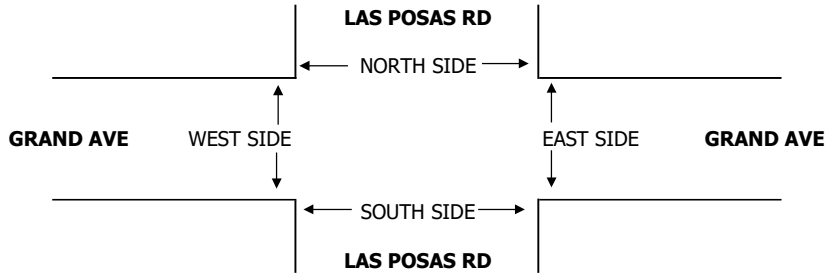
NOTES:

INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER

N ▲ S ▼ W ◄ E ►

		NORTHBOUND LAS POSAS RD			SOUTHBOUND LAS POSAS RD			EASTBOUND GRAND AVE			WESTBOUND GRAND AVE				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	2	42	8	94	109	78	12	28	1	11	29	87	501					0
	7:15 AM	4	48	11	76	116	84	20	31	3	14	34	98	539					0
	7:30 AM	7	60	10	96	276	114	32	33	6	22	34	117	807					0
	7:45 AM	6	86	7	99	182	173	40	42	1	25	51	143	855					0
	8:00 AM	3	92	8	106	160	179	44	46	5	33	49	125	850					0
	8:15 AM	7	89	21	101	149	137	53	73	6	16	39	118	809					0
	8:30 AM	5	87	15	65	117	89	25	46	9	16	49	109	632					0
	8:45 AM	8	67	21	93	120	75	14	41	4	15	32	126	616					0
	VOLUMES	42	571	101	730	1,229	929	240	340	35	152	317	923	5,609	0	0	0	0	0
	APPROACH %	6%	80%	14%	25%	43%	32%	39%	55%	6%	11%	23%	66%						
	APP/DEPART	714	/	1,734	2,888	/	1,416	615	/	1,171	1,392	/	1,288	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	23	327	46	402	767	603	169	194	18	96	173	503	3,321					
	APPROACH %	6%	83%	12%	23%	43%	34%	44%	51%	5%	12%	22%	65%						
	PEAK HR FACTOR		0.846			0.912			0.722			0.881		0.971					
	APP/DEPART	396	/	999	1,772	/	881	381	/	642	772	/	799	0					
PM	4:00 PM	22	199	32	68	108	69	80	125	13	16	51	212	995					0
	4:15 PM	13	206	37	69	107	52	72	107	17	5	39	198	922					0
	4:30 PM	14	169	37	76	111	94	81	113	18	6	39	211	969					0
	4:45 PM	10	175	32	73	108	81	43	91	52	11	25	245	946					0
	5:00 PM	10	171	41	69	109	87	107	92	11	11	56	216	980					0
	5:15 PM	14	182	28	93	118	79	74	88	5	7	34	184	906					0
	5:30 PM	8	162	26	68	103	45	72	79	5	15	41	201	825					0
	5:45 PM	13	167	33	71	127	58	63	65	7	10	37	187	838					0
	VOLUMES	104	1,431	266	587	891	565	592	760	128	81	322	1,654	7,381	0	0	0	0	0
	APPROACH %	6%	79%	15%	29%	44%	28%	40%	51%	9%	4%	16%	80%						
	APP/DEPART	1,801	/	3,677	2,043	/	1,100	1,480	/	1,613	2,057	/	991	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	59	749	138	286	434	296	276	436	100	38	154	866	3,832					
	APPROACH %	6%	79%	15%	28%	43%	29%	34%	54%	12%	4%	15%	82%						
	PEAK HR FACTOR		0.924			0.904			0.931			0.941		0.963					
	APP/DEPART	946	/	1,891	1,016	/	572	812	/	860	1,058	/	509	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM		1			1					0					0
	7:15 AM		1	2		3					0			1		1
	7:30 AM		4	1		5					0					0
	7:45 AM			1		1					0			1	1	2
	8:00 AM					0					0			2	1	3
	8:15 AM		1	1		2					0			1		1
	8:30 AM		3	3	2	8					0		1	1		2
	8:45 AM		3	2	1	6					0					0
	TOTAL	0	13	10	3	26	0	0	0	0	0	0	1	6	2	9
PM	4:00 PM		1	1		2					0			1		1
	4:15 PM		3	3	1	7					0		1	3		4
	4:30 PM		1	1	1	3					0			1		1
	4:45 PM		0	2		2					0			2	1	3
	5:00 PM			1		1					0		1	2		3
	5:15 PM					0					0			2		2
	5:30 PM			1		1					0			3		3
	5:45 PM			2		2					0					0
	TOTAL	0	5	11	2	18	0	0	0	0	0	0	2	14	1	17

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

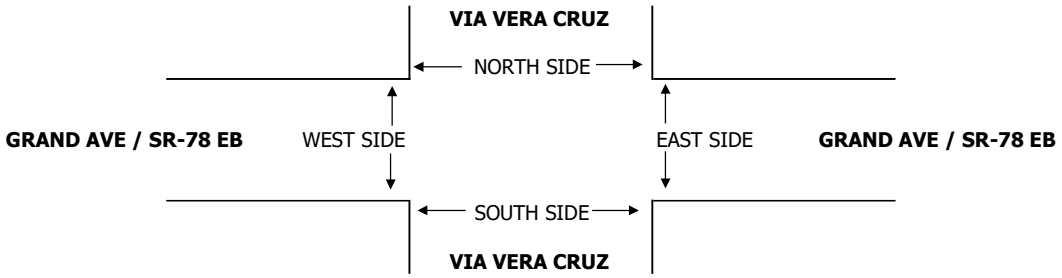
DATE:	LOCATION:	SAN MARCOS CREEK	PROJECT #:	ETD24-1010-02
10/9/25	NORTH & SOUTH:	VIA VERA CRUZ	LOCATION #:	3
THURSDAY	EAST & WEST:	GRAND AVE / SR-78 EB	CONTROL:	SIGNAL

NOTES:

INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND VIA VERA CRUZ			SOUTHBOUND VIA VERA CRUZ			EASTBOUND GRAND AVE / SR-78 EB			WESTBOUND GRAND AVE / SR-78 EB				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	18	4	0	34	40	78	74	24	33	3	30	2	340					0
	7:15 AM	14	15	3	24	49	89	66	27	23	5	48	2	365					0
	7:30 AM	12	11	2	18	75	103	77	20	25	3	45	6	397					0
	7:45 AM	23	18	1	23	78	141	75	37	45	12	54	1	508					0
	8:00 AM	33	13	6	37	57	118	82	36	39	5	47	0	473					0
	8:15 AM	32	12	4	35	70	90	99	46	50	5	48	0	491					0
	8:30 AM	48	5	3	36	59	81	72	45	43	14	40	2	448					0
	8:45 AM	24	7	5	42	71	95	63	44	48	20	50	2	471					0
	VOLUMES	204	85	24	249	499	795	608	279	306	67	362	15	3,493	0	0	0	0	0
	APPROACH %	65%	27%	8%	16%	32%	52%	51%	23%	26%	15%	82%	3%						
	APP/DEPART	313	/	708	1,543	/	872	1,193	/	552	444	/	1,361	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	136	48	14	131	264	430	328	164	177	36	189	3	1,920					
	APPROACH %	69%	24%	7%	16%	32%	52%	49%	25%	26%	16%	83%	1%						
	PEAK HR FACTOR		0.884			0.852			0.858			0.851		0.945					
	APP/DEPART	198	/	379	825	/	477	669	/	309	228	/	755	0					
PM	4:00 PM	74	23	8	92	72	104	83	98	36	17	97	3	707					0
	4:15 PM	58	30	15	102	68	81	60	93	31	12	98	2	650					0
	4:30 PM	70	30	12	101	58	78	76	102	38	17	104	2	688	1				1
	4:45 PM	74	14	9	74	65	112	73	89	50	13	85	1	659					0
	5:00 PM	73	29	19	112	63	86	90	95	38	13	107	4	729					0
	5:15 PM	56	25	17	111	69	89	60	81	52	14	78	2	654					0
	5:30 PM	52	16	16	70	65	109	68	83	29	14	98	2	622					0
	5:45 PM	47	21	6	73	64	103	55	65	35	20	88	2	579					0
	VOLUMES	504	188	102	735	524	762	565	706	309	120	755	18	5,288	1	0	0	0	1
	APPROACH %	63%	24%	13%	36%	26%	38%	36%	45%	20%	13%	85%	2%						
	APP/DEPART	794	/	771	2,021	/	953	1,580	/	1,543	893	/	2,021	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	273	98	57	398	255	365	299	367	178	57	374	9	2,730					
	APPROACH %	64%	23%	13%	39%	25%	36%	35%	43%	21%	13%	85%	2%						
	PEAK HR FACTOR		0.884			0.946			0.946			0.887		0.936					
	APP/DEPART	428	/	406	1,018	/	490	844	/	822	440	/	1,012	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM		1			1					0					0
	TOTAL	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0		1			1
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

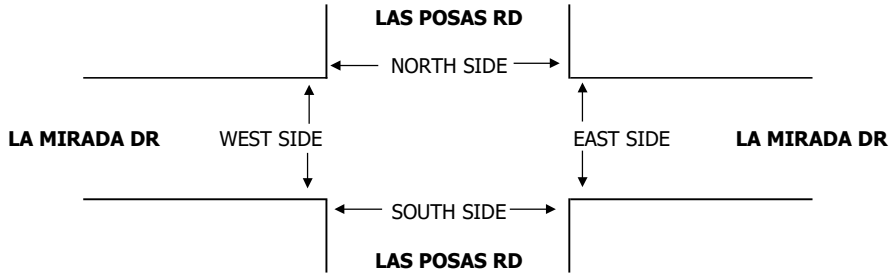
DATE:	LOCATION:	SAN MARCOS	PROJECT #:	ETD25-1031-01
10/29/25	NORTH & SOUTH:	LAS POSAS RD	LOCATION #:	5
WEDNESDAY	EAST & WEST:	LA MIRADA DR	CONTROL:	SIGNAL

NOTES:

INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND LAS POSAS RD			SOUTHBOUND LAS POSAS RD			EASTBOUND LA MIRADA DR			WESTBOUND LA MIRADA DR				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	12:00 PM	6	69	27	55	71	18	12	13	4	32	9	49	365		1			1
	12:15 PM	5	64	23	46	77	14	13	5	3	28	14	28	320					0
	12:30 PM	10	43	18	65	89	12	7	10	10	30	15	55	364					0
	12:45 PM	3	57	21	49	77	10	9	8	4	40	17	67	362					0
	1:00 PM	4	56	25	48	67	11	15	5	6	23	13	46	319					0
	1:15 PM	4	67	15	53	65	11	14	4	4	27	8	47	319	1				1
	1:30 PM	3	69	23	42	80	16	11	6	2	27	7	43	329					0
	1:45 PM	3	58	12	45	77	10	14	7	2	38	8	57	331					0
	VOLUMES	38	483	164	403	603	102	95	58	35	245	91	392	2,709	1	1	0	0	2
	APPROACH %	6%	71%	24%	36%	54%	9%	51%	31%	19%	34%	13%	54%						
	APP/DEPART	685	/	970	1,108	/	883	188	/	625	728	/	231	0					
	BEGIN PEAK HR		12:00 PM																
	VOLUMES	24	233	89	215	314	54	41	36	21	130	55	199	1,411					
	APPROACH %	7%	67%	26%	37%	54%	9%	42%	37%	21%	34%	14%	52%						
	PEAK HR FACTOR		0.848			0.878			0.845			0.774		0.966					
	APP/DEPART	346	/	473	583	/	465	98	/	340	384	/	133	0					
PM	4:00 PM	0	108	12	38	66	5	24	10	5	23	6	44	341					0
	4:15 PM	2	93	17	40	88	15	25	12	5	29	9	37	372		1			1
	4:30 PM	4	121	16	29	96	12	32	16	6	20	15	42	409					0
	4:45 PM	5	126	19	34	76	16	40	27	5	17	11	38	414					0
	5:00 PM	1	106	18	38	80	15	31	10	5	20	10	32	366					0
	5:15 PM	5	103	13	50	108	8	24	16	7	22	8	45	409					0
	5:30 PM	9	137	26	37	79	9	25	7	9	33	3	44	418					0
	5:45 PM	2	99	23	32	64	9	17	14	1	16	10	47	334					0
	VOLUMES	28	893	144	298	657	89	218	112	43	180	72	329	3,063	0	1	0	0	1
	APPROACH %	3%	84%	14%	29%	63%	9%	58%	30%	12%	31%	12%	57%						
	APP/DEPART	1,065	/	1,440	1,044	/	880	373	/	554	581	/	189	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	20	472	76	159	343	48	120	60	26	92	32	159	1,607					
	APPROACH %	4%	83%	13%	29%	62%	9%	58%	29%	13%	33%	11%	56%						
	PEAK HR FACTOR		0.826			0.828			0.715			0.884		0.961					
	APP/DEPART	568	/	751	550	/	461	206	/	295	283	/	100	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	12:00 PM		2			2					0				1	1
	12:15 PM		1		1	2					0					0
	12:30 PM			1		1					0					0
	12:45 PM			1		1					0					0
	1:00 PM		1		1	2					0	1				1
	1:15 PM	1		2		3					0			1		1
	1:30 PM	2				2					0	1		1		2
	1:45 PM	1	1	1		3					0		1		1	2
	TOTAL	4	5	5	2	16	0	0	0	0	0	2	1	2	2	7
PM	4:00 PM	1			1	2					0					0
	4:15 PM				2	2					0		1			1
	4:30 PM	3				3					0	1	2			3
	4:45 PM	1	1		1	3					0					0
	5:00 PM			2	1	3					0					0
	5:15 PM			1		1					0			1		1
	5:30 PM	1	1		1	3					0					0
	5:45 PM					0					0					0
	TOTAL	6	2	3	6	17	0	0	0	0	0	1	3	1	0	5

INTERSECTION TURNING MOVEMENT COUNTS

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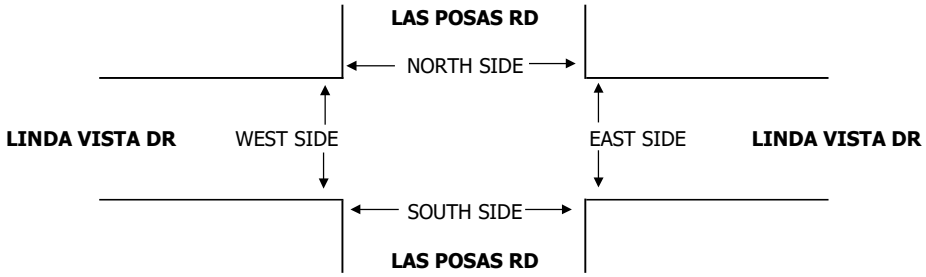
DATE:	LOCATION:	SAN MARCOS	PROJECT #:	ETD25-1031-01
10/29/25	NORTH & SOUTH:	LAS POSAS RD	LOCATION #:	4
WEDNESDAY	EAST & WEST:	LINDA VISTA DR	CONTROL:	SIGNAL

NOTES:

INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND LAS POSAS RD			SOUTHBOUND LAS POSAS RD			EASTBOUND LINDA VISTA DR			WESTBOUND LINDA VISTA DR				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	0	30	1	2	60	37	8	10	4	1	17	1	171					0
	7:15 AM	4	21	1	3	72	26	15	20	4	1	28	3	198					0
	7:30 AM	10	46	1	3	93	45	16	26	9	4	36	0	289				1	1
	7:45 AM	9	51	2	12	58	98	30	69	22	1	38	4	394					0
	8:00 AM	6	45	2	2	95	83	19	44	8	1	48	5	358					0
	8:15 AM	12	60	2	12	71	72	25	53	17	3	33	6	366					0
	8:30 AM	7	58	5	6	47	66	22	58	14	2	42	7	334					0
	8:45 AM	8	47	2	11	45	43	12	35	9	3	33	7	255					0
	VOLUMES	56	358	16	51	541	470	147	315	87	16	275	33	2,365	0	0	0	1	1
	APPROACH %	13%	83%	4%	5%	51%	44%	27%	57%	16%	5%	85%	10%						
	APP/DEPART	430	/	538	1,062	/	644	549	/	382	324	/	801	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	34	214	11	32	271	319	96	224	61	7	161	22	1,452					
	APPROACH %	13%	83%	4%	5%	44%	51%	25%	59%	16%	4%	85%	12%						
	PEAK HR FACTOR		0.875			0.864			0.787			0.880		0.921					
	APP/DEPART	259	/	332	622	/	339	381	/	267	190	/	514	0					
PM	4:00 PM	5	89	1	7	57	35	69	97	6	5	30	9	410		1			1
	4:15 PM	9	103	4	8	68	20	45	78	9	1	30	17	392		1			1
	4:30 PM	7	108	3	12	72	49	42	70	6	1	27	20	417					0
	4:45 PM	4	99	0	4	83	32	34	79	5	0	33	11	384					0
	5:00 PM	5	86	5	9	84	20	46	75	11	3	27	6	377		1			1
	5:15 PM	2	88	1	9	88	33	32	96	4	0	21	11	385					0
	5:30 PM	4	124	5	15	83	23	37	58	8	1	30	16	404		2			2
	5:45 PM	3	93	4	4	53	34	19	40	16	2	23	9	300			1		1
	VOLUMES	39	790	23	68	588	246	324	593	65	13	221	99	3,069	0	5	1	0	6
	APPROACH %	5%	93%	3%	8%	65%	27%	33%	60%	7%	4%	66%	30%						
	APP/DEPART	852	/	1,213	902	/	666	982	/	684	333	/	506	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	25	399	8	31	280	136	190	324	26	7	120	57	1,603					
	APPROACH %	6%	92%	2%	7%	63%	30%	35%	60%	5%	4%	65%	31%						
	PEAK HR FACTOR		0.915			0.840			0.785			0.958		0.961					
	APP/DEPART	432	/	646	447	/	313	540	/	363	184	/	281	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1				1					0					0
	7:15 AM	1				1					0					0
	7:30 AM					0					0			4		4
	7:45 AM		1	1		2					0			1		1
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM	1				1					0				1	1
	8:45 AM			2	3	5					0					0
	TOTAL	3	1	3	3	10	0	0	0	0	0	0	0	5	1	6
PM	4:00 PM	1		4		5					0					0
	4:15 PM			1		1					0					0
	4:30 PM			2		2					0				2	2
	4:45 PM			1	1	2					0					0
	5:00 PM					0					0					0
	5:15 PM			1		1					0				1	1
	5:30 PM		3			3					0					0
	5:45 PM					0					0					0
	TOTAL	1	3	9	1	14	0	0	0	0	0	0	0	0	3	3

INTERSECTION TURNING MOVEMENT COUNTS

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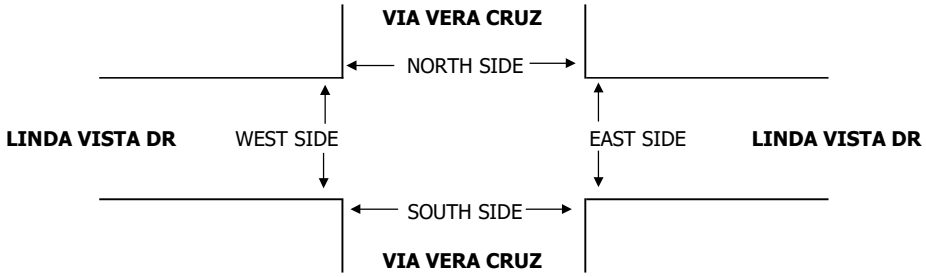
DATE:	LOCATION:	SAN MARCOS CREEK	PROJECT #:	ETD25-1010-02
10/15/25	NORTH & SOUTH:	VIA VERA CRUZ	LOCATION #:	4
WEDNESDAY	EAST & WEST:	LINDA VISTA DR	CONTROL:	SIGNAL

NOTES:

INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, ▼ S

		NORTHBOUND VIA VERA CRUZ			SOUTHBOUND VIA VERA CRUZ			EASTBOUND LINDA VISTA DR			WESTBOUND LINDA VISTA DR				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	2	5	10	4	26	5	3	13	1	2	19	2	92					0
	7:15 AM	3	15	6	1	42	12	0	24	2	3	19	2	129					0
	7:30 AM	4	24	9	6	65	7	13	24	2	6	32	4	196					0
	7:45 AM	1	17	14	4	94	7	19	33	2	6	40	7	244					0
	8:00 AM	6	29	16	0	66	9	21	39	4	1	32	1	224					0
	8:15 AM	6	14	12	3	60	13	18	43	3	2	25	5	204					0
	8:30 AM	3	21	16	3	72	5	12	49	5	3	30	0	219					0
	8:45 AM	4	18	9	3	72	4	11	46	1	4	16	5	193					0
	VOLUMES	29	143	92	24	497	62	97	271	20	27	213	26	1,501	0	0	0	0	0
	APPROACH %	11%	54%	35%	4%	85%	11%	25%	70%	5%	10%	80%	10%						
	APP/DEPART	264	/	266	583	/	544	388	/	387	266	/	304	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	16	81	58	10	292	34	70	164	14	12	127	13	891					
	APPROACH %	10%	52%	37%	3%	87%	10%	28%	66%	6%	8%	84%	9%						
	PEAK HR FACTOR		0.760			0.800			0.939			0.717		0.913					
	APP/DEPART	155	/	164	336	/	318	248	/	232	152	/	177	0					
PM	4:00 PM	19	62	36	7	104	4	19	60	35	4	24	7	381					0
	4:15 PM	10	82	6	7	92	7	16	72	38	2	20	2	354					0
	4:30 PM	16	100	10	5	131	5	8	68	38	1	25	9	416					0
	4:45 PM	18	98	10	15	101	2	8	52	24	3	24	9	364					0
	5:00 PM	15	93	9	8	98	8	11	56	47	2	21	6	374					0
	5:15 PM	12	80	10	11	93	5	5	53	37	3	24	3	336					0
	5:30 PM	11	75	7	13	91	3	12	48	32	1	21	2	316					0
	5:45 PM	6	76	8	5	102	3	5	38	17	3	18	5	286					0
	VOLUMES	107	666	96	71	812	37	84	447	268	19	177	43	2,827	0	0	0	0	0
	APPROACH %	12%	77%	11%	8%	88%	4%	11%	56%	34%	8%	74%	18%						
	APP/DEPART	869	/	793	920	/	1,099	799	/	614	239	/	321	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	63	342	62	34	428	18	51	252	135	10	93	27	1,515					
	APPROACH %	13%	73%	13%	7%	89%	4%	12%	58%	31%	8%	72%	21%						
	PEAK HR FACTOR		0.927			0.851			0.869			0.903		0.910					
	APP/DEPART	467	/	420	480	/	573	438	/	348	130	/	174	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0		1			1
	7:15 AM	1			1	2					0	1				1
	7:30 AM	1				1					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM		1			1					0					0
	8:30 AM				1	1					0					0
	8:45 AM				1	1					0					0
	TOTAL	2	1	0	3	6	0	0	0	0	0	1	1	0	0	2
PM	4:00 PM		1	1		2					0		1		1	2
	4:15 PM		1			1					0		1			1
	4:30 PM		1		1	2					0	1		1	2	4
	4:45 PM		1		1	2					0				2	2
	5:00 PM					0					0				1	1
	5:15 PM				1	1					0					0
	5:30 PM		1	1		2					0		1			1
	5:45 PM	2				2					0					0
	TOTAL	2	5	2	3	12	0	0	0	0	0	1	3	1	6	11

INTERSECTION TURNING MOVEMENT COUNTS

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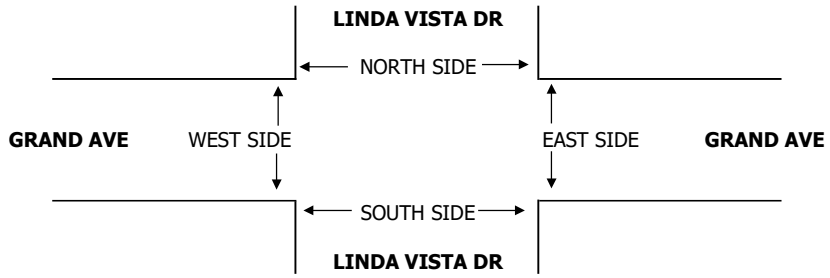
DATE:					
10/9/25	LOCATION:	SAN MARCOS CREEK	PROJECT #:	ETD25-1010-02	
THURSDAY	NORTH & SOUTH:	LINDA VISTA DR	LOCATION #:	5	
	EAST & WEST:	GRAND AVE	CONTROL:	SIGNAL	

NOTES:

INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND LINDA VISTA DR			SOUTHBOUND LINDA VISTA DR			EASTBOUND GRAND AVE			WESTBOUND GRAND AVE				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	1		4					45	4	34	30		118					0
	7:15 AM	0		26					52	1	50	40		169					0
	7:30 AM	1		19					40	1	44	52		157					0
	7:45 AM	3		20					53	4	47	71		198					0
	8:00 AM	1		28					74	5	30	57		195					0
	8:15 AM	1		25					69	4	37	61		197					0
	8:30 AM	2		18					84	2	26	65		197					0
	8:45 AM	1		19					89	7	33	71		220					0
	VOLUMES	10	0	159	0	0	0	0	506	28	301	447	0	1,451	0	0	0	0	0
	APPROACH %	6%	0%	94%	0%	0%	0%	0%	95%	5%	40%	60%	0%						
	APP/DEPART	169	/	0	0	/	329	534	/	665	748	/	457	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	5	0	90	0	0	0	0	316	18	126	254	0	809					
	APPROACH %	5%	0%	95%	0%	0%	0%	0%	95%	5%	33%	67%	0%						
	PEAK HR FACTOR		0.819			0.000			0.870			0.913		0.919					
	APP/DEPART	95	/	0	0	/	144	334	/	406	380	/	259	0					
PM	4:00 PM	2		91					190	2	30	111		426					0
	4:15 PM	2		89					229	3	30	123		476					0
	4:30 PM	3		80					219	1	29	110		442					0
	4:45 PM	4		94					170	5	31	108		412					0
	5:00 PM	1		79					225	9	15	121		450					0
	5:15 PM	2		81					232	8	19	114		456					0
	5:30 PM	0		68					162	4	28	111		373					0
	5:45 PM	0		40					170	6	23	134		373					0
	VOLUMES	14	0	622	0	0	0	0	1,597	38	205	932	0	3,408	0	0	0	0	0
	APPROACH %	2%	0%	98%	0%	0%	0%	0%	98%	2%	18%	82%	0%						
	APP/DEPART	636	/	0	0	/	243	1,635	/	2,219	1,137	/	946	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	10	0	342	0	0	0	0	843	18	105	462	0	1,780					
	APPROACH %	3%	0%	97%	0%	0%	0%	0%	98%	2%	19%	81%	0%						
	PEAK HR FACTOR		0.898			0.000			0.920			0.926		0.935					
	APP/DEPART	352	/	0	0	/	123	861	/	1,185	567	/	472	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0		1			1
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM					0					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

DATE:	LOCATION:	SAN MARCOS CREEK	PROJECT #:	ETD25-1010-02
10/9/25	NORTH & SOUTH:	BENT AVE	LOCATION #:	6
THURSDAY	EAST & WEST:	GRAND AVE	CONTROL:	SIGNAL

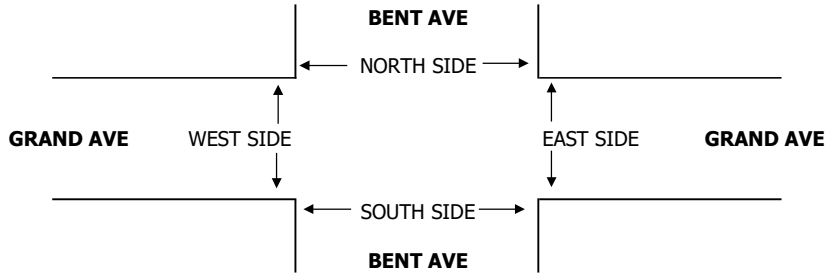
NOTES:

INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER

N ▲ S ▼ W ◄ E ►

		NORTHBOUND BENT AVE			SOUTHBOUND BENT AVE			EASTBOUND GRAND AVE			WESTBOUND GRAND AVE				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	12		3					25	26	4	53		123					0
	7:15 AM	26		4					47	30	3	62		172					0
	7:30 AM	34		6					39	21	6	63		169					0
	7:45 AM	36		2					34	40	3	81		196					0
	8:00 AM	26		6					53	47	2	63		197					0
	8:15 AM	32		8					51	45	8	65		209					0
	8:30 AM	33		9					50	50	9	59		210					0
	8:45 AM	35		10					48	59	2	68		222					0
	VOLUMES	234	0	48	0	0	0	0	347	318	37	514	0	1,498	0	0	0	0	0
	APPROACH %	83%	0%	17%	0%	0%	0%	0%	52%	48%	7%	93%	0%						
	APP/DEPART	282	/	0	0	/	355	665	/	395	551	/	748	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	126	0	33	0	0	0	0	202	201	21	255	0	838					
	APPROACH %	79%	0%	21%	0%	0%	0%	0%	50%	50%	8%	92%	0%						
	PEAK HR FACTOR		0.883			0.000			0.942			0.945		0.944					
	APP/DEPART	159	/	0	0	/	222	403	/	235	276	/	381	0					
PM	4:00 PM	61		12					204	81	6	80		444					0
	4:15 PM	71		7					219	94	8	83		482					0
	4:30 PM	52		16					222	80	10	87		467					0
	4:45 PM	48		10					197	64	10	89		418					0
	5:00 PM	64		9					205	97	11	73		459					0
	5:15 PM	58		12					224	84	6	76		460					0
	5:30 PM	52		11					145	90	5	89		392					0
	5:45 PM	50		4					152	58	3	104		371					0
	VOLUMES	456	0	81	0	0	0	0	1,568	648	59	681	0	3,493	0	0	0	0	0
	APPROACH %	85%	0%	15%	0%	0%	0%	0%	71%	29%	8%	92%	0%						
	APP/DEPART	537	/	0	0	/	707	2,216	/	1,649	740	/	1,137	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	235	0	42	0	0	0	0	843	335	39	332	0	1,826					
	APPROACH %	85%	0%	15%	0%	0%	0%	0%	72%	28%	11%	89%	0%						
	PEAK HR FACTOR		0.888			0.000			0.941			0.937		0.947					
	APP/DEPART	277	/	0	0	/	374	1,178	/	885	371	/	567	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0		1			1
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM		1			1					0					0
	TOTAL	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
PM	4:00 PM					0					0		3			3
	4:15 PM					0					0					0
	4:30 PM		3			3					0		1			1
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM		1			1					0		1			1
	5:45 PM		2			2					0		2			2
	TOTAL	0	6	0	0	6	0	0	0	0	0	0	7	0	0	7

INTERSECTION TURNING MOVEMENT COUNTS

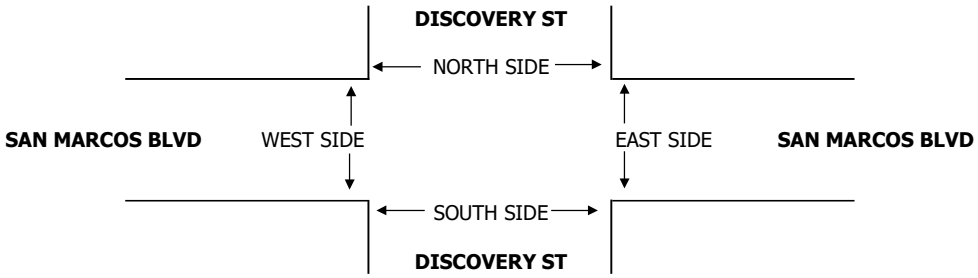
PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

DATE:	LOCATION:	SAN MARCOS	PROJECT #:	ETD25-1031-01
10/29/25	NORTH & SOUTH:	DISCOVERY ST	LOCATION #:	1
WEDNESDAY	EAST & WEST:	SAN MARCOS BLVD	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND DISCOVERY ST			SOUTHBOUND DISCOVERY ST			EASTBOUND SAN MARCOS BLVD			WESTBOUND SAN MARCOS BLVD				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	59	1	16	1	0	1	4	137	37	13	294	6	569					0
	7:15 AM	75	1	9	4	0	2	6	154	40	6	323	19	639					0
	7:30 AM	104	11	10	29	4	14	23	162	55	18	298	64	792					0
	7:45 AM	135	17	38	31	4	21	29	166	71	13	225	79	829					0
	8:00 AM	124	25	29	52	9	30	41	145	62	22	233	115	887					0
	8:15 AM	88	16	26	68	15	29	46	209	96	9	184	111	897					0
	8:30 AM	69	7	19	91	13	45	14	199	92	16	202	63	830					0
	8:45 AM	81	2	22	45	4	17	13	240	104	17	232	23	800			1	1	2
	VOLUMES	735	80	169	321	49	159	176	1,412	557	114	1,991	480	6,243	0	0	1	1	2
	APPROACH %	75%	8%	17%	61%	9%	30%	8%	66%	26%	4%	77%	19%						
	APP/DEPART	984	/	736	529	/	720	2,145	/	1,902	2,585	/	2,885	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	416	65	112	242	41	125	130	719	321	60	844	368	3,443					
	APPROACH %	70%	11%	19%	59%	10%	31%	11%	61%	27%	5%	66%	29%						
	PEAK HR FACTOR		0.780			0.685			0.833			0.859		0.960					
	APP/DEPART	593	/	563	408	/	422	1,170	/	1,073	1,272	/	1,385	0					
PM	4:00 PM	63	4	19	39	6	25	8	329	166	24	230	22	935				1	1
	4:15 PM	78	5	23	34	6	16	12	288	168	24	247	24	925					0
	4:30 PM	65	1	11	30	1	19	10	347	149	16	236	18	903				1	1
	4:45 PM	86	7	26	19	4	15	8	314	162	23	235	25	924				3	3
	5:00 PM	74	4	12	25	5	14	11	365	167	31	220	11	939				1	1
	5:15 PM	71	5	9	15	4	6	5	303	177	31	254	17	897					0
	5:30 PM	79	0	19	13	3	4	6	343	159	22	270	7	925				2	2
	5:45 PM	74	1	18	14	4	5	5	310	147	21	268	10	877					0
	VOLUMES	590	27	137	189	33	104	65	2,599	1,295	192	1,960	134	7,325	0	0	0	8	8
	APPROACH %	78%	4%	18%	58%	10%	32%	2%	66%	33%	8%	86%	6%						
	APP/DEPART	754	/	226	326	/	1,520	3,959	/	2,925	2,286	/	2,654	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	303	17	72	108	16	64	41	1,314	646	94	938	78	3,691					
	APPROACH %	77%	4%	18%	57%	9%	34%	2%	66%	32%	8%	85%	7%						
	PEAK HR FACTOR		0.824			0.839			0.921			0.941		0.983					
	APP/DEPART	392	/	136	188	/	756	2,001	/	1,494	1,110	/	1,305	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0	1				1
	7:15 AM	1	2	1		4					0					0
	7:30 AM	1	2			3					0	1				1
	7:45 AM	3		1		4					0	1				1
	8:00 AM	1		4		5					0					0
	8:15 AM	12	2		11	25					0	1	1			2
	8:30 AM	2	2			4					0		2			2
	8:45 AM	1		1		2					0		1			1
	TOTAL	21	8	7	11	47	0	0	0	0	0	4	4	0	0	8
PM	4:00 PM	3	1	9		13					0					0
	4:15 PM	3		2		5					0					0
	4:30 PM	2				2					0	1		1		2
	4:45 PM	3	3	2		8					0			1		1
	5:00 PM			1		1					0					0
	5:15 PM	2		2		4					0					0
	5:30 PM					0					0	2				2
	5:45 PM		1	3		4					0	2		2		4
	TOTAL	13	5	19	0	37	0	0	0	0	0	5	0	4	0	9

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

DATE:	LOCATION:	SAN MARCOS	PROJECT #:	ETD25-1031-01
10/29/25	NORTH & SOUTH:	PACIFIC ST	LOCATION #:	2
WEDNESDAY	EAST & WEST:	SAN MARCOS BLVD	CONTROL:	SIGNAL

NOTES:

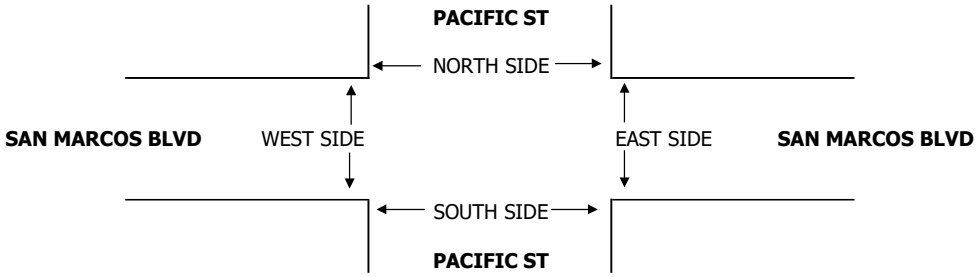
INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — N / W / E / S

		NORTHBOUND PACIFIC ST			SOUTHBOUND PACIFIC ST			EASTBOUND SAN MARCOS BLVD			WESTBOUND SAN MARCOS BLVD			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
AM	7:00 AM				5		5	4	148	0		285	2	449
	7:15 AM				1		10	5	177	0		332	1	526
	7:30 AM				2		10	2	212	0		381	2	609
	7:45 AM				3		13	10	228	0		308	5	567
	8:00 AM				12		45	18	208	2		291	8	584
	8:15 AM				8		37	18	299	0		258	7	627
	8:30 AM				10		32	29	282	0		234	5	592
	8:45 AM				4		11	15	304	0		259	2	595
	VOLUMES	0	0	0	45	0	163	101	1,858	2	0	2,348	32	4,549
	APPROACH %	0%	0%	0%	22%	0%	78%	5%	95%	0%	0%	99%	1%	
	APP/DEPART	0	/	133	208	/	2	1,961	/	1,903	2,380	/	2,511	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	0	0	34	0	125	80	1,093	2	0	1,042	22	2,398
	APPROACH %	0%	0%	0%	21%	0%	79%	7%	93%	0%	0%	98%	2%	
	PEAK HR FACTOR		0.000			0.697			0.921			0.890		0.956
	APP/DEPART	0	/	102	159	/	2	1,175	/	1,127	1,064	/	1,167	0
PM	4:00 PM				11		14	17	382	0		239	9	672
	4:15 PM				14		16	12	365	0		269	7	683
	4:30 PM				7		18	11	357	0		271	6	670
	4:45 PM				1		10	6	377	0		280	5	679
	5:00 PM				12		10	7	400	0		252	7	688
	5:15 PM				8		7	8	355	0		292	5	675
	5:30 PM				16		4	7	359	0		297	7	690
	5:45 PM				3		5	8	346	0		265	5	632
	VOLUMES	0	0	0	72	0	84	76	2,941	0	0	2,165	51	5,389
	APPROACH %	0%	0%	0%	46%	0%	54%	3%	97%	0%	0%	98%	2%	
	APP/DEPART	0	/	127	156	/	0	3,017	/	3,013	2,216	/	2,249	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	37	0	31	28	1,491	0	0	1,121	24	2,732
	APPROACH %	0%	0%	0%	54%	0%	46%	2%	98%	0%	0%	98%	2%	
	PEAK HR FACTOR		0.000			0.773			0.933			0.942		0.990
	APP/DEPART	0	/	52	68	/	0	1,519	/	1,528	1,145	/	1,152	0

U-TURNS

	NB	SB	EB	WB	TTL
	X	X	X	X	
7:00 AM				2	2
7:15 AM			1		1
7:30 AM			1	1	2
7:45 AM			3		3
8:00 AM	1		3		4
8:15 AM	5		5	1	11
8:30 AM	8		1	1	10
8:45 AM	1		1	2	4
VOLUMES	15	0	15	7	37
4:00 PM	2		1	2	5
4:15 PM	2		2	4	8
4:30 PM	7		7	3	17
4:45 PM	5		10	2	17
5:00 PM	6		4	2	12
5:15 PM	2		3	5	10
5:30 PM	3		3	3	9
5:45 PM	8		7	3	18
VOLUMES	35	0	37	24	96



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM	1	4	6	4	15					0				1	1
	7:30 AM		4	5	3	12					0				2	2
	7:45 AM		2	5	4	11					0			1		1
	8:00 AM		4	3	2	9					0					0
	8:15 AM			4		4					0					0
	8:30 AM		2	2		4					0					0
	8:45 AM		3	2	2	7					0					0
	TOTAL	1	19	27	15	62	0	0	0	0	0	0	0	1	3	4
PM	4:00 PM			1	4	5					0					0
	4:15 PM			1		1					0				1	1
	4:30 PM			1	2	3					0			1		1
	4:45 PM				4	4					0			1	1	2
	5:00 PM					0					0					0
	5:15 PM	1			1	2					0					0
	5:30 PM					0					0					0
	5:45 PM				1	1					0					0
	TOTAL	1	0	3	12	16	0	0	0	0	0	0	0	2	2	4

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

DATE:	LOCATION:	SAN MARCOS	PROJECT #:	ETD25-1031-01
10/29/25	NORTH & SOUTH:	LAS POSAS RD	LOCATION #:	3
WEDNESDAY	EAST & WEST:	SAN MARCOS BLVD	CONTROL:	SIGNAL

NOTES:

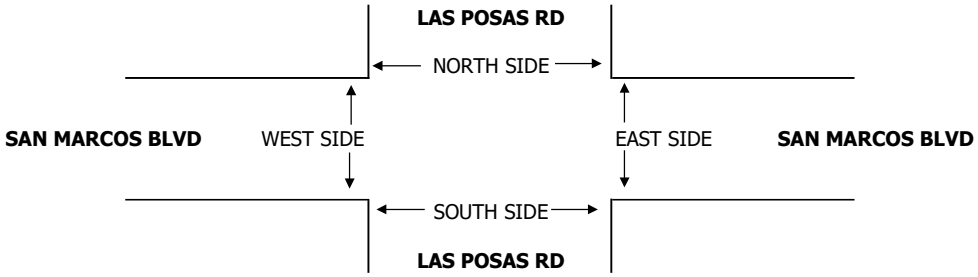
INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND LAS POSAS RD			SOUTHBOUND LAS POSAS RD			EASTBOUND SAN MARCOS BLVD			WESTBOUND SAN MARCOS BLVD			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
AM	7:00 AM	6	5	0	9	3	38	19	148	3	10	239	9	489
	7:15 AM	4	1	4	10	6	51	18	164	3	6	276	9	552
	7:30 AM	10	3	5	7	4	82	28	180	6	8	289	10	632
	7:45 AM	4	5	3	14	7	58	42	198	7	4	264	13	619
	8:00 AM	2	2	5	13	3	67	36	207	4	6	236	17	598
	8:15 AM	4	3	4	29	3	54	57	259	7	3	185	13	621
	8:30 AM	4	1	2	18	4	38	61	247	4	3	192	14	588
	8:45 AM	3	4	4	11	5	34	34	266	11	6	213	6	597
	VOLUMES	37	24	27	111	35	422	295	1,669	45	46	1,894	91	4,696
	APPROACH %	42%	27%	31%	20%	6%	74%	15%	83%	2%	2%	93%	4%	
	APP/DEPART	88	/	410	568	/	126	2,009	/	1,807	2,031	/	2,353	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	20	13	17	63	17	261	163	844	24	21	974	53	2,470
	APPROACH %	40%	26%	34%	18%	5%	77%	16%	82%	2%	2%	93%	5%	
	PEAK HR FACTOR		0.694			0.917			0.798			0.853		0.977
	APP/DEPART	50	/	229	341	/	62	1,031	/	924	1,048	/	1,255	0
PM	4:00 PM	2	3	3	15	5	43	68	315	7	2	204	19	686
	4:15 PM	1	4	2	12	4	54	81	294	5	5	210	26	698
	4:30 PM	0	1	1	10	5	55	73	300	3	6	197	24	675
	4:45 PM	1	6	3	15	3	67	72	297	5	9	205	19	702
	5:00 PM	6	2	1	20	7	64	74	331	5	11	208	14	743
	5:15 PM	3	6	4	18	7	63	68	294	10	4	222	18	717
	5:30 PM	3	6	5	13	1	68	94	287	5	1	214	18	715
	5:45 PM	8	2	4	26	4	41	70	280	6	9	223	21	694
	VOLUMES	24	30	23	129	36	455	600	2,398	46	47	1,683	159	5,630
	APPROACH %	31%	39%	30%	21%	6%	73%	20%	79%	2%	2%	89%	8%	
	APP/DEPART	77	/	789	620	/	129	3,044	/	2,550	1,889	/	2,162	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	13	20	13	66	18	262	308	1,209	25	25	849	69	2,877
	APPROACH %	28%	43%	28%	19%	5%	76%	20%	78%	2%	3%	90%	7%	
	PEAK HR FACTOR		0.821			0.951			0.940			0.966		0.968
	APP/DEPART	46	/	397	346	/	68	1,542	/	1,288	943	/	1,124	0

U-TURNS

	NB	SB	EB	WB	TTL
	X	X	X	X	
7:00 AM			1		1
7:15 AM					0
7:30 AM					0
7:45 AM					0
8:00 AM					0
8:15 AM					0
8:30 AM				1	1
8:45 AM				1	1
AM VOLUMES	0	0	1	2	3
4:00 PM				1	1
4:15 PM				2	2
4:30 PM				1	1
4:45 PM					0
5:00 PM					0
5:15 PM				2	2
5:30 PM					0
5:45 PM					0
PM VOLUMES	0	0	0	6	6



PEDESTRIAN CROSSINGS

	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
7:00 AM				1	1
7:15 AM					0
7:30 AM	2	1		1	4
7:45 AM		1			1
8:00 AM	2				2
8:15 AM					0
8:30 AM	1				1
8:45 AM					0
AM TOTAL	5	2	0	2	9
4:00 PM	1				1
4:15 PM					0
4:30 PM	2				2
4:45 PM	1				1
5:00 PM	1	1			2
5:15 PM					0
5:30 PM	1				1
5:45 PM	9	3	38	20	70
PM TOTAL	15	4	38	20	77

PEDESTRIAN ACTIVATIONS

	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
7:00 AM					0
7:15 AM					0
7:30 AM					0
7:45 AM					0
8:00 AM					0
8:15 AM					0
8:30 AM					0
8:45 AM					0
AM TOTAL	0	0	0	0	0
4:00 PM					0
4:15 PM					0
4:30 PM					0
4:45 PM					0
5:00 PM					0
5:15 PM					0
5:30 PM					0
5:45 PM					0
PM TOTAL	0	0	0	0	0

BICYCLE CROSSINGS

	NS	SS	ES	WS	TOTAL
7:00 AM					0
7:15 AM					0
7:30 AM					0
7:45 AM					0
8:00 AM					0
8:15 AM					0
8:30 AM				1	1
8:45 AM					0
AM TOTAL	0	0	0	1	1
4:00 PM		1	1		2
4:15 PM			1		1
4:30 PM	1	3		4	8
4:45 PM			1		1
5:00 PM	1				1
5:15 PM					0
5:30 PM	1				1
5:45 PM					0
PM TOTAL	3	4	3	4	14

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

DATE:	LOCATION:	SAN MARCOS CREEK	PROJECT #:	ETD25-1010-02
10/15/25	NORTH & SOUTH:	VIA VERA CRUZ	LOCATION #:	7
WEDNESDAY	EAST & WEST:	SAN MARCOS BLVD	CONTROL:	SIGNAL

NOTES:

INCLUDES BIKE & PED

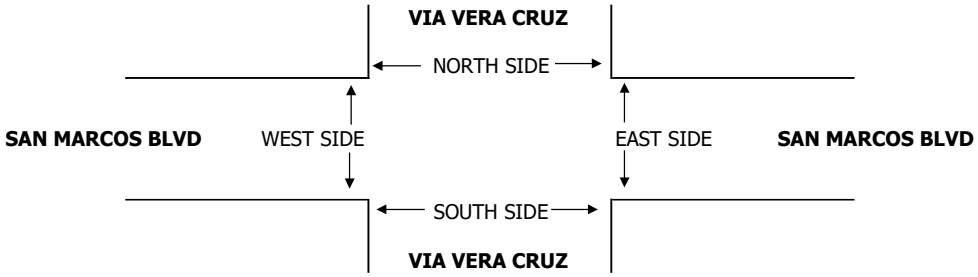
AM / PM / MD / OTHER / OTHER

N ▲ S ▼ W ◄ E ►

		NORTHBOUND VIA VERA CRUZ			SOUTHBOUND VIA VERA CRUZ			EASTBOUND SAN MARCOS BLVD			WESTBOUND SAN MARCOS BLVD			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
AM	7:00 AM	6	9	5	7	9	6	3	153	2	9	242	7	458
	7:15 AM	5	18	4	9	17	10	4	166	4	2	308	10	557
	7:30 AM	5	18	6	14	30	13	5	185	8	5	321	9	619
	7:45 AM	10	41	10	17	39	17	5	217	14	8	236	22	636
	8:00 AM	12	44	14	11	36	5	4	179	13	12	186	13	529
	8:15 AM	14	43	18	15	44	6	7	133	98	17	157	18	570
	8:30 AM	13	41	10	12	41	5	13	192	16	12	165	21	541
	8:45 AM	14	35	7	16	37	6	16	218	9	13	202	25	598
	VOLUMES	79	249	74	101	253	68	57	1,443	164	78	1,817	125	4,508
	APPROACH %	20%	62%	18%	24%	60%	16%	3%	87%	10%	4%	90%	6%	
	APP/DEPART	402	/	431	422	/	495	1,664	/	1,618	2,020	/	1,964	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	41	146	48	57	149	41	21	714	133	42	900	62	2,354
	APPROACH %	17%	62%	20%	23%	60%	17%	2%	82%	15%	4%	90%	6%	
	PEAK HR FACTOR		0.783			0.846			0.912			0.749		0.925
	APP/DEPART	235	/	229	247	/	324	868	/	819	1,004	/	982	0
PM	4:00 PM	17	53	7	47	87	7	14	273	10	12	219	27	773
	4:15 PM	14	26	4	36	79	12	28	288	27	10	262	22	808
	4:30 PM	21	67	11	57	84	12	17	270	37	14	202	21	813
	4:45 PM	20	59	12	40	82	19	7	273	12	14	218	33	789
	5:00 PM	16	41	5	19	97	8	19	291	18	14	245	22	795
	5:15 PM	14	42	7	39	106	8	13	273	31	15	224	23	795
	5:30 PM	14	45	5	45	89	20	14	299	25	12	201	28	797
	5:45 PM	10	47	6	41	56	6	7	285	18	13	196	19	704
	VOLUMES	126	380	57	324	680	92	119	2,252	178	104	1,767	195	6,274
	APPROACH %	22%	67%	10%	30%	62%	8%	5%	88%	7%	5%	86%	9%	
	APP/DEPART	563	/	694	1,096	/	962	2,549	/	2,633	2,066	/	1,985	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	71	193	32	152	342	51	71	1,122	94	52	927	98	3,205
	APPROACH %	24%	65%	11%	28%	63%	9%	6%	87%	7%	5%	86%	9%	
	PEAK HR FACTOR		0.747			0.891			0.938			0.916		0.986
	APP/DEPART	296	/	362	545	/	488	1,287	/	1,306	1,077	/	1,049	0

U-TURNS

NB	SB	EB	WB	TTL
X	X	X	X	
			2	2
				0
				0
			2	2
				0
			1	1
		2	2	4
				0
0	0	2	7	9
			2	2
		6	2	8
		5	2	7
		1	4	5
		2	6	8
		1	3	4
		1	3	4
		3	2	5
0	0	19	24	43



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM	1		1	1	3					0					0
	7:45 AM					0					0					0
	8:00 AM	1	1		1	3					0	1		2		3
	8:15 AM					0					0	1				1
	8:30 AM	1				1					0	1		1		2
	8:45 AM					0					0					0
	TOTAL	3	1	1	2	7	0	0	0	0	0	3	0	3	0	6
PM	4:00 PM			2		2					0	1		2	1	4
	4:15 PM					0					0	1				1
	4:30 PM			1	1	2					0	1		1		2
	4:45 PM	1				1					0	1		1		2
	5:00 PM	1		1		2					0	1				1
	5:15 PM		1			1					0					0
	5:30 PM					0					0					0
	5:45 PM	1		2		3					0					0
	TOTAL	3	1	6	1	11	0	0	0	0	0	5	0	4	1	10

INTERSECTION TURNING MOVEMENT COUNTS

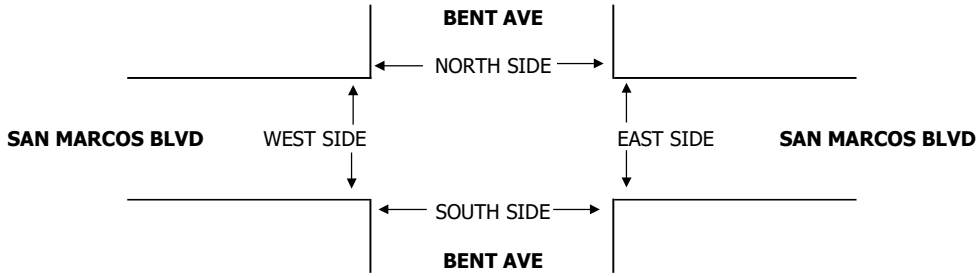
PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

DATE:	LOCATION:	SAN MARCOS CREEK	PROJECT #:	ETD25-1010-02
10/9/25	NORTH & SOUTH:	BENT AVE	LOCATION #:	8
THURSDAY	EAST & WEST:	SAN MARCOS BLVD	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, ▼ S

		NORTHBOUND BENT AVE			SOUTHBOUND BENT AVE			EASTBOUND SAN MARCOS BLVD			WESTBOUND SAN MARCOS BLVD				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	18	13	40	7	22	10	5	157	5	18	219	16	530			3	5	8
	7:15 AM	15	18	50	21	19	14	2	194	6	24	368	18	749			2	11	13
	7:30 AM	6	16	51	18	13	6	6	191	4	15	285	17	628			4	5	9
	7:45 AM	11	19	61	16	28	6	9	201	6	30	273	22	682			4	11	15
	8:00 AM	14	20	44	8	15	6	15	212	6	25	241	9	615			6	8	14
	8:15 AM	13	20	60	17	24	5	13	223	7	34	229	20	665			3	12	15
	8:30 AM	20	14	60	26	24	11	20	261	8	27	245	25	741			5	12	17
	8:45 AM	15	21	58	24	24	19	14	235	4	29	308	29	780			4	11	15
	VOLUMES	112	141	424	137	169	77	84	1,674	46	202	2,168	156	5,390	0	0	31	75	106
	APPROACH %	17%	21%	63%	36%	44%	20%	5%	93%	3%	8%	86%	6%						
	APP/DEPART	677	/	381	383	/	417	1,804	/	2,235	2,526	/	2,357	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	62	75	222	75	87	41	62	931	25	115	1,023	83	2,801					
	APPROACH %	17%	21%	62%	37%	43%	20%	6%	91%	2%	9%	84%	7%						
	PEAK HR FACTOR		0.955			0.757			0.881			0.834		0.898					
	APP/DEPART	359	/	220	203	/	227	1,018	/	1,228	1,221	/	1,126	0					
PM	4:00 PM	14	39	45	24	62	17	9	305	6	23	258	19	821			2	6	8
	4:15 PM	25	49	42	34	63	10	12	304	5	23	228	17	812			3	10	13
	4:30 PM	17	29	52	33	79	13	9	280	8	28	232	17	797			5	10	15
	4:45 PM	15	26	46	28	43	4	8	324	7	30	269	14	814			9	6	15
	5:00 PM	21	37	55	25	67	9	9	295	14	26	219	13	790			2	8	10
	5:15 PM	20	34	39	19	56	16	14	337	3	19	225	14	796			4	6	10
	5:30 PM	19	32	38	20	55	14	11	312	4	22	232	16	775			3	5	8
	5:45 PM	13	25	34	23	51	12	4	339	5	13	254	14	787				4	4
	VOLUMES	144	271	351	206	476	95	76	2,496	52	184	1,917	124	6,392	0	0	28	55	83
	APPROACH %	19%	35%	46%	27%	61%	12%	3%	95%	2%	8%	86%	6%						
	APP/DEPART	766	/	471	777	/	712	2,624	/	3,053	2,225	/	2,156	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	71	143	185	119	247	44	38	1,213	26	104	987	67	3,244					
	APPROACH %	18%	36%	46%	29%	60%	11%	3%	95%	2%	9%	85%	6%						
	PEAK HR FACTOR		0.860			0.820			0.942			0.925		0.988					
	APP/DEPART	399	/	248	410	/	377	1,277	/	1,517	1,158	/	1,102	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1			1	2					0	1				1
	7:15 AM	1		1		2					0	3				3
	7:30 AM	1		2		3					0	1				1
	7:45 AM					0					0					0
	8:00 AM		1			1					0	1				1
	8:15 AM					0					0	3				3
	8:30 AM	4		1	3	8					0	1			1	2
	8:45 AM					0					0					0
	TOTAL	7	1	4	4	16	0	0	0	0	0	10	0	0	1	11
PM	4:00 PM	2	1	2	2	7					0					0
	4:15 PM	1				1					0					0
	4:30 PM	2		2	1	5					0	3				3
	4:45 PM	3			3	6					0	1				1
	5:00 PM		2	1		3					0	1				1
	5:15 PM					0					0					0
	5:30 PM	1	2	1		4					0	3			1	4
	5:45 PM					0					0				1	1
	TOTAL	9	5	6	6	26	0	0	0	0	0	8	0	0	2	10

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

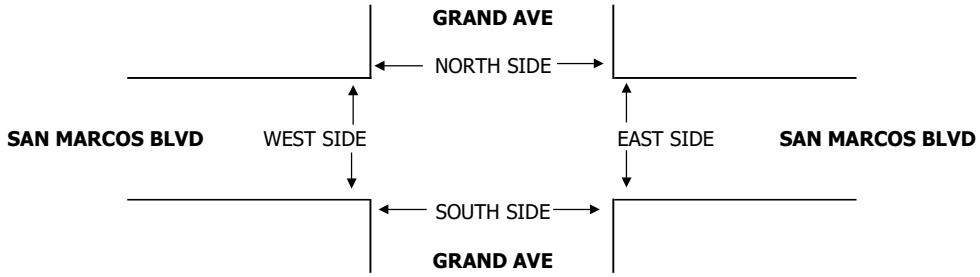
DATE:	LOCATION:	SAN MARCOS CREEK	PROJECT #:	ETD25-1010-02
10/9/25	NORTH & SOUTH:	GRAND AVE	LOCATION #:	9
THURSDAY	EAST & WEST:	SAN MARCOS BLVD	CONTROL:	SIGNAL

NOTES:

INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND GRAND AVE			SOUTHBOUND GRAND AVE			EASTBOUND SAN MARCOS BLVD			WESTBOUND SAN MARCOS BLVD				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	2	7	9	19	4	3	3	185	3	42	285	38	600			8	2	10
	7:15 AM	3	5	9	22	11	6	7	243	9	30	383	66	794			2		2
	7:30 AM	11	5	13	31	9	4	5	239	7	32	327	47	730			8		8
	7:45 AM	4	9	17	20	11	4	5	255	14	51	283	64	737			7		7
	8:00 AM	5	6	15	29	19	4	6	265	15	38	265	47	714			4		4
	8:15 AM	5	8	12	39	11	6	5	241	21	33	274	59	714			2	1	3
	8:30 AM	4	8	9	41	12	7	6	222	20	42	285	52	708			6	1	7
	8:45 AM	8	12	13	31	18	5	11	256	18	59	356	53	840			10		10
	VOLUMES	42	60	97	232	95	39	48	1,906	107	327	2,458	426	5,837	0	0	47	4	51
	APPROACH %	21%	30%	49%	63%	26%	11%	2%	92%	5%	10%	77%	13%						
	APP/DEPART	199	/	534	366	/	529	2,061	/	2,235	3,211	/	2,539	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	22	34	49	140	60	22	28	984	74	172	1,180	211	2,976					
	APPROACH %	21%	32%	47%	63%	27%	10%	3%	91%	7%	11%	75%	13%						
	PEAK HR FACTOR		0.795			0.925			0.949			0.835		0.886					
	APP/DEPART	105	/	273	222	/	306	1,086	/	1,173	1,563	/	1,224	0					
PM	4:00 PM	34	30	7	171	36	1	9	288	17	79	259	54	985			3		3
	4:15 PM	22	40	53	186	48	7	3	256	20	93	255	41	1,024			2		2
	4:30 PM	19	31	50	180	49	4	8	345	26	81	255	50	1,098			9	1	10
	4:45 PM	21	35	38	176	42	3	8	335	48	102	278	42	1,128			4		4
	5:00 PM	27	24	49	173	51	3	7	378	25	80	249	42	1,108			2	1	3
	5:15 PM	26	25	44	167	51	6	8	366	37	103	234	39	1,106			3		3
	5:30 PM	18	31	55	126	48	8	5	303	67	100	272	41	1,074		1	5		6
	5:45 PM	19	28	45	101	50	1	6	379	28	118	247	38	1,060			5		5
	VOLUMES	186	244	341	1,280	375	33	54	2,650	268	756	2,049	347	8,583	0	1	33	2	36
	APPROACH %	24%	32%	44%	76%	22%	2%	2%	89%	9%	24%	65%	11%						
	APP/DEPART	771	/	645	1,688	/	1,399	2,972	/	4,271	3,152	/	2,268	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	93	115	181	696	193	16	31	1,424	136	366	1,016	173	4,440					
	APPROACH %	24%	30%	47%	77%	21%	2%	2%	90%	9%	24%	65%	11%						
	PEAK HR FACTOR		0.973			0.971			0.968			0.921		0.984					
	APP/DEPART	389	/	319	905	/	695	1,591	/	2,301	1,555	/	1,125	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1				1					0	1			1	2
	7:15 AM	2	2		4	8					0	1				1
	7:30 AM	2			1	3					0	2			1	3
	7:45 AM	1			1	2					0	2				2
	8:00 AM					0					0	1	1			2
	8:15 AM	1			1	2					0					0
	8:30 AM					0					0	1				1
	8:45 AM	2	1		2	5					0					0
	TOTAL	9	3	0	9	21	0	0	0	0	0	8	1	0	2	11
PM	4:00 PM	4	2	2	5	13					0		1		1	2
	4:15 PM	5	3		6	14					0	1				1
	4:30 PM	3	2		5	10					0	2			2	4
	4:45 PM	1	2		2	5					0					0
	5:00 PM	2			2	4					0	1			1	2
	5:15 PM	2	1			3					0	1				1
	5:30 PM	3			3	6					0	2			1	3
	5:45 PM	3	2		3	8					0	1				1
	TOTAL	23	12	2	26	63	0	0	0	0	0	8	1	0	5	14

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

DATE:	LOCATION:	SAN MARCOS CREEK	PROJECT #:	ETD24-1010-02
10/9/25	NORTH & SOUTH:	SR-78 EB	LOCATION #:	10
THURSDAY	EAST & WEST:	SAN MARCOS BLVD	CONTROL:	SIGNAL

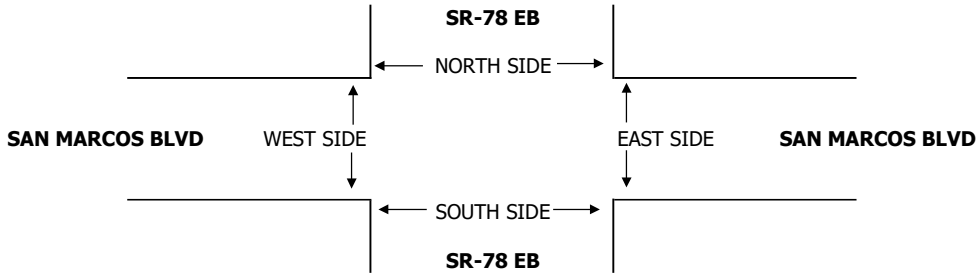
NOTES:

INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER

N ▲ S ▼ ◄ W E ►

		NORTHBOUND SR-78 EB			SOUTHBOUND SR-78 EB			EASTBOUND SAN MARCOS BLVD			WESTBOUND SAN MARCOS BLVD				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM				35		15		76	141	61	378		706					0
	7:15 AM				41		10		118	167	49	447		832					0
	7:30 AM				45		16		129	186	42	402		820					0
	7:45 AM				61		19		151	158	52	406		847				1	1
	8:00 AM				53		19		130	181	50	340		773				1	1
	8:15 AM				38		13		133	180	40	360		764					0
	8:30 AM				41		16		178	223	68	421		947					0
	8:45 AM				32		21		150	174	56	461		894					0
	VOLUMES	0	0	0	346	0	129	0	1,065	1,410	418	3,215	0	6,583	0	0	0	2	2
	APPROACH %	0%	0%	0%	73%	0%	27%	0%	43%	57%	12%	88%	0%						
	APP/DEPART	0	/	0	475	/	1,828	2,475	/	1,411	3,633	/	3,344	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	0	0	0	164	0	69	0	591	758	214	1,582	0	3,378					
	APPROACH %	0%	0%	0%	70%	0%	30%	0%	44%	56%	12%	88%	0%						
	PEAK HR FACTOR		0.000			0.809			0.841			0.868		0.892					
	APP/DEPART	0	/	0	233	/	972	1,349	/	755	1,796	/	1,651	0					
PM	4:00 PM				31		13		331	285	41	342		1,043				1	1
	4:15 PM				31		18		302	294	29	384		1,058					0
	4:30 PM				33		10		314	298	42	395		1,092					0
	4:45 PM				19		19		325	313	35	408		1,119					0
	5:00 PM				38		13		343	310	56	366		1,126					0
	5:15 PM				34		12		326	283	42	398		1,095				1	1
	5:30 PM				36		15		307	266	24	406		1,054				1	1
	5:45 PM				41		25		304	270	33	367		1,040					0
	VOLUMES	0	0	0	263	0	125	0	2,552	2,319	302	3,066	0	8,627	0	0	0	3	3
	APPROACH %	0%	0%	0%	68%	0%	32%	0%	52%	48%	9%	91%	0%						
	APP/DEPART	0	/	0	388	/	2,621	4,871	/	2,815	3,368	/	3,191	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	0	0	0	124	0	54	0	1,308	1,204	175	1,567	0	4,432					
	APPROACH %	0%	0%	0%	70%	0%	30%	0%	52%	48%	10%	90%	0%						
	PEAK HR FACTOR		0.000			0.873			0.962			0.983		0.984					
	APP/DEPART	0	/	0	178	/	1,379	2,512	/	1,432	1,742	/	1,621	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	3				3					0	1				1
	7:15 AM	3				3					0	1				1
	7:30 AM	2				2					0	2				2
	7:45 AM	1				1					0	2				2
	8:00 AM					0					0	1				1
	8:15 AM					0					0					0
	8:30 AM	2				2					0	2				2
	8:45 AM	2				2					0	1				1
	TOTAL	13	0	0	0	13	0	0	0	0	0	10	0	0	0	10
PM	4:00 PM	4				4					0	3				3
	4:15 PM	1				1					0					0
	4:30 PM	6				6					0	2				2
	4:45 PM	2				2					0	2				2
	5:00 PM	2				2					0					0
	5:15 PM	6				6					0	2				2
	5:30 PM					0					0					0
	5:45 PM					0					0	1				1
	TOTAL	21	0	0	0	21	0	0	0	0	0	10	0	0	0	10

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

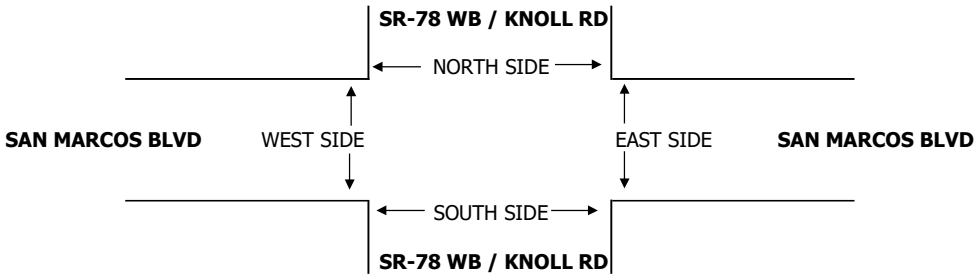
DATE:	LOCATION:	SAN MARCOS CREEK	PROJECT #:	ETD24-1010-02
10/9/25	NORTH & SOUTH:	SR-78 WB / KNOLL RD	LOCATION #:	11
THURSDAY	EAST & WEST:	SAN MARCOS BLVD	CONTROL:	SIGNAL

NOTES:

INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — N / W / E / S

		NORTHBOUND SR-78 WB / KNOLL RD			SOUTHBOUND SR-78 WB / KNOLL RD			EASTBOUND SAN MARCOS BLVD			WESTBOUND SAN MARCOS BLVD				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	209	44	8	20		110	36	46	19		176	16	684					0
	7:15 AM	216	54	6	17		127	60	85	25		219	12	821					0
	7:30 AM	168	52	7	18		137	57	102	26		215	26	808					0
	7:45 AM	171	52	2	23		110	55	121	29		216	17	796					0
	8:00 AM	139	64	9	26		111	41	110	30		201	12	743					0
	8:15 AM	167	68	6	14		101	60	106	32		197	32	783					0
	8:30 AM	171	65	4	17		142	56	117	36		201	28	837					0
	8:45 AM	232	66	4	18		98	36	111	28		249	22	864					0
	VOLUMES	1,473	465	46	153	0	936	401	798	225	0	1,674	165	6,336	0	0	0	0	0
	APPROACH %	74%	23%	2%	14%	0%	86%	28%	56%	16%	0%	91%	9%						
	APP/DEPART	1,984	/	1,031	1,089	/	225	1,424	/	997	1,839	/	4,083	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	709	263	23	75	0	452	193	444	126	0	848	94	3,227					
	APPROACH %	71%	26%	2%	14%	0%	86%	25%	58%	17%	0%	90%	10%						
	PEAK HR FACTOR		0.824			0.829			0.913			0.869		0.934					
	APP/DEPART	995	/	550	527	/	126	763	/	542	942	/	2,009	0					
PM	4:00 PM	177	60	12	36		106	73	253	43		194	30	984					0
	4:15 PM	178	60	16	41		121	74	268	38		175	26	997					0
	4:30 PM	206	67	18	33		91	33	253	29		212	31	973					0
	4:45 PM	171	80	18	27		107	78	275	28		173	29	986					0
	5:00 PM	163	75	12	32		106	104	238	45		208	18	1,001					0
	5:15 PM	177	71	16	31		83	72	269	39		211	22	991					0
	5:30 PM	176	76	16	33		101	74	265	39		224	26	1,030					0
	5:45 PM	136	103	35	23		94	78	248	38		138	59	952					0
	VOLUMES	1,384	592	143	256	0	809	586	2,069	299	0	1,535	241	7,914	0	0	0	0	0
	APPROACH %	65%	28%	7%	24%	0%	76%	20%	70%	10%	0%	86%	14%						
	APP/DEPART	2,119	/	1,419	1,065	/	299	2,954	/	2,468	1,776	/	3,728	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	687	302	62	123	0	397	328	1,047	151	0	816	95	4,008					
	APPROACH %	65%	29%	6%	24%	0%	76%	21%	69%	10%	0%	90%	10%						
	PEAK HR FACTOR		0.977			0.942			0.986			0.911		0.973					
	APP/DEPART	1,051	/	725	520	/	151	1,526	/	1,232	911	/	1,900	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	2		1		3					0					0
	7:15 AM	2		1		3					0					0
	7:30 AM					0					0	2				2
	7:45 AM					0					0	2				2
	8:00 AM					0					0		1			1
	8:15 AM	2		1		3					0					0
	8:30 AM			1		1					0					0
	8:45 AM			3		3					0	2				2
	TOTAL	6	0	7	0	13	0	0	0	0	0	6	1	0	0	7
PM	4:00 PM	3		2		5					0	1	1			2
	4:15 PM	5		2		7					0		1			1
	4:30 PM	3	1	2		6					0	2				2
	4:45 PM	3		2		5					0	1				1
	5:00 PM	2		3		5					0	3				3
	5:15 PM	7	2			9					0	1				1
	5:30 PM	1		1		2					0					0
	5:45 PM			1		1					0	2		1		3
	TOTAL	24	3	13	0	40	0	0	0	0	0	10	2	1	0	13

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

DATE:	LOCATION:	SAN MARCOS CREEK	PROJECT #:	ETD24-1010-02
10/9/25	NORTH & SOUTH:	GRAND AVE	LOCATION #:	12
THURSDAY	EAST & WEST:	CREEKSIDE DR	CONTROL:	SIGNAL

NOTES:

INCLUDES BIKE & PED

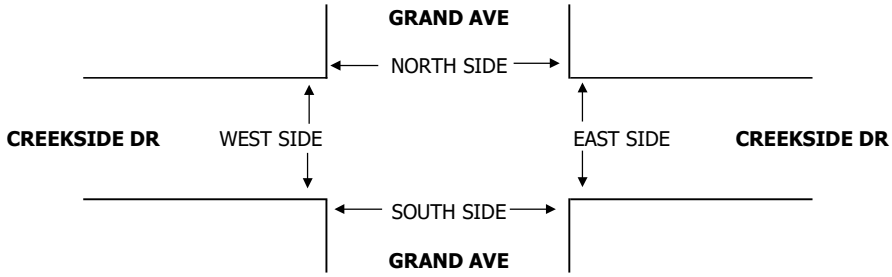
AM / PM / MD / OTHER / OTHER

N ▲ S ▼ W ◄ E ►

		NORTHBOUND GRAND AVE			SOUTHBOUND GRAND AVE			EASTBOUND CREEKSIDE DR			WESTBOUND CREEKSIDE DR			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
AM	7:00 AM	1	2	0	11	1	9	5	7	2	0	5	2	45
	7:15 AM	1	0	1	6	3	17	6	2	1	0	5	3	45
	7:30 AM	0	1	1	6	4	10	12	5	0	0	7	4	50
	7:45 AM	2	6	0	12	2	22	7	12	0	0	7	5	75
	8:00 AM	0	2	0	12	2	14	5	6	0	0	2	5	48
	8:15 AM	2	0	0	22	1	6	7	15	1	0	10	3	67
	8:30 AM	1	4	1	31	1	18	5	7	1	0	10	8	87
	8:45 AM	1	1	0	33	4	13	3	12	0	0	9	9	85
	VOLUMES	8	16	3	133	18	109	50	66	5	0	55	39	502
	APPROACH %	30%	59%	11%	51%	7%	42%	41%	55%	4%	0%	59%	41%	
	APP/DEPART	27	/	105	260	/	23	121	/	202	94	/	172	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	4	7	1	98	8	51	20	40	2	0	31	25	287
	APPROACH %	33%	58%	8%	62%	5%	32%	32%	65%	3%	0%	55%	45%	
	PEAK HR FACTOR		0.500			0.785			0.674			0.778		0.825
	APP/DEPART	12	/	52	157	/	10	62	/	139	56	/	86	0
PM	4:00 PM	2	5	1	67	3	25	16	37	3	0	33	49	241
	4:15 PM	2	5	2	51	2	22	15	22	1	0	38	47	207
	4:30 PM	2	6	0	69	2	21	10	40	0	0	36	30	216
	4:45 PM	1	2	0	65	1	20	10	36	2	1	22	44	204
	5:00 PM	2	5	0	52	3	16	15	30	0	0	36	35	194
	5:15 PM	2	5	1	57	5	22	9	48	1	0	34	34	218
	5:30 PM	1	6	1	82	3	15	8	39	3	0	26	42	226
	5:45 PM	1	7	0	77	1	14	2	33	0	0	29	54	218
	VOLUMES	13	41	5	520	20	155	85	285	10	1	254	335	1,724
	APPROACH %	22%	69%	8%	75%	3%	22%	22%	75%	3%	0%	43%	57%	
	APP/DEPART	59	/	461	695	/	31	380	/	810	590	/	422	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	7	18	3	252	8	88	51	135	6	1	129	170	868
	APPROACH %	25%	64%	11%	72%	2%	25%	27%	70%	3%	0%	43%	57%	
	PEAK HR FACTOR		0.778			0.916			0.857			0.882		0.900
	APP/DEPART	28	/	239	348	/	15	192	/	390	300	/	224	0

U-TURNS

NB	SB	EB	WB	TTL
X	X	X	X	
	5			5
	1			1
	6			6
	2			2
	1			1
	7			7
	3			3
	8			8
0	33	0	0	33
	15			15
	12			12
	24			24
	16			16
	15			15
	11			11
	11			11
	10			10
0	114	0	0	114



PEDESTRIAN CROSSINGS

		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM	7:00 AM		3			3
	7:15 AM		1		1	2
	7:30 AM		2			2
	7:45 AM	1	1			2
	8:00 AM		1			1
	8:15 AM					0
	8:30 AM					0
	8:45 AM		3			3
	TOTAL	1	11	0	1	13
PM	4:00 PM	2	2	2		6
	4:15 PM	3	1		7	11
	4:30 PM	1	5	4	7	17
	4:45 PM	1	4		4	9
	5:00 PM		3	1	5	9
	5:15 PM	2	3	1	1	7
	5:30 PM		7			7
	5:45 PM		8	1	6	15
	TOTAL	9	33	9	30	81

PEDESTRIAN ACTIVATIONS

	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
					0
					0
					0
					0
					0
					0
					0
					0
					0
0	0	0	0	0	0
					0
					0
					0
					0
					0
					0
					0
					0
0	0	0	0	0	0

BICYCLE CROSSINGS

NS	SS	ES	WS	TOTAL
				0
				0
			1	1
				0
				0
				0
				0
				0
0	0	0	1	1
2		2		4
2	1			3
1	1			2
	1			1
	1		2	3
	2			2
			1	1
				0
5	6	2	3	16

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

DATE:	LOCATION:	SAN MARCOS	PROJECT #:	ETD26-0508-01
5/5/26	NORTH & SOUTH:	VIA VERA CRUZ	LOCATION #:	2
TUESDAY	EAST & WEST:	DISCOVERY	CONTROL:	SIGNAL

NOTES:

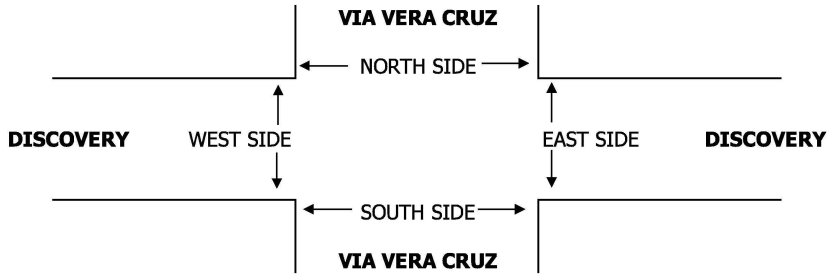
INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND VIA VERA CRUZ			SOUTHBOUND VIA VERA CRUZ			EASTBOUND DISCOVERY			WESTBOUND DISCOVERY			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
AM	7:00 AM	2	20	19	12	6	7	1	41	3	2	79	16	208
	7:15 AM	1	15	8	16	9	8	5	54	0	5	80	17	218
	7:30 AM	4	29	16	18	3	15	1	61	0	3	123	14	287
	7:45 AM	3	24	7	20	9	17	11	83	1	3	148	30	356
	8:00 AM	3	20	15	26	11	20	2	83	2	8	133	23	346
	8:15 AM	4	33	37	22	16	22	4	104	1	7	154	24	428
	8:30 AM	8	37	35	27	9	19	21	129	2	15	141	18	461
	8:45 AM	4	17	21	32	14	8	19	110	2	14	125	26	392
	VOLUMES	29	195	158	173	77	116	64	665	11	57	983	168	2,696
	APPROACH %	8%	51%	41%	47%	21%	32%	9%	90%	1%	5%	81%	14%	
	APP/DEPART	382	/	427	366	/	145	740	/	996	1,208	/	1,128	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	19	107	108	107	50	69	46	426	7	44	553	91	1,627
	APPROACH %	8%	46%	46%	47%	22%	31%	10%	89%	1%	6%	80%	13%	
	PEAK HR FACTOR		0.731			0.942			0.788			0.930		0.882
	APP/DEPART	234	/	244	226	/	101	479	/	641	688	/	641	0
PM	4:00 PM	2	13	11	69	28	10	9	207	4	12	99	39	503
	4:15 PM	2	24	19	73	22	17	11	199	0	9	90	50	516
	4:30 PM	2	11	11	67	15	16	4	170	1	14	78	36	425
	4:45 PM	1	23	12	82	25	8	5	175	0	21	84	46	482
	5:00 PM	2	18	8	73	26	10	9	182	1	22	118	38	507
	5:15 PM	2	40	18	63	32	43	30	151	1	12	125	36	553
	5:30 PM	2	18	16	73	24	20	22	153	4	18	79	35	464
	5:45 PM	1	20	11	60	26	14	17	116	3	21	72	36	397
	VOLUMES	14	167	106	560	198	138	107	1,353	14	129	745	316	3,847
	APPROACH %	5%	58%	37%	63%	22%	15%	7%	92%	1%	11%	63%	27%	
	APP/DEPART	287	/	590	896	/	341	1,474	/	2,019	1,190	/	897	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	7	99	54	291	107	81	66	661	6	73	406	155	2,006
	APPROACH %	4%	62%	34%	61%	22%	17%	9%	90%	1%	12%	64%	24%	
	PEAK HR FACTOR		0.667			0.868			0.954			0.890		0.907
	APP/DEPART	160	/	320	479	/	186	733	/	1,006	634	/	494	0

U-TURNS

NB	SB	EB	WB	TTL
X	X	X	X	
0	0	0	0	0



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM		1			1					0					0
	7:45 AM			1		1					0			1		1
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	1	1	0	2	0	0	0	0	0	0	0	1	0	1
PM	4:00 PM					0					0	1				1
	4:15 PM					0					0					0
	4:30 PM					0					0	1		1		2
	4:45 PM					0					0					0
	5:00 PM		1	1		2					0					0
	5:15 PM					0					0					0
	5:30 PM	1				1					0	1				1
	5:45 PM	3				3					0			1		1
	TOTAL	4	1	1	0	6	0	0	0	0	0	3	0	2	0	5

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

DATE:	LOCATION:	SAN MARCOS	PROJECT #:	ETD26-0508-01
5/6/26	NORTH & SOUTH:	VIA VERA CRUZ	LOCATION #:	2
WEDNESDAY	EAST & WEST:	DISCOVERY	CONTROL:	SIGNAL

NOTES:

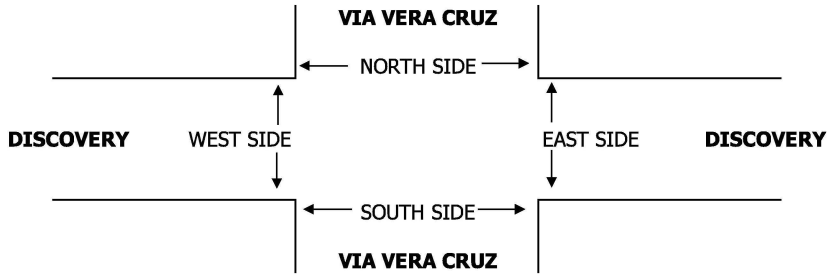
INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND VIA VERA CRUZ			SOUTHBOUND VIA VERA CRUZ			EASTBOUND DISCOVERY			WESTBOUND DISCOVERY			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
AM	7:00 AM	0	20	16	7	5	5	2	34	1	3	69	13	175
	7:15 AM	3	14	12	17	5	8	4	48	0	3	76	18	208
	7:30 AM	8	28	16	19	8	12	9	60	0	8	132	36	336
	7:45 AM	11	21	19	25	10	36	6	90	1	2	178	31	430
	8:00 AM	2	18	19	20	20	35	12	106	1	12	184	39	468
	8:15 AM	6	32	19	28	13	26	28	147	1	7	125	24	456
	8:30 AM	2	17	32	20	6	35	19	132	3	7	133	32	438
	8:45 AM	2	14	18	27	17	10	9	83	2	7	73	23	285
	VOLUMES	34	164	151	163	84	167	89	700	9	49	970	216	2,796
	APPROACH %	10%	47%	43%	39%	20%	40%	11%	88%	1%	4%	79%	17%	
	APP/DEPART	349	/	469	414	/	142	798	/	1,014	1,235	/	1,171	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	21	88	89	93	49	132	65	475	6	28	620	126	1,792
	APPROACH %	11%	44%	45%	34%	18%	48%	12%	87%	1%	4%	80%	16%	
	PEAK HR FACTOR		0.868			0.913			0.776			0.823		0.957
	APP/DEPART	198	/	279	274	/	83	546	/	657	774	/	773	0
PM	4:00 PM	2	10	14	83	26	11	5	196	1	14	91	38	491
	4:15 PM	1	11	13	56	34	13	6	182	3	16	78	34	447
	4:30 PM	2	24	16	95	13	10	9	144	1	10	72	44	440
	4:45 PM	0	22	12	82	23	5	10	153	0	14	87	40	448
	5:00 PM	3	13	7	81	25	18	4	180	4	8	92	37	472
	5:15 PM	2	15	9	73	24	25	2	175	2	11	71	15	424
	5:30 PM	4	10	13	67	24	14	8	181	0	12	79	30	442
	5:45 PM	0	19	6	59	22	16	6	160	0	10	77	27	402
	VOLUMES	14	124	90	596	191	112	50	1,371	11	95	647	265	3,566
	APPROACH %	6%	54%	39%	66%	21%	12%	3%	96%	1%	9%	64%	26%	
	APP/DEPART	228	/	439	899	/	297	1,432	/	2,057	1,007	/	773	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	5	67	55	316	96	39	30	675	5	54	328	156	1,826
	APPROACH %	4%	53%	43%	70%	21%	9%	4%	95%	1%	10%	61%	29%	
	PEAK HR FACTOR		0.756			0.940			0.879			0.941		0.930
	APP/DEPART	127	/	253	451	/	155	710	/	1,046	538	/	372	0

U-TURNS

NB	SB	EB	WB	TTL
X	X	X	X	
				0
				0
				0
				0
				0
				0
				0
			1	1
0	0	0	1	1
				0
				0
			1	1
				0
				0
				0
				0
				0
0	0	0	1	1



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0		1			1
	7:15 AM					0					0		1			1
	7:30 AM		1			1					0					0
	7:45 AM			2		2					0	1				1
	8:00 AM					0					0	2	1			3
	8:15 AM					0					0	1	2		1	4
	8:30 AM		2	1	2	5					0					0
	8:45 AM		2			2					0			2		2
	TOTAL	0	5	3	2	10	0	0	0	0	0	4	5	2	1	12
PM	4:00 PM		1			1					0					0
	4:15 PM			1		1					0					0
	4:30 PM			1		1					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0				1	1
	5:30 PM				1	1					0	1				1
	5:45 PM					0					0					0
	TOTAL	0	1	2	1	4	0	0	0	0	0	1	0	0	1	2

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

DATE:	LOCATION:	SAN MARCOS	PROJECT #:	ETD26-0508-01
5/7/26	NORTH & SOUTH:	VIA VERA CRUZ	LOCATION #:	2
THURSDAY	EAST & WEST:	DISCOVERY	CONTROL:	SIGNAL

NOTES:

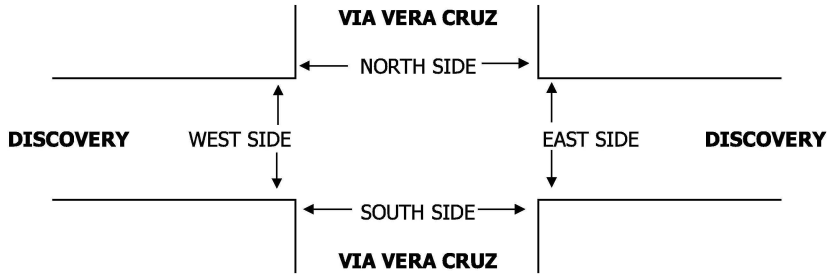
INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND VIA VERA CRUZ			SOUTHBOUND VIA VERA CRUZ			EASTBOUND DISCOVERY			WESTBOUND DISCOVERY			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
AM	7:00 AM	1	26	13	14	6	6	0	41	0	2	84	14	207
	7:15 AM	2	13	14	17	7	10	1	61	0	3	79	17	224
	7:30 AM	5	20	10	17	7	12	3	66	0	4	138	32	314
	7:45 AM	5	29	17	28	9	14	9	78	0	3	153	23	368
	8:00 AM	3	24	13	28	15	22	18	104	1	9	170	30	437
	8:15 AM	2	23	24	32	13	35	15	125	4	12	127	35	447
	8:30 AM	3	24	39	31	13	15	32	133	4	15	108	37	454
	8:45 AM	3	19	23	29	12	14	17	98	0	11	98	35	359
	VOLUMES	24	178	153	196	82	128	95	706	9	59	957	223	2,810
	APPROACH %	7%	50%	43%	48%	20%	32%	12%	87%	1%	5%	77%	18%	
	APP/DEPART	355	/	496	406	/	150	810	/	1,055	1,239	/	1,109	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	13	100	93	119	50	86	74	440	9	39	558	125	1,706
	APPROACH %	6%	49%	45%	47%	20%	34%	14%	84%	2%	5%	77%	17%	
	PEAK HR FACTOR		0.780			0.797			0.774			0.864		0.939
	APP/DEPART	206	/	299	255	/	98	523	/	652	722	/	657	0
PM	4:00 PM	1	15	9	94	16	17	14	189	1	14	82	50	502
	4:15 PM	3	17	15	83	12	12	11	193	1	9	87	40	483
	4:30 PM	2	12	10	94	26	9	14	169	2	5	75	41	459
	4:45 PM	2	19	11	98	21	11	1	179	4	12	82	53	493
	5:00 PM	4	15	16	67	29	13	9	197	1	12	74	40	477
	5:15 PM	2	19	20	90	30	24	5	190	0	16	90	33	519
	5:30 PM	0	9	14	89	32	19	9	151	1	15	83	35	457
	5:45 PM	2	13	6	68	23	19	16	122	3	8	63	34	377
	VOLUMES	16	119	101	683	189	124	79	1,390	13	91	636	326	3,767
	APPROACH %	7%	50%	43%	69%	19%	12%	5%	94%	1%	9%	60%	31%	
	APP/DEPART	236	/	524	996	/	293	1,482	/	2,174	1,053	/	776	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	10	65	57	349	106	57	29	735	7	45	321	167	1,948
	APPROACH %	8%	49%	43%	68%	21%	11%	4%	95%	1%	8%	60%	31%	
	PEAK HR FACTOR		0.805			0.889			0.931			0.906		0.938
	APP/DEPART	132	/	261	512	/	158	771	/	1,141	533	/	388	0

U-TURNS

NB	SB	EB	WB	TTL
X	X	X	X	
0	0	0	1	1
0	0	0	0	0



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM				1	1					0	1				1
	8:00 AM					0					0	3				3
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	1	1	0	0	0	0	0	4	0	0	0	4
PM	4:00 PM				1	1					0					0
	4:15 PM					0					0					0
	4:30 PM	1				1					0					0
	4:45 PM					0					0					0
	5:00 PM	1				1					0					0
	5:15 PM					0					0	1				1
	5:30 PM					0					0		1		1	2
	5:45 PM					0					0					0
	TOTAL	2	0	0	1	3	0	0	0	0	0	1	1	0	1	3

INTERSECTION TURNING MOVEMENT COUNTS

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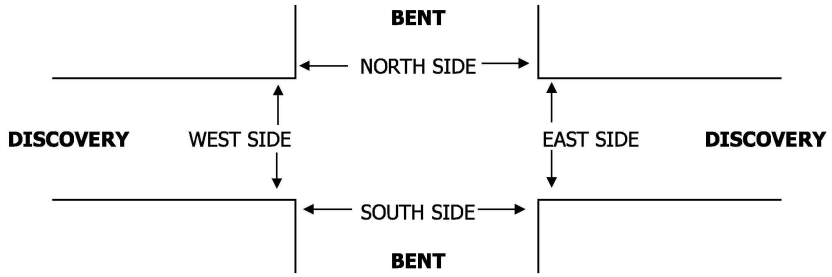
DATE:	LOCATION:	SAN MARCOS	PROJECT #:	ETD26-0508-01
5/5/26	NORTH & SOUTH:	BENT	LOCATION #:	3
TUESDAY	EAST & WEST:	DISCOVERY	CONTROL:	SIGNAL

NOTES:

INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND BENT			SOUTHBOUND BENT			EASTBOUND DISCOVERY			WESTBOUND DISCOVERY				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM				25		7	13	49			66	36	196					0
	7:15 AM				30		6	14	55			95	53	253					0
	7:30 AM				17		9	17	75			128	79	325					0
	7:45 AM				32		13	15	96			168	61	385					0
	8:00 AM				44		13	24	98			141	72	392					0
	8:15 AM				41		16	42	118			165	79	461					0
	8:30 AM				42		15	39	110			151	68	425					0
	8:45 AM				47		10	41	121			142	46	407					0
	VOLUMES	0	0	0	278	0	89	205	722	0	0	1,056	494	2,844	0	0	0	0	0
	APPROACH %	0%	0%	0%	76%	0%	24%	22%	78%	0%	0%	68%	32%						
	APP/DEPART	0	/	699	367	/	0	927	/	1,000	1,550	/	1,145	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	0	0	0	174	0	54	146	447	0	0	599	265	1,685					
	APPROACH %	0%	0%	0%	76%	0%	24%	25%	75%	0%	0%	69%	31%						
	PEAK HR FACTOR		0.000			1.000			0.915			0.885		0.914					
	APP/DEPART	0	/	411	228	/	0	593	/	621	864	/	653	0					
PM	4:00 PM				103		14	44	222			133	104	620					0
	4:15 PM				96		10	61	243			127	66	603					0
	4:30 PM				108		17	34	259			115	113	646					0
	4:45 PM				109		16	39	264			132	92	652					0
	5:00 PM				108		21	35	210			147	96	617					0
	5:15 PM				87		30	36	198			152	124	627					0
	5:30 PM				92		25	27	228			109	101	582					0
	5:45 PM				93		21	25	157			95	74	465					0
	VOLUMES	0	0	0	796	0	154	301	1,781	0	0	1,010	770	4,812	0	0	0	0	0
	APPROACH %	0%	0%	0%	84%	0%	16%	14%	86%	0%	0%	57%	43%						
	APP/DEPART	0	/	1,071	950	/	0	2,082	/	2,577	1,780	/	1,164	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	0	0	0	412	0	84	144	931	0	0	546	425	2,542					
	APPROACH %	0%	0%	0%	83%	0%	17%	13%	87%	0%	0%	56%	44%						
	PEAK HR FACTOR		0.000			0.961			0.887			0.880		0.975					
	APP/DEPART	0	/	569	496	/	0	1,075	/	1,343	971	/	630	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM				1	1					0					0
	7:15 AM					0					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0	1				1
	8:30 AM	3				3					0					0
	8:45 AM				1	1					0	1				1
	TOTAL	3	0	0	2	5	0	0	0	0	0	2	0	0	0	2
PM	4:00 PM					0					0	1				1
	4:15 PM					0					0	1			1	2
	4:30 PM	1			1	2					0					0
	4:45 PM					0					0					0
	5:00 PM	1			2	3					0					0
	5:15 PM				1	1					0	1				1
	5:30 PM	2			1	3					0	1				1
	5:45 PM					0					0	3				3
	TOTAL	4	0	0	5	9	0	0	0	0	0	7	0	0	1	8

INTERSECTION TURNING MOVEMENT COUNTS

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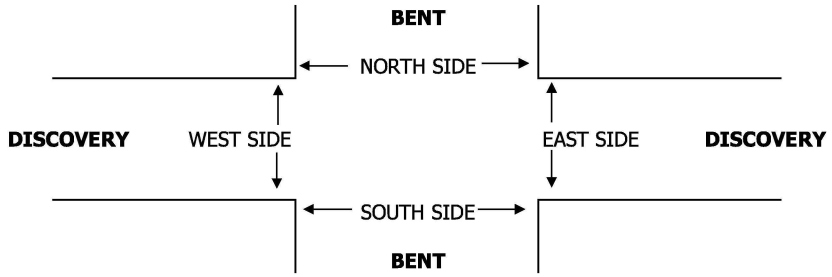
DATE:	LOCATION:	SAN MARCOS	PROJECT #:	ETD26-0508-01
5/6/26	NORTH & SOUTH:	BENT	LOCATION #:	3
WEDNESDAY	EAST & WEST:	DISCOVERY	CONTROL:	SIGNAL

NOTES:

INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND BENT			SOUTHBOUND BENT			EASTBOUND DISCOVERY			WESTBOUND DISCOVERY				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM				18		6	16	36			78	39	193					0
	7:15 AM				24		7	18	55			94	47	245					0
	7:30 AM				28		19	24	70			154	64	359					0
	7:45 AM				40		14	26	99			199	85	463					0
	8:00 AM				37		13	34	112			187	71	454					0
	8:15 AM				51		18	42	139			142	67	459					0
	8:30 AM				34		17	43	131			131	48	404					0
	8:45 AM				45		16	39	136			98	70	404					0
	VOLUMES	0	0	0	277	0	110	242	778	0	0	1,083	491	2,981	0	0	0	0	0
	APPROACH %	0%	0%	0%	72%	0%	28%	24%	76%	0%	0%	69%	31%						
	APP/DEPART	0	/	733	387	/	0	1,020	/	1,055	1,574	/	1,193	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	0	0	0	162	0	62	145	481	0	0	659	271	1,780					
	APPROACH %	0%	0%	0%	72%	0%	28%	23%	77%	0%	0%	71%	29%						
	PEAK HR FACTOR		0.000			0.812			0.865			0.819		0.961					
	APP/DEPART	0	/	416	224	/	0	626	/	643	930	/	721	0					
PM	4:00 PM				105		20	46	220			112	115	618					0
	4:15 PM				105		18	45	199			107	104	578					0
	4:30 PM				109		20	30	228			121	105	613					0
	4:45 PM				120		19	32	225			124	104	624					0
	5:00 PM				105		17	23	231			111	113	600					0
	5:15 PM				112		10	26	227			99	107	581					0
	5:30 PM				112		13	28	230			101	96	580					0
	5:45 PM				86		14	30	222			100	81	533					0
	VOLUMES	0	0	0	854	0	131	260	1,782	0	0	875	825	4,727	0	0	0	0	0
	APPROACH %	0%	0%	0%	87%	0%	13%	13%	87%	0%	0%	51%	49%						
	APP/DEPART	0	/	1,085	985	/	0	2,042	/	2,636	1,700	/	1,006	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	0	0	439	0	77	153	872	0	0	464	428	2,433					
	APPROACH %	0%	0%	0%	85%	0%	15%	15%	85%	0%	0%	52%	48%						
	PEAK HR FACTOR		0.000			0.928			0.963			0.978		0.975					
	APP/DEPART	0	/	581	516	/	0	1,025	/	1,311	892	/	541	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM				1	1					0					0
	7:15 AM	2				2					0				1	1
	7:30 AM					0					0					0
	7:45 AM				1	1					0					0
	8:00 AM				1	1					0					0
	8:15 AM				1	1					0					0
	8:30 AM					0					0					0
	8:45 AM	1				1					0				1	1
	TOTAL	3	0	0	4	7	0	0	0	0	0	0	0	0	2	2
PM	4:00 PM				2	2					0					0
	4:15 PM					0					0					0
	4:30 PM					0					0					0
	4:45 PM					0					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0	1				1
	5:30 PM				4	4					0					0
	5:45 PM					0					0					0
	TOTAL	0	0	0	6	6	0	0	0	0	0	1	0	0	0	1

INTERSECTION TURNING MOVEMENT COUNTS

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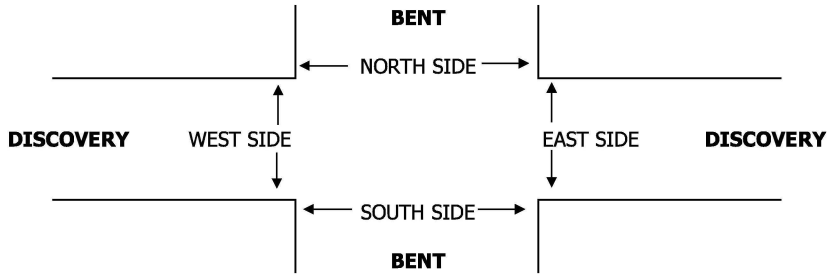
DATE:	LOCATION:	SAN MARCOS	PROJECT #:	ETD26-0508-01
5/7/26	NORTH & SOUTH:	BENT	LOCATION #:	3
THURSDAY	EAST & WEST:	DISCOVERY	CONTROL:	SIGNAL

NOTES:

INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (BENT)			SOUTHBOUND (BENT)			EASTBOUND (DISCOVERY)			WESTBOUND (DISCOVERY)				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM				25		12	14	50			90	40	231					0
	7:15 AM				33		10	21	64			81	49	258					0
	7:30 AM				35		8	17	77			162	62	361					0
	7:45 AM				37		14	23	107			163	62	406					0
	8:00 AM				30		9	31	114			187	79	450					0
	8:15 AM				57		23	34	137			144	75	470					0
	8:30 AM				40		10	48	135			130	62	425					0
	8:45 AM				53		9	35	122			125	81	425					0
	VOLUMES	0	0	0	310	0	95	223	806	0	0	1,082	510	3,026	0	0	0	0	0
	APPROACH %	0%	0%	0%	77%	0%	23%	22%	78%	0%	0%	68%	32%						
	APP/DEPART	0	/	733	405	/	0	1,029	/	1,116	1,592	/	1,177	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	0	0	0	180	0	51	148	508	0	0	586	297	1,770					
	APPROACH %	0%	0%	0%	78%	0%	22%	23%	77%	0%	0%	66%	34%						
	PEAK HR FACTOR		0.000			0.722			0.896			0.830		0.941					
	APP/DEPART	0	/	445	231	/	0	656	/	688	883	/	637	0					
PM	4:00 PM				104		11	23	259			136	92	625					0
	4:15 PM				76		15	49	250			119	99	608					0
	4:30 PM				118		10	35	221			108	106	598					0
	4:45 PM				111		12	39	231			130	101	624					0
	5:00 PM				100		9	22	278			119	115	643					0
	5:15 PM				117		17	39	248			109	98	628					0
	5:30 PM				129		33	21	211			100	88	582					0
	5:45 PM				99		18	32	182			100	84	515					0
	VOLUMES	0	0	0	854	0	125	260	1,880	0	0	921	783	4,823	0	0	0	0	0
	APPROACH %	0%	0%	0%	87%	0%	13%	12%	88%	0%	0%	54%	46%						
	APP/DEPART	0	/	1,043	979	/	0	2,140	/	2,734	1,704	/	1,046	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	0	0	0	446	0	48	135	978	0	0	466	420	2,493					
	APPROACH %	0%	0%	0%	90%	0%	10%	12%	88%	0%	0%	53%	47%						
	PEAK HR FACTOR		0.000			0.922			0.928			0.947		0.969					
	APP/DEPART	0	/	555	494	/	0	1,113	/	1,424	886	/	514	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM				1	1					0					0
	7:15 AM				8	8					0					0
	7:30 AM					0					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM					0					0					0
	TOTAL	0	0	0	9	9	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM					0					0					0
	4:15 PM					0					0					0
	4:30 PM				2	2					0					0
	4:45 PM	1				1					0					0
	5:00 PM	1				1					0					0
	5:15 PM					0					0					0
	5:30 PM				2	2					0					0
	5:45 PM					0					0					0
	TOTAL	2	0	0	4	6	0	0	0	0	0	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

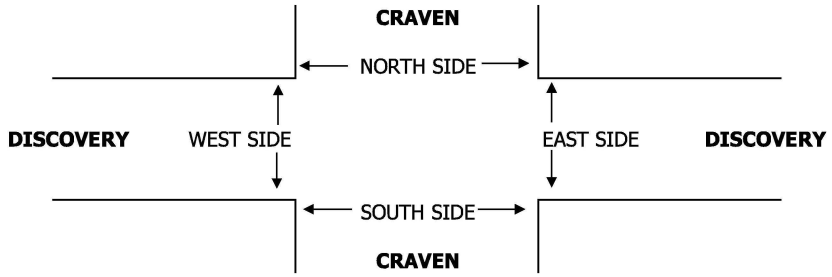
DATE:	LOCATION:	SAN MARCOS	PROJECT #:	ETD26-0508-01
5/5/26	NORTH & SOUTH:	CRAVEN	LOCATION #:	4
TUESDAY	EAST & WEST:	DISCOVERY	CONTROL:	SIGNAL

NOTES:

INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, ▼ S

		NORTHBOUND CRAVEN			SOUTHBOUND CRAVEN			EASTBOUND DISCOVERY			WESTBOUND DISCOVERY				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	60		0					41	34	2	61		198					0
	7:15 AM	74		0					35	59	3	78		249					0
	7:30 AM	52		0					45	52	7	111		267					0
	7:45 AM	86		1					60	77	0	127		351					0
	8:00 AM	91		4					72	82	1	119		369					0
	8:15 AM	109		4					92	69	0	122		396					0
	8:30 AM	103		2					101	84	2	107		399					0
	8:45 AM	82		0					74	102	2	93		353					0
	VOLUMES	657	0	11	0	0	0	0	520	559	17	818	0	2,582	0	0	0	0	0
	APPROACH %	98%	0%	2%	0%	0%	0%	0%	48%	52%	2%	98%	0%						
	APP/DEPART	668	/	0	0	/	576	1,079	/	531	835	/	1,475	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	385	0	10	0	0	0	0	339	337	5	441	0	1,517					
	APPROACH %	97%	0%	3%	0%	0%	0%	0%	50%	50%	1%	99%	0%						
	PEAK HR FACTOR		0.874			0.000			0.914			0.914		0.951					
	APP/DEPART	395	/	0	0	/	342	676	/	349	446	/	826	0					
PM	4:00 PM	124		2					170	156	2	97		551					0
	4:15 PM	121		3					174	158	5	86		547					0
	4:30 PM	119		2					174	148	4	105		552					0
	4:45 PM	123		3					177	171	2	95		571					0
	5:00 PM	122		4					173	172	2	112		585					0
	5:15 PM	123		4					166	146	6	146		591					0
	5:30 PM	99		2					174	146	4	90		515					0
	5:45 PM	82		1					121	137	8	48		397					0
	VOLUMES	913	0	21	0	0	0	0	1,329	1,234	33	779	0	4,309	0	0	0	0	0
	APPROACH %	98%	0%	2%	0%	0%	0%	0%	52%	48%	4%	96%	0%						
	APP/DEPART	934	/	0	0	/	1,267	2,563	/	1,350	812	/	1,692	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	487	0	13	0	0	0	0	690	637	14	458	0	2,299					
	APPROACH %	97%	0%	3%	0%	0%	0%	0%	52%	48%	3%	97%	0%						
	PEAK HR FACTOR		0.984			0.000			0.953			0.776		0.973					
	APP/DEPART	500	/	0	0	/	651	1,327	/	703	472	/	945	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM		1			1					0		1	1		2
	7:15 AM					0					0					0
	7:30 AM					0					0			1		1
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM			1		1					0		1			1
	8:30 AM			3		3					0					0
	8:45 AM		1			1					0		1			1
	TOTAL	0	2	4	0	6	0	0	0	0	0	0	3	2	0	5
PM	4:00 PM					0					0		1	1		2
	4:15 PM		2			2					0					0
	4:30 PM					0					0					0
	4:45 PM		1	3		4					0					0
	5:00 PM		2	3		5					0					0
	5:15 PM					0					0					0
	5:30 PM			2		2					0					0
	5:45 PM					0					0					0
	TOTAL	0	5	8	0	13	0	0	0	0	0	0	1	1	0	2

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

DATE:	LOCATION:	SAN MARCOS	PROJECT #:	ETD26-0508-01
5/6/26	NORTH & SOUTH:	CRAVEN	LOCATION #:	4
WEDNESDAY	EAST & WEST:	DISCOVERY	CONTROL:	SIGNAL

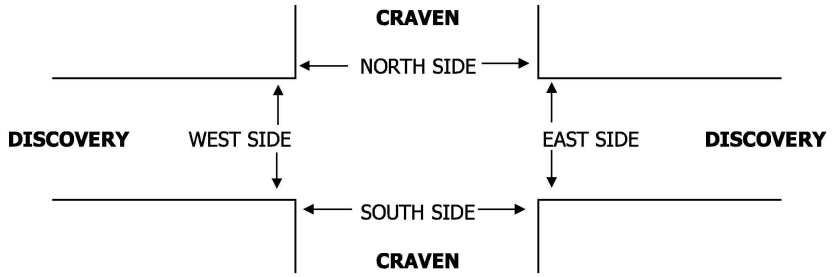
NOTES:

INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND CRAVEN			SOUTHBOUND CRAVEN			EASTBOUND DISCOVERY			WESTBOUND DISCOVERY				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	57		0					22	37	0	56		172					0
	7:15 AM	73		1					36	47	3	62		222					0
	7:30 AM	87		1					59	48	8	129		332					0
	7:45 AM	123		1					70	73	0	156		423					0
	8:00 AM	116		0					71	81	1	130		399					0
	8:15 AM	84		2					86	111	0	122		405					0
	8:30 AM	74		0					100	82	1	106		363					0
	8:45 AM	84		1					74	85	1	85		330					0
	VOLUMES	698	0	6	0	0	0	0	518	564	14	846	0	2,646	0	0	0	0	0
	APPROACH %	99%	0%	1%	0%	0%	0%	0%	48%	52%	2%	98%	0%						
	APP/DEPART	704	/	0	0	/	578	1,082	/	524	860	/	1,544	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	397	0	3	0	0	0	0	327	347	2	514	0	1,590					
	APPROACH %	99%	0%	1%	0%	0%	0%	0%	49%	51%	0%	100%	0%						
	PEAK HR FACTOR		0.806			0.000			0.855			0.827		0.940					
	APP/DEPART	400	/	0	0	/	349	674	/	330	516	/	911	0					
PM	4:00 PM	132		3					214	141	5	146		641					0
	4:15 PM	96		1					196	150	2	100		545					0
	4:30 PM	110		1					184	147	7	105		554					0
	4:45 PM	104		3					231	164	4	130		636					0
	5:00 PM	103		1					220	163	7	85		579					0
	5:15 PM	101		3					198	153	3	108		566					0
	5:30 PM	100		2					178	162	0	78		520				1	1
	5:45 PM	94		4					148	146	3	89		484					0
	VOLUMES	840	0	18	0	0	0	0	1,569	1,226	31	841	0	4,525	0	0	0	1	1
	APPROACH %	98%	0%	2%	0%	0%	0%	0%	56%	44%	4%	96%	0%						
	APP/DEPART	858	/	0	0	/	1,257	2,795	/	1,587	872	/	1,681	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	442	0	8	0	0	0	0	825	602	18	481	0	2,376					
	APPROACH %	98%	0%	2%	0%	0%	0%	0%	58%	42%	4%	96%	0%						
	PEAK HR FACTOR		0.833			0.000			0.903			0.826		0.927					
	APP/DEPART	450	/	0	0	/	620	1,427	/	833	499	/	923	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0					0
	7:15 AM		1			1					0					0
	7:30 AM		1	1		2					0					0
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM		1			1					0		1			1
	8:30 AM		2			2					0					0
	8:45 AM		2			2					0		1			1
	TOTAL	0	7	1	0	8	0	0	0	0	0	0	2	0	0	2
PM	4:00 PM			1		1					0					0
	4:15 PM		1			1					0					0
	4:30 PM		1			1					0					0
	4:45 PM			1		1					0		1			1
	5:00 PM		1			1					0					0
	5:15 PM		1			1					0			3		3
	5:30 PM		1			1					0					0
	5:45 PM					0					0					0
	TOTAL	0	5	2	0	7	0	0	0	0	0	0	1	3	0	4

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: ELITE TRAFFIC DYNAMICS, LLC

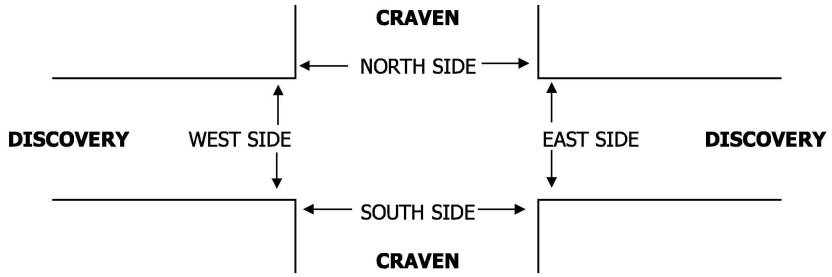
DATE:	LOCATION:	SAN MARCOS	PROJECT #:	ETD26-0508-01
5/7/26	NORTH & SOUTH:	CRAVEN	LOCATION #:	4
THURSDAY	EAST & WEST:	DISCOVERY	CONTROL:	SIGNAL

NOTES:

INCLUDES BIKE & PED

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, ▼ S

		NORTHBOUND CRAVEN			SOUTHBOUND CRAVEN			EASTBOUND DISCOVERY			WESTBOUND DISCOVERY				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	64		0					26	45	0	61		196					0
	7:15 AM	66		2					50	55	2	67		242					0
	7:30 AM	83		1					54	60	8	138		344					0
	7:45 AM	128		2					75	66	2	115		388					0
	8:00 AM	114		3					80	70	1	135		403					0
	8:15 AM	87		3					95	108	2	115		410					0
	8:30 AM	82		1					88	91	11	108		381					0
	8:45 AM	77		1					91	86	1	122		378					0
	VOLUMES	701	0	13	0	0	0	0	559	581	27	861	0	2,742	0	0	0	0	0
	APPROACH %	98%	0%	2%	0%	0%	0%	0%	49%	51%	3%	97%	0%						
	APP/DEPART	714	/	0	0	/	608	1,140	/	572	888	/	1,562	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	411	0	9	0	0	0	0	338	335	16	473	0	1,582					
	APPROACH %	98%	0%	2%	0%	0%	0%	0%	50%	50%	3%	97%	0%						
	PEAK HR FACTOR		0.808			0.000			0.829			0.899		0.965					
	APP/DEPART	420	/	0	0	/	351	673	/	347	489	/	884	0					
PM	4:00 PM	126		3					209	153	7	95		593					0
	4:15 PM	96		2					196	148	5	113		560					0
	4:30 PM	119		1					189	148	7	100		564					0
	4:45 PM	100		6					212	170	5	117		610					0
	5:00 PM	106		1					219	160	6	117		609					0
	5:15 PM	102		4					198	161	3	105		573					0
	5:30 PM	98		2					201	157	1	87		546					0
	5:45 PM	92		5					146	149	3	84		479					0
	VOLUMES	839	0	24	0	0	0	0	1,570	1,246	37	818	0	4,534	0	0	0	0	0
	APPROACH %	97%	0%	3%	0%	0%	0%	0%	56%	44%	4%	96%	0%						
	APP/DEPART	863	/	0	0	/	1,283	2,816	/	1,594	855	/	1,657	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	427	0	12	0	0	0	0	818	639	21	439	0	2,356					
	APPROACH %	97%	0%	3%	0%	0%	0%	0%	56%	44%	5%	95%	0%						
	PEAK HR FACTOR		0.915			0.000			0.954			0.935		0.966					
	APP/DEPART	439	/	0	0	/	660	1,457	/	830	460	/	866	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM					0					0		1			1
	7:15 AM		12			12					0					0
	7:30 AM			1		1					0		1			1
	7:45 AM					0					0					0
	8:00 AM					0					0					0
	8:15 AM					0					0					0
	8:30 AM			1		1					0		1			1
	8:45 AM					0					0		2			2
	TOTAL	0	12	2	0	14	0	0	0	0	0	0	5	0	0	5
PM	4:00 PM					0					0			1		1
	4:15 PM					0					0					0
	4:30 PM					0					0		3	1		4
	4:45 PM		1	2		3					0					0
	5:00 PM			1		1					0					0
	5:15 PM					0					0					0
	5:30 PM		1			1					0		1			1
	5:45 PM					0					0					0
	TOTAL	0	2	3	0	5	0	0	0	0	0	0	4	2	0	6

Appendix D: LOS Analysis Worksheets – Existing Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	520	0	198	204	766	0	0	1193	290
Future Volume (veh/h)	0	0	0	520	0	198	204	766	0	0	1193	290
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1833	1833
Adj Flow Rate, veh/h				388	266	198	227	851	0	0	1326	290
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				429	238	177	219	3268	0	0	1921	420
Arrive On Green				0.24	0.24	0.24	0.16	0.85	0.00	0.00	0.47	0.47
Sat Flow, veh/h				1781	989	736	1781	5274	0	0	4253	893
Grp Volume(v), veh/h				388	0	464	227	851	0	0	1082	534
Grp Sat Flow(s),veh/h/ln				1781	0	1725	1781	1702	0	0	1668	1645
Q Serve(g_s), s				21.1	0.0	24.1	12.3	3.2	0.0	0.0	25.4	25.5
Cycle Q Clear(g_c), s				21.1	0.0	24.1	12.3	3.2	0.0	0.0	25.4	25.5
Prop In Lane				1.00		0.43	1.00		0.00	0.00		0.54
Lane Grp Cap(c), veh/h				429	0	416	219	3268	0	0	1568	773
V/C Ratio(X)				0.90	0.00	1.12	1.04	0.26	0.00	0.00	0.69	0.69
Avail Cap(c_a), veh/h				429	0	416	219	3268	0	0	1568	773
HCM Platoon Ratio				1.00	1.00	1.00	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.92	0.92	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				36.8	0.0	38.0	41.8	2.9	0.0	0.0	20.8	20.8
Incr Delay (d2), s/veh				21.6	0.0	79.7	68.0	0.2	0.0	0.0	2.5	5.0
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				11.0	0.0	18.5	9.1	0.9	0.0	0.0	9.7	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				58.4	0.0	117.6	109.8	3.1	0.0	0.0	23.3	25.8
LnGrp LOS				E		F	F	A			C	C
Approach Vol, veh/h					852			1078			1616	
Approach Delay, s/veh					90.7			25.6			24.1	
Approach LOS					F			C			C	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	70.8		17.0	53.8		29.2						
Change Period (Y+Rc), s	6.8		4.7	6.8		5.1						
Max Green Setting (Gmax), s	64.0		12.3	47.0		24.1						
Max Q Clear Time (g_c+I1), s	5.2		14.3	27.5		26.1						
Green Ext Time (p_c), s	4.1		0.0	7.5		0.0						

Intersection Summary	
HCM 7th Control Delay, s/veh	40.6
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	194	18	96	173	503	23	327	46	402	767	603
Future Volume (veh/h)	169	194	18	96	173	503	23	327	46	402	767	603
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
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	1852	1852	1870	1870	1870	1870	1852	1852	1870	1870	1852
Adj Flow Rate, veh/h	174	200	17	99	178	416	24	337	42	414	791	498
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	309	438	37	150	240	990	61	1343	163	785	1735	890
Arrive On Green	0.09	0.13	0.13	0.14	0.21	0.21	0.03	0.29	0.29	0.38	0.82	0.82
Sat Flow, veh/h	3456	3281	276	1781	1870	2770	1781	4554	553	3456	3554	1535
Grp Volume(v), veh/h	174	106	111	99	178	416	24	247	132	414	791	498
Grp Sat Flow(s),veh/h/ln	1728	1759	1798	1781	1870	1385	1781	1685	1737	1728	1777	1535
Q Serve(g_s), s	4.8	5.6	5.7	5.3	8.9	2.8	1.3	5.6	5.8	9.3	6.6	10.8
Cycle Q Clear(g_c), s	4.8	5.6	5.7	5.3	8.9	2.8	1.3	5.6	5.8	9.3	6.6	10.8
Prop In Lane	1.00		0.15	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	309	235	240	150	240	990	61	994	512	785	1735	890
V/C Ratio(X)	0.56	0.45	0.46	0.66	0.74	0.42	0.40	0.25	0.26	0.53	0.46	0.56
Avail Cap(c_a), veh/h	328	378	387	169	402	1229	169	994	512	785	1735	890
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	0.99	0.99	0.99	0.54	0.54	0.54
Uniform Delay (d), s/veh	43.7	39.9	40.0	41.6	37.7	8.0	47.3	26.8	26.9	26.9	5.3	4.0
Incr Delay (d2), s/veh	2.0	1.4	1.4	7.4	4.2	0.3	4.1	0.6	1.2	0.4	0.5	1.4
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	2.1	2.4	2.5	2.4	3.9	1.4	0.6	2.2	2.5	3.4	1.8	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	45.6	41.3	41.4	49.0	41.9	8.3	51.4	27.4	28.1	27.2	5.8	5.4
LnGrp LOS	D	D	D	D	D	A	D	C	C	C	A	A
Approach Vol, veh/h		391			693			403			1703	
Approach Delay, s/veh		43.3			22.7			29.1			10.9	
Approach LOS		D			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	36.0	14.9	19.9	9.9	55.3	15.4	19.4
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	13.5	29.5	9.5	21.5	9.5	33.5	9.5	21.5
Max Q Clear Time (g_c+I1), s	1.3	7.8	7.3	7.7	3.3	12.8	6.8	10.9
Green Ext Time (p_c), s	0.4	2.1	0.0	0.9	0.0	7.3	0.1	2.0

Intersection Summary	
HCM 7th Control Delay, s/veh	19.7
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	328	164	177	36	189	3	136	48	14	131	264	430
Future Volume (veh/h)	328	164	177	36	189	3	136	48	14	131	264	430
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1833	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	349	174	150	38	201	3	98	117	11	139	281	411
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	411	812	525	128	939	14	196	205	174	664	256	374
Arrive On Green	0.12	0.23	0.23	0.07	0.18	0.18	0.11	0.11	0.11	0.37	0.37	0.37
Sat Flow, veh/h	3456	3554	1553	1781	5183	77	1781	1870	1585	1781	686	1004
Grp Volume(v), veh/h	349	174	150	38	132	72	98	117	11	139	0	692
Grp Sat Flow(s),veh/h/ln	1728	1777	1553	1781	1702	1856	1781	1870	1585	1781	0	1690
Q Serve(g_s), s	9.9	4.0	7.1	2.0	3.3	3.3	5.2	5.9	0.6	5.3	0.0	37.3
Cycle Q Clear(g_c), s	9.9	4.0	7.1	2.0	3.3	3.3	5.2	5.9	0.6	5.3	0.0	37.3
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		0.59
Lane Grp Cap(c), veh/h	411	812	525	128	617	336	196	205	174	664	0	630
V/C Ratio(X)	0.85	0.21	0.29	0.30	0.21	0.21	0.50	0.57	0.06	0.21	0.00	1.10
Avail Cap(c_a), veh/h	415	812	525	267	617	336	267	281	238	664	0	630
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)	0.64	0.64	0.64	1.00	1.00	1.00	0.99	0.99	0.99	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.2	31.3	24.2	44.0	34.9	34.9	41.9	42.3	39.9	21.3	0.0	31.4
Incr Delay (d2), s/veh	9.7	0.4	0.9	0.5	0.8	1.5	0.7	0.9	0.1	0.1	0.0	65.6
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	4.6	1.7	3.1	0.9	1.4	1.6	2.3	2.7	0.2	2.0	0.0	25.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.9	31.7	25.1	44.5	35.7	36.3	42.7	43.2	40.0	21.4	0.0	96.9
LnGrp LOS	D	C	C	D	D	D	D	D	D	C		F
Approach Vol, veh/h		673			242			226			831	
Approach Delay, s/veh		41.2			37.3			42.8			84.3	
Approach LOS		D			D			D			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.9	29.6		42.4	16.6	24.9		16.1				
Change Period (Y+Rc), s	4.7	6.8		5.1	4.7	6.8		5.1				
Max Green Setting (Gmax), s	15.6	11.0		37.3	12.0	14.0		15.0				
Max Q Clear Time (g_c+I1), s	11.9	9.1		39.3	11.9	5.3		7.9				
Green Ext Time (p_c), s	0.0	0.2		0.0	0.0	0.4		0.3				

Intersection Summary	
HCM 7th Control Delay, s/veh	59.1
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	39	24	146	60	208	27	232	100	225	440	156
Future Volume (veh/h)	43	39	24	146	60	208	27	232	100	225	440	156
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
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	1854	1870	1854	1854	1870	1870	1854	1870	1854	1854
Adj Flow Rate, veh/h	44	40	19	151	62	192	28	239	82	232	454	145
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	84	236	196	179	71	221	397	1503	662	219	856	271
Arrive On Green	0.05	0.13	0.13	0.10	0.18	0.18	0.45	0.85	0.85	0.12	0.33	0.33
Sat Flow, veh/h	1781	1870	1556	1781	397	1230	1781	3554	1565	1781	2615	828
Grp Volume(v), veh/h	44	40	19	151	0	254	28	239	82	232	304	295
Grp Sat Flow(s),veh/h/ln	1781	1870	1556	1781	0	1627	1781	1777	1565	1781	1761	1682
Q Serve(g_s), s	2.7	2.1	0.7	9.2	0.0	16.7	1.0	1.3	1.0	13.5	15.5	15.7
Cycle Q Clear(g_c), s	2.7	2.1	0.7	9.2	0.0	16.7	1.0	1.3	1.0	13.5	15.5	15.7
Prop In Lane	1.00		1.00	1.00		0.76	1.00		1.00	1.00		0.49
Lane Grp Cap(c), veh/h	84	236	196	179	0	293	397	1503	662	219	576	550
V/C Ratio(X)	0.53	0.17	0.10	0.84	0.00	0.87	0.07	0.16	0.12	1.06	0.53	0.54
Avail Cap(c_a), veh/h	194	408	339	194	0	355	397	1503	662	219	576	550
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.97	0.97	0.97	0.88	0.88	0.88
Uniform Delay (d), s/veh	51.2	42.9	16.1	48.6	0.0	43.8	23.9	5.0	5.0	48.3	30.1	30.2
Incr Delay (d2), s/veh	5.0	0.3	0.2	25.5	0.0	17.3	0.1	0.2	0.4	74.2	3.0	3.3
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	1.3	1.0	0.5	5.4	0.0	8.1	0.4	0.5	0.4	10.3	6.8	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	56.2	43.2	16.3	74.1	0.0	61.1	24.0	5.2	5.3	122.4	33.1	33.4
LnGrp LOS	E	D	B	E		E	C	A	A	F	C	C
Approach Vol, veh/h		103			405			349			831	
Approach Delay, s/veh		43.8			65.9			6.7			58.2	
Approach LOS		D			E			A			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	53.0	17.1	19.9	31.0	42.0	11.2	25.8
Change Period (Y+Rc), s	6.5	* 6.5	6.0	6.0	6.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.5	* 36	12.0	24.0	13.5	36.0	12.0	24.0
Max Q Clear Time (g_c+I1), s	15.5	3.3	11.2	4.1	3.0	17.7	4.7	18.7
Green Ext Time (p_c), s	0.0	1.7	0.0	0.2	0.0	3.3	0.0	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	48.5
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	224	61	7	161	22	34	214	11	32	271	319
Future Volume (veh/h)	96	224	61	7	161	22	34	214	11	32	271	319
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.99
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	1854	1870	1854	1854	1870	1854	1854	1870	1854	1854
Adj Flow Rate, veh/h	104	243	53	8	175	21	37	233	11	35	295	312
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	130	499	220	32	270	32	66	1981	93	64	1017	896
Arrive On Green	0.07	0.14	0.14	0.02	0.09	0.09	0.04	0.58	0.58	0.06	0.96	0.96
Sat Flow, veh/h	1781	3554	1568	1781	3169	375	1781	3422	161	1781	1761	1551
Grp Volume(v), veh/h	104	243	53	8	96	100	37	119	125	35	295	312
Grp Sat Flow(s),veh/h/ln	1781	1777	1568	1781	1761	1783	1781	1761	1822	1781	1761	1551
Q Serve(g_s), s	6.3	6.9	3.3	0.5	5.8	6.0	2.2	3.4	3.4	2.1	0.9	1.2
Cycle Q Clear(g_c), s	6.3	6.9	3.3	0.5	5.8	6.0	2.2	3.4	3.4	2.1	0.9	1.2
Prop In Lane	1.00		1.00	1.00		0.21	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	130	499	220	32	150	152	66	1019	1055	64	1017	896
V/C Ratio(X)	0.80	0.49	0.24	0.25	0.64	0.66	0.56	0.12	0.12	0.55	0.29	0.35
Avail Cap(c_a), veh/h	178	840	371	178	416	421	219	1019	1055	219	1017	896
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	1.00	1.00	0.99	0.99	0.99	0.83	0.83	0.83	0.91	0.91	0.91
Uniform Delay (d), s/veh	50.2	43.6	42.1	53.3	48.7	48.8	52.1	10.5	10.5	50.8	0.8	0.8
Incr Delay (d2), s/veh	16.3	0.7	0.6	4.1	4.5	4.7	6.1	0.2	0.2	6.5	0.7	1.0
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	8.4	3.1	1.3	0.3	2.7	2.8	1.1	1.3	1.3	1.0	0.4	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	66.5	44.4	42.6	57.4	53.1	53.5	58.2	10.7	10.7	57.4	1.5	1.8
LnGrp LOS	E	D	D	E	D	D	E	B	B	E	A	A
Approach Vol, veh/h		400			204			281			642	
Approach Delay, s/veh		49.9			53.5			16.9			4.7	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	70.2	8.0	21.4	10.6	70.0	14.0	15.4
Change Period (Y+Rc), s	6.5	6.5	6.0	6.0	6.5	6.5	6.0	6.0
Max Green Setting (Gmax), s	13.5	34.5	11.0	26.0	13.5	34.5	11.0	26.0
Max Q Clear Time (g_c+I1), s	4.1	5.4	2.5	8.9	4.2	3.2	8.3	8.0
Green Ext Time (p_c), s	0.0	1.3	0.0	1.5	0.0	4.0	0.1	0.9

Intersection Summary	
HCM 7th Control Delay, s/veh	25.3
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	164	14	12	127	13	16	81	58	10	292	34
Future Volume (veh/h)	70	164	14	12	127	13	16	81	58	10	292	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	77	180	13	13	140	12	18	89	57	11	321	33
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	391	28	36	542	46	40	405	240	31	597	61
Arrive On Green	0.08	0.23	0.23	0.02	0.16	0.16	0.02	0.19	0.19	0.02	0.18	0.18
Sat Flow, veh/h	1781	1723	124	1781	3315	281	1781	2144	1271	1781	3255	332
Grp Volume(v), veh/h	77	0	193	13	74	78	18	73	73	11	174	180
Grp Sat Flow(s),veh/h/ln	1781	0	1848	1781	1777	1820	1781	1777	1638	1781	1777	1810
Q Serve(g_s), s	1.8	0.0	4.0	0.3	1.6	1.6	0.4	1.5	1.7	0.3	3.9	3.9
Cycle Q Clear(g_c), s	1.8	0.0	4.0	0.3	1.6	1.6	0.4	1.5	1.7	0.3	3.9	3.9
Prop In Lane	1.00		0.07	1.00		0.15	1.00		0.78	1.00		0.18
Lane Grp Cap(c), veh/h	148	0	419	36	291	298	40	335	309	31	326	332
V/C Ratio(X)	0.52	0.00	0.46	0.36	0.26	0.26	0.45	0.22	0.24	0.36	0.53	0.54
Avail Cap(c_a), veh/h	1015	0	1264	1015	1216	1245	1015	1621	1494	1015	1621	1651
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	0.00	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	19.3	0.0	14.6	21.2	16.0	16.0	21.2	15.0	15.1	21.3	16.2	16.2
Incr Delay (d2), s/veh	2.8	0.0	0.8	6.1	0.5	0.5	7.7	0.3	0.4	7.0	1.4	1.4
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	0.8	0.0	1.5	0.2	0.6	0.6	0.2	0.5	0.5	0.2	1.4	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.1	0.0	15.4	27.3	16.5	16.5	28.9	15.4	15.5	28.3	17.6	17.6
LnGrp LOS	C		B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		270			165			164			365	
Approach Delay, s/veh		17.3			17.3			16.9			17.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	14.3	6.9	15.9	7.0	14.0	9.7	13.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	25.0	40.0	25.0	30.0	25.0	40.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	2.3	3.7	2.3	6.0	2.4	5.9	3.8	3.6
Green Ext Time (p_c), s	0.0	0.8	0.0	1.0	0.0	2.0	0.2	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	17.5
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	316	18	126	254	5	90
Future Vol, veh/h	316	18	126	254	5	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	65	-	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	343	20	137	276	5	98

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	363	0	765	182
Stage 1	-	-	-	-	353	-
Stage 2	-	-	-	-	412	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1192	-	339	830
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	637	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1192	-	300	830
Mov Cap-2 Maneuver	-	-	-	-	300	-
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	637	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.79	10.48
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	759	-	-	1192	-
HCM Lane V/C Ratio	0.136	-	-	0.115	-
HCM Ctrl Dly (s/v)	10.5	-	-	8.4	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.4	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	202	201	21	255	126	33
Future Volume (veh/h)	202	201	21	255	126	33
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
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
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	215	193	22	271	134	29
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	695	593	58	1945	317	282
Arrive On Green	0.38	0.38	0.03	0.55	0.18	0.18
Sat Flow, veh/h	1910	1550	1781	3647	1781	1585
Grp Volume(v), veh/h	210	198	22	271	134	29
Grp Sat Flow(s),veh/h/ln	1777	1589	1781	1777	1781	1585
Q Serve(g_s), s	3.3	3.5	0.5	1.5	2.6	0.6
Cycle Q Clear(g_c), s	3.3	3.5	0.5	1.5	2.6	0.6
Prop In Lane		0.98	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	680	608	58	1945	317	282
V/C Ratio(X)	0.31	0.33	0.38	0.14	0.42	0.10
Avail Cap(c_a), veh/h	1039	929	272	3000	1132	1008
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	8.5	8.6	18.6	4.4	14.4	13.5
Incr Delay (d2), s/veh	0.3	0.3	4.0	0.0	0.9	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.8	0.2	0.2	0.9	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	8.8	8.9	22.7	4.4	15.3	13.7
LnGrp LOS	A	A	C	A	B	B
Approach Vol, veh/h	408			293	163	
Approach Delay, s/veh	8.8			5.8	15.0	
Approach LOS	A			A	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	6.5	20.8				27.3	12.0
Change Period (Y+Rc), s	5.2	5.8				5.8	5.0
Max Green Setting (Gmax), s	6.0	23.0				33.2	25.0
Max Q Clear Time (g_c+I1), s	2.5	5.5				3.5	4.6
Green Ext Time (p_c), s	0.0	2.0				1.6	0.4

Intersection Summary			
HCM 7th Control Delay, s/veh		8.9	
HCM 7th LOS		A	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	719	321	60	844	368	416	65	112	242	41	125
Future Volume (veh/h)	130	719	321	60	844	368	416	65	112	242	41	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.98	1.00		0.92
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	1850	1870	1870	1850	1870	1870	1850	1870	1870	1870
Adj Flow Rate, veh/h	135	749	267	63	879	306	433	68	94	252	43	116
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	1267	772	375	1779	750	501	319	263	308	48	130
Arrive On Green	0.07	0.36	0.36	0.21	0.50	0.50	0.14	0.17	0.17	0.09	0.11	0.11
Sat Flow, veh/h	3456	3554	1526	1781	3554	1499	3456	1870	1543	3456	421	1135
Grp Volume(v), veh/h	135	749	267	63	879	306	433	68	94	252	0	159
Grp Sat Flow(s),veh/h/ln	1728	1777	1526	1781	1777	1499	1728	1870	1543	1728	0	1556
Q Serve(g_s), s	5.7	25.8	0.0	4.3	24.6	19.2	18.4	4.7	5.2	10.7	0.0	15.1
Cycle Q Clear(g_c), s	5.7	25.8	0.0	4.3	24.6	19.2	18.4	4.7	5.2	10.7	0.0	15.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.73
Lane Grp Cap(c), veh/h	230	1267	772	375	1779	750	501	319	263	308	0	178
V/C Ratio(X)	0.59	0.59	0.35	0.17	0.49	0.41	0.86	0.21	0.36	0.82	0.00	0.89
Avail Cap(c_a), veh/h	380	1267	772	375	1779	750	783	362	298	541	0	192
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	0.89	0.89	0.89	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	68.0	39.3	22.5	48.5	24.9	23.5	62.7	53.6	22.7	67.1	0.0	65.5
Incr Delay (d2), s/veh	2.4	2.0	1.2	0.2	0.9	1.5	6.2	0.3	0.8	5.3	0.0	35.1
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	2.6	11.4	6.1	1.9	10.3	7.3	8.6	2.3	3.2	5.0	0.0	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	70.4	41.4	23.7	48.7	25.7	25.0	68.9	53.9	23.5	72.4	0.0	100.6
LnGrp LOS	E	D	C	D	C	C	E	D	C	E		F
Approach Vol, veh/h		1151			1248			595			411	
Approach Delay, s/veh		40.7			26.7			60.0			83.3	
Approach LOS		D			C			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	82.1	27.7	23.7	38.6	60.0	19.9	31.6
Change Period (Y+Rc), s	6.5	7.0	6.0	6.5	7.0	* 6.5	6.5	6.0
Max Green Setting (Gmax), s	10.5	55.0	34.0	18.5	18.5	* 54	23.5	29.0
Max Q Clear Time (g_c+I1), s	7.7	26.6	20.4	17.1	6.3	27.8	12.7	7.2
Green Ext Time (p_c), s	0.2	7.6	1.4	0.1	0.1	6.1	0.6	0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	44.1
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	1093	2	0	1042	22	0	0	0	34	0	125
Future Volume (veh/h)	80	1093	2	0	1042	22	0	0	0	34	0	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
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	1859	1859	1870	1859	1859	1870	1870	1870	1870	1870	1859
Adj Flow Rate, veh/h	83	1139	2	0	1085	21	0	0	0	35	0	105
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	1627	3	588	2559	50	0	1	0	160	0	139
Arrive On Green	0.08	0.60	0.60	0.00	1.00	1.00	0.00	0.00	0.00	0.09	0.00	0.09
Sat Flow, veh/h	1781	3617	6	1781	3543	69	0	1870	0	1781	0	1554
Grp Volume(v), veh/h	83	556	585	0	541	565	0	0	0	35	0	105
Grp Sat Flow(s),veh/h/ln	1781	1766	1857	1781	1766	1846	0	1870	0	1781	0	1554
Q Serve(g_s), s	6.9	32.6	32.6	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	9.9
Cycle Q Clear(g_c), s	6.9	32.6	32.6	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	9.9
Prop In Lane	1.00		0.00	1.00		0.04	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	103	795	836	588	1275	1333	0	1	0	160	0	139
V/C Ratio(X)	0.80	0.70	0.70	0.00	0.42	0.42	0.00	0.00	0.00	0.22	0.00	0.75
Avail Cap(c_a), veh/h	220	795	836	588	1275	1333	0	193	0	327	0	285
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.00	0.88	0.88	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	68.4	23.1	23.1	0.0	0.0	0.0	0.0	0.0	0.0	63.4	0.0	66.7
Incr Delay (d2), s/veh	11.8	4.4	4.2	0.0	0.9	0.9	0.0	0.0	0.0	0.7	0.0	8.0
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	3.4	12.5	13.1	0.0	0.3	0.3	0.0	0.0	0.0	1.3	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	80.2	27.6	27.4	0.0	0.9	0.9	0.0	0.0	0.0	64.1	0.0	74.6
LnGrp LOS	F	C	C		A	A				E		E
Approach Vol, veh/h		1224			1106			0			140	
Approach Delay, s/veh		31.0			0.9			0.0			72.0	
Approach LOS		C			A						E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.0	74.0		20.0	15.2	114.9		0.0				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	13.5	67.5		27.5	18.5	62.5		15.5				
Max Q Clear Time (g_c+I1), s	10.0	34.6		11.9	8.9	2.0		0.0				
Green Ext Time (p_c), s	0.0	8.0		0.4	0.1	8.2		0.0				

Intersection Summary			
HCM 7th Control Delay, s/veh		19.9	
HCM 7th LOS		B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	844	24	21	974	53	20	13	17	63	17	261
Future Volume (veh/h)	163	844	24	21	974	53	20	13	17	63	17	261
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		1.00	1.00		0.99
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	1859	1859	1870	1870	1859	1870	1870	1859	1870	1870	1859
Adj Flow Rate, veh/h	166	861	22	21	994	44	20	13	13	64	17	213
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	2453	63	42	2187	967	210	280	234	246	280	399
Arrive On Green	0.21	1.00	1.00	0.02	0.62	0.62	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	3518	90	1781	3554	1572	1142	1870	1569	1379	1870	1559
Grp Volume(v), veh/h	166	432	451	21	994	44	20	13	13	64	17	213
Grp Sat Flow(s),veh/h/ln	1781	1766	1842	1781	1777	1572	1142	1870	1569	1379	1870	1559
Q Serve(g_s), s	13.6	0.0	0.0	1.7	22.4	1.7	2.3	0.9	1.1	6.3	1.2	17.7
Cycle Q Clear(g_c), s	13.6	0.0	0.0	1.7	22.4	1.7	3.5	0.9	1.1	7.1	1.2	17.7
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	187	1231	1284	42	2187	967	210	280	234	246	280	399
V/C Ratio(X)	0.89	0.35	0.35	0.51	0.45	0.05	0.10	0.05	0.06	0.26	0.06	0.53
Avail Cap(c_a), veh/h	279	1231	1284	220	2187	967	325	468	392	389	474	561
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	0.82	0.82	0.82	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	58.3	0.0	0.0	72.4	15.4	11.4	56.2	54.6	54.7	57.7	54.8	48.2
Incr Delay (d2), s/veh	18.4	0.7	0.7	7.6	0.6	0.1	0.2	0.1	0.1	0.5	0.1	1.1
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	6.3	0.2	0.2	0.9	8.8	0.6	0.7	0.4	0.4	2.2	0.6	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	76.7	0.7	0.7	80.0	16.0	11.5	56.4	54.7	54.8	58.2	54.8	49.3
LnGrp LOS	E	A	A	E	B	B	E	D	D	E	D	D
Approach Vol, veh/h		1049			1059			46			294	
Approach Delay, s/veh		12.7			17.1			55.5			51.6	
Approach LOS		B			B			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	111.1		28.9	22.3	98.8		28.9				
Change Period (Y+Rc), s	6.5	6.5		* 6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	18.5	74.5		* 38	23.5	69.5		37.5				
Max Q Clear Time (g_c+I1), s	13.7	2.0		19.7	15.6	24.4		5.5				
Green Ext Time (p_c), s	0.0	5.9		0.9	0.2	8.1		0.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	20.1
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	714	133	42	900	62	41	146	48	57	149	41
Future Volume (veh/h)	21	714	133	42	900	62	41	146	48	57	149	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.99
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	1857	1857	1870	1857	1857	1870	1857	1857	1870	1857	1857
Adj Flow Rate, veh/h	23	776	131	46	978	60	45	159	47	62	162	41
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	549	1757	297	67	1051	64	88	356	102	166	192	49
Arrive On Green	0.31	0.58	0.58	0.01	0.10	0.10	0.05	0.13	0.13	0.05	0.13	0.13
Sat Flow, veh/h	1781	3018	509	1781	3372	207	1781	2694	769	3456	1427	361
Grp Volume(v), veh/h	23	453	454	46	511	527	45	102	104	62	0	203
Grp Sat Flow(s),veh/h/ln	1781	1764	1764	1781	1764	1815	1781	1764	1700	1728	0	1788
Q Serve(g_s), s	1.2	18.8	18.8	3.3	37.4	37.4	3.2	6.9	7.3	2.3	0.0	14.4
Cycle Q Clear(g_c), s	1.2	18.8	18.8	3.3	37.4	37.4	3.2	6.9	7.3	2.3	0.0	14.4
Prop In Lane	1.00		0.29	1.00		0.11	1.00		0.45	1.00		0.20
Lane Grp Cap(c), veh/h	549	1027	1027	67	549	566	88	233	225	166	0	241
V/C Ratio(X)	0.04	0.44	0.44	0.69	0.93	0.93	0.51	0.44	0.46	0.37	0.00	0.84
Avail Cap(c_a), veh/h	549	1027	1027	199	549	566	343	332	320	651	0	337
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	0.70	0.70	0.70	0.97	0.97	0.97	0.94	0.00	0.94
Uniform Delay (d), s/veh	31.5	15.3	15.3	63.4	56.9	56.9	60.3	52.0	52.1	60.0	0.0	54.9
Incr Delay (d2), s/veh	0.0	1.3	1.3	8.6	19.1	18.7	4.4	1.3	1.4	1.3	0.0	12.1
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	0.5	7.4	7.4	1.7	20.6	21.1	1.5	3.1	3.2	1.0	0.0	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	31.6	16.6	16.6	72.0	76.1	75.7	64.6	53.2	53.6	61.3	0.0	67.0
LnGrp LOS	C	B	B	E	E	E	E	D	D	E		E
Approach Vol, veh/h		930			1084			251			265	
Approach Delay, s/veh		16.9			75.7			55.4			65.6	
Approach LOS		B			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	82.2	12.4	24.0	46.6	47.0	12.8	23.7
Change Period (Y+Rc), s	6.5	6.5	6.0	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	4.5	40.5	25.0	24.5	14.5	40.5	24.5	24.5
Max Q Clear Time (g_c+I1), s	5.3	20.8	5.2	16.4	3.2	39.4	4.3	9.3
Green Ext Time (p_c), s	0.0	5.2	0.1	0.6	0.0	0.7	0.1	0.9

Intersection Summary	
HCM 7th Control Delay, s/veh	51.0
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	931	25	115	1023	83	62	75	222	75	87	41
Future Volume (veh/h)	62	931	25	115	1023	83	62	75	222	75	87	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		0.97
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	1857	1857	1870	1870	1857	1870	1870	1857	1870	1857	1857
Adj Flow Rate, veh/h	69	1034	26	128	1137	74	69	83	198	83	97	42
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	811	20	704	2034	973	110	209	175	110	141	61
Arrive On Green	0.02	0.08	0.08	0.79	1.00	1.00	0.06	0.11	0.11	0.06	0.12	0.12
Sat Flow, veh/h	1781	3515	88	1781	3554	1530	1781	1870	1565	1781	1215	526
Grp Volume(v), veh/h	69	519	541	128	1137	74	69	83	198	83	0	139
Grp Sat Flow(s),veh/h/ln	1781	1764	1840	1781	1777	1530	1781	1870	1565	1781	0	1742
Q Serve(g_s), s	5.0	30.0	30.0	2.3	0.0	0.0	4.9	5.4	6.4	6.0	0.0	10.0
Cycle Q Clear(g_c), s	5.0	30.0	30.0	2.3	0.0	0.0	4.9	5.4	6.4	6.0	0.0	10.0
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	89	407	425	704	2034	973	110	209	175	110	0	202
V/C Ratio(X)	0.78	1.27	1.27	0.18	0.56	0.08	0.63	0.40	1.13	0.75	0.00	0.69
Avail Cap(c_a), veh/h	185	407	425	704	2034	973	219	590	494	212	0	556
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.88	0.88	0.88	0.70	0.70	0.70	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.2	60.0	60.0	8.5	0.0	0.0	59.6	53.6	11.1	60.0	0.0	55.2
Incr Delay (d2), s/veh	11.8	139.4	138.9	0.1	1.0	0.1	4.1	0.9	69.9	9.9	0.0	4.1
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	2.6	30.0	31.2	0.9	0.3	0.0	2.3	2.6	8.8	3.0	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	75.0	199.5	198.9	8.6	1.0	0.1	63.7	54.5	81.0	69.9	0.0	59.3
LnGrp LOS	E	F	F	A	A	A	E	D	F	E		E
Approach Vol, veh/h		1129			1339			350			222	
Approach Delay, s/veh		191.6			1.7			71.3			63.2	
Approach LOS		F			A			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.9	36.0	14.0	22.1	13.0	80.9	14.5	21.6
Change Period (Y+Rc), s	6.5	6.0	6.0	* 7	6.5	* 6.5	6.5	7.0
Max Green Setting (Gmax), s	11.5	30.0	16.0	* 42	13.5	* 34	15.5	41.0
Max Q Clear Time (g_c+I1), s	14.3	32.0	6.9	12.0	7.0	2.0	8.0	8.4
Green Ext Time (p_c), s	0.2	0.0	0.1	0.8	0.1	9.8	0.1	1.2

Intersection Summary	
HCM 7th Control Delay, s/veh	84.7
HCM 7th LOS	F

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	984	74	172	1180	211	22	34	49	140	60	22
Future Volume (veh/h)	28	984	74	172	1180	211	22	34	49	140	60	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
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	1857	1870	1870	1857	1870	1870	1857	1870	1870	1857
Adj Flow Rate, veh/h	31	1106	67	193	1326	190	25	38	44	157	67	21
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	2764	960	249	2927	1033	266	156	244	317	184	152
Arrive On Green	0.07	1.00	1.00	0.07	0.57	0.57	0.08	0.08	0.08	0.09	0.10	0.10
Sat Flow, veh/h	1781	5106	1550	3456	5106	1551	3456	1870	1568	3456	1870	1545
Grp Volume(v), veh/h	31	1106	67	193	1326	190	25	38	44	157	67	21
Grp Sat Flow(s),veh/h/ln	1781	1702	1550	1728	1702	1551	1728	1870	1568	1728	1870	1545
Q Serve(g_s), s	2.2	0.0	0.0	7.1	19.5	1.6	0.9	2.5	2.2	5.6	4.4	1.6
Cycle Q Clear(g_c), s	2.2	0.0	0.0	7.1	19.5	1.6	0.9	2.5	2.2	5.6	4.4	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	65	2764	960	249	2927	1033	266	156	244	317	184	152
V/C Ratio(X)	0.48	0.40	0.07	0.78	0.45	0.18	0.09	0.24	0.18	0.50	0.36	0.14
Avail Cap(c_a), veh/h	151	2764	960	359	2927	1033	346	504	535	478	575	475
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.65	0.65	0.65	0.76	0.76	0.76	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	59.1	0.0	0.0	59.3	16.0	2.0	55.8	55.7	25.1	56.2	54.8	53.6
Incr Delay (d2), s/veh	3.6	0.3	0.1	5.0	0.4	0.3	0.2	0.8	0.4	1.2	1.2	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	1.0	0.1	0.0	3.3	7.3	0.9	0.4	1.2	1.0	2.5	2.1	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	62.7	0.3	0.1	64.3	16.4	2.3	55.9	56.5	25.5	57.3	56.0	54.0
LnGrp LOS	E	A	A	E	B	A	E	E	C	E	E	D
Approach Vol, veh/h		1204			1709			107			245	
Approach Delay, s/veh		1.9			20.2			43.6			56.7	
Approach LOS		A			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	77.4	17.0	19.8	11.7	81.5	18.9	17.8
Change Period (Y+Rc), s	6.5	7.0	7.0	7.0	7.0	* 7	7.0	7.0
Max Green Setting (Gmax), s	13.5	36.0	13.0	40.0	11.0	* 39	18.0	35.0
Max Q Clear Time (g_c+I1), s	9.1	2.0	2.9	6.4	4.2	21.5	7.6	4.5
Green Ext Time (p_c), s	0.2	9.3	0.0	0.4	0.0	9.0	0.3	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	17.0
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	591	758	214	1582	0	0	0	0	164	0	69
Future Volume (veh/h)	0	591	758	214	1582	0	0	0	0	164	0	69
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	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
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	664	596	240	1778	0				184	0	62
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1511	825	405	2843	0				407	0	187
Arrive On Green	0.00	0.30	0.30	0.12	0.56	0.00				0.12	0.00	0.12
Sat Flow, veh/h	0	5274	2790	3456	5274	0				3456	0	1585
Grp Volume(v), veh/h	0	664	596	240	1778	0				184	0	62
Grp Sat Flow(s),veh/h/ln	0	1702	1395	1728	1702	0				1728	0	1585
Q Serve(g_s), s	0.0	4.2	7.6	2.6	9.4	0.0				2.0	0.0	1.4
Cycle Q Clear(g_c), s	0.0	4.2	7.6	2.6	9.4	0.0				2.0	0.0	1.4
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1511	825	405	2843	0				407	0	187
V/C Ratio(X)	0.00	0.44	0.72	0.59	0.63	0.00				0.45	0.00	0.33
Avail Cap(c_a), veh/h	0	4509	2463	1482	7433	0				2180	0	1000
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.3	12.5	16.6	6.0	0.0				16.3	0.0	16.1
Incr Delay (d2), s/veh	0.0	0.1	0.5	0.5	0.1	0.0				0.3	0.0	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
%ile BackOfQ(50%),veh/ln	0.0	1.1	1.7	0.8	1.4	0.0				0.6	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	11.4	12.9	17.1	6.1	0.0				16.6	0.0	16.4
LnGrp LOS		B	B	B	A					B		B
Approach Vol, veh/h		1260			2018						246	
Approach Delay, s/veh		12.1			7.4						16.5	
Approach LOS		B			A						B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.3	18.5		10.8		28.9
Change Period (Y+Rc), s	5.7	6.8		6.1		6.8
Max Green Setting (Gmax), s	7.6	35.0		25.0		57.7
Max Q Clear Time (g_c+I1), s	4.6	9.6		4.0		11.4
Green Ext Time (p_c), s	0.2	2.1		0.2		5.8

Intersection Summary	
HCM 7th Control Delay, s/veh	9.7
HCM 7th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	444	126	0	848	94	709	263	23	75	0	452
Future Volume (veh/h)	193	444	126	0	848	94	709	263	23	75	0	452
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	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	0	1870	1837	1870	1837	1837	1870	0	1870
Adj Flow Rate, veh/h	208	477	0	0	912	82	762	283	23	81	0	389
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	555	1730		0	1271	379	885	440	36	215	0	0
Arrive On Green	0.16	0.49	0.00	0.00	0.25	0.25	0.26	0.13	0.13	0.12	0.00	0.00
Sat Flow, veh/h	3456	3554	1585	0	5274	1522	3456	3267	264	1781	81	
Grp Volume(v), veh/h	208	477	0	0	912	82	762	150	156	81	30.2	
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	0	1702	1522	1728	1745	1786	1781	C	
Q Serve(g_s), s	4.0	5.9	0.0	0.0	12.0	3.2	15.5	6.0	6.1	3.1		
Cycle Q Clear(g_c), s	4.0	5.9	0.0	0.0	12.0	3.2	15.5	6.0	6.1	3.1		
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.15	1.00		
Lane Grp Cap(c), veh/h	555	1730		0	1271	379	885	235	240	215		
V/C Ratio(X)	0.37	0.28		0.00	0.72	0.22	0.86	0.64	0.65	0.38		
Avail Cap(c_a), veh/h	563	2396		0	2217	661	2208	710	727	266		
HCM Platoon Ratio	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	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	27.6	11.2	0.0	0.0	25.3	22.0	26.2	30.2	30.2	29.8		
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.3	0.1	1.0	1.1	1.1	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		
%ile BackOfQ(50%),veh/ln	1.5	2.0	0.0	0.0	4.5	1.0	5.6	2.3	2.4	1.3		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.8	11.2	0.0	0.0	25.6	22.1	27.1	31.3	31.3	30.2		
LnGrp LOS	C	B			C	C	C	C	C	C		
Approach Vol, veh/h		685			994			1068				
Approach Delay, s/veh		16.3			25.3			28.3				
Approach LOS		B			C			C				

Timer - Assigned Phs		2	3		5	6	7	8				
Phs Duration (G+Y+Rc), s		42.7	25.0		17.5	25.1	15.0	16.0				
Change Period (Y+Rc), s		6.8	6.1		5.7	6.8	6.1	6.1				
Max Green Setting (Gmax), s		49.7	47.1		12.0	32.0	11.0	30.0				
Max Q Clear Time (g_c+I1), s		7.9	17.5		6.0	14.0	5.1	8.1				
Green Ext Time (p_c), s		2.0	1.4		0.2	4.0	0.0	0.8				

Intersection Summary												
HCM 7th Control Delay, s/veh			24.4									
HCM 7th LOS			C									

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	40	2	0	31	25	4	7	1	98	8	51
Future Volume (veh/h)	20	40	2	0	31	25	4	7	1	98	8	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	24	49	2	0	38	23	5	9	1	120	10	56
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	167	6	0	252	213	17	176	19	838	493	439
Arrive On Green	0.13	0.13	0.13	0.00	0.13	0.13	0.01	0.05	0.05	0.24	0.28	0.28
Sat Flow, veh/h	412	1242	45	0	1870	1585	1781	3230	352	3456	1777	1585
Grp Volume(v), veh/h	75	0	0	0	38	23	5	5	5	120	10	56
Grp Sat Flow(s),veh/h/ln	1700	0	0	0	1870	1585	1781	1777	1805	1728	1777	1585
Q Serve(g_s), s	0.2	0.0	0.0	0.0	0.5	0.4	0.1	0.1	0.1	0.8	0.1	0.8
Cycle Q Clear(g_c), s	1.1	0.0	0.0	0.0	0.5	0.4	0.1	0.1	0.1	0.8	0.1	0.8
Prop In Lane	0.32		0.03	0.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	393	0	0	0	252	213	17	97	99	838	493	439
V/C Ratio(X)	0.19	0.00	0.00	0.00	0.15	0.11	0.29	0.05	0.05	0.14	0.02	0.13
Avail Cap(c_a), veh/h	1317	0	0	0	1296	1099	1235	1250	1270	3593	1847	1648
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	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	0.0	0.0	0.0	11.0	11.0	14.2	12.9	12.9	8.6	7.6	7.8
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.3	0.2	9.3	0.2	0.2	0.1	0.0	0.1
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	0.0	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.2	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.5	0.0	0.0	0.0	11.3	11.2	23.5	13.1	13.1	8.7	7.6	7.9
LnGrp LOS	B				B	B	C	B	B	A	A	A
Approach Vol, veh/h		75			61			15			186	
Approach Delay, s/veh		11.5			11.3			16.6			8.4	
Approach LOS		B			B			B			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	7.0		9.9	5.6	13.4		9.9				
Change Period (Y+Rc), s	5.0	5.4		6.0	5.3	5.4		6.0				
Max Green Setting (Gmax), s	30.0	20.3		20.0	20.0	30.0		20.0				
Max Q Clear Time (g_c+I1), s	2.8	2.1		3.1	2.1	2.8		2.5				
Green Ext Time (p_c), s	0.4	0.0		0.3	0.0	0.3		0.2				

Intersection Summary	
HCM 7th Control Delay, s/veh	10.0
HCM 7th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	475	6	28	620	126	21	88	89	93	49	132
Future Volume (veh/h)	65	475	6	28	620	126	21	88	89	93	49	132
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
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	1856	1856	1870	1870	1856	1870	1870	1856	1870	1856	1856
Adj Flow Rate, veh/h	68	495	5	29	646	104	22	92	74	97	51	124
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	88	2221	22	46	2124	984	39	205	170	149	62	151
Arrive On Green	0.05	0.62	0.62	0.05	1.00	1.00	0.02	0.11	0.11	0.04	0.13	0.13
Sat Flow, veh/h	1781	3575	36	1781	3554	1533	1781	1870	1551	3456	473	1150
Grp Volume(v), veh/h	68	244	256	29	646	104	22	92	74	97	0	175
Grp Sat Flow(s),veh/h/ln	1781	1763	1848	1781	1777	1533	1781	1870	1551	1728	0	1623
Q Serve(g_s), s	4.5	7.3	7.3	1.9	0.0	0.0	1.5	5.5	5.4	3.3	0.0	12.6
Cycle Q Clear(g_c), s	4.5	7.3	7.3	1.9	0.0	0.0	1.5	5.5	5.4	3.3	0.0	12.6
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.71
Lane Grp Cap(c), veh/h	88	1095	1148	46	2124	984	39	205	170	149	0	213
V/C Ratio(X)	0.77	0.22	0.22	0.63	0.30	0.11	0.57	0.45	0.43	0.65	0.00	0.82
Avail Cap(c_a), veh/h	223	1095	1148	119	2124	984	163	483	401	259	0	392
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.84	0.84	0.84	1.00	1.00	1.00	0.72	0.00	0.72
Uniform Delay (d), s/veh	56.4	10.0	10.0	56.3	0.0	0.0	58.1	50.0	49.9	56.5	0.0	50.7
Incr Delay (d2), s/veh	13.4	0.5	0.4	11.3	0.3	0.2	12.6	1.5	1.7	3.4	0.0	5.6
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	2.3	2.8	2.9	1.0	0.1	0.0	0.8	2.7	2.1	1.5	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	69.8	10.5	10.4	67.7	0.3	0.2	70.7	51.5	51.7	60.0	0.0	56.4
LnGrp LOS	E	B	B	E	A	A	E	D	D	E		E
Approach Vol, veh/h		568			779			188			272	
Approach Delay, s/veh		17.6			2.8			53.8			57.7	
Approach LOS		B			A			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	80.5	11.2	19.2	11.9	77.7	8.6	21.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.6	48.0	9.0	31.0	15.0	41.0	11.0	29.0
Max Q Clear Time (g_c+I1), s	3.5	9.3	5.3	7.5	6.5	2.0	3.5	14.6
Green Ext Time (p_c), s	0.0	3.0	0.1	0.7	0.1	5.0	0.0	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	21.0
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	145	481	659	271	162	62
Future Volume (veh/h)	145	481	659	271	162	62
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1856	1856
Adj Flow Rate, veh/h	151	501	686	254	169	59
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	178	2628	1485	550	197	69
Arrive On Green	0.20	1.00	1.00	1.00	0.16	0.16
Sat Flow, veh/h	1781	3647	2611	932	1262	441
Grp Volume(v), veh/h	151	501	480	460	229	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1763	1688	1710	0
Q Serve(g_s), s	9.8	0.0	0.0	0.0	15.7	0.0
Cycle Q Clear(g_c), s	9.8	0.0	0.0	0.0	15.7	0.0
Prop In Lane	1.00			0.55	0.74	0.26
Lane Grp Cap(c), veh/h	178	2628	1039	995	267	0
V/C Ratio(X)	0.85	0.19	0.46	0.46	0.86	0.00
Avail Cap(c_a), veh/h	356	2628	1039	995	520	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.85	0.85	0.89	0.00
Uniform Delay (d), s/veh	47.1	0.0	0.0	0.0	49.3	0.0
Incr Delay (d2), s/veh	10.2	0.2	1.3	1.3	7.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.1	0.4	0.4	7.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	57.4	0.2	1.3	1.3	56.3	0.0
LnGrp LOS	E	A	A	A	E	
Approach Vol, veh/h		652	940		229	
Approach Delay, s/veh		13.4	1.3		56.3	
Approach LOS		B	A		E	

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	94.7		25.3	18.0	76.7
Change Period (Y+Rc), s	6.0		6.5	6.0	6.0
Max Green Setting (Gmax), s	71.0		36.5	24.0	41.0
Max Q Clear Time (g_c+I1), s	2.0		17.7	11.8	2.0
Green Ext Time (p_c), s	3.5		0.6	0.3	6.8

Intersection Summary	
HCM 7th Control Delay, s/veh	12.5
HCM 7th LOS	B



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱	↰	↑↑	↰	↱
Traffic Volume (veh/h)	327	347	2	514	397	3
Future Volume (veh/h)	327	347	2	514	397	3
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1856	1870	1870	1870	1856
Adj Flow Rate, veh/h	348	295	2	547	422	2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1979	1260	5	2196	458	404
Arrive On Green	0.93	0.93	0.00	0.62	0.26	0.26
Sat Flow, veh/h	3647	1536	1781	3647	1781	1573
Grp Volume(v), veh/h	348	295	2	547	422	2
Grp Sat Flow(s),veh/h/ln	1777	1536	1781	1777	1781	1573
Q Serve(g_s), s	1.0	1.0	0.1	8.3	27.7	0.1
Cycle Q Clear(g_c), s	1.0	1.0	0.1	8.3	27.7	0.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1979	1260	5	2196	458	404
V/C Ratio(X)	0.18	0.23	0.42	0.25	0.92	0.00
Avail Cap(c_a), veh/h	1979	1260	267	2196	683	603
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.98	0.98	1.00	1.00
Uniform Delay (d), s/veh	1.9	0.3	59.7	10.4	43.4	33.2
Incr Delay (d2), s/veh	0.2	0.4	48.3	0.3	13.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.7	0.1	3.1	13.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	2.1	0.7	108.0	10.6	56.8	33.2
LnGrp LOS	A	A	F	B	E	
Approach Vol, veh/h	643			549	424	
Approach Delay, s/veh	1.5			11.0	56.7	
Approach LOS	A			B	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	7.3	74.8				82.1	37.9
Change Period (Y+Rc), s	7.0	8.0				8.0	7.0
Max Green Setting (Gmax), s	18.6	34.0				59.0	46.0
Max Q Clear Time (g_c+I1), s	12.1	3.0				10.3	29.7
Green Ext Time (p_c), s	0.0	3.3				3.9	1.2

Intersection Summary	
HCM 7th Control Delay, s/veh	19.2
HCM 7th LOS	B



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	10	312	8	20	474	32	60
Future Volume (veh/h)	10	312	8	20	474	32	60
Initial Q (Qb), veh		0	0	0	0	0	0
Lane Width Adj.		1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)			0.97	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No	No	
Adj Sat Flow, veh/h/ln		1860	1860	1870	1860	1860	1860
Adj Flow Rate, veh/h		332	8	21	504	34	58
Peak Hour Factor		0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %		2	2	2	2	2	2
Cap, veh/h		898	22	65	1647	103	175
Arrive On Green		0.25	0.25	0.04	0.47	0.17	0.17
Sat Flow, veh/h		3616	85	1781	3626	600	1023
Grp Volume(v), veh/h		166	174	21	504	93	0
Grp Sat Flow(s),veh/h/ln		1767	1841	1781	1767	1641	0
Q Serve(g_s), s		3.1	3.1	0.5	3.6	2.0	0.0
Cycle Q Clear(g_c), s		3.1	3.1	0.5	3.6	2.0	0.0
Prop In Lane			0.05	1.00		0.37	0.62
Lane Grp Cap(c), veh/h		450	469	65	1647	281	0
V/C Ratio(X)		0.37	0.37	0.32	0.31	0.33	0.00
Avail Cap(c_a), veh/h		1768	1842	1337	3535	1580	0
HCM Platoon Ratio		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	0.00
Uniform Delay (d), s/veh		12.3	12.3	18.8	6.6	14.6	0.0
Incr Delay (d2), s/veh		0.5	0.5	2.8	0.1	0.7	0.0
Initial Q Delay(d3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		1.0	1.0	0.2	0.8	0.7	0.0
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh		12.8	12.7	21.6	6.7	15.2	0.0
LnGrp LOS		B	B	C	A	B	
Approach Vol, veh/h		340			525	93	
Approach Delay, s/veh		12.8			7.3	15.2	
Approach LOS		B			A	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	8.5	18.2				26.6	13.3
Change Period (Y+Rc), s	7.0	8.0				8.0	6.5
Max Green Setting (Gmax), s	30.0	40.0				40.0	38.5
Max Q Clear Time (g_c+I1), s	2.5	5.1				5.6	4.0
Green Ext Time (p_c), s	0.0	1.9				3.4	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	10.0
HCM 7th LOS	B

Notes
User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	232	0	140	398	1465	0	0	873	368
Future Volume (veh/h)	0	0	0	232	0	140	398	1465	0	0	873	368
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1837	1837
Adj Flow Rate, veh/h				183	76	129	406	1495	0	0	891	338
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				255	88	149	436	3824	0	0	1640	620
Arrive On Green				0.14	0.14	0.14	0.24	0.75	0.00	0.00	0.46	0.46
Sat Flow, veh/h				1781	615	1044	1781	5274	0	0	3720	1344
Grp Volume(v), veh/h				183	0	205	406	1495	0	0	838	391
Grp Sat Flow(s),veh/h/ln				1781	0	1658	1781	1702	0	0	1672	1555
Q Serve(g_s), s				10.8	0.0	13.3	24.5	11.4	0.0	0.0	19.8	19.9
Cycle Q Clear(g_c), s				10.8	0.0	13.3	24.5	11.4	0.0	0.0	19.8	19.9
Prop In Lane				1.00		0.63	1.00		0.00	0.00		0.86
Lane Grp Cap(c), veh/h				255	0	237	436	3824	0	0	1542	717
V/C Ratio(X)				0.72	0.00	0.86	0.93	0.39	0.00	0.00	0.54	0.55
Avail Cap(c_a), veh/h				325	0	303	551	3824	0	0	1542	717
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.59	0.59	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				45.0	0.0	46.1	40.6	4.9	0.0	0.0	21.3	21.3
Incr Delay (d2), s/veh				3.4	0.0	15.6	12.2	0.2	0.0	0.0	1.4	3.0
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.8	0.0	6.2	11.9	3.1	0.0	0.0	7.6	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				48.4	0.0	61.7	52.8	5.1	0.0	0.0	22.7	24.3
LnGrp LOS				D		E	D	A			C	C
Approach Vol, veh/h					388			1901			1229	
Approach Delay, s/veh					55.5			15.3			23.2	
Approach LOS					E			B			C	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	89.2		31.6	57.5		20.8						
Change Period (Y+Rc), s	6.8		4.7	6.8		5.1						
Max Green Setting (Gmax), s	78.0		34.0	39.3		20.1						
Max Q Clear Time (g_c+I1), s	13.4		26.5	21.9		15.3						
Green Ext Time (p_c), s	9.0		0.4	5.2		0.4						

Intersection Summary		
HCM 7th Control Delay, s/veh	22.5	
HCM 7th LOS	C	

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	276	436	100	38	154	866	59	749	138	286	434	296
Future Volume (veh/h)	276	436	100	38	154	866	59	749	138	286	434	296
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.98
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	1854	1854	1870	1870	1870	1870	1854	1854	1870	1870	1854
Adj Flow Rate, veh/h	288	454	94	40	160	723	61	780	129	298	452	246
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	347	507	104	103	247	944	96	1407	231	719	1695	890
Arrive On Green	0.10	0.18	0.18	0.02	0.04	0.04	0.02	0.11	0.11	0.07	0.16	0.16
Sat Flow, veh/h	3456	2895	595	1781	1870	2745	1781	4360	715	3456	3554	1535
Grp Volume(v), veh/h	288	275	273	40	160	723	61	602	307	298	452	246
Grp Sat Flow(s),veh/h/ln	1728	1761	1729	1781	1870	1373	1781	1687	1701	1728	1777	1535
Q Serve(g_s), s	9.0	16.8	17.0	2.4	9.3	5.6	3.7	18.6	18.9	9.1	12.3	12.7
Cycle Q Clear(g_c), s	9.0	16.8	17.0	2.4	9.3	5.6	3.7	18.6	18.9	9.1	12.3	12.7
Prop In Lane	1.00		0.34	1.00		1.00	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	347	308	303	103	247	944	96	1089	549	719	1695	890
V/C Ratio(X)	0.83	0.89	0.90	0.39	0.65	0.77	0.64	0.55	0.56	0.41	0.27	0.28
Avail Cap(c_a), veh/h	361	312	306	186	332	1067	219	1089	549	719	1695	890
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.74	0.74	0.74	0.93	0.93	0.93	0.75	0.75	0.75
Uniform Delay (d), s/veh	48.6	44.3	44.5	52.0	50.1	14.4	53.0	41.6	41.7	44.8	29.4	20.1
Incr Delay (d2), s/veh	14.5	25.5	28.0	1.8	2.1	2.2	6.4	1.9	3.8	0.3	0.3	0.6
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	4.5	9.3	9.4	1.1	4.6	4.8	1.8	8.7	9.1	4.1	5.9	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	63.0	69.9	72.4	53.8	52.2	16.6	59.3	43.5	45.5	45.1	29.7	20.7
LnGrp LOS	E	E	E	D	D	B	E	D	D	D	C	C
Approach Vol, veh/h		836			923			970			996	
Approach Delay, s/veh		68.4			24.4			45.1			32.1	
Approach LOS		E			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	42.0	12.8	25.8	12.4	59.0	17.6	21.1
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	7.5	35.5	11.5	19.5	13.5	39.5	11.5	19.5
Max Q Clear Time (g_c+I1), s	11.1	20.9	4.4	19.0	5.7	14.7	11.0	11.3
Green Ext Time (p_c), s	0.5	5.0	0.0	0.2	0.1	3.8	0.1	2.6

Intersection Summary	
HCM 7th Control Delay, s/veh	41.7
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	299	367	178	57	374	9	273	98	57	398	255	365
Future Volume (veh/h)	299	367	178	57	374	9	273	98	57	398	255	365
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1837	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	318	390	151	61	398	9	197	234	48	423	271	255
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	971	1380	788	151	887	20	211	221	187	377	188	177
Arrive On Green	0.28	0.39	0.39	0.08	0.17	0.17	0.12	0.12	0.12	0.21	0.21	0.21
Sat Flow, veh/h	3456	3554	1557	1781	5138	116	1781	1870	1585	1781	886	834
Grp Volume(v), veh/h	318	390	151	61	263	144	197	234	48	423	0	526
Grp Sat Flow(s),veh/h/ln	1728	1777	1557	1781	1702	1850	1781	1870	1585	1781	0	1720
Q Serve(g_s), s	8.0	8.3	5.8	3.6	7.6	7.7	12.1	13.0	3.0	23.3	0.0	23.3
Cycle Q Clear(g_c), s	8.0	8.3	5.8	3.6	7.6	7.7	12.1	13.0	3.0	23.3	0.0	23.3
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	971	1380	788	151	588	319	211	221	187	377	0	364
V/C Ratio(X)	0.33	0.28	0.19	0.41	0.45	0.45	0.94	1.06	0.26	1.12	0.00	1.44
Avail Cap(c_a), veh/h	1037	1380	788	178	588	319	211	221	187	377	0	364
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)	0.70	0.70	0.70	1.00	1.00	1.00	0.89	0.89	0.89	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.3	23.1	14.8	47.7	40.8	40.8	48.1	48.5	44.1	43.4	0.0	43.4
Incr Delay (d2), s/veh	0.1	0.4	0.4	0.7	2.5	4.5	40.6	73.4	0.2	83.4	0.0	214.6
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	8.2	3.4	2.6	1.6	3.3	3.8	7.6	10.4	1.2	18.3	0.0	31.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	31.4	23.5	15.2	48.4	43.3	45.3	88.7	121.9	44.3	126.7	0.0	257.9
LnGrp LOS	C	C	B	D	D	D	F	F	D	F		F
Approach Vol, veh/h		859			468			479			949	
Approach Delay, s/veh		25.0			44.6			100.5			199.4	
Approach LOS		C			D			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	49.5		28.4	37.7	25.8		18.1				
Change Period (Y+Rc), s	4.7	6.8		5.1	6.8	* 6.8		5.1				
Max Green Setting (Gmax), s	10.3	41.0		23.3	33.0	* 19		13.0				
Max Q Clear Time (g_c+I1), s	5.6	10.3		25.3	10.0	9.7		15.0				
Green Ext Time (p_c), s	0.0	1.7		0.0	0.5	1.0		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	101.5
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	60	26	92	32	159	20	472	76	159	343	48
Future Volume (veh/h)	120	60	26	92	32	159	20	472	76	159	343	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.99
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	1854	1870	1854	1854	1870	1870	1854	1870	1854	1854
Adj Flow Rate, veh/h	125	63	21	96	33	149	21	492	62	166	357	45
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	154	301	250	123	42	188	360	1532	666	200	1087	136
Arrive On Green	0.09	0.16	0.16	0.07	0.14	0.14	0.40	0.86	0.86	0.04	0.11	0.11
Sat Flow, veh/h	1781	1870	1556	1781	290	1311	1781	3554	1546	1781	3147	394
Grp Volume(v), veh/h	125	63	21	96	0	182	21	492	62	166	199	203
Grp Sat Flow(s),veh/h/ln	1781	1870	1556	1781	0	1601	1781	1777	1546	1781	1761	1779
Q Serve(g_s), s	7.6	3.2	0.8	5.8	0.0	12.1	0.8	2.9	0.7	10.2	11.4	11.6
Cycle Q Clear(g_c), s	7.6	3.2	0.8	5.8	0.0	12.1	0.8	2.9	0.7	10.2	11.4	11.6
Prop In Lane	1.00		1.00	1.00		0.82	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	154	301	250	123	0	229	360	1532	666	200	608	615
V/C Ratio(X)	0.81	0.21	0.08	0.78	0.00	0.79	0.06	0.32	0.09	0.83	0.33	0.33
Avail Cap(c_a), veh/h	243	306	255	308	0	320	360	1532	666	316	608	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.92	0.92	0.92	0.97	0.97	0.97
Uniform Delay (d), s/veh	49.4	40.1	15.3	50.4	0.0	45.6	26.4	4.5	4.4	51.9	37.0	37.0
Incr Delay (d2), s/veh	10.8	0.3	0.1	10.3	0.0	8.9	0.1	0.5	0.3	9.8	1.4	1.4
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	3.8	1.5	0.5	3.0	0.0	5.4	0.3	1.0	0.3	5.3	5.5	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.2	40.4	15.4	60.7	0.0	54.5	26.4	5.0	4.6	61.7	38.3	38.4
LnGrp LOS	E	D	B	E		D	C	A	A	E	D	D
Approach Vol, veh/h		209			278			575			568	
Approach Delay, s/veh		49.7			56.6			5.8			45.2	
Approach LOS		D			E			A			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.8	53.9	13.6	23.7	28.8	44.0	15.5	21.8
Change Period (Y+Rc), s	6.5	* 6.5	6.0	6.0	6.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	12.5	* 29	19.0	18.0	10.5	38.0	15.0	22.0
Max Q Clear Time (g_c+I1), s	12.2	4.9	7.8	5.2	2.8	13.6	9.6	14.1
Green Ext Time (p_c), s	0.2	3.3	0.2	0.2	0.0	2.2	0.1	0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	33.8
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	324	26	7	120	57	25	399	8	31	280	136
Future Volume (veh/h)	190	324	26	7	120	57	25	399	8	31	280	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.99
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	1854	1870	1854	1854	1870	1854	1854	1870	1854	1854
Adj Flow Rate, veh/h	198	338	21	7	125	53	26	416	7	32	292	127
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	737	325	28	226	90	53	1827	31	61	1247	528
Arrive On Green	0.13	0.21	0.21	0.02	0.09	0.09	0.03	0.52	0.52	0.07	1.00	1.00
Sat Flow, veh/h	1781	3554	1569	1781	2431	974	1781	3544	60	1781	2398	1016
Grp Volume(v), veh/h	198	338	21	7	89	89	26	207	216	32	212	207
Grp Sat Flow(s),veh/h/ln	1781	1777	1569	1781	1761	1644	1781	1761	1843	1781	1761	1654
Q Serve(g_s), s	12.0	9.2	1.2	0.4	5.3	5.7	1.6	7.1	7.1	1.9	0.0	0.0
Cycle Q Clear(g_c), s	12.0	9.2	1.2	0.4	5.3	5.7	1.6	7.1	7.1	1.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.59	1.00		0.03	1.00		0.61
Lane Grp Cap(c), veh/h	232	737	325	28	163	153	53	908	950	61	915	860
V/C Ratio(X)	0.85	0.46	0.06	0.25	0.54	0.59	0.49	0.23	0.23	0.53	0.23	0.24
Avail Cap(c_a), veh/h	405	1066	471	227	352	329	154	908	950	154	915	860
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.99	0.99	0.99	0.65	0.65	0.65	0.98	0.98	0.98
Uniform Delay (d), s/veh	46.8	38.2	35.0	53.5	47.7	47.9	52.5	14.6	14.6	50.4	0.0	0.0
Incr Delay (d2), s/veh	8.7	0.4	0.1	4.5	2.7	3.5	4.4	0.4	0.4	6.8	0.6	0.6
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	5.8	4.0	0.5	0.2	2.4	2.5	0.8	2.8	2.9	0.9	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	55.5	38.6	35.1	58.0	50.4	51.4	57.0	15.0	15.0	57.2	0.6	0.6
LnGrp LOS	E	D	D	E	D	D	E	B	B	E	A	A
Approach Vol, veh/h		557			185			449			451	
Approach Delay, s/veh		44.5			51.2			17.4			4.6	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	63.2	7.7	28.8	9.8	63.7	20.3	16.2
Change Period (Y+Rc), s	6.5	6.5	6.0	6.0	6.5	6.5	6.0	6.0
Max Green Setting (Gmax), s	9.5	28.5	14.0	33.0	9.5	28.5	25.0	22.0
Max Q Clear Time (g_c+I1), s	3.9	9.1	2.4	11.2	3.6	2.0	14.0	7.7
Green Ext Time (p_c), s	0.0	2.2	0.0	2.1	0.0	2.4	0.4	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	26.9
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	252	135	10	93	27	63	342	62	34	428	18
Future Volume (veh/h)	51	252	135	10	93	27	63	342	62	34	428	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.97	1.00		0.98
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	56	277	133	11	102	27	69	376	61	37	470	18
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	354	170	30	709	181	103	676	109	83	733	28
Arrive On Green	0.06	0.30	0.30	0.02	0.25	0.25	0.06	0.22	0.22	0.05	0.21	0.21
Sat Flow, veh/h	1781	1185	569	1781	2794	713	1781	3050	490	1781	3487	133
Grp Volume(v), veh/h	56	0	410	11	63	66	69	217	220	37	239	249
Grp Sat Flow(s),veh/h/ln	1781	0	1755	1781	1777	1730	1781	1777	1763	1781	1777	1843
Q Serve(g_s), s	1.8	0.0	12.3	0.4	1.6	1.7	2.2	6.3	6.4	1.2	7.1	7.1
Cycle Q Clear(g_c), s	1.8	0.0	12.3	0.4	1.6	1.7	2.2	6.3	6.4	1.2	7.1	7.1
Prop In Lane	1.00		0.32	1.00		0.41	1.00		0.28	1.00		0.07
Lane Grp Cap(c), veh/h	110	0	524	30	451	439	103	394	391	83	373	387
V/C Ratio(X)	0.51	0.00	0.78	0.37	0.14	0.15	0.67	0.55	0.56	0.45	0.64	0.64
Avail Cap(c_a), veh/h	773	0	913	773	925	901	773	1233	1224	773	1233	1279
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	0.00	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	26.2	0.0	18.5	28.0	16.6	16.7	26.6	19.9	19.9	26.7	20.8	20.8
Incr Delay (d2), s/veh	3.6	0.0	2.6	7.4	0.1	0.2	7.2	1.2	1.3	3.7	1.8	1.8
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	0.8	0.0	4.7	0.2	0.6	0.6	1.0	2.4	2.4	0.5	2.8	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.8	0.0	21.1	35.4	16.8	16.8	33.8	21.1	21.2	30.5	22.6	22.6
LnGrp LOS	C		C	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		466			140			506			525	
Approach Delay, s/veh		22.2			18.3			22.9			23.1	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	18.8	7.0	23.2	9.3	18.1	9.6	20.6
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	25.0	40.0	25.0	30.0	25.0	40.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	3.8	8.4	2.4	14.3	4.2	9.1	3.8	3.7
Green Ext Time (p_c), s	0.1	2.5	0.0	2.2	0.1	2.8	0.1	0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	22.4
HCM 7th LOS	C

Intersection	
Int Delay, s/veh	6.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	843	18	105	462	10	342
Future Vol, veh/h	843	18	105	462	10	342
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	65	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	897	19	112	491	11	364

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	916	0	1376	458
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	469	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	740	-	136	550
Stage 1	-	-	-	-	354	-
Stage 2	-	-	-	-	596	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	740	-	116	550
Mov Cap-2 Maneuver	-	-	-	-	116	-
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	596	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.99	31.18
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	497	-	-	740	-
HCM Lane V/C Ratio	0.754	-	-	0.151	-
HCM Ctrl Dly (s/v)	31.2	-	-	10.7	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	6.5	-	-	0.5	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	843	335	39	332	235	42
Future Volume (veh/h)	843	335	39	332	235	42
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	887	318	41	349	247	36
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1086	388	94	2088	334	298
Arrive On Green	0.43	0.43	0.05	0.59	0.19	0.19
Sat Flow, veh/h	2641	910	1781	3647	1781	1585
Grp Volume(v), veh/h	618	587	41	349	247	36
Grp Sat Flow(s),veh/h/ln	1777	1680	1781	1777	1781	1585
Q Serve(g_s), s	14.7	14.8	1.1	2.2	6.3	0.9
Cycle Q Clear(g_c), s	14.7	14.8	1.1	2.2	6.3	0.9
Prop In Lane		0.54	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	758	717	94	2088	334	298
V/C Ratio(X)	0.81	0.82	0.44	0.17	0.74	0.12
Avail Cap(c_a), veh/h	851	804	223	2456	927	825
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	12.1	12.1	22.1	4.5	18.4	16.2
Incr Delay (d2), s/veh	5.6	6.1	3.2	0.0	3.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	4.9	0.5	0.4	2.5	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	17.7	18.3	25.2	4.6	21.6	16.4
LnGrp LOS	B	B	C	A	C	B
Approach Vol, veh/h	1205			390	283	
Approach Delay, s/veh	18.0			6.7	20.9	
Approach LOS	B			A	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	7.7	26.3				34.0	14.0
Change Period (Y+Rc), s	5.2	5.8				5.8	5.0
Max Green Setting (Gmax), s	6.0	23.0				33.2	25.0
Max Q Clear Time (g_c+I1), s	3.1	16.8				4.2	8.3
Green Ext Time (p_c), s	0.0	3.6				2.1	0.7

Intersection Summary			
HCM 7th Control Delay, s/veh		16.1	
HCM 7th LOS		B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	1314	646	94	938	78	303	17	72	108	16	64
Future Volume (veh/h)	41	1314	646	94	938	78	303	17	72	108	16	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.98	1.00		0.96
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	1850	1870	1870	1850	1870	1870	1850	1870	1870	1870
Adj Flow Rate, veh/h	42	1341	526	96	957	64	309	17	59	110	16	58
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	2098	1092	116	2135	912	370	196	160	228	22	79
Arrive On Green	0.06	0.59	0.59	0.13	1.00	1.00	0.11	0.10	0.10	0.07	0.06	0.06
Sat Flow, veh/h	3456	3554	1565	1781	3554	1519	3456	1870	1529	3456	344	1247
Grp Volume(v), veh/h	42	1341	526	96	957	64	309	17	59	110	0	74
Grp Sat Flow(s),veh/h/ln	1728	1777	1565	1781	1777	1519	1728	1870	1529	1728	0	1591
Q Serve(g_s), s	1.7	37.2	8.3	7.9	0.0	0.0	13.2	1.2	5.4	4.6	0.0	6.9
Cycle Q Clear(g_c), s	1.7	37.2	8.3	7.9	0.0	0.0	13.2	1.2	5.4	4.6	0.0	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.78
Lane Grp Cap(c), veh/h	190	2098	1092	116	2135	912	370	196	160	228	0	101
V/C Ratio(X)	0.22	0.64	0.48	0.82	0.45	0.07	0.83	0.09	0.37	0.48	0.00	0.73
Avail Cap(c_a), veh/h	311	2098	1092	220	2135	912	668	224	183	680	0	196
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.91	0.91	0.91	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	67.8	20.2	2.6	64.4	0.0	0.0	65.7	60.7	62.5	67.6	0.0	69.0
Incr Delay (d2), s/veh	0.6	1.5	1.5	12.3	0.6	0.1	5.0	0.2	1.4	1.6	0.0	9.7
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	0.8	15.0	3.8	3.7	0.2	0.0	6.1	0.6	2.2	2.1	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	68.4	21.7	4.1	76.7	0.6	0.1	70.6	60.8	63.9	69.2	0.0	78.6
LnGrp LOS	E	C	A	E	A	A	E	E	E	E		E
Approach Vol, veh/h		1909			1117			385			184	
Approach Delay, s/veh		17.9			7.1			69.2			73.0	
Approach LOS		B			A			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	97.1	22.1	16.0	16.3	95.6	16.4	21.7
Change Period (Y+Rc), s	6.5	7.0	6.0	6.5	6.5	* 7	6.5	6.0
Max Green Setting (Gmax), s	13.5	63.0	29.0	18.5	18.5	* 59	29.5	18.0
Max Q Clear Time (g_c+I1), s	3.7	2.0	15.2	8.9	9.9	39.2	6.6	7.4
Green Ext Time (p_c), s	0.0	7.9	0.9	0.2	0.1	11.2	0.3	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	22.9
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	1491	0	0	1121	24	0	0	0	37	0	31
Future Volume (veh/h)	28	1491	0	0	1121	24	0	0	0	37	0	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.96
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	1859	1859	1870	1859	1859	1870	1870	1870	1870	1870	1859
Adj Flow Rate, veh/h	28	1506	0	0	1132	22	0	0	0	37	0	25
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	609	2996	0	1	1642	32	0	1	0	116	0	98
Arrive On Green	0.45	1.00	0.00	0.00	0.62	0.62	0.00	0.00	0.00	0.06	0.00	0.06
Sat Flow, veh/h	1781	3624	0	1781	3543	69	0	1870	0	1781	0	1508
Grp Volume(v), veh/h	28	1506	0	0	564	590	0	0	0	37	0	25
Grp Sat Flow(s),veh/h/ln	1781	1766	0	1781	1766	1846	0	1870	0	1781	0	1508
Q Serve(g_s), s	1.3	0.0	0.0	0.0	32.0	32.0	0.0	0.0	0.0	3.0	0.0	2.4
Cycle Q Clear(g_c), s	1.3	0.0	0.0	0.0	32.0	32.0	0.0	0.0	0.0	3.0	0.0	2.4
Prop In Lane	1.00		0.00	1.00		0.04	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	609	2996	0	1	818	855	0	1	0	116	0	98
V/C Ratio(X)	0.05	0.50	0.00	0.00	0.69	0.69	0.00	0.00	0.00	0.32	0.00	0.26
Avail Cap(c_a), veh/h	609	2996	0	160	818	855	0	168	0	327	0	277
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.00	0.00	0.89	0.89	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	0.0	0.0	21.6	21.6	0.0	0.0	0.0	67.0	0.0	66.7
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	4.2	4.0	0.0	0.0	0.0	1.6	0.0	1.4
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	0.6	0.2	0.0	0.0	12.0	12.5	0.0	0.0	0.0	1.4	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.3	0.4	0.0	0.0	25.8	25.6	0.0	0.0	0.0	68.5	0.0	68.0
LnGrp LOS	C	A			C	C				E		E
Approach Vol, veh/h		1534			1154			0			62	
Approach Delay, s/veh		0.9			25.7			0.0			68.3	
Approach LOS		A			C						E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	133.8		16.2	57.8	76.0		0.0				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	13.5	69.5		27.5	13.5	69.5		13.5				
Max Q Clear Time (g_c+I1), s	0.0	2.0		5.0	3.3	34.0		0.0				
Green Ext Time (p_c), s	0.0	16.5		0.2	0.0	8.3		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	12.8
HCM 7th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	308	1209	25	25	849	69	13	20	13	66	18	262
Future Volume (veh/h)	308	1209	25	25	849	69	13	20	13	66	18	262
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		0.99
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	1859	1859	1870	1870	1859	1870	1870	1859	1870	1870	1859
Adj Flow Rate, veh/h	318	1246	24	26	875	57	13	21	11	68	19	216
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	343	1760	34	424	1926	841	192	253	210	220	253	515
Arrive On Green	0.13	0.33	0.33	0.24	0.54	0.54	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1781	3544	68	1781	3554	1552	1140	1870	1550	1374	1870	1565
Grp Volume(v), veh/h	318	621	649	26	875	57	13	21	11	68	19	216
Grp Sat Flow(s),veh/h/ln	1781	1766	1846	1781	1777	1552	1140	1870	1550	1374	1870	1565
Q Serve(g_s), s	26.5	46.0	46.1	1.7	22.4	2.6	1.5	1.5	0.9	6.8	1.3	16.1
Cycle Q Clear(g_c), s	26.5	46.0	46.1	1.7	22.4	2.6	2.8	1.5	0.9	8.3	1.3	16.1
Prop In Lane	1.00		0.04	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	343	877	917	424	1926	841	192	253	210	220	253	515
V/C Ratio(X)	0.93	0.71	0.71	0.06	0.45	0.07	0.07	0.08	0.05	0.31	0.08	0.42
Avail Cap(c_a), veh/h	398	877	917	424	1926	841	323	468	388	383	474	700
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	64.3	40.5	40.6	44.2	20.9	16.3	57.9	56.7	56.5	60.4	56.7	39.3
Incr Delay (d2), s/veh	22.7	4.1	3.9	0.1	0.8	0.2	0.1	0.1	0.1	0.8	0.1	0.5
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	14.4	21.6	22.6	0.8	9.2	1.0	0.4	0.7	0.4	2.4	0.6	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	87.0	44.6	44.5	44.2	21.6	16.5	58.1	56.9	56.6	61.1	56.8	39.8
LnGrp LOS	F	D	D	D	C	B	E	E	E	E	E	D
Approach Vol, veh/h		1588			958			45			303	
Approach Delay, s/veh		53.1			22.0			57.1			45.7	
Approach LOS		D			C			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	42.2	81.0		26.8	35.4	87.8		26.8				
Change Period (Y+Rc), s	6.5	6.5		* 6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	18.5	74.5		* 38	33.5	59.5		37.5				
Max Q Clear Time (g_c+I1), s	13.7	48.1		18.1	28.5	24.4		4.8				
Green Ext Time (p_c), s	0.0	8.9		0.9	0.4	6.7		0.1				

Intersection Summary	
HCM 7th Control Delay, s/veh	42.0
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	1122	94	52	927	98	71	193	32	152	342	51
Future Volume (veh/h)	71	1122	94	52	927	98	71	193	32	152	342	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.99
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	1859	1859	1870	1859	1859	1870	1859	1859	1870	1859	1859
Adj Flow Rate, veh/h	72	1133	88	53	936	91	72	195	29	154	345	48
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	333	1698	132	69	1179	115	91	672	98	203	365	51
Arrive On Green	0.19	0.51	0.51	0.01	0.12	0.12	0.05	0.22	0.22	0.06	0.23	0.23
Sat Flow, veh/h	1781	3320	258	1781	3245	315	1781	3082	451	3456	1593	222
Grp Volume(v), veh/h	72	602	619	53	509	518	72	110	114	154	0	393
Grp Sat Flow(s),veh/h/ln	1781	1766	1812	1781	1766	1795	1781	1766	1767	1728	0	1815
Q Serve(g_s), s	5.1	37.9	38.0	4.5	42.1	42.1	6.0	7.8	8.1	6.6	0.0	32.0
Cycle Q Clear(g_c), s	5.1	37.9	38.0	4.5	42.1	42.1	6.0	7.8	8.1	6.6	0.0	32.0
Prop In Lane	1.00		0.14	1.00		0.18	1.00		0.26	1.00		0.12
Lane Grp Cap(c), veh/h	333	903	927	69	642	652	91	385	385	203	0	415
V/C Ratio(X)	0.22	0.67	0.67	0.77	0.79	0.79	0.79	0.29	0.30	0.76	0.00	0.95
Avail Cap(c_a), veh/h	333	903	927	160	642	652	190	418	418	357	0	430
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	0.96	0.96	0.96	0.74	0.00	0.74
Uniform Delay (d), s/veh	51.7	27.2	27.2	73.4	60.5	60.5	70.4	48.9	49.0	69.6	0.0	56.9
Incr Delay (d2), s/veh	0.3	3.9	3.8	13.9	8.1	8.0	13.6	0.4	0.4	4.3	0.0	24.4
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	2.3	16.3	16.8	2.3	21.4	21.8	3.1	3.5	3.6	3.0	0.0	17.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.0	31.0	31.0	87.3	68.7	68.6	83.9	49.3	49.4	73.9	0.0	81.3
LnGrp LOS	D	C	C	F	E	E	F	D	D	E		F
Approach Vol, veh/h		1293			1080			296			547	
Approach Delay, s/veh		32.2			69.5			57.8			79.2	
Approach LOS		C			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	83.2	13.7	40.8	34.5	61.0	15.3	39.2
Change Period (Y+Rc), s	6.5	6.5	6.0	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	13.5	59.5	16.0	35.5	18.5	54.5	15.5	35.5
Max Q Clear Time (g_c+I1), s	6.5	40.0	8.0	34.0	7.1	44.1	8.6	10.1
Green Ext Time (p_c), s	0.0	7.5	0.1	0.4	0.1	4.5	0.2	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	55.1
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	1213	26	104	987	67	71	143	185	119	247	44
Future Volume (veh/h)	38	1213	26	104	987	67	71	143	185	119	247	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		0.98
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	1859	1859	1870	1870	1859	1870	1870	1859	1870	1859	1859
Adj Flow Rate, veh/h	38	1225	24	105	997	54	72	144	149	120	249	40
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	57	1346	26	382	1988	978	96	284	237	143	282	45
Arrive On Green	0.06	0.76	0.76	0.43	1.00	1.00	0.05	0.15	0.15	0.08	0.18	0.18
Sat Flow, veh/h	1781	3542	69	1781	3554	1523	1781	1870	1559	1781	1557	250
Grp Volume(v), veh/h	38	611	638	105	997	54	72	144	149	120	0	289
Grp Sat Flow(s),veh/h/ln	1781	1766	1845	1781	1777	1523	1781	1870	1559	1781	0	1807
Q Serve(g_s), s	3.1	40.4	40.4	5.7	0.0	0.0	6.0	10.6	8.6	10.0	0.0	23.4
Cycle Q Clear(g_c), s	3.1	40.4	40.4	5.7	0.0	0.0	6.0	10.6	8.6	10.0	0.0	23.4
Prop In Lane	1.00		0.04	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	57	671	701	382	1988	978	96	284	237	143	0	328
V/C Ratio(X)	0.67	0.91	0.91	0.27	0.50	0.06	0.75	0.51	0.63	0.84	0.00	0.88
Avail Cap(c_a), veh/h	232	671	701	382	1988	978	249	449	374	172	0	367
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	0.91	0.91	0.91	0.71	0.71	0.71	0.99	0.00	0.99
Uniform Delay (d), s/veh	69.5	16.0	16.0	35.2	0.0	0.0	70.0	58.5	24.5	68.0	0.0	59.8
Incr Delay (d2), s/veh	7.9	12.3	11.9	0.4	0.8	0.1	8.0	1.0	2.0	25.4	0.0	19.7
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	1.5	8.9	9.2	2.4	0.2	0.0	3.0	5.1	3.4	5.5	0.0	12.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.3	28.3	27.9	35.6	0.8	0.1	78.0	59.4	26.5	93.5	0.0	79.5
LnGrp LOS	E	C	C	D	A	A	E	E	C	F		E
Approach Vol, veh/h		1287			1156			365			409	
Approach Delay, s/veh		29.5			3.9			49.6			83.6	
Approach LOS		C			A			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	38.7	63.0	14.1	34.2	11.3	90.4	18.5	29.8
Change Period (Y+Rc), s	6.5	6.0	6.0	* 7	6.5	* 6.5	6.5	7.0
Max Green Setting (Gmax), s	16.5	57.0	21.0	* 31	19.5	* 54	14.5	36.0
Max Q Clear Time (g_c+I1), s	7.7	42.4	8.0	25.4	5.1	2.0	12.0	12.6
Green Ext Time (p_c), s	0.1	6.8	0.1	0.7	0.0	8.7	0.1	1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	29.5
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1424	136	366	1016	173	93	115	181	696	193	16
Future Volume (veh/h)	31	1424	136	366	1016	173	93	115	181	696	193	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.97
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	1859	1870	1870	1859	1870	1870	1859	1870	1870	1859
Adj Flow Rate, veh/h	32	1453	110	373	1037	142	95	117	148	710	197	12
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	1954	694	419	2381	1070	230	170	332	766	460	374
Arrive On Green	0.07	0.77	0.77	0.12	0.47	0.47	0.07	0.09	0.09	0.22	0.25	0.25
Sat Flow, veh/h	1781	5106	1538	3456	5106	1545	3456	1870	1549	3456	1870	1520
Grp Volume(v), veh/h	32	1453	110	373	1037	142	95	117	148	710	197	12
Grp Sat Flow(s),veh/h/ln	1781	1702	1538	1728	1702	1545	1728	1870	1549	1728	1870	1520
Q Serve(g_s), s	2.6	23.2	2.6	15.9	20.4	1.2	4.0	9.1	6.8	30.2	13.3	0.9
Cycle Q Clear(g_c), s	2.6	23.2	2.6	15.9	20.4	1.2	4.0	9.1	6.8	30.2	13.3	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	61	1954	694	419	2381	1070	230	170	332	766	460	374
V/C Ratio(X)	0.52	0.74	0.16	0.89	0.44	0.13	0.41	0.69	0.45	0.93	0.43	0.03
Avail Cap(c_a), veh/h	178	1954	694	449	2381	1070	346	212	366	829	474	385
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.57	0.57	0.57	0.90	0.90	0.90	0.94	0.94	0.94	0.58	0.58	0.58
Uniform Delay (d), s/veh	68.7	13.6	8.9	64.9	26.8	2.1	67.2	66.1	21.3	57.2	47.7	43.0
Incr Delay (d2), s/veh	3.9	1.5	0.3	17.1	0.5	0.2	1.1	6.2	0.9	10.2	0.4	0.0
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	1.2	4.9	0.9	8.0	8.3	0.7	1.8	4.7	2.5	14.0	6.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	72.6	15.1	9.2	82.1	27.3	2.3	68.3	72.3	22.1	67.3	48.0	43.0
LnGrp LOS	E	B	A	F	C	A	E	E	C	E	D	D
Approach Vol, veh/h		1595			1552			360			919	
Approach Delay, s/veh		15.8			38.2			50.6			62.9	
Approach LOS		B			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.7	64.4	17.0	43.9	12.2	76.9	40.3	20.6
Change Period (Y+Rc), s	6.5	7.0	7.0	7.0	7.0	* 7	7.0	7.0
Max Green Setting (Gmax), s	19.5	50.0	15.0	38.0	15.0	* 55	36.0	17.0
Max Q Clear Time (g_c+I1), s	17.9	25.2	6.0	15.3	4.6	22.4	32.2	11.1
Green Ext Time (p_c), s	0.2	11.8	0.1	1.0	0.0	8.8	1.1	0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	36.3
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱↱	↰↰	↑↑↑					↰↰		↱
Traffic Volume (veh/h)	0	1308	1204	175	1567	0	0	0	0	124	0	54
Future Volume (veh/h)	0	1308	1204	175	1567	0	0	0	0	124	0	54
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	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
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	1335	1229	179	1599	0				127	0	45
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	2573	1406	288	3515	0				286	0	131
Arrive On Green	0.00	0.50	0.50	0.08	0.69	0.00				0.08	0.00	0.08
Sat Flow, veh/h	0	5274	2790	3456	5274	0				3456	0	1585
Grp Volume(v), veh/h	0	1335	1229	179	1599	0				127	0	45
Grp Sat Flow(s),veh/h/ln	0	1702	1395	1728	1702	0				1728	0	1585
Q Serve(g_s), s	0.0	9.9	22.0	2.8	8.0	0.0				2.0	0.0	1.5
Cycle Q Clear(g_c), s	0.0	9.9	22.0	2.8	8.0	0.0				2.0	0.0	1.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2573	1406	288	3515	0				286	0	131
V/C Ratio(X)	0.00	0.52	0.87	0.62	0.45	0.00				0.44	0.00	0.34
Avail Cap(c_a), veh/h	0	3171	1733	1042	5228	0				1533	0	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.4	12.4	25.0	4.0	0.0				24.6	0.0	24.4
Incr Delay (d2), s/veh	0.0	0.1	3.9	0.8	0.0	0.0				0.4	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	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.7	5.6	1.1	1.2	0.0				0.7	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	9.5	16.3	25.8	4.0	0.0				25.0	0.0	25.0
LnGrp LOS		A	B	C	A					C		C
Approach Vol, veh/h		2564			1778						172	
Approach Delay, s/veh		12.7			6.2						25.0	
Approach LOS		B			A						C	

Timer - Assigned Phs	1	2		4		6			
Phs Duration (G+Y+Rc), s	10.4	35.2		10.8		45.6			
Change Period (Y+Rc), s	5.7	6.8		6.1		6.8			
Max Green Setting (Gmax), s	7.6	35.0		25.0		57.7			
Max Q Clear Time (g_c+I1), s	4.8	24.0		4.0		10.0			
Green Ext Time (p_c), s	0.2	4.4		0.2		5.0			

Intersection Summary			
HCM 7th Control Delay, s/veh		10.6	
HCM 7th LOS		B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	328	1047	151	0	816	95	687	302	62	123	0	397
Future Volume (veh/h)	328	1047	151	0	816	95	687	302	62	123	0	397
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.98	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	0	1870	1837	1870	1837	1837	1870	0	1870
Adj Flow Rate, veh/h	338	1079	0	0	841	77	708	311	58	127	0	308
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	534	1646		0	1201	352	824	469	86	236	0	0
Arrive On Green	0.15	0.46	0.00	0.00	0.24	0.24	0.24	0.16	0.16	0.13	0.00	0.00
Sat Flow, veh/h	3456	3554	1585	0	5274	1494	3456	2935	540	1781	127	
Grp Volume(v), veh/h	338	1079	0	0	841	77	708	183	186	127	32.2	
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	0	1702	1494	1728	1745	1730	1781	C	
Q Serve(g_s), s	7.1	18.2	0.0	0.0	11.7	3.2	15.2	7.7	7.9	5.2		
Cycle Q Clear(g_c), s	7.1	18.2	0.0	0.0	11.7	3.2	15.2	7.7	7.9	5.2		
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.31	1.00		
Lane Grp Cap(c), veh/h	534	1646		0	1201	352	824	279	276	236		
V/C Ratio(X)	0.63	0.66		0.00	0.70	0.22	0.86	0.66	0.67	0.54		
Avail Cap(c_a), veh/h	534	2275		0	2104	616	2096	674	668	252		
HCM Platoon Ratio	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	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	30.8	16.1	0.0	0.0	27.2	23.9	28.3	30.6	30.7	31.5		
Incr Delay (d2), s/veh	1.9	0.2	0.0	0.0	0.3	0.1	1.1	1.0	1.1	0.8		
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		
%ile BackOfQ(50%),veh/ln	2.9	6.4	0.0	0.0	4.4	1.0	5.6	3.0	3.0	2.1		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.6	16.2	0.0	0.0	27.5	24.1	29.4	31.6	31.8	32.2		
LnGrp LOS	C	B			C	C	C	C	C	C		
Approach Vol, veh/h		1417			918			1077				
Approach Delay, s/veh		20.1			27.2			30.2				
Approach LOS		C			C			C				

Timer - Assigned Phs		2	3		5	6	7	8				
Phs Duration (G+Y+Rc), s		42.8	24.6		17.7	25.1	16.4	18.5				
Change Period (Y+Rc), s		6.8	6.1		5.7	6.8	6.1	6.1				
Max Green Setting (Gmax), s		49.7	47.1		12.0	32.0	11.0	30.0				
Max Q Clear Time (g_c+I1), s		20.2	17.2		9.1	13.7	7.2	9.9				
Green Ext Time (p_c), s		5.4	1.3		0.2	3.7	0.0	1.0				

Intersection Summary		
HCM 7th Control Delay, s/veh		25.5
HCM 7th LOS		C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	135	6	1	129	170	7	18	3	252	8	88
Future Volume (veh/h)	51	135	6	1	129	170	7	18	3	252	8	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	0.99		0.95	0.98		0.97	1.00		0.96	1.00		0.95
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	57	150	6	1	143	151	8	20	2	280	9	88
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	330	12	103	465	383	27	290	28	684	468	398
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.01	0.09	0.09	0.20	0.26	0.26
Sat Flow, veh/h	281	1324	47	3	1865	1535	1781	3256	319	3456	1777	1510
Grp Volume(v), veh/h	213	0	0	144	0	151	8	11	11	280	9	88
Grp Sat Flow(s),veh/h/ln	1651	0	0	1869	0	1535	1781	1777	1798	1728	1777	1510
Q Serve(g_s), s	0.7	0.0	0.0	0.0	0.0	2.9	0.2	0.2	0.2	2.5	0.1	1.6
Cycle Q Clear(g_c), s	3.6	0.0	0.0	2.2	0.0	2.9	0.2	0.2	0.2	2.5	0.1	1.6
Prop In Lane	0.27		0.03	0.01		1.00	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	541	0	0	569	0	383	27	158	160	684	468	398
V/C Ratio(X)	0.39	0.00	0.00	0.25	0.00	0.39	0.30	0.07	0.07	0.41	0.02	0.22
Avail Cap(c_a), veh/h	1032	0	0	1157	0	868	1007	1020	1032	2931	1507	1281
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	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	0.0	0.0	10.8	0.0	11.0	17.2	14.8	14.8	12.4	9.6	10.2
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.2	0.0	0.7	6.1	0.2	0.2	0.4	0.0	0.3
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	1.2	0.0	0.0	0.8	0.0	0.9	0.1	0.1	0.1	0.8	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.7	0.0	0.0	11.0	0.0	11.7	23.4	14.9	15.0	12.8	9.7	10.5
LnGrp LOS	B			B		B	C	B	B	B	A	B
Approach Vol, veh/h		213			295			30			377	
Approach Delay, s/veh		11.7			11.4			17.2			12.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	8.5		14.8	5.8	14.7		14.8				
Change Period (Y+Rc), s	5.0	5.4		6.0	5.3	5.4		6.0				
Max Green Setting (Gmax), s	30.0	20.3		20.0	20.0	30.0		20.0				
Max Q Clear Time (g_c+I1), s	4.5	2.2		5.6	2.2	3.6		4.9				
Green Ext Time (p_c), s	1.0	0.0		1.1	0.0	0.5		1.2				

Intersection Summary	
HCM 7th Control Delay, s/veh	12.0
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	661	6	73	406	155	7	99	54	291	107	81
Future Volume (veh/h)	66	661	6	73	406	155	7	99	54	291	107	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	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	1854	1854	1870	1870	1854	1870	1870	1854	1870	1854	1854
Adj Flow Rate, veh/h	73	726	6	80	446	135	8	109	46	320	118	79
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	1172	10	446	1866	977	18	178	149	377	201	135
Arrive On Green	0.05	0.33	0.33	0.50	1.00	1.00	0.01	0.10	0.10	0.11	0.19	0.19
Sat Flow, veh/h	1781	3580	30	1781	3554	1535	1781	1870	1561	3456	1035	693
Grp Volume(v), veh/h	73	357	375	80	446	135	8	109	46	320	0	197
Grp Sat Flow(s),veh/h/ln	1781	1761	1848	1781	1777	1535	1781	1870	1561	1728	0	1728
Q Serve(g_s), s	4.5	18.8	18.8	2.7	0.0	0.0	0.5	6.2	1.8	10.0	0.0	11.4
Cycle Q Clear(g_c), s	4.5	18.8	18.8	2.7	0.0	0.0	0.5	6.2	1.8	10.0	0.0	11.4
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	94	576	605	446	1866	977	18	178	149	377	0	336
V/C Ratio(X)	0.78	0.62	0.62	0.18	0.24	0.14	0.46	0.61	0.31	0.85	0.00	0.59
Avail Cap(c_a), veh/h	146	576	605	446	1866	977	81	493	412	377	0	565
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.65	0.65	0.65	1.00	1.00	1.00	0.41	0.00	0.41
Uniform Delay (d), s/veh	51.5	31.2	31.2	21.3	0.0	0.0	54.2	47.8	16.9	48.1	0.0	40.3
Incr Delay (d2), s/veh	13.0	4.9	4.7	0.1	0.2	0.2	17.3	3.4	1.2	7.5	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	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	8.5	8.9	1.1	0.1	0.1	0.3	3.0	1.2	4.6	0.0	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	64.5	36.2	35.9	21.4	0.2	0.2	71.5	51.2	18.0	55.7	0.0	41.0
LnGrp LOS	E	D	D	C	A	A	E	D	B	E		D
Approach Vol, veh/h		805			661			163			517	
Approach Delay, s/veh		38.6			2.8			42.8			50.1	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.5	42.0	18.0	16.5	11.8	63.7	7.1	27.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.6	36.0	12.0	29.0	9.0	36.0	5.0	36.0
Max Q Clear Time (g_c+I1), s	4.7	20.8	12.0	8.2	6.5	2.0	2.5	13.4
Green Ext Time (p_c), s	0.1	3.7	0.0	0.6	0.0	3.4	0.0	1.0

Intersection Summary	
HCM 7th Control Delay, s/veh	30.7
HCM 7th LOS	C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	144	931	546	425	412	84
Future Volume (veh/h)	144	931	546	425	412	84
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1854	1854	1854	1854
Adj Flow Rate, veh/h	147	950	557	390	420	78
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	175	2072	843	590	442	82
Arrive On Green	0.20	1.00	0.43	0.43	0.30	0.30
Sat Flow, veh/h	1781	3647	2051	1371	1456	270
Grp Volume(v), veh/h	147	950	501	446	499	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1761	1569	1730	0
Q Serve(g_s), s	8.7	0.0	24.9	24.9	31.1	0.0
Cycle Q Clear(g_c), s	8.7	0.0	24.9	24.9	31.1	0.0
Prop In Lane	1.00			0.87	0.84	0.16
Lane Grp Cap(c), veh/h	175	2072	758	675	525	0
V/C Ratio(X)	0.84	0.46	0.66	0.66	0.95	0.00
Avail Cap(c_a), veh/h	291	2072	758	675	543	0
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	0.83	0.60	0.00
Uniform Delay (d), s/veh	43.4	0.0	24.9	24.9	37.5	0.0
Incr Delay (d2), s/veh	8.9	0.6	3.8	4.2	18.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.2	10.6	9.5	15.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	52.3	0.6	28.7	29.2	56.3	0.0
LnGrp LOS	D	A	C	C	E	
Approach Vol, veh/h		1097	947		499	
Approach Delay, s/veh		7.5	28.9		56.3	
Approach LOS		A	C		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		70.1		39.9	16.8	53.3
Change Period (Y+Rc), s		6.0		6.5	6.0	6.0
Max Green Setting (Gmax), s		63.0		34.5	18.0	39.0
Max Q Clear Time (g_c+I1), s		2.0		33.1	10.7	26.9
Green Ext Time (p_c), s		7.9		0.3	0.2	4.7

Intersection Summary		
HCM 7th Control Delay, s/veh		25.1
HCM 7th LOS		C



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱	↰	↑↑	↰	↱
Traffic Volume (veh/h)	825	602	18	481	442	8
Future Volume (veh/h)	825	602	18	481	442	8
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1856	1870	1870	1870	1856
Adj Flow Rate, veh/h	887	518	19	517	475	8
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1814	1235	35	2091	511	451
Arrive On Green	0.51	0.51	0.02	0.59	0.29	0.29
Sat Flow, veh/h	3647	1537	1781	3647	1781	1573
Grp Volume(v), veh/h	887	518	19	517	475	8
Grp Sat Flow(s),veh/h/ln	1777	1537	1781	1777	1781	1573
Q Serve(g_s), s	19.5	12.4	1.3	8.4	31.1	0.4
Cycle Q Clear(g_c), s	19.5	12.4	1.3	8.4	31.1	0.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1814	1235	35	2091	511	451
V/C Ratio(X)	0.49	0.42	0.55	0.25	0.93	0.02
Avail Cap(c_a), veh/h	1814	1235	267	2091	683	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	0.99	0.99	1.00	1.00
Uniform Delay (d), s/veh	19.2	3.7	58.3	11.9	41.6	30.7
Incr Delay (d2), s/veh	0.7	0.8	12.5	0.3	16.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	10.4	0.7	3.2	15.5	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	19.9	4.5	70.8	12.2	57.8	30.7
LnGrp LOS	B	A	E	B	E	C
Approach Vol, veh/h	1405			536	483	
Approach Delay, s/veh	14.2			14.3	57.4	
Approach LOS	B			B	E	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	9.3	69.2			78.6	41.4
Change Period (Y+Rc), s	7.0	8.0			8.0	7.0
Max Green Setting (Gmax), s	18.6	34.0			59.0	46.0
Max Q Clear Time (g_c+I1), s	13.3	21.5			10.4	33.1
Green Ext Time (p_c), s	0.0	6.3			3.6	1.3

Intersection Summary			
HCM 7th Control Delay, s/veh		22.8	
HCM 7th LOS		C	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	820	13	33	486	13	21
Future Volume (veh/h)	820	13	33	486	13	21
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1860	1860	1870	1860	1860	1860
Adj Flow Rate, veh/h	882	13	35	523	14	21
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1347	20	98	2073	61	91
Arrive On Green	0.38	0.38	0.05	0.59	0.10	0.10
Sat Flow, veh/h	3656	53	1781	3626	641	961
Grp Volume(v), veh/h	437	458	35	523	36	0
Grp Sat Flow(s),veh/h/ln	1767	1849	1781	1767	1648	0
Q Serve(g_s), s	9.3	9.3	0.9	3.3	0.9	0.0
Cycle Q Clear(g_c), s	9.3	9.3	0.9	3.3	0.9	0.0
Prop In Lane		0.03	1.00		0.39	0.58
Lane Grp Cap(c), veh/h	668	699	98	2073	157	0
V/C Ratio(X)	0.65	0.65	0.36	0.25	0.23	0.00
Avail Cap(c_a), veh/h	1551	1623	1173	3102	1393	0
HCM Platoon Ratio	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	0.00
Uniform Delay (d), s/veh	11.7	11.7	20.7	4.6	19.1	0.0
Incr Delay (d2), s/veh	1.1	1.0	2.2	0.1	0.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	2.9	0.4	0.6	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	12.8	12.8	22.9	4.6	19.8	0.0
LnGrp LOS	B	B	C	A	B	
Approach Vol, veh/h	895			558	36	
Approach Delay, s/veh	12.8			5.8	19.8	
Approach LOS	B			A	B	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	9.5	25.2			34.7	10.8
Change Period (Y+Rc), s	7.0	8.0			8.0	6.5
Max Green Setting (Gmax), s	30.0	40.0			40.0	38.5
Max Q Clear Time (g_c+I1), s	12.9	11.3			5.3	2.9
Green Ext Time (p_c), s	0.1	5.8			3.6	0.1

Intersection Summary		
HCM 7th Control Delay, s/veh		10.3
HCM 7th LOS		B

Appendix E: Forecasted Horizon Year 2050 Base Volume Calculations

Area	Drwy		ADT	Roadway Segment	Segment	ADT	Overall %	Area 1 Drwy 1 ADT	%	Area 1 Drwy 2 ADT	%	Area 2 Drwy 1 ADT	%	Area 2 Drwy 2 ADT	%	Area 2 Drwy 3 ADT	%	Area 3 Drwy 1 ADT	%	Area 3 Drwy 2 ADT	%	Area 3 Drwy 3 ADT	%	Area 4 Drwy 1 ADT	%	Area 4 Drwy 2 ADT	%
	1	1	7473	Las Posas Rd	Grand Ave to La Mirada Dr	7641	9.2%	0		2241.9	30.0%	3950	60.0%	1448.333	22.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	1	2	7473	Las Posas Rd	La Mirada Dr to Linda Vista Dr	7641	9.2%	0		2241.9	30.0%	3950	60.0%	1448.333	22.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	2	1	6583.333	Las Posas Rd	Linda Vista Dr to San Marcos Blvd	8628	10.4%	0		2241.9	30.0%	4937.5	75.0%	1448.333	22.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	2	2	6583.333	Via Vera Cruz	Grand Ave to Linda Vista Dr	9493	11.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3950	60.0%	4750.8	60.0%	791.8	10.0%	0	0.0%	0	0.0%	0	0.0%
	2	3	6583.333	Via Vera Cruz	Linda Vista Dr to San Marcos Blvd	10546	12.7%	0	0.0%	0	0.0%	0	0.0%	1053.333	16.0%	3950	60.0%	4750.8	60.0%	791.8	10.0%	0	0.0%	0	0.0%	0	0.0%
	3	1	7918	Via Vera Cruz	San Marcos Blvd to Creekside Dr	14502	17.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	6583.333	100.0%	7918	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	3	2	7918	Bent Ave	Grand Ave to San Marcos Blvd	6119	7.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1821.14	23.0%	4296.95	35.0%	0	0.0%
	3	3	7918	Bent Ave	San Marcos Blvd to Creekside Dr	16572	20.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	7364	93.0%	9208	75.0%	0	0.0%
	4	1	12277	Grand Ave	Las Posas Rd to Via Vera Cruz	10547	12.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1975	30.0%	2375.4	30.0%	791.8	10.0%	910.57	11.5%	2455.4	20.0%	2037.982	16.6%
	4	2	12277	Grand Ave	Via Vera Cruz to Bent Ave	10211	12.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1821.14	23.0%	4296.95	35.0%	4091.924	33.3%
			83004	Grand Ave	Bent Ave to San Marcos Blvd	4092	4.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4091.924	33.3%
				Grand Ave	San Marcos Blvd to Creekside Dr	8177	9.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	8176.482	66.6%
				Linda Vista Dr	Las Posas Rd to Via Vera Cruz	1054	1.3%	0	0.0%	0	0.0%	0	0.0%	1053.333	16.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
				San Marcos Blvd	Knights Realm to Discovery St	18462	22.2%	3736.5	50.0%	5231.1	70.0%	1645.833	25.0%	1448.333	22.0%	421.3333	6.4%	791.8	10.0%	1187.7	15.0%	2771.3	35.0%	1227.7	10.0%	0	0.0%
				San Marcos Blvd	Discovery St to Pacific St	18462	22.2%	3736.5	50.0%	5231.1	70.0%	1645.833	25.0%	1448.333	22.0%	421.3333	6.4%	791.8	10.0%	1187.7	15.0%	2771.3	35.0%	1227.7	10.0%	0	0.0%
				San Marcos Blvd	Pacific St to Las Posas Rd	18462	22.2%	3736.5	50.0%	5231.1	70.0%	1645.833	25.0%	1448.333	22.0%	421.3333	6.4%	791.8	10.0%	1187.7	15.0%	2771.3	35.0%	1227.7	10.0%	0	0.0%
				San Marcos Blvd	Las Posas Rd to Via Vera Cruz	16720	20.1%	3736.5	50.0%	0		0		6583.333	100.0%	421.3333	6.4%	791.8	10.0%	1187.7	15.0%	2771.3	35.0%	1227.7	10.0%	0	0.0%
				San Marcos Blvd	Via Vera Cruz to Bent Ave	19408	23.4%	3736.5	50.0%	0		0		2633.333	40.0%	329.1667	5.0%	791.8	10.0%	7918	100.0%	2771.3	35.0%	1227.7	10.0%	0	0.0%
				San Marcos Blvd	Bent Ave to Grand Ave	19884	24.0%	3736.5	50.0%	0		0		2633.333	40.0%	329.1667	5.0%	791.8	10.0%	5938.5	75.0%	2771.3	35.0%	3683.1	30.0%	0	0.0%
				San Marcos Blvd	Grand Ave to SR-78 EB Ramps	23976	28.9%	3736.5	50.0%	0		0		2633.333	40.0%	329.1667	5.0%	791.8	10.0%	5938.5	75.0%	2771.3	35.0%	3683.1	30.0%	4091.924	33.3%
				San Marcos Blvd	SR-78 EB Ramps to SR-78 WB Ramps	20313	24.5%	3736.5	50.0%	0		0		1711.667	26.0%	164.5833	2.5%	395.9	5.0%	5146.7	65.0%	1385.65	17.5%	3683.1	30.0%	4088.241	33.3%
				San Marcos Blvd	Knoll Rd to Travelers Wy	9803	11.8%	3736.5	50.0%	0	0.0%	0	0.0%	790	12.0%	0	0.0%	0	0.0%	1187.7	15.0%	0	0.0%	0	0.0%	4088.241	33.3%
				Creekside Dr	Bent Ave to Grand Ave	24554	29.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	12277	100.0%	12277	100.0%
				Bent Ave	Creekside Dr to Discovery St	4304	5.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	791.8	10.0%	3511.222	28.6%	0	0.0%
				Discovery St	Via Vera Cruz to Bent Ave	3467	4.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1882.833	28.6%	1583.6	20.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
				Discovery St	Bent Ave to Craven Rd	7770	9.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1882.833	28.6%	1583.6	20.0%	0	0.0%	791.8	10.0%	3511.222	28.6%	0	0.0%
				Discovery St	Grand Ave to N City Dr	9979	12.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1583.6	20.0%	0	0.0%	791.8	10.0%	3511.222	28.6%	4091.924	33.3%
				Grand Ave	Creekside Dr to Discovery St	4092	4.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4091.924	33.3%
				Las Posas Rd	Descanso Ave to SR-78 WB Ramps	6283	7.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	987.5	15.0%	1187.7	15.0%	791.8	10.0%	455.285	5.8%	1841.55	15.0%	1018.991	8.3%
				Las Posas Rd	SR-78 WB Ramps to SR-78 EB Ramps	10547	12.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1975	30.0%	2375.4	30.0%	791.8	10.0%	910.57	11.5%	2455.4	20.0%	2037.982	16.6%
				SR-78 WB On-Ramp	Via Las Posas Rd	4264	5.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	987.5	15.0%	1187.7	15.0%	0	0.0%	455.285	5.8%	613.85	5.0%	1018.991	8.3%
				Grand Ave	Pacific St to Las Posas Rd	7641	9.2%	0		2241.9	30.0%	3950	60.0%	1448.333	22.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
				SR-78 EB Ramps	Via Via Vera Cruz	9141	11.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1975	30.0%	2375.4	30.0%	0	0.0%	910.57	11.5%	1841.55	15.0%	2037.982	16.6%
				Linda Vista Dr	Pacific St to Las Posas Rd	2041	2.5%	0		0	0.0%	987.5	15.0%	1053.333	16.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
				SR-78 EB Off-Ramp	Via San Marcos Blvd	3660	4.4%	0		0		0		921.6667	14.0%	164.5833	2.5%	395.9	5.0%	791.8	10.0%	1385.65	17.5%	0	0.0%	0	0.0%
				SR-78 EB On-Ramp	Via San Marcos Blvd	3660	4.4%	0		0		0		921.6667	14.0%	164.5833	2.5%	395.9	5.0%	791.8	10.0%	1385.65	17.5%	0	0.0%	0	0.0%
				SR-78 WB On-Ramps	Via San Marcos Blvd	2376	3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2375.4	30.0%	0	0.0%	0	0.0%	0	0.0%
				Knoll Rd	North of San Marcos Blvd	4475	5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	791.8	10.0%	0	0.0%	3683.1	30.0%	0	0.0%
				Craven Rd	South of Discovery	1883	2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1882.833	28.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
				Discovery St	Craven Rd to Grand Ave	5887	7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1583.6	20.0%	0	0.0%	791.8	10.0%	3511.222	28.6%	0	0.0%
				Via Vera Cruz	Creekside to Discovery St	3467	4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1882.833	28.6%	1583.6	20.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Appendix F: LOS Analysis Worksheets – Horizon Year 2050 Base Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	620	10	280	430	830	0	0	1270	350
Future Volume (veh/h)	0	0	0	620	10	280	430	830	0	0	1270	350
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		0.97
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1833	1833
Adj Flow Rate, veh/h				465	275	266	453	874	0	0	1337	331
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				506	246	238	443	3189	0	0	1352	334
Arrive On Green				0.28	0.28	0.28	0.50	1.00	0.00	0.00	0.34	0.34
Sat Flow, veh/h				1781	867	838	1781	5274	0	0	4142	983
Grp Volume(v), veh/h				465	0	541	453	874	0	0	1121	547
Grp Sat Flow(s),veh/h/ln				1781	0	1705	1781	1702	0	0	1668	1624
Q Serve(g_s), s				32.9	0.0	36.9	32.3	0.0	0.0	0.0	43.4	43.6
Cycle Q Clear(g_c), s				32.9	0.0	36.9	32.3	0.0	0.0	0.0	43.4	43.6
Prop In Lane				1.00		0.49	1.00		0.00	0.00		0.61
Lane Grp Cap(c), veh/h				506	0	484	443	3189	0	0	1134	552
V/C Ratio(X)				0.92	0.00	1.12	1.02	0.27	0.00	0.00	0.99	0.99
Avail Cap(c_a), veh/h				506	0	484	443	3189	0	0	1134	552
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.86	0.86	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				45.1	0.0	46.6	32.7	0.0	0.0	0.0	42.6	42.7
Incr Delay (d2), s/veh				21.7	0.0	77.3	45.8	0.2	0.0	0.0	24.1	36.1
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				16.8	0.0	25.1	15.7	0.1	0.0	0.0	21.1	22.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				66.8	0.0	123.9	78.5	0.2	0.0	0.0	66.7	78.8
LnGrp LOS				E		F	F	A			E	E
Approach Vol, veh/h					1006			1327			1668	
Approach Delay, s/veh					97.5			26.9			70.7	
Approach LOS					F			C			E	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	88.0		37.0	51.0		42.0						
Change Period (Y+Rc), s	6.8		4.7	6.8		5.1						
Max Green Setting (Gmax), s	81.2		32.3	44.2		36.9						
Max Q Clear Time (g_c+I1), s	2.0		34.3	45.6		38.9						
Green Ext Time (p_c), s	4.2		0.0	0.0		0.0						

Intersection Summary	
HCM 7th Control Delay, s/veh	62.9
HCM 7th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	200	60	200	290	710	70	370	150	440	820	630
Future Volume (veh/h)	180	200	60	200	290	710	70	370	150	440	820	630
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.98
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	1852	1852	1870	1870	1870	1870	1852	1852	1870	1870	1852
Adj Flow Rate, veh/h	186	206	56	206	299	512	72	381	140	454	845	519
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	371	98	212	342	1236	92	1047	364	902	1755	871
Arrive On Green	0.07	0.14	0.14	0.20	0.31	0.31	0.05	0.28	0.28	0.09	0.16	0.16
Sat Flow, veh/h	3456	2744	727	1781	1870	2776	1781	3678	1278	3456	3554	1535
Grp Volume(v), veh/h	186	130	132	206	299	512	72	347	174	454	845	519
Grp Sat Flow(s),veh/h/ln	1728	1759	1711	1781	1870	1388	1781	1685	1586	1728	1777	1535
Q Serve(g_s), s	6.9	9.0	9.4	14.9	19.7	3.6	5.2	10.7	11.4	16.3	28.1	35.5
Cycle Q Clear(g_c), s	6.9	9.0	9.4	14.9	19.7	3.6	5.2	10.7	11.4	16.3	28.1	35.5
Prop In Lane	1.00		0.42	1.00		1.00	1.00		0.81	1.00		1.00
Lane Grp Cap(c), veh/h	247	238	231	212	342	1236	92	959	451	902	1755	871
V/C Ratio(X)	0.75	0.55	0.57	0.97	0.87	0.41	0.78	0.36	0.38	0.50	0.48	0.60
Avail Cap(c_a), veh/h	569	460	448	212	404	1328	162	959	451	902	1755	871
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.45	0.45	0.45	0.93	0.93	0.93	0.09	0.09	0.09
Uniform Delay (d), s/veh	59.2	52.5	52.7	51.8	43.7	8.3	60.9	37.1	37.4	51.4	39.3	33.1
Incr Delay (d2), s/veh	4.6	2.0	2.2	33.6	8.4	0.1	12.7	1.0	2.3	0.0	0.1	0.3
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	8.1	4.1	4.1	7.9	8.6	2.2	2.6	4.5	4.7	7.6	13.4	14.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	63.8	54.4	54.9	85.5	52.2	8.4	73.6	38.1	39.7	51.4	39.4	33.3
LnGrp LOS	E	D	D	F	D	A	E	D	D	D	D	C
Approach Vol, veh/h		448			1017			593			1818	
Approach Delay, s/veh		58.5			36.9			42.9			40.7	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	43.5	22.0	24.1	13.2	70.7	15.8	30.3
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	7.5	37.0	15.5	34.0	11.8	42.7	21.4	28.1
Max Q Clear Time (g_c+I1), s	8.3	13.4	16.9	11.4	7.2	37.5	8.9	21.7
Green Ext Time (p_c), s	0.0	3.2	0.0	1.3	0.0	3.2	0.4	2.1

Intersection Summary	
HCM 7th Control Delay, s/veh	42.1
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	210	210	80	480	70	200	240	20	380	580	520
Future Volume (veh/h)	370	210	210	80	480	70	200	240	20	380	580	520
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1833	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	389	221	177	84	505	67	211	253	17	400	611	438
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	399	630	465	143	650	85	218	229	194	807	459	329
Arrive On Green	0.12	0.18	0.18	0.08	0.14	0.14	0.12	0.12	0.12	0.45	0.45	0.45
Sat Flow, veh/h	3456	3554	1553	1781	4570	597	1781	1870	1585	1781	1013	726
Grp Volume(v), veh/h	389	221	177	84	374	198	211	253	17	400	0	1049
Grp Sat Flow(s),veh/h/ln	1728	1777	1553	1781	1702	1763	1781	1870	1585	1781	0	1740
Q Serve(g_s), s	14.6	7.1	11.7	5.9	13.8	14.1	15.3	15.9	1.2	20.6	0.0	58.9
Cycle Q Clear(g_c), s	14.6	7.1	11.7	5.9	13.8	14.1	15.3	15.9	1.2	20.6	0.0	58.9
Prop In Lane	1.00		1.00	1.00		0.34	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	399	630	465	143	484	251	218	229	194	807	0	788
V/C Ratio(X)	0.98	0.35	0.38	0.59	0.77	0.79	0.97	1.11	0.09	0.50	0.00	1.33
Avail Cap(c_a), veh/h	399	630	465	151	484	251	218	229	194	807	0	788
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)	0.54	0.54	0.54	1.00	1.00	1.00	0.89	0.89	0.89	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.3	46.9	36.0	57.7	53.7	53.9	56.8	57.0	50.6	25.1	0.0	35.6
Incr Delay (d2), s/veh	26.9	0.8	1.3	3.2	11.3	21.8	48.3	87.5	0.1	0.2	0.0	157.6
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	7.7	3.2	5.4	2.7	6.5	7.6	9.7	12.9	0.5	8.2	0.0	57.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	84.3	47.8	37.3	60.9	65.1	75.7	105.1	144.6	50.7	25.2	0.0	193.1
LnGrp LOS	F	D	D	E	E	E	F	F	D	C		F
Approach Vol, veh/h		787			656			481			1449	
Approach Delay, s/veh		63.4			67.7			123.9			146.8	
Approach LOS		E			E			F			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.2	29.8		64.0	19.7	25.3		21.0
Change Period (Y+Rc), s	4.7	6.8		5.1	4.7	6.8		5.1
Max Green Setting (Gmax), s	10.5	22.5		58.9	15.0	18.5		15.9
Max Q Clear Time (g_c+I1), s	17.9	13.7		60.9	16.6	16.1		17.9
Green Ext Time (p_c), s	0.0	0.8		0.0	0.0	0.6		0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	108.7
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	50	90	180	70	230	120	380	190	240	620	180
Future Volume (veh/h)	70	50	90	180	70	230	120	380	190	240	620	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
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	1854	1870	1854	1854	1870	1870	1854	1870	1854	1854
Adj Flow Rate, veh/h	72	52	74	186	72	213	124	392	157	247	639	167
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	261	217	213	85	251	437	1552	684	171	802	209
Arrive On Green	0.05	0.14	0.14	0.12	0.21	0.21	0.49	0.87	0.87	0.10	0.29	0.29
Sat Flow, veh/h	1781	1870	1557	1781	412	1218	1781	3554	1565	1781	2748	717
Grp Volume(v), veh/h	72	52	74	186	0	285	124	392	157	247	409	397
Grp Sat Flow(s),veh/h/ln	1781	1870	1557	1781	0	1630	1781	1777	1565	1781	1761	1705
Q Serve(g_s), s	4.8	3.0	3.1	12.3	0.0	20.2	4.9	2.1	1.9	11.5	25.7	25.8
Cycle Q Clear(g_c), s	4.8	3.0	3.1	12.3	0.0	20.2	4.9	2.1	1.9	11.5	25.7	25.8
Prop In Lane	1.00		1.00	1.00		0.75	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	94	261	217	213	0	336	437	1552	684	171	514	497
V/C Ratio(X)	0.76	0.20	0.34	0.87	0.00	0.85	0.28	0.25	0.23	1.45	0.80	0.80
Avail Cap(c_a), veh/h	148	499	415	238	0	516	437	1552	684	171	514	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.95	0.95	0.95	0.74	0.74	0.74
Uniform Delay (d), s/veh	56.1	45.7	16.5	51.9	0.0	45.8	24.4	4.4	4.4	54.2	39.2	39.2
Incr Delay (d2), s/veh	11.9	0.4	0.9	26.1	0.0	8.0	0.3	0.4	0.7	223.8	9.2	9.6
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	2.4	1.4	2.0	7.1	0.0	9.0	2.0	0.8	0.7	15.7	12.1	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	67.9	46.1	17.4	78.0	0.0	53.8	24.7	4.8	5.1	278.1	48.4	48.8
LnGrp LOS	E	D	B	E		D	C	A	A	F	D	D
Approach Vol, veh/h		198			471			673			1053	
Approach Delay, s/veh		43.3			63.4			8.5			102.4	
Approach LOS		D			E			A			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	58.9	20.4	22.7	35.9	41.0	12.4	30.7
Change Period (Y+Rc), s	6.5	* 6.5	6.0	6.0	6.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	11.5	* 36	16.0	32.0	12.5	35.0	10.0	38.0
Max Q Clear Time (g_c+I1), s	13.5	4.1	14.3	5.1	6.9	27.8	6.8	22.2
Green Ext Time (p_c), s	0.0	3.1	0.1	0.5	0.1	2.8	0.0	1.7

Intersection Summary	
HCM 7th Control Delay, s/veh	63.5
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	290	110	80	250	150	60	390	20	70	490	370
Future Volume (veh/h)	110	290	110	80	250	150	60	390	20	70	490	370
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
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	1854	1870	1854	1854	1870	1854	1854	1870	1854	1854
Adj Flow Rate, veh/h	116	305	93	84	263	142	63	411	19	74	516	350
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	586	258	125	347	182	81	1726	80	94	1021	691
Arrive On Green	0.08	0.16	0.16	0.07	0.16	0.16	0.05	0.50	0.50	0.10	1.00	1.00
Sat Flow, veh/h	1781	3554	1568	1781	2232	1167	1781	3426	158	1781	1997	1353
Grp Volume(v), veh/h	116	305	93	84	206	199	63	211	219	74	455	411
Grp Sat Flow(s),veh/h/ln	1781	1777	1568	1781	1761	1638	1781	1761	1823	1781	1761	1589
Q Serve(g_s), s	7.7	9.4	6.3	5.5	13.4	14.0	4.2	8.1	8.1	4.9	0.0	0.0
Cycle Q Clear(g_c), s	7.7	9.4	6.3	5.5	13.4	14.0	4.2	8.1	8.1	4.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.71	1.00		0.09	1.00		0.85
Lane Grp Cap(c), veh/h	142	586	258	125	274	255	81	887	918	94	900	812
V/C Ratio(X)	0.82	0.52	0.36	0.67	0.75	0.78	0.78	0.24	0.24	0.79	0.51	0.51
Avail Cap(c_a), veh/h	193	1007	444	178	484	450	126	887	918	126	900	812
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	0.79	0.79	0.79	0.80	0.80	0.80
Uniform Delay (d), s/veh	54.4	45.8	44.5	54.4	48.4	48.7	56.7	16.8	16.8	53.1	0.0	0.0
Incr Delay (d2), s/veh	17.5	0.7	0.8	5.6	3.8	4.8	11.9	0.5	0.5	17.3	1.6	1.8
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	4.1	4.2	0.1	2.7	6.1	6.0	2.1	3.3	3.4	2.5	0.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	71.9	46.5	45.3	60.0	52.3	53.5	68.5	17.3	17.3	70.4	1.6	1.8
LnGrp LOS	E	D	D	E	D	D	E	B	B	E	A	A
Approach Vol, veh/h		514			489			493			940	
Approach Delay, s/veh		52.0			54.1			23.8			7.1	
Approach LOS		D			D			C			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	67.0	14.5	25.8	12.0	67.8	15.6	24.7
Change Period (Y+Rc), s	6.5	6.5	6.0	6.0	6.5	6.5	6.0	6.0
Max Green Setting (Gmax), s	8.5	40.5	12.0	34.0	8.5	40.5	13.0	33.0
Max Q Clear Time (g_c+I1), s	6.3	10.1	7.5	11.4	6.2	2.0	9.7	16.0
Green Ext Time (p_c), s	0.0	2.4	0.1	2.2	0.0	6.3	0.1	2.1

Intersection Summary	
HCM 7th Control Delay, s/veh	29.4
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	200	80	40	200	30	80	330	100	50	470	210
Future Volume (veh/h)	150	200	80	40	200	30	80	330	100	50	470	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	158	211	76	42	211	29	84	347	94	53	495	199
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	207	283	102	89	470	64	110	803	215	103	709	283
Arrive On Green	0.12	0.22	0.22	0.05	0.15	0.15	0.06	0.29	0.29	0.06	0.29	0.29
Sat Flow, veh/h	1781	1311	472	1781	3144	426	1781	2772	741	1781	2477	990
Grp Volume(v), veh/h	158	0	287	42	118	122	84	221	220	53	354	340
Grp Sat Flow(s),veh/h/ln	1781	0	1784	1781	1777	1794	1781	1777	1736	1781	1777	1691
Q Serve(g_s), s	5.3	0.0	9.3	1.4	3.8	3.8	2.9	6.2	6.4	1.8	11.0	11.1
Cycle Q Clear(g_c), s	5.3	0.0	9.3	1.4	3.8	3.8	2.9	6.2	6.4	1.8	11.0	11.1
Prop In Lane	1.00		0.26	1.00		0.24	1.00		0.43	1.00		0.59
Lane Grp Cap(c), veh/h	207	0	384	89	265	268	110	515	503	103	508	484
V/C Ratio(X)	0.76	0.00	0.75	0.47	0.44	0.46	0.76	0.43	0.44	0.51	0.70	0.70
Avail Cap(c_a), veh/h	718	0	1265	316	859	868	431	1518	1483	345	1432	1363
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	0.00	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	26.6	0.0	22.7	28.7	24.0	24.1	28.7	17.9	17.9	28.4	19.7	19.8
Incr Delay (d2), s/veh	5.8	0.0	2.9	3.9	1.2	1.2	10.5	0.6	0.6	3.9	1.7	1.9
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	2.4	0.0	3.9	0.7	1.5	1.6	1.4	2.3	2.3	0.8	4.2	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.4	0.0	25.6	32.5	25.2	25.3	39.1	18.4	18.5	32.3	21.5	21.7
LnGrp LOS	C		C	C	C	C	D	B	B	C	C	C
Approach Vol, veh/h		445			282			525			747	
Approach Delay, s/veh		28.0			26.3			21.8			22.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	24.0	9.1	19.4	9.8	23.7	13.2	15.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	12.6	53.0	11.0	44.0	15.0	50.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	13.8	8.4	3.4	11.3	4.9	13.1	7.3	5.8
Green Ext Time (p_c), s	0.0	2.7	0.0	1.8	0.1	4.6	0.4	1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	24.0
HCM 7th LOS	C

Intersection	
Int Delay, s/veh	5.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	540	120	160	690	60	110
Future Vol, veh/h	540	120	160	690	60	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	65	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	568	126	168	726	63	116

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	695	0	1332	347
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	700	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	897	-	146	649
Stage 1	-	-	-	-	492	-
Stage 2	-	-	-	-	454	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	897	-	118	649
Mov Cap-2 Maneuver	-	-	-	-	118	-
Stage 1	-	-	-	-	400	-
Stage 2	-	-	-	-	454	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.87	48.3
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	251	-	-	897	-
HCM Lane V/C Ratio	0.712	-	-	0.188	-
HCM Ctrl Dly (s/v)	48.3	-	-	9.9	-
HCM Lane LOS	E	-	-	A	-
HCM 95th %tile Q(veh)	4.8	-	-	0.7	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	270	380	50	460	390	50
Future Volume (veh/h)	270	380	50	460	390	50
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
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
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	284	400	53	484	411	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	648	577	117	1966	663	304
Arrive On Green	0.36	0.36	0.07	0.55	0.19	0.19
Sat Flow, veh/h	1870	1583	1781	3647	3456	1585
Grp Volume(v), veh/h	284	400	53	484	411	53
Grp Sat Flow(s),veh/h/ln	1777	1583	1781	1777	1728	1585
Q Serve(g_s), s	5.1	9.1	1.2	3.0	4.6	1.2
Cycle Q Clear(g_c), s	5.1	9.1	1.2	3.0	4.6	1.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	648	577	117	1966	663	304
V/C Ratio(X)	0.44	0.69	0.45	0.25	0.62	0.17
Avail Cap(c_a), veh/h	1602	1427	496	4629	1957	898
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	10.2	11.4	19.1	4.9	15.7	14.3
Incr Delay (d2), s/veh	0.5	1.5	2.7	0.1	0.9	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.3	0.5	0.5	1.6	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	10.6	12.9	21.8	5.0	16.6	14.6
LnGrp LOS	B	B	C	A	B	B
Approach Vol, veh/h	684			537	464	
Approach Delay, s/veh	12.0			6.6	16.4	
Approach LOS	B			A	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	8.0	21.3				29.2	13.1
Change Period (Y+Rc), s	5.2	5.8				5.8	5.0
Max Green Setting (Gmax), s	11.8	38.2				55.2	24.0
Max Q Clear Time (g_c+I1), s	3.2	11.1				5.0	6.6
Green Ext Time (p_c), s	0.0	4.3				3.2	1.5

Intersection Summary			
HCM 7th Control Delay, s/veh		11.5	
HCM 7th LOS		B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	1190	430	100	1080	390	490	80	170	260	60	150
Future Volume (veh/h)	150	1190	430	100	1080	390	490	80	170	260	60	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		0.99	1.00		0.94
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	1850	1870	1870	1850	1870	1870	1850	1870	1870	1870
Adj Flow Rate, veh/h	156	1240	358	104	1125	325	510	83	142	271	63	140
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	1433	617	215	1625	684	563	392	324	322	69	153
Arrive On Green	0.07	0.40	0.40	0.08	0.31	0.31	0.16	0.21	0.21	0.09	0.14	0.14
Sat Flow, veh/h	3456	3554	1529	1781	3554	1495	3456	1870	1547	3456	493	1095
Grp Volume(v), veh/h	156	1240	358	104	1125	325	510	83	142	271	0	203
Grp Sat Flow(s),veh/h/ln	1728	1777	1529	1781	1777	1495	1728	1870	1547	1728	0	1588
Q Serve(g_s), s	6.6	48.0	19.1	8.4	41.8	14.3	21.7	5.5	12.0	11.6	0.0	18.9
Cycle Q Clear(g_c), s	6.6	48.0	19.1	8.4	41.8	14.3	21.7	5.5	12.0	11.6	0.0	18.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.69
Lane Grp Cap(c), veh/h	230	1433	617	215	1625	684	563	392	324	322	0	222
V/C Ratio(X)	0.68	0.87	0.58	0.48	0.69	0.48	0.91	0.21	0.44	0.84	0.00	0.91
Avail Cap(c_a), veh/h	281	1433	617	215	1625	684	622	392	324	424	0	228
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.45	0.45	0.45	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	68.4	41.0	17.0	64.5	42.7	10.9	61.7	49.0	51.6	66.9	0.0	63.6
Incr Delay (d2), s/veh	4.8	7.2	4.0	0.8	1.1	1.1	16.1	0.3	0.9	11.1	0.0	36.8
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	3.0	21.7	7.5	3.9	19.2	5.5	10.9	2.7	4.8	5.7	0.0	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	73.3	48.2	21.0	65.2	43.8	12.0	77.8	49.3	52.5	78.0	0.0	100.4
LnGrp LOS	E	D	C	E	D	B	E	D	D	E		F
Approach Vol, veh/h		1754			1554			735			474	
Approach Delay, s/veh		44.9			38.6			69.7			87.6	
Approach LOS		D			D			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	75.6	30.4	27.5	25.1	67.0	20.5	37.4
Change Period (Y+Rc), s	6.5	7.0	6.0	6.5	7.0	* 6.5	6.5	6.0
Max Green Setting (Gmax), s	12.3	63.3	27.0	21.5	15.5	* 61	18.4	30.1
Max Q Clear Time (g_c+I1), s	8.6	43.8	23.7	20.9	10.4	50.0	13.6	14.0
Green Ext Time (p_c), s	0.1	8.7	0.7	0.1	0.1	6.6	0.4	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	51.2
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	1330	160	170	1430	60	80	10	100	70	10	160
Future Volume (veh/h)	130	1330	160	170	1430	60	80	10	100	70	10	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
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	1859	1859	1870	1859	1859	1870	1870	1870	1870	1870	1859
Adj Flow Rate, veh/h	135	1385	140	177	1490	51	83	10	94	73	10	134
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	1530	672	312	1850	817	82	10	93	170	23	168
Arrive On Green	0.03	0.14	0.14	0.35	1.00	1.00	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	3531	1551	1781	3531	1559	746	90	845	1576	216	1558
Grp Volume(v), veh/h	135	1385	140	177	1490	51	187	0	0	83	0	134
Grp Sat Flow(s),veh/h/ln	1781	1766	1551	1781	1766	1559	1681	0	0	1792	0	1558
Q Serve(g_s), s	11.3	57.9	12.0	12.1	0.0	0.0	16.5	0.0	0.0	6.5	0.0	12.6
Cycle Q Clear(g_c), s	11.3	57.9	12.0	12.1	0.0	0.0	16.5	0.0	0.0	6.5	0.0	12.6
Prop In Lane	1.00		1.00	1.00		1.00	0.44		0.50	0.88		1.00
Lane Grp Cap(c), veh/h	151	1530	672	312	1850	817	185	0	0	193	0	168
V/C Ratio(X)	0.90	0.91	0.21	0.57	0.81	0.06	1.01	0.00	0.00	0.43	0.00	0.80
Avail Cap(c_a), veh/h	151	1530	672	312	1850	817	185	0	0	322	0	280
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.57	0.57	0.57	0.69	0.69	0.69	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.2	61.2	41.5	44.1	0.0	0.0	66.8	0.0	0.0	62.6	0.0	65.3
Incr Delay (d2), s/veh	29.8	5.6	0.4	1.7	2.7	0.1	69.2	0.0	0.0	1.5	0.0	8.3
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	6.6	28.6	5.0	4.8	0.7	0.0	10.7	0.0	0.0	3.0	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	102.0	66.9	41.9	45.7	2.7	0.1	135.9	0.0	0.0	64.1	0.0	73.6
LnGrp LOS	F	E	D	D	A	A	F			E		E
Approach Vol, veh/h		1660			1718			187			217	
Approach Delay, s/veh		67.6			7.0			135.9			70.0	
Approach LOS		E			A			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.8	71.5		22.7	19.2	85.1		23.0				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	15.5	65.0		27.0	12.7	67.8		16.5				
Max Q Clear Time (g_c+I1), s	14.1	59.9		14.6	13.3	2.0		18.5				
Green Ext Time (p_c), s	0.1	3.7		0.6	0.0	16.5		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	43.6
HCM 7th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	950	260	290	1160	120	140	90	150	210	110	360
Future Volume (veh/h)	290	950	260	290	1160	120	140	90	150	210	110	360
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
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	1859	1859	1870	1870	1859	1870	1870	1859	1870	1870	1859
Adj Flow Rate, veh/h	296	969	220	296	1184	98	143	92	124	214	112	341
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	316	1593	708	322	1615	714	225	446	374	279	446	652
Arrive On Green	0.35	0.90	0.90	0.18	0.45	0.45	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1781	3531	1570	1781	3554	1571	935	1870	1571	1163	1870	1565
Grp Volume(v), veh/h	296	969	220	296	1184	98	143	92	124	214	112	341
Grp Sat Flow(s),veh/h/ln	1781	1766	1570	1781	1777	1571	935	1870	1571	1163	1870	1565
Q Serve(g_s), s	24.1	8.9	2.9	24.5	40.9	5.4	21.9	5.9	9.8	27.1	7.3	24.4
Cycle Q Clear(g_c), s	24.1	8.9	2.9	24.5	40.9	5.4	29.2	5.9	9.8	33.0	7.3	24.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	316	1593	708	322	1615	714	225	446	374	279	446	652
V/C Ratio(X)	0.94	0.61	0.31	0.92	0.73	0.14	0.63	0.21	0.33	0.77	0.25	0.52
Avail Cap(c_a), veh/h	398	1593	708	433	1615	714	233	461	388	293	468	671
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.49	0.49	0.49	0.09	0.09	0.09	1.00	1.00	1.00	0.85	0.85	0.85
Uniform Delay (d), s/veh	47.6	4.5	4.2	60.4	33.5	23.8	58.1	45.8	47.2	59.0	46.3	32.7
Incr Delay (d2), s/veh	15.9	0.9	0.6	2.7	0.3	0.0	5.3	0.2	0.5	9.5	0.2	0.6
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	10.2	1.9	0.9	11.1	17.1	2.0	5.5	2.8	3.9	8.6	3.4	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	63.5	5.3	4.7	63.1	33.8	23.9	63.4	46.0	47.8	68.5	46.5	33.3
LnGrp LOS	E	A	A	E	C	C	E	D	D	E	D	C
Approach Vol, veh/h		1485			1578			359			667	
Approach Delay, s/veh		16.8			38.6			53.5			46.8	
Approach LOS		B			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	33.6	74.2		42.2	33.1	74.7		42.2				
Change Period (Y+Rc), s	6.5	6.5		* 6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	36.5	57.0		* 38	33.5	60.0		37.0				
Max Q Clear Time (g_c+I1), s	26.5	10.9		35.0	26.1	42.9		31.2				
Green Ext Time (p_c), s	0.6	8.7		0.8	0.5	7.7		0.8				

Intersection Summary	
HCM 7th Control Delay, s/veh	33.4
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	830	280	250	1070	160	250	270	290	220	250	160
Future Volume (veh/h)	170	830	280	250	1070	160	250	270	290	220	250	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.99
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	1857	1857	1870	1857	1857	1870	1857	1857	1870	1857	1857
Adj Flow Rate, veh/h	179	874	207	263	1126	134	263	284	283	232	263	151
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	192	1111	494	288	1300	571	214	474	416	281	258	148
Arrive On Green	0.11	0.31	0.31	0.16	0.37	0.37	0.12	0.27	0.27	0.08	0.23	0.23
Sat Flow, veh/h	1781	3528	1569	1781	3528	1549	1781	1764	1548	3456	1104	634
Grp Volume(v), veh/h	179	874	207	263	1126	134	263	284	283	232	0	414
Grp Sat Flow(s),veh/h/ln	1781	1764	1569	1781	1764	1549	1781	1764	1548	1728	0	1739
Q Serve(g_s), s	14.9	33.8	15.6	21.8	44.4	6.6	18.0	21.1	24.5	9.9	0.0	35.0
Cycle Q Clear(g_c), s	14.9	33.8	15.6	21.8	44.4	6.6	18.0	21.1	24.5	9.9	0.0	35.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	192	1111	494	288	1300	571	214	474	416	281	0	406
V/C Ratio(X)	0.93	0.79	0.42	0.91	0.87	0.23	1.23	0.60	0.68	0.82	0.00	1.02
Avail Cap(c_a), veh/h	192	1111	494	382	1300	571	214	474	416	380	0	406
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)	0.09	0.09	0.09	0.14	0.14	0.14	0.84	0.84	0.84	0.70	0.00	0.70
Uniform Delay (d), s/veh	66.3	46.8	40.5	61.8	43.9	17.6	66.0	47.8	49.1	67.8	0.0	57.5
Incr Delay (d2), s/veh	8.0	0.5	0.2	4.2	1.2	0.1	133.1	1.8	3.8	7.5	0.0	42.7
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	7.1	14.6	6.0	10.1	19.2	3.3	16.0	9.4	9.8	4.6	0.0	19.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	74.3	47.3	40.8	66.1	45.1	17.8	199.1	49.6	52.9	75.3	0.0	100.2
LnGrp LOS	E	D	D	E	D	B	F	D	D	E		F
Approach Vol, veh/h		1260			1523			830			646	
Approach Delay, s/veh		50.1			46.3			98.1			91.2	
Approach LOS		D			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.8	53.7	24.0	41.5	22.7	61.8	18.7	46.8
Change Period (Y+Rc), s	6.5	6.5	6.0	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	32.3	39.3	18.0	35.0	16.2	55.3	16.5	36.0
Max Q Clear Time (g_c+I1), s	23.8	35.8	20.0	37.0	16.9	46.4	11.9	26.5
Green Ext Time (p_c), s	0.5	2.0	0.0	0.0	0.0	5.0	0.3	2.3

Intersection Summary	
HCM 7th Control Delay, s/veh	64.3
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	910	330	370	1180	120	280	240	520	110	190	90
Future Volume (veh/h)	80	910	330	370	1180	120	280	240	520	110	190	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
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	1857	1857	1870	1870	1857	1870	1870	1857	1870	1857	1857
Adj Flow Rate, veh/h	84	958	271	389	1242	101	295	253	498	116	200	86
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	1152	512	253	1445	628	190	498	443	139	616	254
Arrive On Green	0.06	0.33	0.33	0.28	0.81	0.81	0.11	0.28	0.28	0.08	0.25	0.25
Sat Flow, veh/h	1781	3528	1568	1781	3554	1545	1781	1777	1582	1781	2418	998
Grp Volume(v), veh/h	84	958	271	389	1242	101	295	253	498	116	144	142
Grp Sat Flow(s),veh/h/ln	1781	1764	1568	1781	1777	1545	1781	1777	1582	1781	1764	1652
Q Serve(g_s), s	7.0	37.7	15.3	21.3	32.5	2.1	16.0	17.9	42.0	9.6	9.9	10.5
Cycle Q Clear(g_c), s	7.0	37.7	15.3	21.3	32.5	2.1	16.0	17.9	42.0	9.6	9.9	10.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.60
Lane Grp Cap(c), veh/h	104	1152	512	253	1445	628	190	498	443	139	449	421
V/C Ratio(X)	0.81	0.83	0.53	1.54	0.86	0.16	1.55	0.51	1.12	0.83	0.32	0.34
Avail Cap(c_a), veh/h	160	1152	512	253	1445	628	190	498	443	184	500	468
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.70	0.70	0.70	0.76	0.76	0.76	0.99	0.99	0.99
Uniform Delay (d), s/veh	69.8	46.7	21.5	53.7	11.3	8.5	67.0	45.3	54.0	68.2	45.3	45.6
Incr Delay (d2), s/veh	1.6	0.7	0.4	256.1	4.9	0.4	267.5	0.7	76.5	21.1	0.4	0.5
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	3.2	16.4	5.7	26.2	5.7	0.8	21.4	8.1	26.1	5.2	4.4	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	71.4	47.4	21.8	309.8	16.3	8.9	334.5	46.0	130.5	89.2	45.7	46.0
LnGrp LOS	E	D	C	F	B	A	F	D	F	F	D	D
Approach Vol, veh/h		1313			1732			1046			402	
Approach Delay, s/veh		43.6			81.8			167.6			58.4	
Approach LOS		D			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.8	55.0	22.0	45.2	15.3	67.5	18.2	49.0
Change Period (Y+Rc), s	6.5	6.0	6.0	* 7	6.5	* 6.5	6.5	7.0
Max Green Setting (Gmax), s	17.5	49.0	16.0	* 43	13.5	* 53	15.5	42.0
Max Q Clear Time (g_c+I1), s	23.3	39.7	18.0	12.5	9.0	34.5	11.6	44.0
Green Ext Time (p_c), s	0.0	4.8	0.0	1.7	0.1	8.8	0.1	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	88.5
HCM 7th LOS	F

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	1090	270	380	1510	300	210	160	230	160	90	40
Future Volume (veh/h)	100	1090	270	380	1510	300	210	160	230	160	90	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
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	1857	1870	1870	1857	1870	1870	1857	1870	1870	1857
Adj Flow Rate, veh/h	105	1147	231	400	1589	253	221	168	206	168	95	34
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	125	2606	896	456	2906	981	230	209	383	215	201	166
Arrive On Green	0.14	1.00	1.00	0.13	0.57	0.57	0.07	0.11	0.11	0.06	0.11	0.11
Sat Flow, veh/h	1781	5106	1550	3456	5106	1551	3456	1870	1569	3456	1870	1547
Grp Volume(v), veh/h	105	1147	231	400	1589	253	221	168	206	168	95	34
Grp Sat Flow(s),veh/h/ln	1781	1702	1550	1728	1702	1551	1728	1870	1569	1728	1870	1547
Q Serve(g_s), s	8.6	0.0	0.0	17.0	29.2	3.4	9.6	13.1	12.6	7.2	7.2	3.0
Cycle Q Clear(g_c), s	8.6	0.0	0.0	17.0	29.2	3.4	9.6	13.1	12.6	7.2	7.2	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	125	2606	896	456	2906	981	230	209	383	215	201	166
V/C Ratio(X)	0.84	0.44	0.26	0.88	0.55	0.26	0.96	0.80	0.54	0.78	0.47	0.20
Avail Cap(c_a), veh/h	131	2606	896	578	2906	981	230	461	595	299	499	413
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.66	0.66	0.66	0.66	0.66	0.66	0.69	0.69	0.69	0.90	0.90	0.90
Uniform Delay (d), s/veh	63.7	0.0	0.0	63.9	20.2	3.5	69.8	65.0	27.8	69.3	62.9	61.1
Incr Delay (d2), s/veh	25.9	0.4	0.5	8.3	0.5	0.4	38.4	4.9	0.8	7.7	1.5	0.5
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	4.5	0.1	0.1	7.9	11.4	1.7	5.5	6.6	4.9	3.4	3.4	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	89.6	0.4	0.5	72.2	20.7	3.9	108.2	69.9	28.6	77.1	64.5	61.6
LnGrp LOS	F	A	A	E	C	A	F	E	C	E	E	E
Approach Vol, veh/h		1483			2242			595			297	
Approach Delay, s/veh		6.7			28.0			69.8			71.3	
Approach LOS		A			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.3	83.6	17.0	23.1	17.5	92.4	16.3	23.8
Change Period (Y+Rc), s	6.5	7.0	7.0	7.0	7.0	* 7	7.0	7.0
Max Green Setting (Gmax), s	25.1	47.4	10.0	40.0	11.0	* 62	13.0	37.0
Max Q Clear Time (g_c+I1), s	19.6	2.0	11.6	9.2	10.6	31.2	9.2	15.1
Green Ext Time (p_c), s	0.8	11.3	0.0	0.5	0.0	15.4	0.2	1.6

Intersection Summary	
HCM 7th Control Delay, s/veh	29.3
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱↱	↰↰	↑↑↑					↰↰		↱
Traffic Volume (veh/h)	0	780	800	370	1960	0	0	0	0	210	0	230
Future Volume (veh/h)	0	780	800	370	1960	0	0	0	0	210	0	230
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	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
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	821	602	389	2063	0				221	0	179
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1491	815	541	2907	0				543	0	249
Arrive On Green	0.00	0.29	0.29	0.16	0.57	0.00				0.16	0.00	0.16
Sat Flow, veh/h	0	5274	2790	3456	5274	0				3456	0	1585
Grp Volume(v), veh/h	0	821	602	389	2063	0				221	0	179
Grp Sat Flow(s),veh/h/ln	0	1702	1395	1728	1702	0				1728	0	1585
Q Serve(g_s), s	0.0	6.4	9.2	5.0	13.8	0.0				2.7	0.0	5.1
Cycle Q Clear(g_c), s	0.0	6.4	9.2	5.0	13.8	0.0				2.7	0.0	5.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1491	815	541	2907	0				543	0	249
V/C Ratio(X)	0.00	0.55	0.74	0.72	0.71	0.00				0.41	0.00	0.72
Avail Cap(c_a), veh/h	0	3520	1923	1283	6033	0				1979	0	908
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.1	15.1	18.9	7.3	0.0				17.9	0.0	18.9
Incr Delay (d2), s/veh	0.0	0.1	0.5	0.7	0.1	0.0				0.2	0.0	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.9	2.3	1.7	2.7	0.0				0.8	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	14.2	15.6	19.6	7.5	0.0				18.1	0.0	20.3
LnGrp LOS		B	B	B	A					B		C
Approach Vol, veh/h		1423			2452						400	
Approach Delay, s/veh		14.8			9.4						19.1	
Approach LOS		B			A						B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.1	20.6		13.5		33.6
Change Period (Y+Rc), s	5.7	6.8		6.1		6.8
Max Green Setting (Gmax), s	7.5	32.5		27.0		55.7
Max Q Clear Time (g_c+I1), s	7.0	11.2		7.1		15.8
Green Ext Time (p_c), s	0.4	2.6		0.4		7.5

Intersection Summary	
HCM 7th Control Delay, s/veh	12.1
HCM 7th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	510	270	0	1270	130	890	310	180	110	0	490
Future Volume (veh/h)	210	510	270	0	1270	130	890	310	180	110	0	490
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	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	0	1870	1837	1870	1837	1837	1870	0	1870
Adj Flow Rate, veh/h	221	537	0	0	1337	110	937	326	170	116	0	413
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	442	1770		0	1580	472	1037	417	213	199	0	0
Arrive On Green	0.13	0.50	0.00	0.00	0.31	0.31	0.30	0.19	0.19	0.11	0.00	0.00
Sat Flow, veh/h	3456	3554	1585	0	5274	1525	3456	2229	1137	1781	116	
Grp Volume(v), veh/h	221	537	0	0	1337	110	937	254	242	116	41.7	
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	0	1702	1525	1728	1745	1621	1781	D	
Q Serve(g_s), s	5.6	8.4	0.0	0.0	22.9	5.0	24.4	12.9	13.4	5.8		
Cycle Q Clear(g_c), s	5.6	8.4	0.0	0.0	22.9	5.0	24.4	12.9	13.4	5.8		
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.70	1.00		
Lane Grp Cap(c), veh/h	442	1770		0	1580	472	1037	326	303	199		
V/C Ratio(X)	0.50	0.30		0.00	0.85	0.23	0.90	0.78	0.80	0.58		
Avail Cap(c_a), veh/h	447	1925		0	1795	536	1702	541	502	209		
HCM Platoon Ratio	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	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	38.0	13.9	0.0	0.0	30.2	24.0	31.4	36.2	36.4	39.5		
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.0	3.2	0.1	2.6	1.5	1.9	2.2		
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		
%ile BackOfQ(50%),veh/ln	2.3	3.1	0.0	0.0	9.3	1.7	9.5	5.2	5.0	2.6		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.4	13.9	0.0	0.0	33.4	24.1	34.1	37.7	38.2	41.7		
LnGrp LOS	D	B			C	C	C	D	D	D		
Approach Vol, veh/h		758			1447			1433				
Approach Delay, s/veh		21.0			32.7			35.4				
Approach LOS		C			C			D				

Timer - Assigned Phs	2	3	5	6	7	8
Phs Duration (G+Y+Rc), s	53.4	34.2	17.7	35.8	16.6	23.6
Change Period (Y+Rc), s	6.8	6.1	5.7	6.8	6.1	6.1
Max Green Setting (Gmax), s	50.7	46.1	12.1	32.9	11.0	29.0
Max Q Clear Time (g_c+I1), s	10.4	26.4	7.6	24.9	7.8	15.4
Green Ext Time (p_c), s	2.3	1.7	0.2	4.0	0.0	1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	31.7
HCM 7th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	60	190	130	80	100	140	290	140	220	220	300
Future Volume (veh/h)	210	60	190	130	80	100	140	290	140	220	220	300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	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	221	63	198	137	84	84	147	305	139	232	232	285
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	83	204	374	212	711	175	532	237	339	389	347
Arrive On Green	0.45	0.45	0.45	0.45	0.45	0.45	0.10	0.22	0.22	0.10	0.22	0.22
Sat Flow, veh/h	468	185	455	652	471	1585	1781	2387	1062	3456	1777	1585
Grp Volume(v), veh/h	482	0	0	221	0	84	147	225	219	232	232	285
Grp Sat Flow(s),veh/h/ln	1109	0	0	1123	0	1585	1781	1777	1672	1728	1777	1585
Q Serve(g_s), s	21.9	0.0	0.0	0.0	0.0	2.2	5.8	8.0	8.3	4.6	8.4	12.2
Cycle Q Clear(g_c), s	30.8	0.0	0.0	8.9	0.0	2.2	5.8	8.0	8.3	4.6	8.4	12.2
Prop In Lane	0.46		0.41	0.62		1.00	1.00		0.64	1.00		1.00
Lane Grp Cap(c), veh/h	571	0	0	586	0	711	175	396	373	339	389	347
V/C Ratio(X)	0.84	0.00	0.00	0.38	0.00	0.12	0.84	0.57	0.59	0.68	0.60	0.82
Avail Cap(c_a), veh/h	571	0	0	586	0	711	175	481	453	339	473	422
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	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	0.0	0.0	13.1	0.0	11.4	31.6	24.6	24.8	31.1	25.0	26.5
Incr Delay (d2), s/veh	11.1	0.0	0.0	0.4	0.0	0.1	29.0	1.3	1.5	5.6	1.5	10.4
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	9.2	0.0	0.0	2.3	0.0	0.7	3.8	3.4	3.3	2.1	3.5	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.3	0.0	0.0	13.5	0.0	11.5	60.6	25.9	26.2	36.7	26.5	36.9
LnGrp LOS	C			B		B	E	C	C	D	C	D
Approach Vol, veh/h		482			305			591			749	
Approach Delay, s/veh		33.3			12.9			34.7			33.6	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	21.3		38.0	12.3	21.0		38.0				
Change Period (Y+Rc), s	5.0	5.4		6.0	5.3	5.4		6.0				
Max Green Setting (Gmax), s	7.0	19.3		32.0	7.0	19.0		32.0				
Max Q Clear Time (g_c+I1), s	16.9	10.3		32.8	7.8	14.2		10.9				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	1.4		1.7				

Intersection Summary	
HCM 7th Control Delay, s/veh	30.9
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	580	30	50	720	350	30	100	100	210	70	200
Future Volume (veh/h)	300	580	30	50	720	350	30	100	100	210	70	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		0.98
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	1856	1856	1870	1870	1856	1870	1870	1856	1870	1856	1856
Adj Flow Rate, veh/h	312	604	28	52	750	292	31	104	83	219	73	187
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	1898	88	67	1656	831	48	251	208	259	83	213
Arrive On Green	0.13	0.55	0.55	0.07	0.93	0.93	0.03	0.13	0.13	0.08	0.18	0.18
Sat Flow, veh/h	1781	3428	159	1781	3554	1531	1781	1870	1555	3456	456	1167
Grp Volume(v), veh/h	312	310	322	52	750	292	31	104	83	219	0	260
Grp Sat Flow(s),veh/h/ln	1781	1763	1824	1781	1777	1531	1781	1870	1555	1728	0	1623
Q Serve(g_s), s	15.0	11.4	11.5	3.4	3.0	2.2	2.1	6.1	5.9	7.5	0.0	18.7
Cycle Q Clear(g_c), s	15.0	11.4	11.5	3.4	3.0	2.2	2.1	6.1	5.9	7.5	0.0	18.7
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		0.72
Lane Grp Cap(c), veh/h	223	976	1010	67	1656	831	48	251	208	259	0	296
V/C Ratio(X)	1.40	0.32	0.32	0.78	0.45	0.35	0.65	0.41	0.40	0.84	0.00	0.88
Avail Cap(c_a), veh/h	223	976	1010	119	1656	831	163	483	402	259	0	392
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.41	0.41	0.41	1.00	1.00	1.00	0.91	0.00	0.91
Uniform Delay (d), s/veh	52.5	14.5	14.5	55.0	2.3	1.7	57.8	47.6	47.5	54.8	0.0	47.8
Incr Delay (d2), s/veh	205.4	0.9	0.8	7.8	0.4	0.5	13.8	1.1	1.2	20.2	0.0	15.0
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	19.3	4.6	4.7	1.6	0.8	0.6	1.1	2.9	2.3	3.9	0.0	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	257.9	15.4	15.4	62.9	2.7	2.2	71.6	48.7	48.8	75.0	0.0	62.7
LnGrp LOS	F	B	B	E	A	A	E	D	D	E		E
Approach Vol, veh/h		944			1094			218			479	
Approach Delay, s/veh		95.5			5.4			52.0			68.4	
Approach LOS		F			A			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	72.4	15.0	22.1	21.0	61.9	9.2	27.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.0	48.0	9.0	31.0	15.0	41.0	11.0	29.0
Max Q Clear Time (g_c+I1), s	5.4	13.5	9.5	8.1	17.0	5.0	4.1	20.7
Green Ext Time (p_c), s	0.0	3.9	0.0	0.8	0.0	6.9	0.0	0.9

Intersection Summary	
HCM 7th Control Delay, s/veh	51.2
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	230	710	830	620	240	180
Future Volume (veh/h)	230	710	830	620	240	180
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
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
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1856	1856
Adj Flow Rate, veh/h	240	740	865	581	250	151
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	265	2600	1088	711	290	258
Arrive On Green	0.30	1.00	1.00	1.00	0.16	0.16
Sat Flow, veh/h	1781	3647	2135	1336	1767	1573
Grp Volume(v), veh/h	240	740	743	703	250	151
Grp Sat Flow(s),veh/h/ln	1781	1777	1763	1615	1767	1573
Q Serve(g_s), s	15.5	0.0	0.0	0.0	16.5	10.7
Cycle Q Clear(g_c), s	15.5	0.0	0.0	0.0	16.5	10.7
Prop In Lane	1.00			0.83	1.00	1.00
Lane Grp Cap(c), veh/h	265	2600	939	860	290	258
V/C Ratio(X)	0.90	0.28	0.79	0.82	0.86	0.58
Avail Cap(c_a), veh/h	356	2600	939	860	538	478
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.74	0.74	0.89	0.89
Uniform Delay (d), s/veh	41.3	0.0	0.0	0.0	48.8	46.4
Incr Delay (d2), s/veh	19.2	0.2	5.1	6.4	6.7	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.1	1.3	1.5	7.8	9.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	60.5	0.2	5.1	6.4	55.5	48.2
LnGrp LOS	E	A	A	A	E	D
Approach Vol, veh/h		980	1446		401	
Approach Delay, s/veh		15.0	5.7		52.8	
Approach LOS		B	A		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		93.8		26.2	23.9	69.9
Change Period (Y+Rc), s		6.0		6.5	6.0	6.0
Max Green Setting (Gmax), s		71.0		36.5	24.0	41.0
Max Q Clear Time (g_c+I1), s		2.0		18.5	17.5	2.0
Green Ext Time (p_c), s		5.6		1.2	0.4	13.7

Intersection Summary		
HCM 7th Control Delay, s/veh		15.6
HCM 7th LOS		B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	520	430	130	1010	440	50
Future Volume (veh/h)	520	430	130	1010	440	50
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1856	1870	1870	1870	1856
Adj Flow Rate, veh/h	547	362	137	1063	463	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1575	1122	165	2112	500	441
Arrive On Green	0.89	0.89	0.09	0.59	0.28	0.28
Sat Flow, veh/h	3647	1535	1781	3647	1781	1573
Grp Volume(v), veh/h	547	362	137	1063	463	42
Grp Sat Flow(s),veh/h/ln	1777	1535	1781	1777	1781	1573
Q Serve(g_s), s	3.0	3.0	9.1	20.8	30.3	2.4
Cycle Q Clear(g_c), s	3.0	3.0	9.1	20.8	30.3	2.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1575	1122	165	2112	500	441
V/C Ratio(X)	0.35	0.32	0.83	0.50	0.93	0.10
Avail Cap(c_a), veh/h	1575	1122	267	2112	683	603
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.09	0.09	1.00	1.00
Uniform Delay (d), s/veh	4.0	1.0	53.5	14.1	41.9	31.9
Incr Delay (d2), s/veh	0.6	0.7	1.1	0.1	15.3	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.4	4.0	7.7	15.0	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	4.5	1.7	54.6	14.2	57.2	32.0
LnGrp LOS	A	A	D	B	E	C
Approach Vol, veh/h	909			1200	505	
Approach Delay, s/veh	3.4			18.8	55.1	
Approach LOS	A			B	E	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.1	61.2			79.3	40.7
Change Period (Y+Rc), s	7.0	8.0			8.0	7.0
Max Green Setting (Gmax), s	18.0	34.0			59.0	46.0
Max Q Clear Time (g_c+I1), s	11.1	5.0			22.8	32.3
Green Ext Time (p_c), s	0.2	5.2			8.8	1.4

Intersection Summary		
HCM 7th Control Delay, s/veh	20.5	
HCM 7th LOS	C	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	410	20	30	800	420	40	10	70	220	20	300
Future Volume (veh/h)	140	410	20	30	800	420	40	10	70	220	20	300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	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	1860	1860	1870	1860	1860	1860	1860	1860	1860	1860	1860
Adj Flow Rate, veh/h	147	432	19	32	842	398	42	11	67	232	21	284
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	1549	68	73	907	426	110	44	132	338	32	438
Arrive On Green	0.10	0.45	0.45	0.04	0.39	0.39	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1781	3443	151	1781	2333	1096	207	148	449	1311	110	1483
Grp Volume(v), veh/h	147	221	230	32	636	604	120	0	0	232	0	305
Grp Sat Flow(s),veh/h/ln	1781	1767	1828	1781	1767	1662	804	0	0	1311	0	1593
Q Serve(g_s), s	8.1	7.9	8.0	1.8	34.6	35.0	3.4	0.0	0.0	6.2	0.0	16.8
Cycle Q Clear(g_c), s	8.1	7.9	8.0	1.8	34.6	35.0	20.2	0.0	0.0	26.4	0.0	16.8
Prop In Lane	1.00		0.08	1.00		0.66	0.35		0.56	1.00		0.93
Lane Grp Cap(c), veh/h	182	795	822	73	687	646	285	0	0	338	0	470
V/C Ratio(X)	0.81	0.28	0.28	0.44	0.93	0.93	0.42	0.00	0.00	0.69	0.00	0.65
Avail Cap(c_a), veh/h	532	795	822	532	703	662	406	0	0	389	0	531
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	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.1	17.4	17.4	47.0	29.3	29.5	31.1	0.0	0.0	35.9	0.0	30.9
Incr Delay (d2), s/veh	8.1	0.2	0.2	4.0	18.2	20.3	1.0	0.0	0.0	4.2	0.0	2.3
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	8.9	3.1	3.2	0.8	17.1	16.7	2.8	0.0	0.0	5.7	0.0	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.3	17.6	17.6	51.1	47.6	49.8	32.0	0.0	0.0	40.0	0.0	33.2
LnGrp LOS	D	B	B	D	D	D	C			D		C
Approach Vol, veh/h		598			1272			120			537	
Approach Delay, s/veh		26.1			48.7			32.0			36.2	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.1	53.2		36.1	17.3	47.0		36.1				
Change Period (Y+Rc), s	7.0	8.0		6.5	7.0	8.0		6.5				
Max Green Setting (Gmax), s	30.0	40.0		33.5	30.0	40.0		38.5				
Max Q Clear Time (g_c+I1), s	13.8	10.0		28.4	10.1	37.0		22.2				
Green Ext Time (p_c), s	0.0	2.6		1.2	0.3	2.0		0.6				

Intersection Summary	
HCM 7th Control Delay, s/veh	39.9
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	270	10	180	920	1620	0	0	920	450
Future Volume (veh/h)	0	0	0	270	10	180	920	1620	0	0	920	450
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1837	1837
Adj Flow Rate, veh/h				226	80	166	939	1653	0	0	939	413
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				248	75	155	873	3990	0	0	878	386
Arrive On Green				0.14	0.14	0.14	0.49	0.78	0.00	0.00	0.26	0.26
Sat Flow, veh/h				1781	535	1110	1781	5274	0	0	3543	1484
Grp Volume(v), veh/h				226	0	246	939	1653	0	0	929	423
Grp Sat Flow(s),veh/h/ln				1781	0	1645	1781	1702	0	0	1672	1519
Q Serve(g_s), s				18.8	0.0	20.9	73.5	15.7	0.0	0.0	39.0	39.0
Cycle Q Clear(g_c), s				18.8	0.0	20.9	73.5	15.7	0.0	0.0	39.0	39.0
Prop In Lane				1.00		0.67	1.00		0.00	0.00		0.98
Lane Grp Cap(c), veh/h				248	0	229	873	3990	0	0	869	395
V/C Ratio(X)				0.91	0.00	1.07	1.08	0.41	0.00	0.00	1.07	1.07
Avail Cap(c_a), veh/h				248	0	229	873	3990	0	0	869	395
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				63.6	0.0	64.6	38.3	5.3	0.0	0.0	55.5	55.5
Incr Delay (d2), s/veh				33.6	0.0	80.3	36.6	0.0	0.0	0.0	50.7	65.2
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				10.6	0.0	13.6	39.5	4.7	0.0	0.0	22.3	21.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				97.2	0.0	144.9	74.8	5.3	0.0	0.0	106.2	120.7
LnGrp LOS				F		F	F	A			F	F
Approach Vol, veh/h					472			2592			1352	
Approach Delay, s/veh					122.1			30.5			110.8	
Approach LOS					F			C			F	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	124.0		78.2	45.8		26.0						
Change Period (Y+Rc), s	6.8		4.7	6.8		5.1						
Max Green Setting (Gmax), s	117.2		73.5	39.0		20.9						
Max Q Clear Time (g_c+I1), s	17.7		75.5	41.0		22.9						
Green Ext Time (p_c), s	10.8		0.0	0.0		0.0						

Intersection Summary	
HCM 7th Control Delay, s/veh	64.9
HCM 7th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	450	130	390	270	1240	160	1020	460	240	630	320
Future Volume (veh/h)	280	450	130	390	270	1240	160	1020	460	240	630	320
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.97	1.00		0.98
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	1854	1854	1870	1870	1870	1870	1854	1854	1870	1870	1854
Adj Flow Rate, veh/h	292	469	121	406	281	1167	167	1062	431	250	656	266
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	344	554	142	327	532	1204	189	1027	417	516	1195	672
Arrive On Green	0.10	0.20	0.20	0.31	0.48	0.48	0.11	0.29	0.29	0.05	0.11	0.11
Sat Flow, veh/h	3456	2761	707	1781	1870	2769	1781	3501	1421	3456	3554	1533
Grp Volume(v), veh/h	292	298	292	406	281	1167	167	1023	470	250	656	266
Grp Sat Flow(s),veh/h/ln	1728	1761	1706	1781	1870	1385	1781	1687	1547	1728	1777	1533
Q Serve(g_s), s	12.5	24.4	24.8	27.5	15.8	22.4	13.9	44.0	44.0	10.6	26.2	20.9
Cycle Q Clear(g_c), s	12.5	24.4	24.8	27.5	15.8	22.4	13.9	44.0	44.0	10.6	26.2	20.9
Prop In Lane	1.00		0.41	1.00		1.00	1.00		0.92	1.00		1.00
Lane Grp Cap(c), veh/h	344	353	342	327	532	1204	189	990	454	516	1195	672
V/C Ratio(X)	0.85	0.84	0.85	1.24	0.53	0.97	0.88	1.03	1.03	0.48	0.55	0.40
Avail Cap(c_a), veh/h	454	399	387	327	532	1204	221	990	454	516	1195	672
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	0.48	0.48	0.48	0.09	0.09	0.09
Uniform Delay (d), s/veh	66.4	57.7	57.8	52.0	32.3	11.3	66.1	53.0	53.0	65.7	55.9	39.9
Incr Delay (d2), s/veh	11.2	13.8	15.3	111.9	0.1	3.2	16.1	29.3	38.5	0.1	0.2	0.2
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	6.0	12.1	12.0	21.0	6.1	7.0	7.1	22.3	21.6	4.9	12.6	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.6	71.4	73.1	164.0	32.4	14.5	82.2	82.3	91.5	65.7	56.1	40.0
LnGrp LOS	E	E	E	F	C	B	F	F	F	E	E	D
Approach Vol, veh/h		882			1854			1660			1172	
Approach Delay, s/veh		74.0			50.0			84.9			54.5	
Approach LOS		E			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.9	50.5	34.0	36.6	22.5	56.9	21.4	49.2
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	18.5	44.0	27.5	34.0	18.6	43.9	19.7	41.8
Max Q Clear Time (g_c+I1), s	12.5	46.0	29.5	26.8	15.9	28.2	14.5	24.4
Green Ext Time (p_c), s	0.4	0.0	0.0	2.0	0.1	4.6	0.5	6.7

Intersection Summary	
HCM 7th Control Delay, s/veh	65.1
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	420	480	250	90	860	290	420	290	230	710	640	620
Future Volume (veh/h)	420	480	250	90	860	290	420	290	230	710	640	620
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1837	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	442	505	210	95	905	244	374	401	194	747	674	610
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1539	1998	1102	128	700	188	260	273	231	759	385	349
Arrive On Green	0.45	0.56	0.56	0.07	0.17	0.17	0.15	0.15	0.15	0.43	0.43	0.43
Sat Flow, veh/h	3456	3554	1557	1781	4005	1076	1781	1870	1585	1781	904	819
Grp Volume(v), veh/h	442	505	210	95	769	380	374	401	194	747	0	1284
Grp Sat Flow(s),veh/h/ln	1728	1777	1557	1781	1702	1677	1781	1870	1585	1781	0	1723
Q Serve(g_s), s	12.2	10.9	6.8	7.8	26.2	26.2	21.9	21.9	17.9	62.2	0.0	63.9
Cycle Q Clear(g_c), s	12.2	10.9	6.8	7.8	26.2	26.2	21.9	21.9	17.9	62.2	0.0	63.9
Prop In Lane	1.00		1.00	1.00		0.64	1.00		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	1539	1998	1102	128	595	293	260	273	231	759	0	734
V/C Ratio(X)	0.29	0.25	0.19	0.74	1.29	1.30	1.44	1.47	0.84	0.98	0.00	1.75
Avail Cap(c_a), veh/h	1539	1998	1102	147	595	293	260	273	231	759	0	734
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)	0.54	0.54	0.54	1.00	1.00	1.00	0.59	0.59	0.59	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.5	16.8	7.4	68.2	61.9	61.9	64.1	64.1	62.3	42.6	0.0	43.1
Incr Delay (d2), s/veh	0.0	0.2	0.2	12.6	144.0	157.3	209.7	222.4	14.0	28.6	0.0	342.8
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	5.0	4.4	3.6	4.0	23.0	23.7	25.0	27.2	8.0	31.6	0.0	95.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.5	16.9	7.6	80.9	205.9	219.2	273.8	286.4	76.3	71.2	0.0	385.9
LnGrp LOS	C	B	A	F	F	F	F	F	E	E		F
Approach Vol, veh/h		1157			1244			969			2031	
Approach Delay, s/veh		18.9			200.4			239.5			270.1	
Approach LOS		B			F			F			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.5	91.3		69.0	73.8	33.0		27.0
Change Period (Y+Rc), s	4.7	6.8		5.1	6.8	* 6.8		5.1
Max Green Setting (Gmax), s	12.4	30.1		63.9	16.3	* 26		21.9
Max Q Clear Time (g_c+I1), s	9.8	12.9		65.9	14.2	28.2		23.9
Green Ext Time (p_c), s	0.0	2.1		0.0	0.2	0.0		0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	194.7
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	90	40	140	60	200	70	1140	140	240	760	120
Future Volume (veh/h)	130	90	40	140	60	200	70	1140	140	240	760	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.99
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	1854	1870	1854	1854	1870	1870	1854	1870	1854	1854
Adj Flow Rate, veh/h	135	94	34	146	63	187	73	1188	117	250	792	113
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	328	273	153	75	222	251	1448	630	272	1307	186
Arrive On Green	0.08	0.18	0.18	0.09	0.18	0.18	0.28	0.82	0.82	0.15	0.42	0.42
Sat Flow, veh/h	1781	1870	1557	1781	409	1214	1781	3554	1546	1781	3091	441
Grp Volume(v), veh/h	135	94	34	146	0	250	73	1188	117	250	451	454
Grp Sat Flow(s),veh/h/ln	1781	1870	1557	1781	0	1623	1781	1777	1546	1781	1761	1771
Q Serve(g_s), s	10.6	6.1	1.9	11.4	0.0	20.8	4.5	26.1	2.3	19.4	27.8	27.8
Cycle Q Clear(g_c), s	10.6	6.1	1.9	11.4	0.0	20.8	4.5	26.1	2.3	19.4	27.8	27.8
Prop In Lane	1.00		1.00	1.00		0.75	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	140	328	273	153	0	296	251	1448	630	272	745	749
V/C Ratio(X)	0.96	0.29	0.12	0.96	0.00	0.84	0.29	0.82	0.19	0.92	0.61	0.61
Avail Cap(c_a), veh/h	140	428	356	153	0	383	251	1448	630	274	745	749
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.48	0.48	0.48	0.44	0.44	0.44
Uniform Delay (d), s/veh	64.3	50.1	25.3	63.7	0.0	55.3	44.8	10.1	7.9	58.5	31.3	31.4
Incr Delay (d2), s/veh	65.1	0.5	0.2	59.6	0.0	12.7	0.3	2.6	0.3	18.9	1.6	1.6
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	7.3	2.9	1.0	7.8	0.0	9.6	1.9	4.6	0.8	10.0	11.9	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	129.4	50.6	25.5	123.3	0.0	68.0	45.1	12.7	8.2	77.3	33.0	33.0
LnGrp LOS	F	D	C	F		E	D	B	A	E	C	C
Approach Vol, veh/h		263			396			1378			1155	
Approach Delay, s/veh		87.8			88.4			14.0			42.6	
Approach LOS		F			F			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.9	63.6	18.0	30.6	26.2	65.2	17.0	31.6
Change Period (Y+Rc), s	6.5	* 6.5	6.0	6.0	6.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	21.5	* 50	12.0	32.0	12.3	59.2	11.0	33.0
Max Q Clear Time (g_c+I1), s	21.4	28.1	13.4	8.1	6.5	29.8	12.6	22.8
Green Ext Time (p_c), s	0.0	9.1	0.0	0.5	0.1	6.1	0.0	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	39.7
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	360	70	150	160	130	100	1060	40	160	530	210
Future Volume (veh/h)	210	360	70	150	160	130	100	1060	40	160	530	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.99
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	1854	1870	1854	1854	1870	1854	1854	1870	1854	1854
Adj Flow Rate, veh/h	219	375	58	156	167	121	104	1104	39	167	552	197
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	241	589	260	180	261	177	127	1565	55	184	1226	436
Arrive On Green	0.14	0.17	0.17	0.10	0.13	0.13	0.07	0.45	0.45	0.21	0.97	0.97
Sat Flow, veh/h	1781	3554	1568	1781	1990	1348	1781	3469	123	1781	2535	902
Grp Volume(v), veh/h	219	375	58	156	146	142	104	560	583	167	383	366
Grp Sat Flow(s),veh/h/ln	1781	1777	1568	1781	1761	1578	1781	1761	1831	1781	1761	1676
Q Serve(g_s), s	17.0	13.8	4.5	12.1	11.0	12.0	8.1	35.9	35.9	12.8	1.8	1.8
Cycle Q Clear(g_c), s	17.0	13.8	4.5	12.1	11.0	12.0	8.1	35.9	35.9	12.8	1.8	1.8
Prop In Lane	1.00		1.00	1.00		0.85	1.00		0.07	1.00		0.54
Lane Grp Cap(c), veh/h	241	589	260	180	231	207	127	794	826	184	851	810
V/C Ratio(X)	0.91	0.64	0.22	0.87	0.63	0.68	0.82	0.71	0.71	0.91	0.45	0.45
Avail Cap(c_a), veh/h	242	914	403	204	415	372	200	794	826	184	851	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.87	0.87	0.87	0.09	0.09	0.09	0.82	0.82	0.82
Uniform Delay (d), s/veh	59.7	54.5	50.6	62.0	57.6	58.0	64.1	30.9	30.9	54.8	1.2	1.2
Incr Delay (d2), s/veh	34.2	1.1	0.4	25.5	2.5	3.5	1.4	0.5	0.5	35.5	1.4	1.5
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	9.9	6.2	1.8	6.7	5.1	5.0	3.7	14.9	15.5	6.9	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	93.9	55.6	51.0	87.5	60.1	61.5	65.5	31.4	31.4	90.3	2.6	2.7
LnGrp LOS	F	E	D	F	E	E	E	C	C	F	A	A
Approach Vol, veh/h		652			444			1247			916	
Approach Delay, s/veh		68.1			70.2			34.3			18.7	
Approach LOS		E			E			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	69.7	20.1	29.2	16.5	74.2	25.0	24.4
Change Period (Y+Rc), s	6.5	6.5	6.0	6.0	6.5	6.5	6.0	6.0
Max Green Setting (Gmax), s	14.5	48.5	16.0	36.0	15.7	47.3	19.0	33.0
Max Q Clear Time (g_c+I1), s	14.8	37.9	14.1	15.8	10.1	3.8	19.0	14.0
Green Ext Time (p_c), s	0.0	5.1	0.1	2.5	0.1	5.1	0.0	1.5

Intersection Summary	
HCM 7th Control Delay, s/veh	41.5
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	290	200	40	130	50	140	780	70	80	700	160
Future Volume (veh/h)	80	290	200	40	130	50	140	780	70	80	700	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.97	1.00		0.98
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	84	305	190	42	137	48	147	821	61	84	737	151
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	330	206	79	762	256	166	1026	76	108	802	164
Arrive On Green	0.06	0.31	0.31	0.04	0.29	0.29	0.09	0.31	0.31	0.06	0.27	0.27
Sat Flow, veh/h	1781	1069	666	1781	2602	874	1781	3345	249	1781	2927	599
Grp Volume(v), veh/h	84	0	495	42	92	93	147	436	446	84	447	441
Grp Sat Flow(s),veh/h/ln	1781	0	1735	1781	1777	1699	1781	1777	1817	1781	1777	1749
Q Serve(g_s), s	4.0	0.0	23.7	2.0	3.3	3.5	7.0	19.4	19.4	4.0	21.0	21.0
Cycle Q Clear(g_c), s	4.0	0.0	23.7	2.0	3.3	3.5	7.0	19.4	19.4	4.0	21.0	21.0
Prop In Lane	1.00		0.38	1.00		0.51	1.00		0.14	1.00		0.34
Lane Grp Cap(c), veh/h	108	0	536	79	520	497	166	545	557	108	487	480
V/C Ratio(X)	0.78	0.00	0.92	0.53	0.18	0.19	0.89	0.80	0.80	0.78	0.92	0.92
Avail Cap(c_a), veh/h	124	0	566	124	579	554	166	545	557	145	497	489
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	0.00	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	39.8	0.0	28.7	40.2	22.6	22.7	38.5	27.3	27.4	39.8	30.2	30.2
Incr Delay (d2), s/veh	23.5	0.0	20.4	5.5	0.2	0.2	39.2	8.3	8.1	17.1	22.0	22.3
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	2.4	0.0	12.3	1.0	1.4	1.4	4.7	8.9	9.1	2.2	11.3	11.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	63.3	0.0	49.1	45.7	22.8	22.9	77.7	35.6	35.5	56.8	52.2	52.5
LnGrp LOS	E		D	D	C	C	E	D	D	E	D	D
Approach Vol, veh/h		579			227			1029			972	
Approach Delay, s/veh		51.1			27.1			41.6			52.8	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	32.3	9.8	32.5	14.0	29.5	11.2	31.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	7.0	25.0	6.0	28.0	8.0	24.0	6.0	28.0
Max Q Clear Time (g_c+I1), s	6.0	21.4	4.0	25.7	9.0	23.0	6.0	5.5
Green Ext Time (p_c), s	0.0	1.8	0.0	0.7	0.0	0.6	0.0	0.9

Intersection Summary	
HCM 7th Control Delay, s/veh	46.3
HCM 7th LOS	D

Intersection	
Int Delay, s/veh	38.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1320	70	140	1110	10	370
Future Vol, veh/h	1320	70	140	1110	10	370
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	65	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1389	74	147	1168	11	389

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1463	0	2305	732
Stage 1	-	-	-	-	1426	-
Stage 2	-	-	-	-	879	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	458	-	32	~ 364
Stage 1	-	-	-	-	188	-
Stage 2	-	-	-	-	366	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	458	-	22	~ 364
Mov Cap-2 Maneuver	-	-	-	-	22	-
Stage 1	-	-	-	-	127	-
Stage 2	-	-	-	-	366	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.85	$ 301.67
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	258	-	-	458	-
HCM Lane V/C Ratio	1.552	-	-	0.322	-
HCM Ctrl Dly (s/v)	$ 301.7	-	-	16.6	-
HCM Lane LOS	F	-	-	C	-
HCM 95th %tile Q(veh)	24	-	-	1.4	-

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1020	670	60	570	680	80
Future Volume (veh/h)	1020	670	60	570	680	80
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1074	625	63	600	716	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1149	628	99	2280	787	361
Arrive On Green	0.52	0.52	0.06	0.64	0.23	0.23
Sat Flow, veh/h	2290	1201	1781	3647	3456	1585
Grp Volume(v), veh/h	856	843	63	600	716	67
Grp Sat Flow(s),veh/h/ln	1777	1620	1781	1777	1728	1585
Q Serve(g_s), s	36.6	42.7	2.9	6.0	16.7	2.8
Cycle Q Clear(g_c), s	36.6	42.7	2.9	6.0	16.7	2.8
Prop In Lane		0.74	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	929	847	99	2280	787	361
V/C Ratio(X)	0.92	0.99	0.64	0.26	0.91	0.19
Avail Cap(c_a), veh/h	929	847	255	2590	795	365
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	18.1	19.6	38.2	6.4	31.1	25.7
Incr Delay (d2), s/veh	14.1	29.6	6.6	0.1	14.4	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.8	19.9	1.4	1.7	8.2	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	32.2	49.2	44.8	6.4	45.5	26.0
LnGrp LOS	C	D	D	A	D	C
Approach Vol, veh/h	1699			663	783	
Approach Delay, s/veh	40.6			10.1	43.8	
Approach LOS	D			B	D	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	9.8	49.0				58.8	23.8
Change Period (Y+Rc), s	5.2	5.8				5.8	5.0
Max Green Setting (Gmax), s	11.8	43.2				60.2	19.0
Max Q Clear Time (g_c+I1), s	4.9	44.7				8.0	18.7
Green Ext Time (p_c), s	0.1	0.0				4.1	0.1

Intersection Summary			
HCM 7th Control Delay, s/veh		35.0	
HCM 7th LOS		C	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1830	710	220	1240	110	350	40	110	120	30	80
Future Volume (veh/h)	60	1830	710	220	1240	110	350	40	110	120	30	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.98	1.00		0.97
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	1850	1870	1870	1850	1870	1870	1850	1870	1870	1870
Adj Flow Rate, veh/h	61	1867	571	224	1265	81	357	41	81	122	31	66
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	1867	822	196	2040	871	412	234	191	229	37	80
Arrive On Green	0.06	0.53	0.53	0.07	0.38	0.38	0.12	0.12	0.12	0.07	0.07	0.07
Sat Flow, veh/h	3456	3554	1565	1781	3554	1518	3456	1870	1532	3456	520	1106
Grp Volume(v), veh/h	61	1867	571	224	1265	81	357	41	81	122	0	97
Grp Sat Flow(s),veh/h/ln	1728	1777	1565	1781	1777	1518	1728	1870	1532	1728	0	1626
Q Serve(g_s), s	2.5	78.8	40.9	16.5	43.1	2.6	15.2	2.9	7.3	5.1	0.0	8.8
Cycle Q Clear(g_c), s	2.5	78.8	40.9	16.5	43.1	2.6	15.2	2.9	7.3	5.1	0.0	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.68
Lane Grp Cap(c), veh/h	212	1867	822	196	2040	871	412	234	191	229	0	117
V/C Ratio(X)	0.29	1.00	0.69	1.14	0.62	0.09	0.87	0.18	0.42	0.53	0.00	0.83
Avail Cap(c_a), veh/h	230	1867	822	196	2040	871	530	349	286	230	0	163
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.44	0.44	0.44	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	67.3	35.6	26.6	69.5	32.9	5.7	64.9	58.7	60.6	67.8	0.0	68.7
Incr Delay (d2), s/veh	0.7	20.8	4.8	88.1	0.6	0.1	11.6	0.4	1.5	2.3	0.0	21.5
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	1.1	37.3	16.5	12.4	19.5	1.8	7.4	1.4	3.0	2.4	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	68.0	56.4	31.4	157.5	33.6	5.8	76.4	59.1	62.1	70.1	0.0	90.2
LnGrp LOS	E	E	C	F	C	A	E	E	E	E		F
Approach Vol, veh/h		2499			1570			479			219	
Approach Delay, s/veh		50.9			49.8			72.5			79.0	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	93.1	23.9	17.3	23.0	85.8	16.4	24.7
Change Period (Y+Rc), s	6.5	7.0	6.0	6.5	6.5	* 7	6.5	6.0
Max Green Setting (Gmax), s	10.0	76.0	23.0	15.0	16.5	* 70	10.0	28.0
Max Q Clear Time (g_c+I1), s	4.5	45.1	17.2	10.8	18.5	80.8	7.1	9.3
Green Ext Time (p_c), s	0.0	10.8	0.7	0.1	0.0	0.0	0.1	0.4

Intersection Summary	
HCM 7th Control Delay, s/veh	54.0
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1830	180	260	1360	60	160	20	280	60	30	50
Future Volume (veh/h)	50	1830	180	260	1360	60	160	20	280	60	30	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.96
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	1859	1859	1870	1859	1859	1870	1870	1870	1870	1870	1859
Adj Flow Rate, veh/h	51	1848	154	263	1374	49	162	20	255	61	30	41
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	1699	754	184	1542	687	100	12	157	96	47	120
Arrive On Green	0.15	0.48	0.48	0.03	0.14	0.14	0.16	0.16	0.16	0.08	0.08	0.08
Sat Flow, veh/h	1781	3531	1567	1781	3531	1573	612	76	963	1213	597	1517
Grp Volume(v), veh/h	51	1848	154	263	1374	49	437	0	0	91	0	41
Grp Sat Flow(s),veh/h/ln	1781	1766	1567	1781	1766	1573	1651	0	0	1810	0	1517
Q Serve(g_s), s	3.8	72.2	8.5	15.5	57.3	4.0	24.5	0.0	0.0	7.3	0.0	3.8
Cycle Q Clear(g_c), s	3.8	72.2	8.5	15.5	57.3	4.0	24.5	0.0	0.0	7.3	0.0	3.8
Prop In Lane	1.00		1.00	1.00		1.00	0.37		0.58	0.67		1.00
Lane Grp Cap(c), veh/h	263	1699	754	184	1542	687	270	0	0	143	0	120
V/C Ratio(X)	0.19	1.09	0.20	1.43	0.89	0.07	1.62	0.00	0.00	0.64	0.00	0.34
Avail Cap(c_a), veh/h	263	1699	754	184	1542	687	270	0	0	326	0	273
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.41	0.41	0.41	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.1	38.9	22.4	72.4	60.7	37.9	62.8	0.0	0.0	67.0	0.0	65.4
Incr Delay (d2), s/veh	0.0	40.6	0.1	205.5	3.6	0.1	295.7	0.0	0.0	4.7	0.0	1.7
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	1.7	39.2	3.1	18.0	28.0	1.6	32.5	0.0	0.0	3.6	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	56.1	79.5	22.4	278.0	64.3	38.0	358.5	0.0	0.0	71.7	0.0	67.1
LnGrp LOS	E	F	C	F	E	D	F			E		E
Approach Vol, veh/h		2053			1686			437			132	
Approach Delay, s/veh		74.6			96.9			358.5			70.3	
Approach LOS		E			F			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.0	78.7		18.3	28.7	72.0		31.0				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	15.5	57.0		27.0	7.0	65.5		24.5				
Max Q Clear Time (g_c+I1), s	17.5	74.2		9.3	5.8	59.3		26.5				
Green Ext Time (p_c), s	0.0	0.0		0.5	0.0	4.2		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	112.0
HCM 7th LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	460	1420	290	350	1120	230	230	510	270	200	250	330
Future Volume (veh/h)	460	1420	290	350	1120	230	230	510	270	200	250	330
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	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	1859	1859	1870	1870	1859	1870	1870	1859	1870	1870	1859
Adj Flow Rate, veh/h	474	1464	245	361	1155	190	237	526	233	206	258	272
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	303	1212	540	451	1516	662	300	723	601	152	723	875
Arrive On Green	0.06	0.11	0.11	0.25	0.43	0.43	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	1781	3531	1573	1781	3554	1551	873	1870	1554	706	1870	1571
Grp Volume(v), veh/h	474	1464	245	361	1155	190	237	526	233	206	258	272
Grp Sat Flow(s),veh/h/ln	1781	1766	1573	1781	1777	1551	873	1870	1554	706	1870	1571
Q Serve(g_s), s	25.5	51.5	21.8	28.5	41.4	12.0	39.8	36.0	16.2	22.0	14.7	13.9
Cycle Q Clear(g_c), s	25.5	51.5	21.8	28.5	41.4	12.0	54.5	36.0	16.2	58.0	14.7	13.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	303	1212	540	451	1516	662	300	723	601	152	723	875
V/C Ratio(X)	1.57	1.21	0.45	0.80	0.76	0.29	0.79	0.73	0.39	1.36	0.36	0.31
Avail Cap(c_a), veh/h	303	1212	540	451	1516	662	300	723	601	152	723	875
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.09	0.09	0.09	1.00	1.00	1.00	0.83	0.83	0.83
Uniform Delay (d), s/veh	70.8	66.5	53.4	52.4	36.5	28.1	52.1	39.3	33.2	67.5	32.7	17.8
Incr Delay (d2), s/veh	255.9	94.2	0.2	1.0	0.3	0.1	13.3	3.7	0.4	192.8	0.2	0.2
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	38.8	40.3	9.3	12.6	17.4	4.4	9.8	17.3	6.3	13.9	6.7	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	326.6	160.7	53.6	53.4	36.9	28.2	65.4	42.9	33.6	260.2	33.0	18.0
LnGrp LOS	F	F	D	D	D	C	E	D	C	F	C	B
Approach Vol, veh/h		2183			1706			996			736	
Approach Delay, s/veh		184.7			39.4			46.1			91.0	
Approach LOS		F			D			D			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	45.0	58.0		64.5	32.0	71.0		64.5
Change Period (Y+Rc), s	6.5	6.5		* 6.5	6.5	6.5		6.5
Max Green Setting (Gmax), s	21.5	51.5		* 58	25.5	47.5		57.5
Max Q Clear Time (g_c+I1), s	30.5	53.5		60.0	27.5	43.4		56.5
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	2.7		0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	103.8
HCM 7th LOS	F

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	1280	470	340	1180	250	310	470	300	270	560	130
Future Volume (veh/h)	220	1280	470	340	1180	250	310	470	300	270	560	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.99
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	1859	1859	1870	1859	1859	1870	1859	1859	1870	1859	1859
Adj Flow Rate, veh/h	222	1293	356	343	1192	202	313	475	255	273	566	123
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	1001	446	220	1212	531	249	724	386	319	418	91
Arrive On Green	0.06	0.28	0.28	0.12	0.34	0.34	0.14	0.33	0.33	0.09	0.28	0.28
Sat Flow, veh/h	1781	3531	1573	1781	3531	1547	1781	2210	1179	3456	1475	321
Grp Volume(v), veh/h	222	1293	356	343	1192	202	313	379	351	273	0	689
Grp Sat Flow(s),veh/h/ln	1781	1766	1573	1781	1766	1547	1781	1766	1623	1728	0	1796
Q Serve(g_s), s	9.5	42.5	31.4	18.5	50.2	10.8	21.0	27.6	27.8	11.7	0.0	42.5
Cycle Q Clear(g_c), s	9.5	42.5	31.4	18.5	50.2	10.8	21.0	27.6	27.8	11.7	0.0	42.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.73	1.00		0.18
Lane Grp Cap(c), veh/h	113	1001	446	220	1212	531	249	579	532	319	0	509
V/C Ratio(X)	1.97	1.29	0.80	1.56	0.98	0.38	1.26	0.65	0.66	0.86	0.00	1.35
Avail Cap(c_a), veh/h	113	1001	446	220	1212	531	249	579	532	352	0	509
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)	0.09	0.09	0.09	0.09	0.09	0.09	0.73	0.73	0.73	0.37	0.00	0.37
Uniform Delay (d), s/veh	70.2	53.8	49.8	65.8	48.8	19.7	64.5	43.2	43.2	67.1	0.0	53.8
Incr Delay (d2), s/veh	438.4	132.3	1.4	254.6	4.8	0.2	136.6	2.0	2.2	7.2	0.0	164.3
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	18.0	36.7	12.4	23.8	22.4	3.9	18.9	12.2	11.4	5.4	0.0	42.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	508.7	186.0	51.2	320.4	53.6	19.9	201.1	45.1	45.5	74.4	0.0	218.1
LnGrp LOS	F	F	D	F	D	B	F	D	D	E		F
Approach Vol, veh/h		1871			1737			1043			962	
Approach Delay, s/veh		198.6			102.4			92.0			177.3	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	49.0	27.0	49.0	16.0	58.0	20.3	55.7
Change Period (Y+Rc), s	6.5	6.5	6.0	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	18.5	42.5	21.0	42.5	9.5	51.5	15.3	47.7
Max Q Clear Time (g_c+I1), s	20.5	44.5	23.0	44.5	11.5	52.2	13.7	29.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.2	4.2

Intersection Summary	
HCM 7th Control Delay, s/veh	145.4
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1350	410	340	1120	80	490	660	490	150	500	130
Future Volume (veh/h)	60	1350	410	340	1120	80	490	660	490	150	500	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
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	1859	1859	1870	1870	1859	1870	1870	1859	1870	1859	1859
Adj Flow Rate, veh/h	61	1364	299	343	1131	65	495	667	443	152	505	118
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	977	432	255	1325	573	333	674	447	137	633	147
Arrive On Green	0.04	0.28	0.28	0.29	0.75	0.75	0.19	0.33	0.33	0.08	0.22	0.22
Sat Flow, veh/h	1781	3531	1563	1781	3554	1538	1781	2043	1354	1781	2833	658
Grp Volume(v), veh/h	61	1364	299	343	1131	65	495	580	530	152	314	309
Grp Sat Flow(s),veh/h/ln	1781	1766	1563	1781	1777	1538	1781	1777	1619	1781	1766	1725
Q Serve(g_s), s	5.1	41.5	16.2	21.5	33.4	1.8	28.0	48.7	48.9	11.5	25.2	25.5
Cycle Q Clear(g_c), s	5.1	41.5	16.2	21.5	33.4	1.8	28.0	48.7	48.9	11.5	25.2	25.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.84	1.00		0.38
Lane Grp Cap(c), veh/h	78	977	432	255	1325	573	333	586	534	137	394	385
V/C Ratio(X)	0.78	1.40	0.69	1.34	0.85	0.11	1.49	0.99	0.99	1.11	0.80	0.80
Avail Cap(c_a), veh/h	163	977	432	255	1325	573	333	586	534	137	400	391
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.54	0.54	0.54	0.76	0.76	0.76	0.94	0.94	0.94
Uniform Delay (d), s/veh	71.0	54.2	19.3	53.5	16.2	12.2	61.0	50.0	50.0	69.3	55.0	55.1
Incr Delay (d2), s/veh	1.6	178.8	0.8	168.2	4.0	0.2	231.8	29.6	31.8	108.2	10.0	10.7
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	2.3	42.4	6.1	20.2	6.8	0.7	34.1	26.4	24.4	9.3	12.2	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	72.6	233.1	20.2	221.7	20.2	12.4	292.8	79.6	81.8	177.5	65.0	65.9
LnGrp LOS	E	F	C	F	C	B	F	E	F	F	E	E
Approach Vol, veh/h		1724			1539			1605			775	
Approach Delay, s/veh		190.5			64.8			146.1			87.4	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	47.5	34.0	40.5	13.1	62.4	18.0	56.5
Change Period (Y+Rc), s	6.5	6.0	6.0	* 7	6.5	* 6.5	6.5	7.0
Max Green Setting (Gmax), s	21.5	41.5	28.0	* 34	13.7	* 49	11.5	49.5
Max Q Clear Time (g_c+I1), s	23.5	43.5	30.0	27.5	7.1	35.4	13.5	50.9
Green Ext Time (p_c), s	0.0	0.0	0.0	2.0	0.0	6.6	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	129.4
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	1590	250	570	1170	220	360	290	300	740	300	60
Future Volume (veh/h)	120	1590	250	570	1170	220	360	290	300	740	300	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.99	1.00		0.97
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	1859	1870	1870	1859	1870	1870	1859	1870	1870	1859
Adj Flow Rate, veh/h	122	1622	204	582	1194	179	367	296	239	755	306	49
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	1566	596	564	1970	910	276	274	486	691	499	406
Arrive On Green	0.11	0.41	0.41	0.16	0.39	0.39	0.08	0.15	0.15	0.20	0.27	0.27
Sat Flow, veh/h	1781	5106	1534	3456	5106	1543	3456	1870	1559	3456	1870	1523
Grp Volume(v), veh/h	122	1622	204	582	1194	179	367	296	239	755	306	49
Grp Sat Flow(s),veh/h/ln	1781	1702	1534	1728	1702	1543	1728	1870	1559	1728	1870	1523
Q Serve(g_s), s	10.1	46.0	12.7	24.5	28.1	2.5	12.0	22.0	9.6	30.0	21.5	3.7
Cycle Q Clear(g_c), s	10.1	46.0	12.7	24.5	28.1	2.5	12.0	22.0	9.6	30.0	21.5	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	1566	596	564	1970	910	276	274	486	691	499	406
V/C Ratio(X)	0.85	1.04	0.34	1.03	0.61	0.20	1.33	1.08	0.49	1.09	0.61	0.12
Avail Cap(c_a), veh/h	214	1566	596	564	1970	910	276	274	486	691	499	406
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.85	0.85	0.85	0.65	0.65	0.65	0.22	0.22	0.22
Uniform Delay (d), s/veh	66.0	44.4	27.4	62.8	36.9	4.5	69.0	64.0	16.4	60.0	48.2	41.7
Incr Delay (d2), s/veh	2.0	18.7	0.1	43.2	1.2	0.4	162.9	66.6	0.5	47.5	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	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	20.5	4.5	14.0	11.8	1.3	11.6	15.6	3.4	17.4	9.9	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	68.0	63.1	27.6	105.9	38.1	5.0	231.9	130.6	16.9	107.5	48.7	41.7
LnGrp LOS	E	F	C	F	D	A	F	F	B	F	D	D
Approach Vol, veh/h		1948			1955			902			1110	
Approach Delay, s/veh		59.7			55.3			141.7			88.4	
Approach LOS		E			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.0	53.0	19.0	47.0	19.1	64.9	37.0	29.0
Change Period (Y+Rc), s	6.5	7.0	7.0	7.0	7.0	* 7	7.0	7.0
Max Green Setting (Gmax), s	24.5	46.0	12.0	40.0	18.0	* 53	30.0	22.0
Max Q Clear Time (g_c+I1), s	26.1	48.0	14.0	23.5	12.1	30.1	32.0	24.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.6	0.1	9.3	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	76.1
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱↱	↰↰	↑↑↑					↰↰		↱
Traffic Volume (veh/h)	0	1540	1300	320	1760	0	0	0	0	180	0	200
Future Volume (veh/h)	0	1540	1300	320	1760	0	0	0	0	180	0	200
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	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
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	1571	1327	327	1796	0				184	0	163
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	2724	1489	412	3714	0				358	0	164
Arrive On Green	0.00	0.53	0.53	0.12	0.73	0.00				0.10	0.00	0.10
Sat Flow, veh/h	0	5274	2790	3456	5274	0				3456	0	1585
Grp Volume(v), veh/h	0	1571	1327	327	1796	0				184	0	163
Grp Sat Flow(s),veh/h/ln	0	1702	1395	1728	1702	0				1728	0	1585
Q Serve(g_s), s	0.0	15.8	32.3	7.0	11.3	0.0				3.8	0.0	7.8
Cycle Q Clear(g_c), s	0.0	15.8	32.3	7.0	11.3	0.0				3.8	0.0	7.8
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2724	1489	412	3714	0				358	0	164
V/C Ratio(X)	0.00	0.58	0.89	0.79	0.48	0.00				0.51	0.00	0.99
Avail Cap(c_a), veh/h	0	3560	1945	467	4631	0				358	0	164
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.0	15.8	32.7	4.4	0.0				32.4	0.0	34.2
Incr Delay (d2), s/veh	0.0	0.1	3.8	7.1	0.0	0.0				0.6	0.0	68.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.0	9.1	3.2	2.3	0.0				1.5	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	12.1	19.7	39.8	4.4	0.0				32.9	0.0	102.2
LnGrp LOS		B	B	D	A					C		F
Approach Vol, veh/h		2898			2123						347	
Approach Delay, s/veh		15.5			9.9						65.5	
Approach LOS		B			A						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.8	47.5		14.0		62.3
Change Period (Y+Rc), s	5.7	6.8		6.1		6.8
Max Green Setting (Gmax), s	10.3	53.2		7.9		69.2
Max Q Clear Time (g_c+I1), s	9.0	34.3		9.8		13.3
Green Ext Time (p_c), s	0.1	6.4		0.0		6.0

Intersection Summary	
HCM 7th Control Delay, s/veh	16.5
HCM 7th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	1130	220	0	1110	150	760	390	190	160	0	430
Future Volume (veh/h)	370	1130	220	0	1110	150	760	390	190	160	0	430
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.99	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	0	1870	1837	1870	1837	1837	1870	0	1870
Adj Flow Rate, veh/h	381	1165	0	0	1144	124	784	402	176	165	0	332
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	465	1601		0	1286	377	886	508	220	216	0	0
Arrive On Green	0.13	0.45	0.00	0.00	0.25	0.25	0.26	0.21	0.21	0.12	0.00	0.00
Sat Flow, veh/h	3456	3554	1585	0	5274	1497	3456	2363	1021	1781	165	
Grp Volume(v), veh/h	381	1165	0	0	1144	124	784	295	283	165	50.9	
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	0	1702	1497	1728	1745	1639	1781	D	
Q Serve(g_s), s	9.6	23.9	0.0	0.0	19.3	6.0	19.4	14.3	14.6	8.0		
Cycle Q Clear(g_c), s	9.6	23.9	0.0	0.0	19.3	6.0	19.4	14.3	14.6	8.0		
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.62	1.00		
Lane Grp Cap(c), veh/h	465	1601		0	1286	377	886	375	352	216		
V/C Ratio(X)	0.82	0.73		0.00	0.89	0.33	0.88	0.79	0.80	0.76		
Avail Cap(c_a), veh/h	465	1635		0	1335	391	1788	568	534	220		
HCM Platoon Ratio	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	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	37.5	20.0	0.0	0.0	32.1	27.2	31.9	33.1	33.2	37.9		
Incr Delay (d2), s/veh	10.3	1.4	0.0	0.0	7.3	0.2	1.2	2.0	2.7	12.9		
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		
%ile BackOfQ(50%),veh/ln	4.5	9.2	0.0	0.0	8.3	2.0	7.4	5.7	5.5	4.1		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.8	21.4	0.0	0.0	39.4	27.4	33.1	35.1	35.9	50.9		
LnGrp LOS	D	C			D	C	C	D	D	D		
Approach Vol, veh/h		1546			1268			1362				
Approach Delay, s/veh		27.9			38.2			34.1				
Approach LOS		C			D			C				

Timer - Assigned Phs		2	3		5	6	7	8				
Phs Duration (G+Y+Rc), s		46.9	29.0		17.7	29.2	16.9	25.3				
Change Period (Y+Rc), s		6.8	6.1		5.7	6.8	6.1	6.1				
Max Green Setting (Gmax), s		41.0	46.1		12.0	23.3	11.0	29.0				
Max Q Clear Time (g_c+I1), s		25.9	21.4		11.6	21.3	10.0	16.6				
Green Ext Time (p_c), s		4.9	1.4		0.0	1.2	0.0	1.5				

Intersection Summary	
HCM 7th Control Delay, s/veh	33.7
HCM 7th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	460	260	150	100	300	190	150	300	100	340	220	560
Future Volume (veh/h)	460	260	150	100	300	190	150	300	100	340	220	560
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.96	1.00		0.94
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	484	274	157	105	316	149	158	316	104	358	232	516
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	142	81	231	674	856	117	528	170	323	404	340
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.07	0.20	0.20	0.09	0.23	0.23
Sat Flow, veh/h	453	257	147	343	1222	1552	1781	2614	841	3456	1777	1498
Grp Volume(v), veh/h	915	0	0	421	0	149	158	212	208	358	232	516
Grp Sat Flow(s),veh/h/ln	857	0	0	1565	0	1552	1781	1777	1677	1728	1777	1498
Q Serve(g_s), s	42.6	0.0	0.0	0.0	0.0	5.1	7.0	11.6	12.1	10.0	12.4	24.3
Cycle Q Clear(g_c), s	59.0	0.0	0.0	16.4	0.0	5.1	7.0	11.6	12.1	10.0	12.4	24.3
Prop In Lane	0.53		0.17	0.25		1.00	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	524	0	0	905	0	856	117	359	339	323	404	340
V/C Ratio(X)	1.75	0.00	0.00	0.47	0.00	0.17	1.36	0.59	0.61	1.11	0.57	1.52
Avail Cap(c_a), veh/h	524	0	0	905	0	856	117	359	339	323	404	340
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	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	0.0	0.0	14.2	0.0	11.9	50.0	38.7	38.9	48.5	36.8	41.4
Incr Delay (d2), s/veh	343.5	0.0	0.0	0.4	0.0	0.1	205.9	2.6	3.2	82.5	2.0	247.2
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	34.2	0.0	0.0	6.1	0.0	1.8	9.8	5.3	5.2	8.0	5.6	32.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	377.8	0.0	0.0	14.6	0.0	12.0	255.9	41.3	42.1	131.0	38.8	288.6
LnGrp LOS	F			B		B	F	D	D	F	D	F
Approach Vol, veh/h		915			570			578			1106	
Approach Delay, s/veh		377.8			13.9			100.3			185.2	
Approach LOS		F			B			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	27.0		65.0	12.3	29.7		65.0				
Change Period (Y+Rc), s	5.0	5.4		6.0	5.3	5.4		6.0				
Max Green Setting (Gmax), s	10.0	21.6		59.0	7.0	24.3		32.0				
Max Q Clear Time (g_c+I1), s	12.0	14.1		61.0	9.0	26.3		18.4				
Green Ext Time (p_c), s	0.0	1.5		0.0	0.0	0.0		3.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	194.5
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	920	30	90	540	300	20	110	60	530	130	380
Future Volume (veh/h)	270	920	30	90	540	300	20	110	60	530	130	380
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	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	1854	1854	1870	1870	1854	1870	1870	1854	1870	1854	1854
Adj Flow Rate, veh/h	284	968	29	95	568	253	21	116	50	558	137	360
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	310	1306	39	113	937	618	38	389	326	471	146	383
Arrive On Green	0.17	0.37	0.37	0.02	0.09	0.09	0.02	0.21	0.21	0.14	0.32	0.32
Sat Flow, veh/h	1781	3491	105	1781	3554	1531	1781	1870	1566	3456	452	1187
Grp Volume(v), veh/h	284	488	509	95	568	253	21	116	50	558	0	497
Grp Sat Flow(s),veh/h/ln	1781	1761	1835	1781	1777	1531	1781	1870	1566	1728	0	1639
Q Serve(g_s), s	17.2	26.4	26.4	5.8	16.9	6.3	1.3	5.8	2.9	15.0	0.0	32.4
Cycle Q Clear(g_c), s	17.2	26.4	26.4	5.8	16.9	6.3	1.3	5.8	2.9	15.0	0.0	32.4
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		0.72
Lane Grp Cap(c), veh/h	310	659	686	113	937	618	38	389	326	471	0	529
V/C Ratio(X)	0.92	0.74	0.74	0.84	0.61	0.41	0.55	0.30	0.15	1.18	0.00	0.94
Avail Cap(c_a), veh/h	310	659	686	113	937	618	81	476	399	471	0	566
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.10	0.10	0.10	1.00	1.00	1.00	0.09	0.00	0.09
Uniform Delay (d), s/veh	44.6	29.8	29.8	53.3	44.7	10.2	53.3	36.8	35.7	47.5	0.0	36.2
Incr Delay (d2), s/veh	30.6	7.4	7.1	5.7	0.3	0.2	11.6	0.4	0.2	85.0	0.0	3.4
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	10.0	12.0	12.5	2.8	8.1	2.9	0.7	2.7	1.1	11.9	0.0	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	75.2	37.2	36.9	59.0	45.0	10.4	64.9	37.2	35.9	132.5	0.0	39.7
LnGrp LOS	E	D	D	E	D	B	E	D	D	F		D
Approach Vol, veh/h		1281			916			187			1055	
Approach Delay, s/veh		45.5			36.9			40.0			88.8	
Approach LOS		D			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	47.1	21.0	28.9	25.1	35.0	8.4	41.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	7.0	36.0	15.0	28.0	14.0	29.0	5.0	38.0
Max Q Clear Time (g_c+I1), s	7.8	28.4	17.0	7.8	19.2	18.9	3.3	34.4
Green Ext Time (p_c), s	0.0	3.5	0.0	0.7	0.0	3.2	0.0	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	56.2
HCM 7th LOS	E



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	330	1230	760	600	510	170
Future Volume (veh/h)	330	1230	760	600	510	170
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1854	1854	1854	1854
Adj Flow Rate, veh/h	337	1255	776	551	520	138
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	291	2052	705	491	545	485
Arrive On Green	0.33	1.00	0.36	0.36	0.31	0.31
Sat Flow, veh/h	1781	3647	2054	1367	1765	1571
Grp Volume(v), veh/h	337	1255	695	632	520	138
Grp Sat Flow(s),veh/h/ln	1781	1777	1761	1568	1765	1571
Q Serve(g_s), s	18.0	0.0	39.5	39.5	31.7	7.3
Cycle Q Clear(g_c), s	18.0	0.0	39.5	39.5	31.7	7.3
Prop In Lane	1.00			0.87	1.00	1.00
Lane Grp Cap(c), veh/h	291	2052	633	564	545	485
V/C Ratio(X)	1.16	0.61	1.10	1.12	0.95	0.28
Avail Cap(c_a), veh/h	291	2052	633	564	554	493
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.39	0.39	0.75	0.75	0.84	0.84
Uniform Delay (d), s/veh	37.0	0.0	35.2	35.2	37.2	28.8
Incr Delay (d2), s/veh	85.0	0.5	61.5	71.5	24.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	0.2	26.9	25.5	17.1	7.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	122.0	0.5	96.7	106.7	61.3	29.1
LnGrp LOS	F	A	F	F	E	C
Approach Vol, veh/h		1592	1327		658	
Approach Delay, s/veh		26.3	101.5		54.5	
Approach LOS		C	F		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		69.5		40.5	24.0	45.5
Change Period (Y+Rc), s		6.0		6.5	6.0	6.0
Max Green Setting (Gmax), s		63.0		34.5	18.0	39.0
Max Q Clear Time (g_c+I1), s		2.0		33.7	20.0	41.5
Green Ext Time (p_c), s		12.3		0.2	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	59.4
HCM 7th LOS	E



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱	↰	↑↑	↰	↱
Traffic Volume (veh/h)	1070	670	60	870	490	50
Future Volume (veh/h)	1070	670	60	870	490	50
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1856	1870	1870	1870	1856
Adj Flow Rate, veh/h	1126	564	63	916	516	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1643	1196	81	2012	550	486
Arrive On Green	0.46	0.46	0.05	0.57	0.31	0.31
Sat Flow, veh/h	3647	1536	1781	3647	1781	1573
Grp Volume(v), veh/h	1126	564	63	916	516	42
Grp Sat Flow(s),veh/h/ln	1777	1536	1781	1777	1781	1573
Q Serve(g_s), s	29.9	15.9	4.2	18.1	33.8	2.3
Cycle Q Clear(g_c), s	29.9	15.9	4.2	18.1	33.8	2.3
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1643	1196	81	2012	550	486
V/C Ratio(X)	0.69	0.47	0.78	0.46	0.94	0.09
Avail Cap(c_a), veh/h	1643	1196	104	2012	653	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.63	0.63	0.09	0.09	1.00	1.00
Uniform Delay (d), s/veh	25.4	5.0	56.7	15.2	40.3	29.4
Incr Delay (d2), s/veh	1.5	0.8	2.6	0.1	19.5	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.4	13.3	1.9	6.9	17.3	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	26.9	5.8	59.3	15.3	59.9	29.5
LnGrp LOS	C	A	E	B	E	C
Approach Vol, veh/h	1690			979	558	
Approach Delay, s/veh	19.8			18.1	57.6	
Approach LOS	B			B	E	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.4	63.5			75.9	44.1
Change Period (Y+Rc), s	7.0	8.0			8.0	7.0
Max Green Setting (Gmax), s	7.6	47.0			61.0	44.0
Max Q Clear Time (g_c+I1), s	6.2	31.9			20.1	35.8
Green Ext Time (p_c), s	0.0	8.6			7.3	1.2

Intersection Summary		
HCM 7th Control Delay, s/veh		25.8
HCM 7th LOS		C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	960	30	50	690	410	20	10	30	230	20	220
Future Volume (veh/h)	130	960	30	50	690	410	20	10	30	230	20	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	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	1860	1860	1870	1860	1860	1860	1860	1860	1860	1860	1860
Adj Flow Rate, veh/h	137	1011	29	53	726	389	21	11	29	236	30	209
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	1502	43	105	865	462	120	73	124	371	52	364
Arrive On Green	0.10	0.43	0.43	0.06	0.39	0.39	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1781	3505	101	1781	2223	1189	244	282	477	1355	202	1405
Grp Volume(v), veh/h	137	510	530	53	577	538	61	0	0	236	0	239
Grp Sat Flow(s),veh/h/ln	1781	1767	1839	1781	1767	1646	1004	0	0	1355	0	1607
Q Serve(g_s), s	6.4	19.6	19.6	2.4	25.1	25.2	0.3	0.0	0.0	6.9	0.0	11.0
Cycle Q Clear(g_c), s	6.4	19.6	19.6	2.4	25.1	25.2	11.3	0.0	0.0	18.1	0.0	11.0
Prop In Lane	1.00		0.05	1.00		0.72	0.34		0.48	1.00		0.87
Lane Grp Cap(c), veh/h	175	757	788	105	687	640	317	0	0	371	0	416
V/C Ratio(X)	0.78	0.67	0.67	0.51	0.84	0.84	0.19	0.00	0.00	0.64	0.00	0.57
Avail Cap(c_a), veh/h	631	834	868	631	834	777	595	0	0	556	0	635
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	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.3	19.4	19.4	38.7	23.5	23.5	24.5	0.0	0.0	30.9	0.0	27.3
Incr Delay (d2), s/veh	7.4	1.9	1.8	3.7	6.5	7.0	0.3	0.0	0.0	1.8	0.0	1.3
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	3.0	7.6	7.9	1.1	10.7	10.1	1.0	0.0	0.0	4.5	0.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	44.7	21.3	21.3	42.4	29.9	30.5	24.7	0.0	0.0	32.8	0.0	28.6
LnGrp LOS	D	C	C	D	C	C	C			C		C
Approach Vol, veh/h		1177			1168			61			475	
Approach Delay, s/veh		24.0			30.8			24.7			30.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	44.3		28.4	15.3	41.0		28.4				
Change Period (Y+Rc), s	7.0	8.0		6.5	7.0	8.0		6.5				
Max Green Setting (Gmax), s	30.0	40.0		33.5	30.0	40.0		38.5				
Max Q Clear Time (g_c+I1), s	4.4	21.6		20.1	8.4	27.2		13.3				
Green Ext Time (p_c), s	0.1	6.2		1.8	0.3	5.8		0.3				

Intersection Summary	
HCM 7th Control Delay, s/veh	27.9
HCM 7th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Appendix G: Forecasted Horizon Year 2050 with Project Volume Calculations

Area	Drwy		ADT	Roadway Segment	Segment	ADT	Overall %	Area 1 Drwy 1 ADT	%	Area 1 Drwy 2 ADT	%	Area 2 Drwy 1 ADT	%	Area 2 Drwy 2 ADT	%	Area 2 Drwy 3 ADT	%	Area 3 Drwy 1 ADT	%	Area 3 Drwy 2 ADT	%	Area 3 Drwy 3 ADT	%	Area 4 Drwy 1 ADT	%	Area 4 Drwy 2 ADT	%
	1	1	1560	Las Posas Rd	Grand Ave to La Mirada Dr	3224	7.0%	0		468	30.0%	2016	60.0%	739.2	22.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	1	2	1560	Las Posas Rd	La Mirada Dr to Linda Vista Dr	3224	7.0%	0		468	30.0%	2016	60.0%	739.2	22.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	2	1	3360	Las Posas Rd	Linda Vista Dr to San Marcos Blvd	3728	8.1%	0		468	30.0%	2520	75.0%	739.2	22.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	2	2	3360	Via Vera Cruz	Grand Ave to Linda Vista Dr	8277	17.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2016	60.0%	5366.4	60.0%	894.4	10.0%	0	0.0%	0	0.0%	0	0.0%
	2	3	3360	Via Vera Cruz	Linda Vista Dr to San Marcos Blvd	8815	19.0%	0	0.0%	0	0.0%	0	0.0%	537.6	16.0%	2016	60.0%	5366.4	60.0%	894.4	10.0%	0	0.0%	0	0.0%	0	0.0%
	3	1	8944	Via Vera Cruz	San Marcos Blvd to Creekside Dr	12304	26.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3360	100.0%	8944	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	3	2	8944	Bent Ave	Grand Ave to San Marcos Blvd	3151	6.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2057.12	23.0%	1093.4	35.0%	0	0.0%
	3	3	8944	Bent Ave	San Marcos Blvd to Creekside Dr	10661	23.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	8318	93.0%	2343	75.0%	0	0.0%
	4	1	3124	Grand Ave	Las Posas Rd to Via Vera Cruz	6758	14.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1008	30.0%	2683.2	30.0%	894.4	10.0%	1028.56	11.5%	624.8	20.0%	518.584	16.6%
	4	2	3124	Grand Ave	Via Vera Cruz to Bent Ave	4192	9.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2057.12	23.0%	1093.4	35.0%	1041.229	33.3%
			46280	Grand Ave	Bent Ave to San Marcos Blvd	1042	2.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1041.229	33.3%
				Grand Ave	San Marcos Blvd to Creekside Dr	2081	4.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2080.584	66.6%
				Linda Vista Dr	Las Posas Rd to Via Vera Cruz	538	1.2%	0	0.0%	0	0.0%	0	0.0%	537.6	16.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
				San Marcos Blvd	Knights Realm to Discovery St	9346	20.2%	780	50.0%	1092	70.0%	840	25.0%	739.2	22.0%	215.04	6.4%	894.4	10.0%	1341.6	15.0%	3130.4	35.0%	312.4	10.0%	0	0.0%
				San Marcos Blvd	Discovery St to Pacific St	9346	20.2%	780	50.0%	1092	70.0%	840	25.0%	739.2	22.0%	215.04	6.4%	894.4	10.0%	1341.6	15.0%	3130.4	35.0%	312.4	10.0%	0	0.0%
				San Marcos Blvd	Pacific St to Las Posas Rd	9346	20.2%	780	50.0%	1092	70.0%	840	25.0%	739.2	22.0%	215.04	6.4%	894.4	10.0%	1341.6	15.0%	3130.4	35.0%	312.4	10.0%	0	0.0%
				San Marcos Blvd	Las Posas Rd to Via Vera Cruz	10034	21.7%	780	50.0%	0		0		3360	100.0%	215.04	6.4%	894.4	10.0%	1341.6	15.0%	3130.4	35.0%	312.4	10.0%	0	0.0%
				San Marcos Blvd	Via Vera Cruz to Bent Ave	15574	33.7%	780	50.0%	0		0		1344	40.0%	168	5.0%	894.4	10.0%	8944	100.0%	3130.4	35.0%	312.4	10.0%	0	0.0%
				San Marcos Blvd	Bent Ave to Grand Ave	13962	30.2%	780	50.0%	0		0		1344	40.0%	168	5.0%	894.4	10.0%	6708	75.0%	3130.4	35.0%	937.2	30.0%	0	0.0%
				San Marcos Blvd	Grand Ave to SR-78 EB Ramps	15004	32.4%	780	50.0%	0		0		1344	40.0%	168	5.0%	894.4	10.0%	6708	75.0%	3130.4	35.0%	937.2	30.0%	1041.229	33.3%
				San Marcos Blvd	SR-78 EB Ramps to SR-78 WB Ramps	11542	24.9%	780	50.0%	0		0		873.6	26.0%	84	2.5%	447.2	5.0%	5813.6	65.0%	1565.2	17.5%	937.2	30.0%	1040.292	33.3%
				San Marcos Blvd	Knoll Rd to Travelers Wy	3566	7.7%	780	50.0%	0	0.0%	0	0.0%	403.2	12.0%	0	0.0%	0	0.0%	1341.6	15.0%	0	0.0%	0	0.0%	1040.292	33.3%
				Creekside Dr	Bent Ave to Grand Ave	6248	13.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3124	100.0%	3124	100.0%
				Bent Ave	Creekside Dr to Discovery St	1788	3.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	894.4	10.0%	893.464	28.6%	0	0.0%
				Discovery St	Via Vera Cruz to Bent Ave	2750	5.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	960.96	28.6%	1788.8	20.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
				Discovery St	Bent Ave to Craven Rd	4538	9.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	960.96	28.6%	1788.8	20.0%	0	0.0%	894.4	10.0%	893.464	28.6%	0	0.0%
				Discovery St	Grand Ave to N City Dr	4618	10.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1788.8	20.0%	0	0.0%	894.4	10.0%	893.464	28.6%	1041.229	33.3%
				Grand Ave	Creekside Dr to Discovery St	1042	2.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1041.229	33.3%
				Las Posas Rd	Descanso Ave to SR-78 WB Ramps	3983	8.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	504	15.0%	1341.6	15.0%	894.4	10.0%	514.28	5.8%	468.6	15.0%	259.292	8.3%
				Las Posas Rd	SR-78 WB Ramps to SR-78 EB Ramps	6758	14.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1008	30.0%	2683.2	30.0%	894.4	10.0%	1028.56	11.5%	624.8	20.0%	518.584	16.6%
				SR-78 WB On-Ramp	Via Las Posas Rd	2776	6.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	504	15.0%	1341.6	15.0%	0	0.0%	514.28	5.8%	156.2	5.0%	259.292	8.3%
				Grand Ave	Pacific St to Las Posas Rd	3224	7.0%	0		468	30.0%	2016	60.0%	739.2	22.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
				SR-78 EB Ramps	Via Via Vera Cruz	5707	12.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1008	30.0%	2683.2	30.0%	0	0.0%	1028.56	11.5%	468.6	15.0%	518.584	16.6%
				Linda Vista Dr	Pacific St to Las Posas Rd	1042	2.3%	0		0	0.0%	504	15.0%	537.6	16.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
				SR-78 EB Off-Ramp	Via San Marcos Blvd	3462	7.5%	0		0		0		470.4	14.0%	84	2.5%	447.2	5.0%	894.4	10.0%	1565.2	17.5%	0	0.0%	0	0.0%
				SR-78 EB On-Ramp	Via San Marcos Blvd	3462	7.5%	0		0		0		470.4	14.0%	84	2.5%	447.2	5.0%	894.4	10.0%	1565.2	17.5%	0	0.0%	0	0.0%
				SR-78 WB On-Ramps	Via San Marcos Blvd	2684	6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2683.2	30.0%	0	0.0%	0	0.0%	0	0.0%
				Knoll Rd	North of San Marcos Blvd	1832	4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	894.4	10.0%	0	0.0%	937.2	30.0%	0	0.0%
				Craven Rd	South of Discovery	961	2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	960.96	28.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
				Discovery St	Craven Rd to Grand Ave	3577	8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1788.8	20.0%	0	0.0%	894.4	10.0%	893.464	28.6%	0	0.0%
				Via Vera Cruz	Creekside to Discovery St	2750	6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	960.96	28.6%	1788.8	20.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Appendix H: Ground to Plan Analysis

Roadway Segment LOS Results – Horizon Year 2050 with Project Conditions

Roadway	Segment	Existing Conditions					Horizon Year 2050 with Project Conditions					Δ in V/C
		Cross-Section	Threshold (LOS E)	ADT	V/C	LOS	Cross-Section	Threshold (LOS E)	ADT	V/C	LOS	
Las Posas Rd	Grand Ave to La Mirada Dr	Major Arterial (5 Lanes – Raised Median)	45,000	16,359	0.364	A	Major Arterial (5 Lanes – Raised Median)	45,000	26,900	0.598	C	0.234
Las Posas Rd	La Mirada Dr to Linda Vista Dr	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	12,985	0.433	B	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	20,300	0.677	D	0.244
Las Posas Rd	Linda Vista Dr to San Marcos Blvd	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	9,557	0.319	A	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	13,000	0.433	B	0.114
Via Vera Cruz	Grand Ave to Linda Vista Dr	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	9,814	0.327	A	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	21,800	0.727	D	0.400
Via Vera Cruz	Linda Vista Dr to San Marcos Blvd	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	10,168	0.339	B	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	19,500	0.650	C	0.311
Via Vera Cruz	San Marcos Blvd to Discovery St	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	6,908	0.230	A	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	21,400	0.713	D	0.483
Bent Ave	Grand Ave to San Marcos Blvd	Collector (2 Lanes – Center Lane)	15,000	7,281	0.485	C	Collector (2 Lanes – Center Lane)	15,000	13,500	0.900	**E**	0.415
Bent Ave	San Marcos Blvd to Creekside Dr	Collector (2 Lanes – Commercial Fronting)	8,000	7,571	0.946	**E**	Collector (2 Lanes – Center Lane)	15,000	24,900	1.660	**F**	0.714
Bent Ave	Creekside Dr to Discovery St	Collector (2 Lanes – No Fronting Property)	10,000	7,571	0.757	D	Collector (2 Lanes – No Fronting Property)	10,000	10,200	1.020	**F**	0.263
Grand Ave	Las Posas Rd to Via Vera Cruz	Major Arterial (4 Lanes)	40,000	23,061	0.577	C	Major Arterial (4 Lanes)	40,000	29,900	0.748	C	0.171
Grand Ave	Via Vera Cruz to Bent Ave	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	12,292	0.410	B	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	18,300	0.610	C	0.200
Grand Ave	Bent Ave to San Marcos Blvd	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	11,914	0.397	B	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	12,500	0.417	B	0.020
Grand Ave	San Marcos Blvd to Creekside Dr	Major Arterial (4 Lanes – Raised Median)	40,000	9,215	0.230	A	Major Arterial (4 Lanes – Raised Median)	40,000	29,300	0.733	C	0.503
Grand Ave	Creekside Dr to Discovery St	Does Not Exist					Major Arterial (4 Lanes – Raised Median)	40,000	20,800	0.520	B	N/A
Linda Vista Dr	Las Posas Rd to Via Vera Cruz	Collector (4 Lanes)	15,000	5,003	0.334	B	Major Arterial (4 Lanes – Raised Median)	40,000	15,200	0.380	B	0.046
Linda Vista Dr	Via Vera Cruz to Grand Ave	Collector (2 Lanes – Commercial Fronting)	8,000	3,972	0.497	C	Collector (2 Lanes – Commercial Fronting)	8,000	8,300	1.038	**F**	0.541
San Marcos Blvd	Knights Realm to Discovery St	Major Arterial (5 Lanes – Raised Median)	45,000	41,351	0.919	**E**	Major Arterial (6 Lanes – Raised Median)	50,000	63,800	1.276	**F**	0.357
San Marcos Blvd	Discovery St to Pacific St	Major Arterial (4 Lanes – Raised Median)	40,000	36,521	0.913	**E**	Multi-Way Boulevard (4 Lanes + 2 Multi-Way Lanes)	48,000	44,000	0.917	**E**	0.004
San Marcos Blvd	Pacific St to Las Posas Rd	Major Arterial (4 Lanes – Raised Median)	40,000	36,875	0.922	**E**	Multi-Way Boulevard (4 Lanes + 2 Multi-Way Lanes)	48,000	44,500	0.927	**E**	0.005
San Marcos Blvd	Las Posas Rd to Via Vera Cruz	Major Arterial (4 Lanes – Raised Median)	40,000	32,141	0.804	D	Multi-Way Boulevard (4 Lanes + 2 Multi-Way Lanes)	48,000	49,700	1.035	**F**	0.231
San Marcos Blvd	Via Vera Cruz to Bent Ave	Major Arterial (4 Lanes – Raised Median)	40,000	36,890	0.922	**E**	Multi-Way Boulevard (4 Lanes + 2 Multi-Way Lanes)	48,000	53,800	1.121	**F**	0.199

Roadway Segment LOS Results – Horizon Year 2050 with Project Conditions

Roadway	Segment	Existing Conditions					Horizon Year 2050 with Project Conditions					Δ in V/C
		Cross-Section	Threshold (LOS E)	ADT	V/C	LOS	Cross-Section	Threshold (LOS E)	ADT	V/C	LOS	
San Marcos Blvd	Bent Ave to Grand Ave	Major Arterial (6 Lanes – Raised Median)	50,000	39,415	0.788	C	Major Arterial (6 Lanes – Raised Median)	50,000	49,000	0.980	**E**	0.192
San Marcos Blvd	Grand Ave to SR-78 EB Ramps	Major Arterial (6 Lanes – Raised Median)	60,000	51,538	0.859	D	Major Arterial (6 Lanes – Raised Median)	60,000	73,700	1.228	**F**	0.369
San Marcos Blvd	SR-78 EB Ramps to SR-78 WB Ramps	Major Arterial (6 Lanes – Raised Median)	60,000	47,476	0.791	C	Major Arterial (6 Lanes – Raised Median)	60,000	68,300	1.138	**F**	0.347
San Marcos Blvd	Knoll Rd / SR-78 WB Off-Ramp to Travelers Wy	Major Arterial (5 Lanes – Raised Median)	45,000	24,363	0.541	B	Major Arterial (6 Lanes – Raised Median)	50,000	38,000	0.760	C	0.219
Creekside Dr	Bent Ave to Grand Ave	Collector (2-Lanes – Multi-Family)	8,000	5,131	0.641	D	Collector (2-Lanes – Multi-Family)	8,000	12,900	1.613	**F**	0.972
Discovery St	Via Vera Cruz to Bent Ave	Secondary Arterial / Collector (4 Lanes – Center Lane)	30,000	16,122	0.537	C	Major Arterial (4 Lanes – Raised Median)	40,000	27,500	0.688	C	0.151
Discovery St	Bent Ave to Craven Rd	Major Arterial (4 Lanes – Raised Median)	40,000	22,544	0.564	C	Major Arterial (4 Lanes – Raised Median)	40,000	20,300	0.508	B	-0.056
Discovery St	Craven Rd to N City Dr	Major Arterial (4 Lanes – Raised Median)	40,000	10,559	0.264	A	Major Arterial (4 Lanes – Raised Median)	40,000	26,900	0.673	C	0.409

Notes:
Bold indicates LOS E or F.
V/C = Volume to Capacity Ratio

Peak Hour Intersection LOS Results – Horizon Year 2050 with Project Conditions

Intersection	Control	Existing Conditions				Horizon Year 2050 with Project Conditions				Δ in Delay AM/PM
		AM		PM		AM		PM		
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
1: Las Posas Road / SR-78 WB Ramps	Signal	40.6	D	22.5	C	53.0	D	36.5	D	12.4 / 14.0
2: Las Posas Road / Grand Avenue	Signal	19.7	B	41.7	D	41.1	D	54.1	D	21.4 / 12.4
3: Via Vera Cruz / SR-78 EB Ramps / Grand Avenue	Signal	59.1	**E**	101.5	**F**	105.6	**F**	150.7	**F**	46.5 / 49.2
4: Las Posas Road / La Mirada Drive	Signal	48.5	D	33.8	C	51.0	D	38.9	D	2.5 / 5.1
5: Las Posas Road / Linda Vista Drive	Signal	25.3	C	26.9	C	32.0	C	41.1	D	6.7 / 14.2
6: Via Vera Cruz / Linda Vista Drive	Signal	17.5	B	22.4	C	23.3	C	43.0	D	5.8 / 20.6
7: Linda Vista Dive / Grand Avenue	SSSC	10.5	B	31.2	D	35.3	**E**	> 180.0	**F**	24.8 / 190.9
8: Bent Avenue / Grand Avenue	Signal	8.9	A	16.1	B	12.7	B	39.8	D	3.8 / 23.7
9: Discovery Street / San Marcos Boulevard	Signal	44.1	D	22.9	C	47.8	D	47.4	D	3.7 / 24.5
10: Pacific Street / San Marcos Boulevard	Signal	19.9	B	12.8	B	24.3	C	47.6	D	4.4 / 34.8
11: Las Posas Road / San Marcos Boulevard	Signal	20.1	C	42.0	D	28.6	C	53.9	D	8.5 / 11.9
12: Via Vera Cruz / San Marcos Boulevard	Signal	51.0	D	55.1	**E**	49.3	D	93.6	**F**	-1.7 / 38.5
13: Bent Avenue / San Marcos Boulevard	Signal	84.7	**F**	29.5	C	36.5	D	85.6	**F**	-48.2 / 56.1
14: Grand Avenue / San Marcos Boulevard	Signal	17.0	B	36.3	D	24.9	C	46.0	D	7.9 / 9.7
15: SR-78 EB Ramps / San Marcos Boulevard	Signal	9.7	A	10.6	B	12.3	B	13.9	B	2.6 / 3.3

Peak Hour Intersection LOS Results – Horizon Year 2050 with Project Conditions

Intersection	Control	Existing Conditions				Horizon Year 2050 with Project Conditions				Δ in Delay AM/PM
		AM		PM		AM		PM		
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
16: SR-78 WB Ramps / San Marcos Boulevard	Signal	24.4	C	25.5	C	29.6	C	33.1	C	5.2 / 7.6
17: Grand Avenue / Creekside Drive	Signal	10.0	A	12.0	B	16.0	B	51.2	D	6.0 / 39.2
18: Via Vera Cruz / Discovery St	Signal	21.0	C	30.7	C	26.1	C	53.0	D	5.1 / 22.3
19: Bent Ave / Discovery St	Signal	12.5	B	25.1	C	14.6	B	51.3	D	2.1 / 26.2
20: Craven Rd / Discovery St	Signal	19.2	B	22.8	C	20.5	C	41.5	D	1.3 / 18.7
21: Exploration Dr / Discovery St	Signal	10.0	B	10.3	B	25.6	C	31.6	C	15.6 / 21.3

Note:

Bold indicates LOS E or F.

SSSC = Side-Street Stop Controlled. For SSSC intersections, the delay shown is the worst delay experienced by any of the movements.

Appendix I: LOS Analysis Worksheets – Horizon Year 2050 with Project Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	620	10	280	390	800	0	0	1250	350
Future Volume (veh/h)	0	0	0	620	10	280	390	800	0	0	1250	350
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		0.99	1.00		1.00	1.00		0.97
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1833	1833
Adj Flow Rate, veh/h				448	298	232	411	842	0	0	1316	305
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				522	284	221	388	3142	0	0	1459	338
Arrive On Green				0.29	0.29	0.29	0.44	1.00	0.00	0.00	0.36	0.36
Sat Flow, veh/h				1781	968	754	1781	5274	0	0	4201	934
Grp Volume(v), veh/h				448	0	530	411	842	0	0	1087	534
Grp Sat Flow(s),veh/h/ln				1781	0	1722	1781	1702	0	0	1668	1635
Q Serve(g_s), s				30.9	0.0	38.1	28.3	0.0	0.0	0.0	40.1	40.2
Cycle Q Clear(g_c), s				30.9	0.0	38.1	28.3	0.0	0.0	0.0	40.1	40.2
Prop In Lane				1.00		0.44	1.00		0.00	0.00		0.57
Lane Grp Cap(c), veh/h				522	0	505	388	3142	0	0	1206	591
V/C Ratio(X)				0.86	0.00	1.05	1.06	0.27	0.00	0.00	0.90	0.90
Avail Cap(c_a), veh/h				522	0	505	388	3142	0	0	1206	591
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.88	0.88	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				43.4	0.0	46.0	36.7	0.0	0.0	0.0	39.3	39.3
Incr Delay (d2), s/veh				12.8	0.0	53.9	59.6	0.2	0.0	0.0	11.0	19.5
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				14.7	0.0	22.9	15.8	0.1	0.0	0.0	17.7	18.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				56.2	0.0	99.9	96.3	0.2	0.0	0.0	50.3	58.9
LnGrp LOS				E		F	F	A			D	E
Approach Vol, veh/h					978			1253			1621	
Approach Delay, s/veh					79.9			31.7			53.1	
Approach LOS					E			C			D	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	86.8		33.0	53.8		43.2						
Change Period (Y+Rc), s	6.8		4.7	6.8		5.1						
Max Green Setting (Gmax), s	80.0		28.3	47.0		38.1						
Max Q Clear Time (g_c+I1), s	2.0		30.3	42.2		40.1						
Green Ext Time (p_c), s	4.1		0.0	3.0		0.0						

Intersection Summary	
HCM 7th Control Delay, s/veh	53.0
HCM 7th LOS	D

Notes
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	180	40	200	230	670	60	340	150	420	820	630
Future Volume (veh/h)	180	180	40	200	230	670	60	340	150	420	820	630
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
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	1852	1852	1870	1870	1870	1870	1852	1852	1870	1870	1852
Adj Flow Rate, veh/h	186	186	37	206	237	496	62	351	140	433	845	519
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	322	63	212	295	1236	86	1024	383	989	1858	915
Arrive On Green	0.07	0.11	0.11	0.20	0.26	0.26	0.05	0.28	0.28	0.09	0.17	0.17
Sat Flow, veh/h	3456	2929	570	1781	1870	2774	1781	3597	1345	3456	3554	1536
Grp Volume(v), veh/h	186	110	113	206	237	496	62	327	164	433	845	519
Grp Sat Flow(s),veh/h/ln	1728	1759	1740	1781	1870	1387	1781	1685	1572	1728	1777	1536
Q Serve(g_s), s	6.9	7.7	8.0	14.9	15.4	3.5	4.5	10.0	10.8	15.4	27.8	34.8
Cycle Q Clear(g_c), s	6.9	7.7	8.0	14.9	15.4	3.5	4.5	10.0	10.8	15.4	27.8	34.8
Prop In Lane	1.00		0.33	1.00		1.00	1.00		0.86	1.00		1.00
Lane Grp Cap(c), veh/h	247	193	191	212	295	1236	86	959	447	989	1858	915
V/C Ratio(X)	0.75	0.57	0.59	0.97	0.80	0.40	0.72	0.34	0.37	0.44	0.45	0.57
Avail Cap(c_a), veh/h	569	460	455	212	404	1398	162	959	447	989	1858	915
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.59	0.59	0.59	0.97	0.97	0.97	0.18	0.18	0.18
Uniform Delay (d), s/veh	59.2	54.9	55.1	51.8	46.0	8.6	61.0	36.8	37.1	49.0	37.2	30.8
Incr Delay (d2), s/veh	4.6	2.6	2.9	39.3	4.9	0.1	10.6	0.9	2.2	0.1	0.1	0.5
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	8.1	3.5	3.6	8.2	6.7	2.2	2.2	4.2	4.4	7.1	13.2	14.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	63.8	57.6	58.0	91.2	50.9	8.7	71.6	37.8	39.4	49.0	37.3	31.3
LnGrp LOS	E	E	E	F	D	A	E	D	D	D	D	C
Approach Vol, veh/h		409			939			553			1797	
Approach Delay, s/veh		60.5			37.4			42.0			38.4	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	43.5	22.0	20.8	12.8	74.5	15.8	27.0
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	7.5	37.0	15.5	34.0	11.8	42.7	21.4	28.1
Max Q Clear Time (g_c+I1), s	17.4	12.8	16.9	10.0	6.5	36.8	8.9	17.4
Green Ext Time (p_c), s	0.0	3.0	0.0	1.1	0.0	3.6	0.4	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	41.1
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	210	170	80	430	70	170	240	20	340	540	500
Future Volume (veh/h)	370	210	170	80	430	70	170	240	20	340	540	500
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1833	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	389	221	143	84	453	59	179	253	17	358	568	477
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	399	594	450	143	606	78	218	229	194	825	435	365
Arrive On Green	0.12	0.17	0.17	0.08	0.13	0.13	0.12	0.12	0.12	0.46	0.46	0.46
Sat Flow, veh/h	3456	3554	1553	1781	4583	586	1781	1870	1585	1781	939	789
Grp Volume(v), veh/h	389	221	143	84	334	178	179	253	17	358	0	1045
Grp Sat Flow(s),veh/h/ln	1728	1777	1553	1781	1702	1765	1781	1870	1585	1781	0	1728
Q Serve(g_s), s	14.6	7.2	9.4	5.9	12.3	12.6	12.7	15.9	1.2	17.6	0.0	60.2
Cycle Q Clear(g_c), s	14.6	7.2	9.4	5.9	12.3	12.6	12.7	15.9	1.2	17.6	0.0	60.2
Prop In Lane	1.00		1.00	1.00		0.33	1.00		1.00	1.00		0.46
Lane Grp Cap(c), veh/h	399	594	450	143	450	233	218	229	194	825	0	800
V/C Ratio(X)	0.98	0.37	0.32	0.59	0.74	0.76	0.82	1.11	0.09	0.43	0.00	1.31
Avail Cap(c_a), veh/h	399	594	450	151	450	233	218	229	194	825	0	800
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)	0.57	0.57	0.57	1.00	1.00	1.00	0.89	0.89	0.89	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.3	48.1	36.1	57.7	54.3	54.4	55.7	57.0	50.6	23.5	0.0	34.9
Incr Delay (d2), s/veh	27.8	1.0	1.1	3.2	10.6	20.6	18.5	87.5	0.1	0.1	0.0	146.6
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	7.8	3.2	4.3	2.7	5.8	6.8	6.8	12.9	0.5	6.9	0.0	55.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	85.1	49.1	37.2	60.9	64.8	75.0	74.2	144.6	50.7	23.6	0.0	181.5
LnGrp LOS	F	D	D	E	E	E	E	F	D	C		F
Approach Vol, veh/h		753			596			449			1403	
Approach Delay, s/veh		65.5			67.3			112.9			141.2	
Approach LOS		E			E			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.2	28.5		65.3	19.7	24.0		21.0				
Change Period (Y+Rc), s	4.7	6.8		5.1	4.7	6.8		5.1				
Max Green Setting (Gmax), s	11.0	21.2		60.2	15.0	17.2		15.9				
Max Q Clear Time (g_c+I1), s	7.9	11.4		62.2	16.6	14.6		17.9				
Green Ext Time (p_c), s	0.0	0.7		0.0	0.0	0.5		0.0				

Intersection Summary			
HCM 7th Control Delay, s/veh		105.6	
HCM 7th LOS		F	

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	50	90	180	70	230	70	320	190	240	600	180
Future Volume (veh/h)	70	50	90	180	70	230	70	320	190	240	600	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
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	1854	1870	1854	1854	1870	1870	1854	1870	1854	1854
Adj Flow Rate, veh/h	72	52	74	186	72	213	72	330	157	247	619	167
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	310	259	163	84	249	421	1349	594	275	823	222
Arrive On Green	0.05	0.17	0.17	0.09	0.20	0.20	0.47	0.76	0.76	0.15	0.30	0.30
Sat Flow, veh/h	1781	1870	1560	1781	412	1218	1781	3554	1565	1781	2728	734
Grp Volume(v), veh/h	72	52	74	186	0	285	72	330	157	247	399	387
Grp Sat Flow(s),veh/h/ln	1781	1870	1560	1781	0	1630	1781	1777	1565	1781	1761	1701
Q Serve(g_s), s	4.8	2.9	2.9	11.0	0.0	20.2	2.8	3.3	3.6	16.3	24.6	24.7
Cycle Q Clear(g_c), s	4.8	2.9	2.9	11.0	0.0	20.2	2.8	3.3	3.6	16.3	24.6	24.7
Prop In Lane	1.00		1.00	1.00		0.75	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	94	310	259	163	0	333	421	1349	594	275	531	513
V/C Ratio(X)	0.76	0.17	0.29	1.14	0.00	0.85	0.17	0.24	0.26	0.90	0.75	0.75
Avail Cap(c_a), veh/h	208	577	481	163	0	462	421	1349	594	319	531	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.95	0.95	0.95	0.77	0.77	0.77
Uniform Delay (d), s/veh	56.1	42.9	15.3	54.5	0.0	46.0	24.9	9.4	9.4	49.8	37.8	37.9
Incr Delay (d2), s/veh	11.9	0.3	0.6	112.7	0.0	10.9	0.2	0.4	1.0	19.9	7.4	7.7
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	2.4	1.3	2.0	10.1	0.0	9.2	1.2	1.2	1.3	8.6	11.4	11.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	67.9	43.2	15.9	167.2	0.0	56.9	25.0	9.8	10.4	69.7	45.2	45.6
LnGrp LOS	E	D	B	F		E	C	A	B	E	D	D
Approach Vol, veh/h		198			471			559			1033	
Approach Delay, s/veh		42.0			100.5			11.9			51.2	
Approach LOS		D			F			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	52.0	17.0	25.9	34.9	42.2	12.4	30.5
Change Period (Y+Rc), s	6.5	* 6.5	6.0	6.0	6.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	21.5	* 26	11.0	37.0	11.3	36.2	14.0	34.0
Max Q Clear Time (g_c+I1), s	8.3	5.6	13.0	4.9	4.8	26.7	6.8	22.2
Green Ext Time (p_c), s	0.2	2.4	0.0	0.5	0.1	3.3	0.1	1.4

Intersection Summary	
HCM 7th Control Delay, s/veh	51.0
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	280	80	80	250	150	60	320	20	70	400	370
Future Volume (veh/h)	110	280	80	80	250	150	60	320	20	70	400	370
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
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	1854	1870	1854	1854	1870	1854	1854	1870	1854	1854
Adj Flow Rate, veh/h	116	295	67	84	263	142	63	337	19	74	421	350
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	586	258	125	347	182	81	1706	96	94	929	767
Arrive On Green	0.08	0.16	0.16	0.07	0.16	0.16	0.05	0.50	0.50	0.09	0.85	0.85
Sat Flow, veh/h	1781	3554	1568	1781	2232	1167	1781	3387	190	1781	1819	1502
Grp Volume(v), veh/h	116	295	67	84	206	199	63	175	181	74	408	363
Grp Sat Flow(s),veh/h/ln	1781	1777	1568	1781	1761	1638	1781	1761	1816	1781	1761	1560
Q Serve(g_s), s	7.7	9.1	4.5	5.5	13.4	14.0	4.2	6.6	6.6	4.9	6.6	6.7
Cycle Q Clear(g_c), s	7.7	9.1	4.5	5.5	13.4	14.0	4.2	6.6	6.6	4.9	6.6	6.7
Prop In Lane	1.00		1.00	1.00		0.71	1.00		0.10	1.00		0.96
Lane Grp Cap(c), veh/h	142	586	258	125	274	255	81	887	915	94	900	797
V/C Ratio(X)	0.82	0.50	0.26	0.67	0.75	0.78	0.78	0.20	0.20	0.79	0.45	0.46
Avail Cap(c_a), veh/h	193	1007	444	178	484	450	135	887	915	141	900	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	0.83	0.83	0.83	0.78	0.78	0.78
Uniform Delay (d), s/veh	54.4	45.6	43.7	54.4	48.4	48.7	56.7	16.4	16.4	54.1	4.8	4.8
Incr Delay (d2), s/veh	17.5	0.7	0.5	5.6	3.8	4.8	12.4	0.4	0.4	12.5	1.3	1.5
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	4.1	4.0	1.8	2.7	6.1	6.0	2.1	2.7	2.8	2.4	2.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	71.9	46.3	44.2	60.0	52.3	53.5	69.0	16.8	16.8	66.6	6.1	6.3
LnGrp LOS	E	D	D	E	D	D	E	B	B	E	A	A
Approach Vol, veh/h		478			489			419			845	
Approach Delay, s/veh		52.2			54.1			24.7			11.5	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	66.9	14.5	25.8	12.0	67.8	15.6	24.7
Change Period (Y+Rc), s	6.5	6.5	6.0	6.0	6.5	6.5	6.0	6.0
Max Green Setting (Gmax), s	6.5	39.5	12.0	34.0	9.1	39.9	13.0	33.0
Max Q Clear Time (g_c+I1), s	6.3	8.6	7.5	11.1	6.2	8.7	9.7	16.0
Green Ext Time (p_c), s	0.0	2.0	0.1	2.0	0.0	5.3	0.1	2.1

Intersection Summary	
HCM 7th Control Delay, s/veh	32.0
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	200	70	40	200	30	80	290	100	50	390	210
Future Volume (veh/h)	150	200	70	40	200	30	80	290	100	50	390	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	158	211	67	42	211	29	84	305	94	53	411	199
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	289	92	90	461	63	113	717	217	105	612	293
Arrive On Green	0.12	0.21	0.21	0.05	0.15	0.15	0.06	0.27	0.27	0.06	0.26	0.26
Sat Flow, veh/h	1781	1360	432	1781	3144	426	1781	2686	813	1781	2330	1115
Grp Volume(v), veh/h	158	0	278	42	118	122	84	200	199	53	312	298
Grp Sat Flow(s),veh/h/ln	1781	0	1791	1781	1777	1794	1781	1777	1722	1781	1777	1668
Q Serve(g_s), s	5.0	0.0	8.5	1.3	3.6	3.6	2.7	5.4	5.6	1.7	9.2	9.4
Cycle Q Clear(g_c), s	5.0	0.0	8.5	1.3	3.6	3.6	2.7	5.4	5.6	1.7	9.2	9.4
Prop In Lane	1.00		0.24	1.00		0.24	1.00		0.47	1.00		0.67
Lane Grp Cap(c), veh/h	208	0	381	90	261	263	113	475	460	105	467	438
V/C Ratio(X)	0.76	0.00	0.73	0.46	0.45	0.46	0.74	0.42	0.43	0.50	0.67	0.68
Avail Cap(c_a), veh/h	761	0	1348	335	911	920	457	1610	1561	365	1519	1426
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	0.00	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	25.0	0.0	21.5	27.0	22.8	22.9	26.9	17.7	17.8	26.7	19.3	19.4
Incr Delay (d2), s/veh	5.6	0.0	2.7	3.7	1.2	1.3	9.1	0.6	0.6	3.7	1.7	1.9
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	2.3	0.0	3.5	0.6	1.4	1.5	1.3	2.0	2.0	0.8	3.5	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.7	0.0	24.2	30.7	24.0	24.1	36.0	18.3	18.4	30.3	21.0	21.2
LnGrp LOS	C		C	C	C	C	D	B	B	C	C	C
Approach Vol, veh/h		436			282			483			663	
Approach Delay, s/veh		26.5			25.1			21.4			21.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	21.6	9.0	18.4	9.7	21.4	12.8	14.6
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	12.6	53.0	11.0	44.0	15.0	50.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	3.7	7.6	3.3	10.5	4.7	11.4	7.0	5.6
Green Ext Time (p_c), s	0.0	2.4	0.0	1.7	0.1	3.9	0.4	1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	23.3
HCM 7th LOS	C

Intersection	
Int Delay, s/veh	5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	490	120	160	570	60	110
Future Vol, veh/h	490	120	160	570	60	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	65	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	516	126	168	600	63	116

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	642	0	1216	321
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	637	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	938	-	174	675
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	489	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	938	-	142	675
Mov Cap-2 Maneuver	-	-	-	-	142	-
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	489	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.12	35.3
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	291	-	-	938	-
HCM Lane V/C Ratio	0.615	-	-	0.179	-
HCM Ctrl Dly (s/v)	35.3	-	-	9.7	-
HCM Lane LOS	E	-	-	A	-
HCM 95th %tile Q(veh)	3.8	-	-	0.7	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	260	340	50	400	330	50
Future Volume (veh/h)	260	340	50	400	330	50
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
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
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	274	286	53	421	347	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	595	530	115	1831	436	388
Arrive On Green	0.33	0.33	0.06	0.52	0.24	0.24
Sat Flow, veh/h	1870	1583	1781	3647	1781	1585
Grp Volume(v), veh/h	274	286	53	421	347	42
Grp Sat Flow(s),veh/h/ln	1777	1583	1781	1777	1781	1585
Q Serve(g_s), s	5.4	6.6	1.3	2.9	8.2	0.9
Cycle Q Clear(g_c), s	5.4	6.6	1.3	2.9	8.2	0.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	595	530	115	1831	436	388
V/C Ratio(X)	0.46	0.54	0.46	0.23	0.80	0.11
Avail Cap(c_a), veh/h	1154	1028	270	3258	713	635
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	11.8	12.1	20.3	6.0	15.9	13.2
Incr Delay (d2), s/veh	0.6	0.9	2.9	0.1	3.4	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.8	0.5	0.6	3.1	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	12.3	13.0	23.1	6.1	19.3	13.3
LnGrp LOS	B	B	C	A	B	B
Approach Vol, veh/h	560			474	389	
Approach Delay, s/veh	12.7			8.0	18.7	
Approach LOS	B			A	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	8.1	20.9				29.0	16.0
Change Period (Y+Rc), s	5.2	5.8				5.8	5.0
Max Green Setting (Gmax), s	6.8	29.2				41.2	18.0
Max Q Clear Time (g_c+I1), s	3.3	8.6				4.9	10.2
Green Ext Time (p_c), s	0.0	3.1				2.7	0.8

Intersection Summary		
HCM 7th Control Delay, s/veh		12.7
HCM 7th LOS		B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	910	430	100	1180	390	490	80	170	260	60	150
Future Volume (veh/h)	150	910	430	100	1180	390	490	80	170	260	60	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		0.99	1.00		0.93
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	1850	1870	1870	1850	1870	1870	1850	1870	1870	1870
Adj Flow Rate, veh/h	156	948	358	104	1229	325	510	83	142	271	63	140
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	1078	462	428	1695	714	575	386	319	265	57	126
Arrive On Green	0.07	0.30	0.30	0.48	0.95	0.95	0.17	0.21	0.21	0.08	0.12	0.12
Sat Flow, veh/h	3456	3554	1523	1781	3554	1497	3456	1870	1547	3456	488	1084
Grp Volume(v), veh/h	156	948	358	104	1229	325	510	83	142	271	0	203
Grp Sat Flow(s),veh/h/ln	1728	1777	1523	1781	1777	1497	1728	1870	1547	1728	0	1572
Q Serve(g_s), s	6.6	38.0	24.6	5.2	7.7	1.4	21.6	5.5	12.0	11.5	0.0	17.5
Cycle Q Clear(g_c), s	6.6	38.0	24.6	5.2	7.7	1.4	21.6	5.5	12.0	11.5	0.0	17.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.69
Lane Grp Cap(c), veh/h	230	1078	462	428	1695	714	575	386	319	265	0	183
V/C Ratio(X)	0.68	0.88	0.78	0.24	0.73	0.46	0.89	0.21	0.44	1.02	0.00	1.11
Avail Cap(c_a), veh/h	311	1078	462	428	1695	714	737	474	392	265	0	183
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.44	0.44	0.44	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	68.4	49.6	27.9	30.9	2.0	0.5	61.1	49.4	52.0	69.3	0.0	66.3
Incr Delay (d2), s/veh	3.5	10.2	12.0	0.1	1.2	0.9	10.5	0.3	1.0	61.3	0.0	98.0
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	3.0	18.0	10.7	2.1	1.3	0.7	10.4	2.7	4.8	7.4	0.0	12.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	72.0	59.9	39.9	31.1	3.2	1.4	71.6	49.7	53.0	130.6	0.0	164.2
LnGrp LOS	E	E	D	C	A	A	E	D	D	F		F
Approach Vol, veh/h		1462			1658			735			474	
Approach Delay, s/veh		56.3			4.6			65.6			145.0	
Approach LOS		E			A			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	78.6	31.0	24.0	43.0	52.0	18.0	37.0
Change Period (Y+Rc), s	6.5	7.0	6.0	6.5	7.0	* 6.5	6.5	6.0
Max Green Setting (Gmax), s	13.5	61.0	32.0	17.5	29.5	* 46	11.5	38.0
Max Q Clear Time (g_c+I1), s	8.6	9.7	23.6	19.5	7.2	40.0	13.5	14.0
Green Ext Time (p_c), s	0.2	13.4	1.3	0.0	0.2	3.3	0.0	0.9

Intersection Summary	
HCM 7th Control Delay, s/veh	47.8
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	1090	70	60	1460	60	50	10	70	70	10	160
Future Volume (veh/h)	180	1090	70	60	1460	60	50	10	70	70	10	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.99
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	1859	1859	1870	1859	1859	1870	1870	1870	1870	1870	1859
Adj Flow Rate, veh/h	188	1135	58	63	1521	51	52	10	66	73	10	134
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	196	1283	562	485	1855	819	57	11	72	170	23	168
Arrive On Green	0.22	0.73	0.73	0.54	1.00	1.00	0.08	0.08	0.08	0.11	0.11	0.11
Sat Flow, veh/h	1781	3531	1547	1781	3531	1559	683	131	866	1576	216	1558
Grp Volume(v), veh/h	188	1135	58	63	1521	51	128	0	0	83	0	134
Grp Sat Flow(s),veh/h/ln	1781	1766	1547	1781	1766	1559	1680	0	0	1792	0	1558
Q Serve(g_s), s	15.7	36.9	1.7	2.6	0.0	0.0	11.3	0.0	0.0	6.5	0.0	12.6
Cycle Q Clear(g_c), s	15.7	36.9	1.7	2.6	0.0	0.0	11.3	0.0	0.0	6.5	0.0	12.6
Prop In Lane	1.00		1.00	1.00		1.00	0.41		0.52	0.88		1.00
Lane Grp Cap(c), veh/h	196	1283	562	485	1855	819	140	0	0	193	0	168
V/C Ratio(X)	0.96	0.88	0.10	0.13	0.82	0.06	0.91	0.00	0.00	0.43	0.00	0.80
Avail Cap(c_a), veh/h	196	1283	562	485	1855	819	140	0	0	322	0	280
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.53	0.53	0.53	0.74	0.74	0.74	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.2	18.1	13.3	25.5	0.0	0.0	68.2	0.0	0.0	62.6	0.0	65.3
Incr Delay (d2), s/veh	36.2	5.2	0.2	0.1	3.1	0.1	51.0	0.0	0.0	1.5	0.0	8.3
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	8.1	7.7	0.6	1.1	0.8	0.0	6.9	0.0	0.0	3.0	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	94.3	23.3	13.5	25.6	3.1	0.1	119.2	0.0	0.0	64.1	0.0	73.6
LnGrp LOS	F	C	B	C	A	A	F			E		E
Approach Vol, veh/h		1381			1635			128			217	
Approach Delay, s/veh		32.5			3.9			119.2			70.0	
Approach LOS		C			A			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.3	61.0		22.7	23.0	85.3		19.0				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	10.8	54.5		27.0	16.5	68.0		12.5				
Max Q Clear Time (g_c+I1), s	4.6	38.9		14.6	17.7	2.0		13.3				
Green Ext Time (p_c), s	0.1	6.9		0.6	0.0	17.2		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	24.3
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	930	60	100	1200	120	80	70	110	170	90	300
Future Volume (veh/h)	240	930	60	100	1200	120	80	70	110	170	90	300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
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	1859	1859	1870	1870	1859	1870	1870	1859	1870	1870	1859
Adj Flow Rate, veh/h	245	949	49	102	1224	98	82	71	90	173	92	280
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	266	2129	947	124	1859	822	205	369	310	251	369	544
Arrive On Green	0.30	1.00	1.00	0.07	0.52	0.52	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	3531	1571	1781	3554	1571	1006	1870	1570	1222	1870	1563
Grp Volume(v), veh/h	245	949	49	102	1224	98	82	71	90	173	92	280
Grp Sat Flow(s),veh/h/ln	1781	1766	1571	1781	1777	1571	1006	1870	1570	1222	1870	1563
Q Serve(g_s), s	20.0	0.0	0.0	8.5	37.6	4.8	11.2	4.7	7.3	20.6	6.2	21.4
Cycle Q Clear(g_c), s	20.0	0.0	0.0	8.5	37.6	4.8	17.5	4.7	7.3	25.4	6.2	21.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	266	2129	947	124	1859	822	205	369	310	251	369	544
V/C Ratio(X)	0.92	0.45	0.05	0.82	0.66	0.12	0.40	0.19	0.29	0.69	0.25	0.51
Avail Cap(c_a), veh/h	362	2129	947	196	1859	822	254	461	387	315	468	626
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	0.68	0.18	0.18	0.18	1.00	1.00	1.00	0.88	0.88	0.88
Uniform Delay (d), s/veh	51.8	0.0	0.0	68.9	26.0	18.2	58.2	50.2	51.2	60.8	50.8	39.0
Incr Delay (d2), s/veh	17.7	0.5	0.1	2.9	0.3	0.1	1.3	0.3	0.5	4.0	0.3	0.7
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	8.8	0.1	0.0	3.9	15.3	1.7	3.0	2.3	3.0	6.6	2.9	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	69.5	0.5	0.1	71.8	26.3	18.2	59.4	50.5	51.7	64.8	51.1	39.7
LnGrp LOS	E	A	A	E	C	B	E	D	D	E	D	D
Approach Vol, veh/h		1243			1424			243			545	
Approach Delay, s/veh		14.0			29.0			54.0			49.6	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.9	97.0		36.1	28.9	85.0		36.1				
Change Period (Y+Rc), s	6.5	6.5		* 6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	10.5	77.0		* 38	30.5	63.0		37.0				
Max Q Clear Time (g_c+I1), s	10.5	2.0		27.4	22.0	39.6		19.5				
Green Ext Time (p_c), s	0.1	7.8		1.5	0.4	9.3		0.9				

Intersection Summary	
HCM 7th Control Delay, s/veh	28.6
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	830	240	150	1140	160	180	280	230	120	230	90
Future Volume (veh/h)	120	830	240	150	1140	160	180	280	230	120	230	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.99
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	1857	1857	1870	1857	1857	1870	1857	1857	1870	1857	1857
Adj Flow Rate, veh/h	126	874	202	158	1200	134	189	295	194	126	242	86
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	318	1657	738	181	1387	609	184	723	317	173	268	95
Arrive On Green	0.18	0.47	0.47	0.10	0.39	0.39	0.05	0.20	0.20	0.05	0.21	0.21
Sat Flow, veh/h	1781	3528	1570	1781	3528	1549	3456	3528	1547	3456	1306	464
Grp Volume(v), veh/h	126	874	202	158	1200	134	189	295	194	126	0	328
Grp Sat Flow(s),veh/h/ln	1781	1764	1570	1781	1764	1549	1728	1764	1547	1728	0	1770
Q Serve(g_s), s	9.4	26.2	11.7	13.1	46.9	6.7	8.0	10.9	17.1	5.4	0.0	27.1
Cycle Q Clear(g_c), s	9.4	26.2	11.7	13.1	46.9	6.7	8.0	10.9	17.1	5.4	0.0	27.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	318	1657	738	181	1387	609	184	723	317	173	0	363
V/C Ratio(X)	0.40	0.53	0.27	0.87	0.86	0.22	1.03	0.41	0.61	0.73	0.00	0.90
Avail Cap(c_a), veh/h	318	1657	738	253	1387	609	184	800	351	311	0	472
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)	0.25	0.25	0.25	0.21	0.21	0.21	0.94	0.94	0.94	0.72	0.00	0.72
Uniform Delay (d), s/veh	54.5	28.0	24.2	66.4	41.8	18.1	71.0	51.7	54.2	70.2	0.0	58.2
Incr Delay (d2), s/veh	0.2	0.3	0.2	5.3	1.7	0.2	71.1	0.3	2.5	4.2	0.0	13.4
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	4.2	10.8	4.4	6.2	20.3	3.2	5.3	4.8	6.8	2.5	0.0	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	54.7	28.3	24.4	71.7	43.5	18.3	142.1	52.1	56.7	74.4	0.0	71.6
LnGrp LOS	D	C	C	E	D	B	F	D	E	E		E
Approach Vol, veh/h		1202			1492			678			454	
Approach Delay, s/veh		30.4			44.2			78.5			72.4	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.8	77.0	14.0	37.3	33.2	65.5	14.0	37.2
Change Period (Y+Rc), s	6.5	6.5	6.0	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	21.3	55.2	8.0	40.0	17.5	59.0	13.5	34.0
Max Q Clear Time (g_c+I1), s	15.1	28.2	10.0	29.1	11.4	48.9	7.4	19.1
Green Ext Time (p_c), s	0.2	6.9	0.0	1.3	0.1	5.8	0.2	2.1

Intersection Summary	
HCM 7th Control Delay, s/veh	49.3
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	870	200	230	1090	120	250	180	430	110	160	80
Future Volume (veh/h)	80	870	200	230	1090	120	250	180	430	110	160	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		1.00	1.00		0.97
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	1857	1857	1870	1870	1857	1870	1870	1857	1870	1857	1857
Adj Flow Rate, veh/h	84	916	169	242	1147	101	263	189	362	116	168	76
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	1082	479	505	1879	809	253	311	707	125	199	90
Arrive On Green	0.06	0.31	0.31	0.57	1.00	1.00	0.07	0.17	0.17	0.07	0.17	0.17
Sat Flow, veh/h	1781	3528	1563	1781	3554	1529	3456	1870	1568	1781	1199	543
Grp Volume(v), veh/h	84	916	169	242	1147	101	263	189	362	116	0	244
Grp Sat Flow(s),veh/h/ln	1781	1764	1563	1781	1777	1529	1728	1870	1568	1781	0	1742
Q Serve(g_s), s	7.0	36.5	9.8	12.1	0.0	0.0	11.0	14.1	5.1	9.7	0.0	20.4
Cycle Q Clear(g_c), s	7.0	36.5	9.8	12.1	0.0	0.0	11.0	14.1	5.1	9.7	0.0	20.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	104	1082	479	505	1879	809	253	311	707	125	0	290
V/C Ratio(X)	0.81	0.85	0.35	0.48	0.61	0.12	1.04	0.61	0.51	0.93	0.00	0.84
Avail Cap(c_a), veh/h	110	1082	479	505	1879	809	253	511	875	125	0	482
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.42	0.42	0.42	0.82	0.82	0.82	0.09	0.09	0.09	0.98	0.00	0.98
Uniform Delay (d), s/veh	69.8	48.7	24.5	25.9	0.0	0.0	69.5	58.0	13.0	69.4	0.0	60.6
Incr Delay (d2), s/veh	16.4	3.7	0.9	0.6	1.2	0.3	27.8	0.2	0.1	58.6	0.0	6.7
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	3.6	16.3	3.8	4.3	0.3	0.1	5.9	6.7	5.4	6.5	0.0	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	86.2	52.4	25.4	26.4	1.2	0.3	97.3	58.2	13.0	128.0	0.0	67.3
LnGrp LOS	F	D	C	C	A	A	F	E	B	F		E
Approach Vol, veh/h		1169			1490			814			360	
Approach Delay, s/veh		50.9			5.3			50.7			86.9	
Approach LOS		D			A			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	49.1	52.0	17.0	31.9	15.2	85.8	17.0	31.9
Change Period (Y+Rc), s	6.5	6.0	6.0	* 7	6.5	* 6.5	6.5	7.0
Max Green Setting (Gmax), s	26.5	46.0	11.0	* 42	9.3	* 63	10.5	41.0
Max Q Clear Time (g_c+I1), s	14.1	38.5	13.0	22.4	9.0	2.0	11.7	16.1
Green Ext Time (p_c), s	0.5	3.8	0.0	1.3	0.0	11.2	0.0	2.4

Intersection Summary	
HCM 7th Control Delay, s/veh	36.5
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	1020	230	250	1340	300	150	120	200	160	80	40
Future Volume (veh/h)	80	1020	230	250	1340	300	150	120	200	160	80	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
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	1857	1870	1870	1857	1870	1870	1857	1870	1870	1857
Adj Flow Rate, veh/h	84	1074	194	263	1411	253	158	126	169	168	84	34
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	2890	983	313	3040	1021	230	183	296	214	175	144
Arrive On Green	0.12	1.00	1.00	0.09	0.60	0.60	0.07	0.10	0.10	0.06	0.09	0.09
Sat Flow, veh/h	1781	5106	1551	3456	5106	1551	3456	1870	1569	3456	1870	1543
Grp Volume(v), veh/h	84	1074	194	263	1411	253	158	126	169	168	84	34
Grp Sat Flow(s),veh/h/ln	1781	1702	1551	1728	1702	1551	1728	1870	1569	1728	1870	1543
Q Serve(g_s), s	6.9	0.0	0.0	11.2	23.2	3.1	6.7	9.8	11.1	7.2	6.4	3.1
Cycle Q Clear(g_c), s	6.9	0.0	0.0	11.2	23.2	3.1	6.7	9.8	11.1	7.2	6.4	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	103	2890	983	313	3040	1021	230	183	296	214	175	144
V/C Ratio(X)	0.82	0.37	0.20	0.84	0.46	0.25	0.69	0.69	0.57	0.78	0.48	0.24
Avail Cap(c_a), veh/h	131	2890	983	403	3040	1021	230	474	540	276	499	411
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.65	0.65	0.65	0.76	0.76	0.76	0.77	0.77	0.77	0.90	0.90	0.90
Uniform Delay (d), s/veh	65.6	0.0	0.0	67.1	17.0	2.9	68.5	65.4	32.5	69.4	64.5	63.0
Incr Delay (d2), s/veh	18.2	0.2	0.3	9.3	0.4	0.4	6.4	3.5	1.3	9.6	1.8	0.7
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	3.5	0.1	0.1	5.3	8.9	1.5	3.2	4.9	4.4	3.4	3.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	83.8	0.2	0.3	76.4	17.4	3.3	74.8	68.9	33.9	78.9	66.4	63.8
LnGrp LOS	F	A	A	E	B	A	E	E	C	E	E	E
Approach Vol, veh/h		1352			1927			453			286	
Approach Delay, s/veh		5.4			23.6			57.9			73.4	
Approach LOS		A			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.1	91.9	17.0	21.0	15.7	96.3	16.3	21.7
Change Period (Y+Rc), s	6.5	7.0	7.0	7.0	7.0	* 7	7.0	7.0
Max Green Setting (Gmax), s	17.5	55.0	10.0	40.0	11.0	* 62	12.0	38.0
Max Q Clear Time (g_c+I1), s	13.2	2.0	8.7	8.4	8.9	25.2	9.2	13.1
Green Ext Time (p_c), s	0.3	10.3	0.1	0.5	0.0	14.3	0.1	1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	24.9
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱↱	↰↰	↑↑↑					↰↰		↱
Traffic Volume (veh/h)	0	710	770	370	1660	0	0	0	0	210	0	230
Future Volume (veh/h)	0	710	770	370	1660	0	0	0	0	210	0	230
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	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
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	747	600	389	1747	0				221	0	194
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1466	801	539	2874	0				574	0	263
Arrive On Green	0.00	0.29	0.29	0.16	0.56	0.00				0.17	0.00	0.17
Sat Flow, veh/h	0	5274	2790	3456	5274	0				3456	0	1585
Grp Volume(v), veh/h	0	747	600	389	1747	0				221	0	194
Grp Sat Flow(s),veh/h/ln	0	1702	1395	1728	1702	0				1728	0	1585
Q Serve(g_s), s	0.0	5.8	9.3	5.1	10.8	0.0				2.7	0.0	5.5
Cycle Q Clear(g_c), s	0.0	5.8	9.3	5.1	10.8	0.0				2.7	0.0	5.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1466	801	539	2874	0				574	0	263
V/C Ratio(X)	0.00	0.51	0.75	0.72	0.61	0.00				0.39	0.00	0.74
Avail Cap(c_a), veh/h	0	3488	1905	1271	5977	0				1961	0	899
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.2	15.4	19.1	6.9	0.0				17.7	0.0	18.9
Incr Delay (d2), s/veh	0.0	0.1	0.5	0.7	0.1	0.0				0.2	0.0	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	2.4	1.8	2.2	0.0				0.8	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	14.3	15.9	19.8	7.0	0.0				17.8	0.0	20.4
LnGrp LOS		B	B	B	A					B		C
Approach Vol, veh/h		1347			2136						415	
Approach Delay, s/veh		15.0			9.3						19.0	
Approach LOS		B			A						B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.1	20.5		14.0		33.6
Change Period (Y+Rc), s	5.7	6.8		6.1		6.8
Max Green Setting (Gmax), s	7.5	32.5		27.0		55.7
Max Q Clear Time (g_c+I1), s	7.1	11.3		7.5		12.8
Green Ext Time (p_c), s	0.4	2.4		0.4		5.7

Intersection Summary	
HCM 7th Control Delay, s/veh	12.3
HCM 7th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	490	230	0	1070	130	800	310	180	110	0	480
Future Volume (veh/h)	200	490	230	0	1070	130	800	310	180	110	0	480
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	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	0	1870	1837	1870	1837	1837	1870	0	1870
Adj Flow Rate, veh/h	211	516	0	0	1126	110	842	326	170	116	0	402
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	467	1698		0	1420	424	947	423	216	209	0	0
Arrive On Green	0.14	0.48	0.00	0.00	0.28	0.28	0.27	0.19	0.19	0.12	0.00	0.00
Sat Flow, veh/h	3456	3554	1585	0	5274	1524	3456	2230	1137	1781	116	
Grp Volume(v), veh/h	211	516	0	0	1126	110	842	254	242	116	38.1	
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	0	1702	1524	1728	1745	1622	1781	D	
Q Serve(g_s), s	5.0	7.8	0.0	0.0	18.0	5.0	20.6	12.2	12.6	5.4		
Cycle Q Clear(g_c), s	5.0	7.8	0.0	0.0	18.0	5.0	20.6	12.2	12.6	5.4		
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.70	1.00		
Lane Grp Cap(c), veh/h	467	1698		0	1420	424	947	331	307	209		
V/C Ratio(X)	0.45	0.30		0.00	0.79	0.26	0.89	0.77	0.79	0.55		
Avail Cap(c_a), veh/h	474	2041		0	1903	568	1805	573	533	222		
HCM Platoon Ratio	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	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	35.2	14.1	0.0	0.0	29.5	24.8	30.8	33.9	34.1	36.8		
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.0	1.2	0.1	1.2	1.4	1.7	1.3		
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		
%ile BackOfQ(50%),veh/ln	2.0	2.9	0.0	0.0	7.1	1.6	7.8	4.8	4.7	2.3		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.4	14.1	0.0	0.0	30.7	24.9	32.0	35.3	35.8	38.1		
LnGrp LOS	D	B			C	C	C	D	D	D		
Approach Vol, veh/h		727			1236			1338				
Approach Delay, s/veh		20.3			30.2			33.3				
Approach LOS		C			C			C				

Timer - Assigned Phs	2	3		5	6	7	8
Phs Duration (G+Y+Rc), s	49.0	30.3		17.6	31.3	16.5	22.8
Change Period (Y+Rc), s	6.8	6.1		5.7	6.8	6.1	6.1
Max Green Setting (Gmax), s	50.7	46.1		12.1	32.9	11.0	29.0
Max Q Clear Time (g_c+I1), s	9.8	22.6		7.0	20.0	7.4	14.6
Green Ext Time (p_c), s	2.2	1.5		0.2	4.5	0.0	1.4

Intersection Summary	
HCM 7th Control Delay, s/veh	29.6
HCM 7th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	80	30	130	80	100	80	280	140	220	220	120
Future Volume (veh/h)	90	80	30	130	80	100	80	280	140	220	220	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	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	95	84	29	137	84	84	84	295	132	232	232	113
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	207	160	40	334	176	415	181	504	220	546	608	286
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.10	0.21	0.21	0.16	0.26	0.26
Sat Flow, veh/h	339	613	154	775	671	1585	1781	2403	1049	3456	2345	1104
Grp Volume(v), veh/h	208	0	0	221	0	84	84	216	211	232	174	171
Grp Sat Flow(s),veh/h/ln	1106	0	0	1446	0	1585	1781	1777	1674	1728	1777	1672
Q Serve(g_s), s	3.0	0.0	0.0	0.0	0.0	1.8	2.0	4.8	5.0	2.7	3.6	3.7
Cycle Q Clear(g_c), s	8.7	0.0	0.0	5.7	0.0	1.8	2.0	4.8	5.0	2.7	3.6	3.7
Prop In Lane	0.46		0.14	0.62		1.00	1.00		0.63	1.00		0.66
Lane Grp Cap(c), veh/h	408	0	0	510	0	415	181	373	351	546	461	433
V/C Ratio(X)	0.51	0.00	0.00	0.43	0.00	0.20	0.46	0.58	0.60	0.42	0.38	0.39
Avail Cap(c_a), veh/h	1087	0	0	1180	0	1146	282	775	730	546	763	717
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	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.2	0.0	0.0	14.0	0.0	12.7	18.7	15.7	15.8	16.8	13.5	13.5
Incr Delay (d2), s/veh	1.0	0.0	0.0	0.6	0.0	0.2	1.8	1.4	1.6	0.5	0.5	0.6
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	1.9	0.0	0.0	1.7	0.0	0.6	0.8	1.8	1.8	1.0	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.2	0.0	0.0	14.6	0.0	13.0	20.6	17.2	17.5	17.3	14.0	14.1
LnGrp LOS	B			B		B	C	B	B	B	B	B
Approach Vol, veh/h		208			305			511			577	
Approach Delay, s/veh		16.2			14.2			17.8			15.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	14.7		17.6	9.8	16.9		17.6
Change Period (Y+Rc), s	5.0	5.4		6.0	5.3	5.4		6.0
Max Green Setting (Gmax), s	7.0	19.3		32.0	7.0	19.0		32.0
Max Q Clear Time (g_c+I1), s	4.7	7.0		10.7	4.0	5.7		7.7
Green Ext Time (p_c), s	0.2	2.0		1.3	0.0	1.7		1.7

Intersection Summary	
HCM 7th Control Delay, s/veh	16.0
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	540	30	50	720	280	30	100	100	200	60	190
Future Volume (veh/h)	140	540	30	50	720	280	30	100	100	200	60	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		0.98
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	1856	1856	1870	1870	1856	1870	1870	1856	1870	1856	1856
Adj Flow Rate, veh/h	146	562	28	52	750	234	31	104	83	208	63	178
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	1926	96	67	1792	890	48	231	192	259	73	205
Arrive On Green	0.10	0.56	0.56	0.07	1.00	1.00	0.03	0.12	0.12	0.08	0.17	0.17
Sat Flow, veh/h	1781	3415	170	1781	3554	1532	1781	1870	1553	3456	423	1194
Grp Volume(v), veh/h	146	290	300	52	750	234	31	104	83	208	0	241
Grp Sat Flow(s),veh/h/ln	1781	1763	1822	1781	1777	1532	1781	1870	1553	1728	0	1617
Q Serve(g_s), s	9.7	10.3	10.3	3.4	0.0	0.0	2.1	6.2	5.9	7.1	0.0	17.4
Cycle Q Clear(g_c), s	9.7	10.3	10.3	3.4	0.0	0.0	2.1	6.2	5.9	7.1	0.0	17.4
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		0.74
Lane Grp Cap(c), veh/h	173	994	1028	67	1792	890	48	231	192	259	0	277
V/C Ratio(X)	0.84	0.29	0.29	0.78	0.42	0.26	0.65	0.45	0.43	0.80	0.00	0.87
Avail Cap(c_a), veh/h	223	994	1028	119	1792	890	163	483	401	259	0	391
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.34	0.34	0.34	1.00	1.00	1.00	0.95	0.00	0.95
Uniform Delay (d), s/veh	53.3	13.6	13.6	55.0	0.0	0.0	57.8	48.8	48.7	54.6	0.0	48.4
Incr Delay (d2), s/veh	19.9	0.7	0.7	6.6	0.2	0.2	13.8	1.4	1.5	15.7	0.0	13.3
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	5.2	4.1	4.2	1.6	0.1	0.1	1.1	3.0	2.3	3.6	0.0	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	73.1	14.4	14.4	61.6	0.2	0.2	71.6	50.2	50.2	70.4	0.0	61.7
LnGrp LOS	E	B	B	E	A	A	E	D	D	E		E
Approach Vol, veh/h		736			1036			218			449	
Approach Delay, s/veh		26.0			3.3			53.3			65.7	
Approach LOS		C			A			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	73.7	15.0	20.8	17.7	66.5	9.2	26.6
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.0	48.0	9.0	31.0	15.0	41.0	11.0	29.0
Max Q Clear Time (g_c+I1), s	5.4	12.3	9.1	8.2	11.7	2.0	4.1	19.4
Green Ext Time (p_c), s	0.0	3.6	0.0	0.8	0.1	6.6	0.0	0.9

Intersection Summary	
HCM 7th Control Delay, s/veh	26.1
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	210	680	810	520	200	130
Future Volume (veh/h)	210	680	810	520	200	130
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
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
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	1856	1856
Adj Flow Rate, veh/h	219	708	844	488	208	121
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	245	2419	1066	608	229	133
Arrive On Green	0.28	1.00	0.99	0.99	0.22	0.22
Sat Flow, veh/h	1781	3647	2255	1234	1064	619
Grp Volume(v), veh/h	219	708	686	646	330	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1763	1634	1688	0
Q Serve(g_s), s	14.2	0.0	3.0	3.2	22.9	0.0
Cycle Q Clear(g_c), s	14.2	0.0	3.0	3.2	22.9	0.0
Prop In Lane	1.00			0.76	0.63	0.37
Lane Grp Cap(c), veh/h	245	2419	869	805	363	0
V/C Ratio(X)	0.89	0.29	0.79	0.80	0.91	0.00
Avail Cap(c_a), veh/h	356	2419	869	805	513	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.78	0.78	0.09	0.00
Uniform Delay (d), s/veh	42.6	0.0	0.5	0.5	45.9	0.0
Incr Delay (d2), s/veh	16.4	0.3	5.7	6.6	1.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	0.1	1.6	1.7	9.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	59.1	0.3	6.2	7.0	47.8	0.0
LnGrp LOS	E	A	A	A	D	
Approach Vol, veh/h		927	1332		330	
Approach Delay, s/veh		14.2	6.6		47.8	
Approach LOS		B	A		D	

Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	87.7		32.3	22.5	65.1
Change Period (Y+Rc), s	6.0		6.5	6.0	6.0
Max Green Setting (Gmax), s	71.0		36.5	24.0	41.0
Max Q Clear Time (g_c+I1), s	2.0		24.9	16.2	5.2
Green Ext Time (p_c), s	5.3		0.8	0.4	11.6

Intersection Summary	
HCM 7th Control Delay, s/veh	14.6
HCM 7th LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	460	420	130	900	430	50
Future Volume (veh/h)	460	420	130	900	430	50
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1856	1870	1870	1870	1856
Adj Flow Rate, veh/h	484	354	137	947	453	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1595	1121	165	2132	490	433
Arrive On Green	0.90	0.90	0.09	0.60	0.28	0.28
Sat Flow, veh/h	3647	1535	1781	3647	1781	1573
Grp Volume(v), veh/h	484	354	137	947	453	42
Grp Sat Flow(s),veh/h/ln	1777	1535	1781	1777	1781	1573
Q Serve(g_s), s	2.3	2.6	9.1	17.4	29.7	2.4
Cycle Q Clear(g_c), s	2.3	2.6	9.1	17.4	29.7	2.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1595	1121	165	2132	490	433
V/C Ratio(X)	0.30	0.32	0.83	0.44	0.92	0.10
Avail Cap(c_a), veh/h	1595	1121	267	2132	683	603
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.09	0.09	1.00	1.00
Uniform Delay (d), s/veh	3.5	0.9	53.5	13.1	42.3	32.4
Incr Delay (d2), s/veh	0.4	0.7	1.1	0.1	14.8	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.2	4.0	6.5	14.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	3.9	1.6	54.6	13.2	57.0	32.5
LnGrp LOS	A	A	D	B	E	C
Approach Vol, veh/h	838			1084	495	
Approach Delay, s/veh	2.9			18.4	54.9	
Approach LOS	A			B	D	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.1	61.9			80.0	40.0
Change Period (Y+Rc), s	7.0	8.0			8.0	7.0
Max Green Setting (Gmax), s	11.0	34.0			59.0	46.0
Max Q Clear Time (g_c+I1), s	11.1	4.6			19.4	31.7
Green Ext Time (p_c), s	0.2	4.6			7.6	1.4

Intersection Summary		
HCM 7th Control Delay, s/veh	20.5	
HCM 7th LOS	C	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	370	20	30	800	370	40	10	70	170	20	190
Future Volume (veh/h)	120	370	20	30	800	370	40	10	70	170	20	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	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	1860	1860	1870	1860	1860	1860	1860	1860	1860	1860	1860
Adj Flow Rate, veh/h	126	389	19	32	842	350	42	11	67	179	21	180
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	1589	77	80	1015	420	114	48	127	322	36	313
Arrive On Green	0.09	0.46	0.46	0.04	0.42	0.42	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3425	167	1781	2436	1009	242	220	584	1310	167	1434
Grp Volume(v), veh/h	126	200	208	32	610	582	120	0	0	179	0	201
Grp Sat Flow(s),veh/h/ln	1781	1767	1825	1781	1767	1678	1046	0	0	1310	0	1601
Q Serve(g_s), s	5.4	5.4	5.4	1.4	24.2	24.4	1.8	0.0	0.0	2.9	0.0	8.8
Cycle Q Clear(g_c), s	5.4	5.4	5.4	1.4	24.2	24.4	10.6	0.0	0.0	13.6	0.0	8.8
Prop In Lane	1.00		0.09	1.00		0.60	0.35		0.56	1.00		0.90
Lane Grp Cap(c), veh/h	164	820	847	80	736	699	290	0	0	322	0	349
V/C Ratio(X)	0.77	0.24	0.25	0.40	0.83	0.83	0.41	0.00	0.00	0.56	0.00	0.58
Avail Cap(c_a), veh/h	679	898	927	679	898	853	675	0	0	594	0	682
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	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.9	12.7	12.8	36.6	20.4	20.5	27.2	0.0	0.0	29.8	0.0	27.5
Incr Delay (d2), s/veh	7.4	0.2	0.1	3.2	5.5	6.0	0.9	0.0	0.0	1.5	0.0	1.5
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	2.6	1.9	2.0	0.6	9.9	9.5	2.1	0.0	0.0	3.2	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.3	12.9	12.9	39.8	25.9	26.5	28.1	0.0	0.0	31.3	0.0	29.0
LnGrp LOS	D	B	B	D	C	C	C			C		C
Approach Vol, veh/h		534			1224			120			380	
Approach Delay, s/veh		19.8			26.5			28.1			30.1	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.5	44.5		23.7	14.2	40.8		23.7				
Change Period (Y+Rc), s	7.0	8.0		6.5	7.0	8.0		6.5				
Max Green Setting (Gmax), s	30.0	40.0		33.5	30.0	40.0		38.5				
Max Q Clear Time (g_c+I1), s	13.4	7.4		15.6	7.4	26.4		12.6				
Green Ext Time (p_c), s	0.1	2.3		1.6	0.3	6.4		0.7				

Intersection Summary		
HCM 7th Control Delay, s/veh	25.6	
HCM 7th LOS	C	

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	240	10	180	660	1440	0	0	930	450
Future Volume (veh/h)	0	0	0	240	10	180	660	1440	0	0	930	450
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj				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	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1837	1837
Adj Flow Rate, veh/h				210	59	166	673	1469	0	0	949	413
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				248	59	167	691	3990	0	0	1229	534
Arrive On Green				0.14	0.14	0.14	0.52	1.00	0.00	0.00	0.36	0.36
Sat Flow, veh/h				1781	426	1200	1781	5274	0	0	3558	1475
Grp Volume(v), veh/h				210	0	225	673	1469	0	0	935	427
Grp Sat Flow(s),veh/h/ln				1781	0	1626	1781	1702	0	0	1672	1525
Q Serve(g_s), s				17.3	0.0	20.7	55.2	0.0	0.0	0.0	37.1	37.2
Cycle Q Clear(g_c), s				17.3	0.0	20.7	55.2	0.0	0.0	0.0	37.1	37.2
Prop In Lane				1.00		0.74	1.00		0.00	0.00		0.97
Lane Grp Cap(c), veh/h				248	0	227	691	3990	0	0	1211	552
V/C Ratio(X)				0.85	0.00	0.99	0.97	0.37	0.00	0.00	0.77	0.77
Avail Cap(c_a), veh/h				248	0	227	873	3990	0	0	1211	552
HCM Platoon Ratio				1.00	1.00	1.00	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.42	0.42	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				63.0	0.0	64.5	35.6	0.0	0.0	0.0	42.4	42.4
Incr Delay (d2), s/veh				21.8	0.0	57.6	11.9	0.1	0.0	0.0	4.8	10.1
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.1	0.0	11.9	23.6	0.0	0.0	0.0	15.9	15.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				84.7	0.0	122.1	47.5	0.1	0.0	0.0	47.2	52.4
LnGrp LOS				F		F	D	A			D	D
Approach Vol, veh/h					435			2142			1362	
Approach Delay, s/veh					104.1			15.0			48.8	
Approach LOS					F			B			D	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	124.0		62.9	61.1		26.0						
Change Period (Y+Rc), s	6.8		4.7	6.8		5.1						
Max Green Setting (Gmax), s	117.2		73.5	39.0		20.9						
Max Q Clear Time (g_c+I1), s	2.0		57.2	39.2		22.7						
Green Ext Time (p_c), s	8.8		1.0	0.0		0.0						

Intersection Summary		
HCM 7th Control Delay, s/veh	36.5	
HCM 7th LOS	D	

Notes
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	450	120	340	270	970	160	850	430	230	620	320
Future Volume (veh/h)	280	450	120	340	270	970	160	850	430	230	620	320
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.97	1.00		0.98
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	1854	1854	1870	1870	1870	1870	1854	1854	1870	1870	1854
Adj Flow Rate, veh/h	292	469	113	354	281	885	167	885	369	240	646	233
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	344	558	133	327	529	1204	189	1019	423	522	1202	675
Arrive On Green	0.10	0.20	0.20	0.31	0.47	0.47	0.11	0.29	0.29	0.05	0.11	0.11
Sat Flow, veh/h	3456	2804	671	1781	1870	2769	1781	3473	1443	3456	3554	1533
Grp Volume(v), veh/h	292	293	289	354	281	885	167	860	394	240	646	233
Grp Sat Flow(s),veh/h/ln	1728	1761	1714	1781	1870	1384	1781	1687	1543	1728	1777	1533
Q Serve(g_s), s	12.5	24.0	24.4	27.5	15.9	10.8	13.9	36.2	36.4	10.1	25.8	18.1
Cycle Q Clear(g_c), s	12.5	24.0	24.4	27.5	15.9	10.8	13.9	36.2	36.4	10.1	25.8	18.1
Prop In Lane	1.00		0.39	1.00		1.00	1.00		0.94	1.00		1.00
Lane Grp Cap(c), veh/h	344	350	341	327	529	1204	189	990	452	522	1202	675
V/C Ratio(X)	0.85	0.84	0.85	1.08	0.53	0.73	0.88	0.87	0.87	0.46	0.54	0.35
Avail Cap(c_a), veh/h	454	399	388	327	529	1204	221	990	452	522	1202	675
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	0.67	0.67	0.67	0.31	0.31	0.31
Uniform Delay (d), s/veh	66.4	57.8	57.9	52.0	32.6	9.9	66.1	50.3	50.3	65.3	55.5	38.7
Incr Delay (d2), s/veh	11.2	13.1	14.5	43.4	0.1	0.2	21.0	7.2	14.5	0.2	0.5	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	6.0	11.8	11.8	14.7	6.1	4.5	7.3	16.0	15.6	4.7	12.4	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.6	70.9	72.4	95.4	32.7	10.1	87.0	57.4	64.8	65.5	56.1	39.1
LnGrp LOS	E	E	E	F	C	B	F	E	E	E	E	D
Approach Vol, veh/h		874			1520			1421			1119	
Approach Delay, s/veh		73.6			34.1			63.0			54.6	
Approach LOS		E			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	50.5	34.0	36.3	22.5	57.2	21.4	48.9
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	18.5	44.0	27.5	34.0	18.6	43.9	19.7	41.8
Max Q Clear Time (g_c+I1), s	12.1	38.4	29.5	26.4	15.9	27.8	14.5	17.9
Green Ext Time (p_c), s	0.4	3.5	0.0	2.0	0.1	4.5	0.5	5.7

Intersection Summary	
HCM 7th Control Delay, s/veh	54.1
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	450	260	90	620	290	380	230	220	680	600	580
Future Volume (veh/h)	400	450	260	90	620	290	380	230	220	680	600	580
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1837	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	421	474	219	95	653	274	321	353	186	716	632	569
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1436	1891	1056	128	620	255	260	273	231	759	386	348
Arrive On Green	0.42	0.53	0.53	0.07	0.17	0.17	0.15	0.15	0.15	0.43	0.43	0.43
Sat Flow, veh/h	3456	3554	1557	1781	3549	1462	1781	1870	1585	1781	907	816
Grp Volume(v), veh/h	421	474	219	95	626	301	321	353	186	716	0	1201
Grp Sat Flow(s),veh/h/ln	1728	1777	1557	1781	1702	1607	1781	1870	1585	1781	0	1723
Q Serve(g_s), s	12.2	10.8	7.9	7.8	26.2	26.2	21.9	21.9	17.0	57.9	0.0	63.9
Cycle Q Clear(g_c), s	12.2	10.8	7.9	7.8	26.2	26.2	21.9	21.9	17.0	57.9	0.0	63.9
Prop In Lane	1.00		1.00	1.00		0.91	1.00		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	1436	1891	1056	128	595	281	260	273	231	759	0	734
V/C Ratio(X)	0.29	0.25	0.21	0.74	1.05	1.07	1.23	1.29	0.80	0.94	0.00	1.64
Avail Cap(c_a), veh/h	1436	1891	1056	147	595	281	260	273	231	759	0	734
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)	0.56	0.56	0.56	1.00	1.00	1.00	0.70	0.70	0.70	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.2	18.9	9.0	68.2	61.9	61.9	64.1	64.1	62.0	41.3	0.0	43.1
Incr Delay (d2), s/veh	0.0	0.2	0.2	12.6	51.5	74.4	126.7	149.6	12.5	19.9	0.0	292.3
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	5.0	4.4	4.1	4.0	15.3	16.3	19.0	21.7	7.6	28.0	0.0	85.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.2	19.1	9.3	80.9	113.4	136.3	190.7	213.7	74.5	61.2	0.0	335.4
LnGrp LOS	C	B	A	F	F	F	F	F	E	E		F
Approach Vol, veh/h		1114			1022			860			1917	
Approach Delay, s/veh		21.0			117.1			175.0			233.0	
Approach LOS		C			F			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.5	86.8		69.0	69.3	33.0		27.0				
Change Period (Y+Rc), s	4.7	6.8		5.1	6.8	* 6.8		5.1				
Max Green Setting (Gmax), s	12.4	30.1		63.9	16.3	* 26		21.9				
Max Q Clear Time (g_c+I1), s	9.8	12.8		65.9	14.2	28.2		23.9				
Green Ext Time (p_c), s	0.0	2.0		0.0	0.2	0.0		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	150.7
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	90	40	130	60	200	70	940	150	240	720	120
Future Volume (veh/h)	130	90	40	130	60	200	70	940	150	240	720	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.99
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	1854	1870	1854	1854	1870	1870	1854	1870	1854	1854
Adj Flow Rate, veh/h	135	94	34	135	63	187	73	979	125	250	750	113
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	336	280	158	75	222	251	1420	617	274	1275	192
Arrive On Green	0.09	0.18	0.18	0.09	0.18	0.18	0.28	0.80	0.80	0.15	0.42	0.42
Sat Flow, veh/h	1781	1870	1558	1781	409	1214	1781	3554	1545	1781	3066	462
Grp Volume(v), veh/h	135	94	34	135	0	250	73	979	125	250	431	432
Grp Sat Flow(s),veh/h/ln	1781	1870	1558	1781	0	1623	1781	1777	1545	1781	1761	1767
Q Serve(g_s), s	10.5	6.1	1.8	10.5	0.0	20.8	4.5	17.3	2.7	19.3	26.5	26.5
Cycle Q Clear(g_c), s	10.5	6.1	1.8	10.5	0.0	20.8	4.5	17.3	2.7	19.3	26.5	26.5
Prop In Lane	1.00		1.00	1.00		0.75	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	153	336	280	158	0	296	251	1420	617	274	732	735
V/C Ratio(X)	0.88	0.28	0.12	0.85	0.00	0.84	0.29	0.69	0.20	0.91	0.59	0.59
Avail Cap(c_a), veh/h	153	428	356	165	0	383	251	1420	617	299	732	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.71	0.71	0.71	0.58	0.58	0.58
Uniform Delay (d), s/veh	63.3	49.6	24.9	62.9	0.0	55.3	44.8	10.2	8.7	58.3	31.6	31.6
Incr Delay (d2), s/veh	41.2	0.4	0.2	32.0	0.0	12.7	0.5	2.0	0.5	19.9	2.0	2.0
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	6.5	2.9	1.0	6.2	0.0	9.6	1.9	4.0	1.0	10.1	11.4	11.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	104.5	50.1	25.1	94.9	0.0	68.0	45.2	12.1	9.2	78.2	33.6	33.6
LnGrp LOS	F	D	C	F		E	D	B	A	E	C	C
Approach Vol, veh/h		263			385			1177			1113	
Approach Delay, s/veh		74.8			77.4			13.9			43.7	
Approach LOS		E			E			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	62.4	18.4	31.1	26.2	64.2	18.0	31.6
Change Period (Y+Rc), s	6.5	* 6.5	6.0	6.0	6.5	6.0	6.0	6.0
Max Green Setting (Gmax), s	23.5	* 47	13.0	32.0	12.3	58.2	12.0	33.0
Max Q Clear Time (g_c+I1), s	21.3	19.3	12.5	8.1	6.5	28.5	12.5	22.8
Green Ext Time (p_c), s	0.2	7.9	0.0	0.5	0.1	5.7	0.0	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	38.9
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	360	60	140	140	150	70	780	30	180	520	190
Future Volume (veh/h)	210	360	60	140	140	150	70	780	30	180	520	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.99
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	1854	1870	1854	1854	1870	1854	1854	1870	1854	1854
Adj Flow Rate, veh/h	219	375	51	146	146	140	73	813	28	188	542	178
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	243	615	271	170	233	203	92	1512	52	209	1301	426
Arrive On Green	0.14	0.17	0.17	0.10	0.13	0.13	0.05	0.44	0.44	0.23	1.00	1.00
Sat Flow, veh/h	1781	3554	1568	1781	1761	1539	1781	3473	120	1781	2598	850
Grp Volume(v), veh/h	219	375	51	146	146	140	73	412	429	188	367	353
Grp Sat Flow(s),veh/h/ln	1781	1777	1568	1781	1761	1539	1781	1761	1831	1781	1761	1686
Q Serve(g_s), s	16.9	13.7	3.9	11.3	11.0	12.2	5.7	24.2	24.2	14.3	0.0	0.0
Cycle Q Clear(g_c), s	16.9	13.7	3.9	11.3	11.0	12.2	5.7	24.2	24.2	14.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.50
Lane Grp Cap(c), veh/h	243	615	271	170	233	203	92	767	797	209	882	845
V/C Ratio(X)	0.90	0.61	0.19	0.86	0.63	0.69	0.79	0.54	0.54	0.90	0.42	0.42
Avail Cap(c_a), veh/h	280	939	414	229	415	363	135	767	797	233	882	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.90	0.90	0.90	0.68	0.68	0.68	0.85	0.85	0.85
Uniform Delay (d), s/veh	59.5	53.5	49.5	62.4	57.5	58.0	65.6	29.1	29.1	52.8	0.0	0.0
Incr Delay (d2), s/veh	27.3	1.0	0.3	18.9	2.5	3.7	12.4	1.8	1.8	28.2	1.2	1.3
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	9.5	6.2	1.6	6.0	5.0	4.9	2.9	10.4	10.8	7.2	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	86.8	54.5	49.8	81.3	60.0	61.7	78.1	31.0	30.9	81.0	1.2	1.3
LnGrp LOS	F	D	D	F	E	E	E	C	C	F	A	A
Approach Vol, veh/h		645			432			914			908	
Approach Delay, s/veh		65.1			67.7			34.7			17.8	
Approach LOS		E			E			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.9	67.4	19.4	30.2	13.8	76.6	25.1	24.5
Change Period (Y+Rc), s	6.5	6.5	6.0	6.0	6.5	6.5	6.0	6.0
Max Green Setting (Gmax), s	16.3	41.7	18.0	37.0	10.6	49.4	22.0	33.0
Max Q Clear Time (g_c+I1), s	18.3	26.2	13.3	15.7	7.7	2.0	18.9	14.2
Green Ext Time (p_c), s	0.1	4.4	0.1	2.5	0.0	4.8	0.2	1.5

Intersection Summary	
HCM 7th Control Delay, s/veh	41.1
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	290	200	40	130	50	130	670	70	80	670	160
Future Volume (veh/h)	80	290	200	40	130	50	130	670	70	80	670	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.97	1.00		0.98
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	84	305	190	42	137	48	137	705	67	84	705	151
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	331	206	79	763	256	167	992	94	108	784	168
Arrive On Green	0.06	0.31	0.31	0.04	0.29	0.29	0.09	0.30	0.30	0.06	0.27	0.27
Sat Flow, veh/h	1781	1069	666	1781	2602	874	1781	3270	310	1781	2901	621
Grp Volume(v), veh/h	84	0	495	42	92	93	137	383	389	84	432	424
Grp Sat Flow(s),veh/h/ln	1781	0	1735	1781	1777	1699	1781	1777	1803	1781	1777	1745
Q Serve(g_s), s	4.0	0.0	23.5	2.0	3.3	3.5	6.4	16.3	16.3	4.0	20.0	20.0
Cycle Q Clear(g_c), s	4.0	0.0	23.5	2.0	3.3	3.5	6.4	16.3	16.3	4.0	20.0	20.0
Prop In Lane	1.00		0.38	1.00		0.51	1.00		0.17	1.00		0.36
Lane Grp Cap(c), veh/h	108	0	538	79	521	498	167	539	547	108	480	471
V/C Ratio(X)	0.78	0.00	0.92	0.53	0.18	0.19	0.82	0.71	0.71	0.78	0.90	0.90
Avail Cap(c_a), veh/h	125	0	570	125	584	558	167	539	547	146	501	492
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	0.00	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	39.4	0.0	28.4	39.8	22.4	22.5	37.9	26.4	26.4	39.4	30.0	30.0
Incr Delay (d2), s/veh	22.6	0.0	19.8	5.4	0.2	0.2	26.3	4.3	4.3	16.4	18.6	19.0
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	2.4	0.0	12.1	1.0	1.3	1.4	3.9	7.1	7.2	2.2	10.4	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	62.1	0.0	48.2	45.3	22.6	22.7	64.2	30.7	30.7	55.8	48.6	49.0
LnGrp LOS	E		D	D	C	C	E	C	C	E	D	D
Approach Vol, veh/h		579			227			909			940	
Approach Delay, s/veh		50.2			26.8			35.7			49.4	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	31.8	9.8	32.4	14.0	29.0	11.2	31.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	7.0	25.0	6.0	28.0	8.0	24.0	6.0	28.0
Max Q Clear Time (g_c+I1), s	6.0	18.3	4.0	25.5	8.4	22.0	6.0	5.5
Green Ext Time (p_c), s	0.0	2.5	0.0	0.8	0.0	1.0	0.0	0.9

Intersection Summary	
HCM 7th Control Delay, s/veh	43.0
HCM 7th LOS	D

Intersection	
Int Delay, s/veh	32.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1270	70	140	830	10	370
Future Vol, veh/h	1270	70	140	830	10	370
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	65	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1337	74	147	874	11	389

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1411	0	2105	705
Stage 1	-	-	-	-	1374	-
Stage 2	-	-	-	-	732	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	479	-	44	~ 379
Stage 1	-	-	-	-	200	-
Stage 2	-	-	-	-	437	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	479	-	31	~ 379
Mov Cap-2 Maneuver	-	-	-	-	31	-
Stage 1	-	-	-	-	139	-
Stage 2	-	-	-	-	437	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	2.28	222.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	291	-	-	479	-
HCM Lane V/C Ratio	1.372	-	-	0.307	-
HCM Ctrl Dly (s/v)	222.1	-	-	15.8	-
HCM Lane LOS	F	-	-	C	-
HCM 95th %tile Q(veh)	20.8	-	-	1.3	-

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1010	630	60	500	470	80
Future Volume (veh/h)	1010	630	60	500	470	80
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1063	597	63	526	495	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1184	630	81	2199	531	473
Arrive On Green	0.53	0.53	0.05	0.62	0.30	0.30
Sat Flow, veh/h	2313	1181	1781	3647	1781	1585
Grp Volume(v), veh/h	839	821	63	526	495	67
Grp Sat Flow(s),veh/h/ln	1777	1624	1781	1777	1781	1585
Q Serve(g_s), s	54.4	62.1	4.6	8.6	35.2	4.0
Cycle Q Clear(g_c), s	54.4	62.1	4.6	8.6	35.2	4.0
Prop In Lane		0.73	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	948	866	81	2199	531	473
V/C Ratio(X)	0.89	0.95	0.78	0.24	0.93	0.14
Avail Cap(c_a), veh/h	972	888	120	2325	739	657
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	26.9	28.7	61.5	11.1	44.4	33.5
Incr Delay (d2), s/veh	9.7	18.5	17.0	0.1	14.9	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.7	26.6	2.4	3.2	17.5	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	36.6	47.2	78.6	11.2	59.3	33.6
LnGrp LOS	D	D	E	B	E	C
Approach Vol, veh/h	1660			589	562	
Approach Delay, s/veh	41.8			18.4	56.3	
Approach LOS	D			B	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	11.1	75.3				86.4	43.8
Change Period (Y+Rc), s	5.2	5.8				5.8	5.0
Max Green Setting (Gmax), s	8.8	71.2				85.2	54.0
Max Q Clear Time (g_c+I1), s	6.6	64.1				10.6	37.2
Green Ext Time (p_c), s	0.0	5.4				3.5	1.7

Intersection Summary			
HCM 7th Control Delay, s/veh		39.8	
HCM 7th LOS		D	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1740	710	220	940	110	350	40	110	120	30	80
Future Volume (veh/h)	60	1740	710	220	940	110	350	40	110	120	30	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.98	1.00		0.97
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	1850	1870	1870	1850	1870	1870	1850	1870	1870	1870
Adj Flow Rate, veh/h	61	1776	579	224	959	90	357	41	90	122	31	74
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	1849	814	196	2021	863	412	244	200	229	37	88
Arrive On Green	0.06	0.52	0.52	0.15	0.76	0.76	0.12	0.13	0.13	0.07	0.08	0.08
Sat Flow, veh/h	3456	3554	1565	1781	3554	1518	3456	1870	1533	3456	479	1143
Grp Volume(v), veh/h	61	1776	579	224	959	90	357	41	90	122	0	105
Grp Sat Flow(s),veh/h/ln	1728	1777	1565	1781	1777	1518	1728	1870	1533	1728	0	1621
Q Serve(g_s), s	2.5	71.9	42.3	16.5	15.4	1.2	15.2	2.9	8.1	5.1	0.0	9.6
Cycle Q Clear(g_c), s	2.5	71.9	42.3	16.5	15.4	1.2	15.2	2.9	8.1	5.1	0.0	9.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.70
Lane Grp Cap(c), veh/h	212	1849	814	196	2021	863	412	244	200	229	0	125
V/C Ratio(X)	0.29	0.96	0.71	1.14	0.47	0.10	0.87	0.17	0.45	0.53	0.00	0.84
Avail Cap(c_a), veh/h	230	1849	814	196	2021	863	530	349	286	230	0	162
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	67.3	34.5	27.4	64.0	9.7	2.2	64.9	58.0	60.3	67.8	0.0	68.3
Incr Delay (d2), s/veh	0.7	13.5	5.2	100.3	0.6	0.2	11.6	0.3	1.6	2.3	0.0	25.0
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	1.1	32.6	17.1	12.5	4.8	0.8	7.4	1.4	3.3	2.4	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	68.0	48.0	32.6	164.3	10.4	2.4	76.4	58.3	61.9	70.1	0.0	93.3
LnGrp LOS	E	D	C	F	B	A	E	E	E	E		F
Approach Vol, veh/h		2416			1273			488			227	
Approach Delay, s/veh		44.8			36.9			72.2			80.8	
Approach LOS		D			D			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	92.3	23.9	18.1	23.0	85.0	16.4	25.5
Change Period (Y+Rc), s	6.5	7.0	6.0	6.5	6.5	* 7	6.5	6.0
Max Green Setting (Gmax), s	10.0	76.0	23.0	15.0	16.5	* 70	10.0	28.0
Max Q Clear Time (g_c+I1), s	14.5	17.4	17.2	11.6	18.5	73.9	7.1	10.1
Green Ext Time (p_c), s	0.0	8.1	0.7	0.1	0.0	0.0	0.1	0.4

Intersection Summary	
HCM 7th Control Delay, s/veh	47.4
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1780	140	150	1130	60	90	10	110	60	10	50
Future Volume (veh/h)	50	1780	140	150	1130	60	90	10	110	60	10	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.96
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	1859	1859	1870	1859	1859	1870	1870	1870	1870	1870	1859
Adj Flow Rate, veh/h	51	1798	113	152	1141	49	91	10	100	61	10	41
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	315	2064	916	153	1742	776	66	7	73	106	17	104
Arrive On Green	0.24	0.78	0.78	0.03	0.16	0.16	0.09	0.09	0.09	0.07	0.07	0.07
Sat Flow, veh/h	1781	3531	1568	1781	3531	1573	755	83	830	1541	253	1511
Grp Volume(v), veh/h	51	1798	113	152	1141	49	201	0	0	71	0	41
Grp Sat Flow(s),veh/h/ln	1781	1766	1568	1781	1766	1573	1669	0	0	1793	0	1511
Q Serve(g_s), s	3.4	52.7	2.7	12.8	45.4	4.0	13.1	0.0	0.0	5.8	0.0	3.9
Cycle Q Clear(g_c), s	3.4	52.7	2.7	12.8	45.4	4.0	13.1	0.0	0.0	5.8	0.0	3.9
Prop In Lane	1.00		1.00	1.00		1.00	0.45		0.50	0.86		1.00
Lane Grp Cap(c), veh/h	315	2064	916	153	1742	776	146	0	0	124	0	104
V/C Ratio(X)	0.16	0.87	0.12	0.99	0.65	0.06	1.38	0.00	0.00	0.57	0.00	0.39
Avail Cap(c_a), veh/h	315	2064	916	153	1742	776	146	0	0	323	0	272
HCM Platoon Ratio	1.33	1.33	1.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.73	0.73	0.73	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.5	12.8	7.2	72.8	50.8	33.5	68.5	0.0	0.0	67.7	0.0	66.8
Incr Delay (d2), s/veh	0.0	0.5	0.0	59.8	1.4	0.1	207.6	0.0	0.0	4.1	0.0	2.4
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	1.5	12.8	0.9	8.7	21.9	1.5	14.0	0.0	0.0	2.8	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	48.5	13.3	7.3	132.6	52.2	33.6	276.0	0.0	0.0	71.8	0.0	69.2
LnGrp LOS	D	B	A	F	D	C	F			E		E
Approach Vol, veh/h		1962			1342			201			112	
Approach Delay, s/veh		13.9			60.7			276.0			70.9	
Approach LOS		B			E			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.4	94.2		16.8	33.1	80.5		19.6				
Change Period (Y+Rc), s	6.5	6.5		6.5	6.5	6.5		6.5				
Max Green Setting (Gmax), s	12.9	71.0		27.0	9.9	74.0		13.1				
Max Q Clear Time (g_c+I1), s	14.8	54.7		7.8	5.4	47.4		15.1				
Green Ext Time (p_c), s	0.0	11.5		0.4	0.0	8.8		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh	47.6	
HCM 7th LOS	D	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	1360	180	160	910	220	100	250	120	190	200	330
Future Volume (veh/h)	410	1360	180	160	910	220	100	250	120	190	200	330
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	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	1859	1859	1870	1870	1859	1870	1870	1859	1870	1870	1859
Adj Flow Rate, veh/h	423	1402	149	165	938	182	103	258	75	196	206	306
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	451	1589	708	226	1150	501	231	549	456	237	549	859
Arrive On Green	0.08	0.15	0.15	0.13	0.32	0.32	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1781	3531	1573	1781	3554	1550	887	1870	1553	1047	1870	1570
Grp Volume(v), veh/h	423	1402	149	165	938	182	103	258	75	196	206	306
Grp Sat Flow(s),veh/h/ln	1781	1766	1573	1781	1777	1550	887	1870	1553	1047	1870	1570
Q Serve(g_s), s	35.4	58.4	12.5	13.4	36.4	13.5	15.6	17.0	5.4	27.0	13.1	16.5
Cycle Q Clear(g_c), s	35.4	58.4	12.5	13.4	36.4	13.5	28.8	17.0	5.4	44.0	13.1	16.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	451	1589	708	226	1150	501	231	549	456	237	549	859
V/C Ratio(X)	0.94	0.88	0.21	0.73	0.82	0.36	0.45	0.47	0.16	0.83	0.38	0.36
Avail Cap(c_a), veh/h	493	1589	708	232	1150	501	231	549	456	237	549	859
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.50	0.50	0.50	1.00	1.00	1.00	0.87	0.87	0.87
Uniform Delay (d), s/veh	67.6	60.0	40.4	63.0	46.6	38.9	53.5	43.4	39.4	62.0	42.1	19.2
Incr Delay (d2), s/veh	3.7	0.8	0.1	5.7	3.3	1.0	1.4	0.6	0.2	18.7	0.4	0.2
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	17.5	27.8	5.2	6.3	16.2	5.2	3.6	8.0	2.1	8.7	6.1	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	71.3	60.7	40.5	68.7	50.0	39.9	54.9	44.1	39.5	80.7	42.5	19.4
LnGrp LOS	E	E	D	E	D	D	D	D	D	F	D	B
Approach Vol, veh/h		1974			1285			436			708	
Approach Delay, s/veh		61.5			50.9			45.8			43.1	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	25.5	74.0		50.5	44.5	55.0		50.5
Change Period (Y+Rc), s	6.5	6.5		* 6.5	6.5	6.5		6.5
Max Green Setting (Gmax), s	19.5	67.5		* 44	41.5	45.5		43.5
Max Q Clear Time (g_c+I1), s	15.4	60.4		46.0	37.4	38.4		30.8
Green Ext Time (p_c), s	0.1	5.0		0.0	0.5	3.7		1.9

Intersection Summary	
HCM 7th Control Delay, s/veh	53.9
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	1190	400	390	930	230	220	430	280	260	550	120
Future Volume (veh/h)	160	1190	400	390	930	230	220	430	280	260	550	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.99
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	1859	1859	1870	1859	1859	1870	1859	1859	1870	1859	1859
Adj Flow Rate, veh/h	162	1202	323	394	939	186	222	434	226	263	556	114
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	192	1142	509	291	1337	586	184	884	387	309	433	89
Arrive On Green	0.11	0.32	0.32	0.16	0.38	0.38	0.05	0.25	0.25	0.09	0.29	0.29
Sat Flow, veh/h	1781	3531	1574	1781	3531	1548	3456	3531	1547	3456	1492	306
Grp Volume(v), veh/h	162	1202	323	394	939	186	222	434	226	263	0	670
Grp Sat Flow(s),veh/h/ln	1781	1766	1574	1781	1766	1548	1728	1766	1547	1728	0	1798
Q Serve(g_s), s	13.4	48.5	26.2	24.5	33.8	9.1	8.0	15.8	19.2	11.2	0.0	43.5
Cycle Q Clear(g_c), s	13.4	48.5	26.2	24.5	33.8	9.1	8.0	15.8	19.2	11.2	0.0	43.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	192	1142	509	291	1337	586	184	884	387	309	0	522
V/C Ratio(X)	0.84	1.05	0.63	1.35	0.70	0.32	1.20	0.49	0.58	0.85	0.00	1.28
Avail Cap(c_a), veh/h	192	1142	509	291	1337	586	184	884	387	352	0	522
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)	0.09	0.09	0.09	0.17	0.17	0.17	0.93	0.93	0.93	0.41	0.00	0.41
Uniform Delay (d), s/veh	65.6	50.8	43.2	62.8	39.4	16.9	71.0	48.0	49.3	67.3	0.0	53.3
Incr Delay (d2), s/veh	3.2	26.3	0.6	163.3	0.5	0.2	129.9	0.4	2.1	7.3	0.0	134.2
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	6.2	24.9	10.2	24.1	14.5	3.3	6.8	6.9	7.6	5.2	0.0	38.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	68.9	77.0	43.8	226.1	40.0	17.1	200.9	48.4	51.4	74.6	0.0	187.4
LnGrp LOS	E	F	D	F	D	B	F	D	D	E		F
Approach Vol, veh/h		1687			1519			882			933	
Approach Delay, s/veh		69.9			85.4			87.6			155.6	
Approach LOS		E			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	55.0	14.0	50.0	22.7	63.3	19.9	44.1
Change Period (Y+Rc), s	6.5	6.5	6.0	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	24.5	48.5	8.0	43.5	16.2	56.8	15.3	35.7
Max Q Clear Time (g_c+I1), s	26.5	50.5	10.0	45.5	15.4	35.8	13.2	21.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	7.1	0.2	3.0

Intersection Summary	
HCM 7th Control Delay, s/veh	93.6
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	1300	330	340	1040	80	370	400	440	140	470	130
Future Volume (veh/h)	70	1300	330	340	1040	80	370	400	440	140	470	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		0.99
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	1859	1859	1870	1870	1859	1870	1870	1859	1870	1859	1859
Adj Flow Rate, veh/h	71	1313	266	343	1051	65	374	404	355	141	475	122
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	1177	520	451	1895	811	253	517	832	137	403	103
Arrive On Green	0.05	0.33	0.33	0.34	0.71	0.71	0.07	0.28	0.28	0.08	0.28	0.28
Sat Flow, veh/h	1781	3531	1559	1781	3554	1522	3456	1870	1567	1781	1421	365
Grp Volume(v), veh/h	71	1313	266	343	1051	65	374	404	355	141	0	597
Grp Sat Flow(s),veh/h/ln	1781	1766	1559	1781	1777	1522	1728	1870	1567	1781	0	1786
Q Serve(g_s), s	5.9	50.0	19.3	25.7	21.3	2.0	11.0	29.9	5.3	11.5	0.0	42.5
Cycle Q Clear(g_c), s	5.9	50.0	19.3	25.7	21.3	2.0	11.0	29.9	5.3	11.5	0.0	42.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	89	1177	520	451	1895	811	253	517	832	137	0	506
V/C Ratio(X)	0.80	1.12	0.51	0.76	0.55	0.08	1.48	0.78	0.43	1.03	0.00	1.18
Avail Cap(c_a), veh/h	108	1177	520	451	1895	811	253	517	832	137	0	506
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.76	0.76	0.76	0.09	0.09	0.09	0.79	0.00	0.79
Uniform Delay (d), s/veh	70.5	50.0	35.5	45.7	13.3	10.5	69.5	50.1	14.9	69.3	0.0	53.8
Incr Delay (d2), s/veh	3.2	53.3	0.3	5.7	0.9	0.1	216.1	0.7	0.0	77.2	0.0	96.3
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	2.8	30.3	7.5	11.4	6.9	0.7	12.5	14.1	5.8	8.2	0.0	32.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	73.6	103.3	35.8	51.4	14.2	10.6	285.6	50.8	14.9	146.5	0.0	150.0
LnGrp LOS	E	F	D	D	B	B	F	D	B	F		F
Approach Vol, veh/h		1650			1459			1133			738	
Approach Delay, s/veh		91.1			22.8			117.1			149.4	
Approach LOS		F			C			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	56.0	17.0	49.5	14.0	87.0	18.0	48.5
Change Period (Y+Rc), s	6.5	6.0	6.0	* 7	6.5	* 6.5	6.5	7.0
Max Green Setting (Gmax), s	21.5	50.0	11.0	* 43	9.1	* 62	11.5	41.0
Max Q Clear Time (g_c+I1), s	27.3	52.0	13.0	44.5	7.9	23.3	13.5	31.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	9.1	0.0	2.7

Intersection Summary	
HCM 7th Control Delay, s/veh	85.6
HCM 7th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	1430	310	520	1160	220	230	230	260	740	280	70
Future Volume (veh/h)	110	1430	310	520	1160	220	230	230	260	740	280	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.97
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	1859	1870	1870	1859	1870	1870	1859	1870	1870	1859
Adj Flow Rate, veh/h	112	1459	253	531	1184	179	235	235	212	755	286	57
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	131	1789	667	518	2164	1001	281	258	451	760	517	421
Arrive On Green	0.15	0.70	0.70	0.15	0.42	0.42	0.08	0.14	0.14	0.22	0.28	0.28
Sat Flow, veh/h	1781	5106	1537	3456	5106	1544	3456	1870	1558	3456	1870	1524
Grp Volume(v), veh/h	112	1459	253	531	1184	179	235	235	212	755	286	57
Grp Sat Flow(s),veh/h/ln	1781	1702	1537	1728	1702	1544	1728	1870	1558	1728	1870	1524
Q Serve(g_s), s	9.2	29.9	9.6	22.5	26.1	2.4	10.1	18.6	9.4	32.7	19.6	4.2
Cycle Q Clear(g_c), s	9.2	29.9	9.6	22.5	26.1	2.4	10.1	18.6	9.4	32.7	19.6	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	131	1789	667	518	2164	1001	281	258	451	760	517	421
V/C Ratio(X)	0.86	0.82	0.38	1.02	0.55	0.18	0.84	0.91	0.47	0.99	0.55	0.14
Avail Cap(c_a), veh/h	131	1789	667	518	2164	1001	323	262	454	760	517	421
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.10	0.10	0.10	0.87	0.87	0.87	0.80	0.80	0.80	0.28	0.28	0.28
Uniform Delay (d), s/veh	63.2	19.1	12.4	63.7	32.4	4.1	67.9	63.8	19.8	58.4	46.3	40.8
Incr Delay (d2), s/veh	5.9	0.4	0.2	43.2	0.9	0.3	12.7	28.2	0.6	15.6	0.4	0.0
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	4.1	6.6	2.7	12.9	10.8	1.1	5.0	10.9	3.4	15.6	9.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	69.1	19.5	12.6	107.0	33.3	4.4	80.7	91.9	20.5	74.0	46.7	40.8
LnGrp LOS	E	B	B	F	C	A	F	F	C	E	D	D
Approach Vol, veh/h		1824			1894			682			1098	
Approach Delay, s/veh		21.6			51.2			65.8			65.2	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.0	59.7	19.2	48.5	18.0	70.7	40.0	27.7
Change Period (Y+Rc), s	6.5	7.0	7.0	7.0	7.0	* 7	7.0	7.0
Max Green Setting (Gmax), s	22.5	46.0	14.0	40.0	11.0	* 58	33.0	21.0
Max Q Clear Time (g_c+I1), s	24.5	31.9	12.1	21.6	11.2	28.1	34.7	20.6
Green Ext Time (p_c), s	0.0	8.9	0.2	1.5	0.0	10.3	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	46.0
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱↱	↰↰	↑↑↑					↰↰		↱
Traffic Volume (veh/h)	0	1410	1230	320	1740	0	0	0	0	180	0	160
Future Volume (veh/h)	0	1410	1230	320	1740	0	0	0	0	180	0	160
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	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
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	0	1870
Adj Flow Rate, veh/h	0	1439	1255	327	1776	0				184	0	130
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	2609	1426	418	3634	0				372	0	171
Arrive On Green	0.00	0.51	0.51	0.12	0.71	0.00				0.11	0.00	0.11
Sat Flow, veh/h	0	5274	2790	3456	5274	0				3456	0	1585
Grp Volume(v), veh/h	0	1439	1255	327	1776	0				184	0	130
Grp Sat Flow(s),veh/h/ln	0	1702	1395	1728	1702	0				1728	0	1585
Q Serve(g_s), s	0.0	13.7	28.6	6.6	11.0	0.0				3.6	0.0	5.7
Cycle Q Clear(g_c), s	0.0	13.7	28.6	6.6	11.0	0.0				3.6	0.0	5.7
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2609	1426	418	3634	0				372	0	171
V/C Ratio(X)	0.00	0.55	0.88	0.78	0.49	0.00				0.49	0.00	0.76
Avail Cap(c_a), veh/h	0	3802	2077	498	4946	0				382	0	175
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.9	15.5	30.5	4.5	0.0				30.0	0.0	31.0
Incr Delay (d2), s/veh	0.0	0.1	2.4	5.4	0.0	0.0				0.4	0.0	15.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.3	7.7	2.9	2.2	0.0				1.3	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	12.0	17.9	35.9	4.6	0.0				30.4	0.0	46.5
LnGrp LOS		B	B	D	A					C		D
Approach Vol, veh/h		2694			2103						314	
Approach Delay, s/veh		14.7			9.5						37.1	
Approach LOS		B			A						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.3	43.3		13.8		57.7
Change Period (Y+Rc), s	5.7	6.8		6.1		6.8
Max Green Setting (Gmax), s	10.3	53.2		7.9		69.2
Max Q Clear Time (g_c+I1), s	8.6	30.6		7.7		13.0
Green Ext Time (p_c), s	0.1	5.9		0.0		5.9

Intersection Summary	
HCM 7th Control Delay, s/veh	13.9
HCM 7th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	1080	170	0	1100	150	740	390	190	160	0	440
Future Volume (veh/h)	340	1080	170	0	1100	150	740	390	190	160	0	440
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.99	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	0	1870	1837	1870	1837	1837	1870	0	1870
Adj Flow Rate, veh/h	351	1113	0	0	1134	124	763	402	176	165	0	343
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	466	1599		0	1281	376	865	508	220	216	0	0
Arrive On Green	0.13	0.45	0.00	0.00	0.25	0.25	0.25	0.22	0.22	0.12	0.00	0.00
Sat Flow, veh/h	3456	3554	1585	0	5274	1497	3456	2363	1021	1781	165	
Grp Volume(v), veh/h	351	1113	0	0	1134	124	763	295	283	165	50.7	
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	0	1702	1497	1728	1745	1639	1781	D	
Q Serve(g_s), s	8.7	22.3	0.0	0.0	19.0	6.0	18.9	14.2	14.5	8.0		
Cycle Q Clear(g_c), s	8.7	22.3	0.0	0.0	19.0	6.0	18.9	14.2	14.5	8.0		
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.62	1.00		
Lane Grp Cap(c), veh/h	466	1599		0	1281	376	865	375	353	216		
V/C Ratio(X)	0.75	0.70		0.00	0.89	0.33	0.88	0.79	0.80	0.76		
Avail Cap(c_a), veh/h	466	1638		0	1337	392	1791	569	534	220		
HCM Platoon Ratio	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	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	37.1	19.6	0.0	0.0	32.1	27.2	32.1	33.0	33.1	37.8		
Incr Delay (d2), s/veh	6.1	1.1	0.0	0.0	6.9	0.2	1.2	2.0	2.7	12.8		
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		
%ile BackOfQ(50%),veh/ln	8.9	8.5	0.0	0.0	8.2	2.0	7.3	5.7	5.5	4.1		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	43.2	20.7	0.0	0.0	39.0	27.4	33.3	35.0	35.8	50.7		
LnGrp LOS	D	C			D	C	C	D	D	D		
Approach Vol, veh/h		1464			1258			1341				
Approach Delay, s/veh		26.1			37.8			34.2				
Approach LOS		C			D			C				

Timer - Assigned Phs	2	3	5	6	7	8
Phs Duration (G+Y+Rc), s	46.8	28.4	17.7	29.1	16.9	25.2
Change Period (Y+Rc), s	6.8	6.1	5.7	6.8	6.1	6.1
Max Green Setting (Gmax), s	41.0	46.1	12.0	23.3	11.0	29.0
Max Q Clear Time (g_c+I1), s	24.3	20.9	10.7	21.0	10.0	16.5
Green Ext Time (p_c), s	4.8	1.4	0.1	1.3	0.0	1.5

Intersection Summary	
HCM 7th Control Delay, s/veh	33.1
HCM 7th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	180	110	100	300	190	80	300	100	340	460	310
Future Volume (veh/h)	230	180	110	100	300	190	80	300	100	340	460	310
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.96	1.00		0.95
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	242	189	93	105	316	116	84	316	104	358	484	263
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	244	163	77	208	596	789	111	546	176	422	581	314
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.06	0.21	0.21	0.12	0.27	0.27
Sat Flow, veh/h	378	320	151	323	1171	1551	1781	2614	841	3456	2186	1180
Grp Volume(v), veh/h	524	0	0	421	0	116	84	212	208	358	393	354
Grp Sat Flow(s),veh/h/ln	849	0	0	1494	0	1551	1781	1777	1678	1728	1777	1589
Q Serve(g_s), s	33.7	0.0	0.0	0.0	0.0	4.1	4.7	11.0	11.4	10.4	21.3	21.5
Cycle Q Clear(g_c), s	52.0	0.0	0.0	18.3	0.0	4.1	4.7	11.0	11.4	10.4	21.3	21.5
Prop In Lane	0.46		0.18	0.25		1.00	1.00		0.50	1.00		0.74
Lane Grp Cap(c), veh/h	483	0	0	804	0	789	111	371	351	422	472	422
V/C Ratio(X)	1.08	0.00	0.00	0.52	0.00	0.15	0.76	0.57	0.59	0.85	0.83	0.84
Avail Cap(c_a), veh/h	483	0	0	804	0	789	122	497	470	439	596	533
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	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.9	0.0	0.0	16.5	0.0	13.3	47.2	36.3	36.5	44.0	35.4	35.5
Incr Delay (d2), s/veh	65.6	0.0	0.0	0.6	0.0	0.1	21.8	1.4	1.6	14.1	7.9	9.3
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	21.2	0.0	0.0	6.6	0.0	1.4	2.8	4.9	4.8	5.2	10.1	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	100.5	0.0	0.0	17.1	0.0	13.4	68.9	37.7	38.1	58.1	43.3	44.7
LnGrp LOS	F			B		B	E	D	D	E	D	D
Approach Vol, veh/h		524			537			504			1105	
Approach Delay, s/veh		100.5			16.3			43.1			48.6	
Approach LOS		F			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.5	26.8		58.0	11.7	32.6		58.0
Change Period (Y+Rc), s	5.0	5.4		6.0	5.3	5.4		6.0
Max Green Setting (Gmax), s	13.6	28.6		52.0	7.0	34.3		34.0
Max Q Clear Time (g_c+I1), s	12.4	13.4		54.0	6.7	23.5		20.3
Green Ext Time (p_c), s	0.1	2.2		0.0	0.0	3.6		2.8

Intersection Summary	
HCM 7th Control Delay, s/veh	51.2
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	920	30	90	540	230	20	110	60	390	130	380
Future Volume (veh/h)	270	920	30	90	540	230	20	110	60	390	130	380
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	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	1854	1854	1870	1870	1854	1870	1870	1854	1870	1854	1854
Adj Flow Rate, veh/h	284	968	30	95	568	194	21	116	50	411	137	360
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	484	1509	47	117	806	559	35	387	324	467	146	383
Arrive On Green	0.27	0.43	0.43	0.02	0.07	0.07	0.02	0.21	0.21	0.14	0.32	0.32
Sat Flow, veh/h	1781	3487	108	1781	3554	1530	1781	1870	1566	3456	452	1187
Grp Volume(v), veh/h	284	489	509	95	568	194	21	116	50	411	0	497
Grp Sat Flow(s),veh/h/ln	1781	1761	1834	1781	1777	1530	1781	1870	1566	1728	0	1639
Q Serve(g_s), s	20.7	32.7	32.7	8.0	23.4	5.9	1.8	7.9	3.9	17.5	0.0	44.3
Cycle Q Clear(g_c), s	20.7	32.7	32.7	8.0	23.4	5.9	1.8	7.9	3.9	17.5	0.0	44.3
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		0.72
Lane Grp Cap(c), veh/h	484	762	794	117	806	559	35	387	324	467	0	528
V/C Ratio(X)	0.59	0.64	0.64	0.81	0.71	0.35	0.61	0.30	0.15	0.88	0.00	0.94
Avail Cap(c_a), veh/h	484	762	794	154	806	559	59	436	365	576	0	601
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	0.68	0.00	0.68
Uniform Delay (d), s/veh	47.3	33.4	33.4	72.5	64.5	16.5	73.0	50.3	48.8	63.7	0.0	49.4
Incr Delay (d2), s/veh	1.8	4.1	4.0	2.4	0.5	0.2	15.9	0.4	0.2	9.1	0.0	16.6
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	9.4	14.6	15.2	3.8	11.3	2.7	1.0	3.8	1.6	8.2	0.0	20.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	49.2	37.5	37.4	74.8	65.0	16.7	88.9	50.7	49.0	72.8	0.0	66.0
LnGrp LOS	D	D	D	E	E	B	F	D	D	E		E
Approach Vol, veh/h		1282			857			187			908	
Approach Delay, s/veh		40.0			55.1			54.6			69.1	
Approach LOS		D			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	70.9	26.3	37.0	46.7	40.0	8.9	54.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	53.0	25.0	35.0	32.0	34.0	5.0	55.0
Max Q Clear Time (g_c+I1), s	10.0	34.7	19.5	9.9	22.7	25.4	3.8	46.3
Green Ext Time (p_c), s	0.0	5.9	0.7	0.8	0.6	2.8	0.0	2.1

Intersection Summary	
HCM 7th Control Delay, s/veh	53.0
HCM 7th LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	330	1040	750	420	490	110
Future Volume (veh/h)	330	1040	750	420	490	110
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1854	1854	1854	1854
Adj Flow Rate, veh/h	337	1061	765	386	500	104
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	344	2056	776	390	482	100
Arrive On Green	0.39	1.00	0.35	0.35	0.34	0.34
Sat Flow, veh/h	1781	3647	2341	1130	1427	297
Grp Volume(v), veh/h	337	1061	599	552	605	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1761	1617	1727	0
Q Serve(g_s), s	28.0	0.0	50.6	50.9	50.7	0.0
Cycle Q Clear(g_c), s	28.0	0.0	50.6	50.9	50.7	0.0
Prop In Lane	1.00			0.70	0.83	0.17
Lane Grp Cap(c), veh/h	344	2056	608	559	584	0
V/C Ratio(X)	0.98	0.52	0.98	0.99	1.04	0.00
Avail Cap(c_a), veh/h	344	2056	608	559	584	0
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.79	0.79	0.09	0.00
Uniform Delay (d), s/veh	45.7	0.0	48.7	48.8	49.7	0.0
Incr Delay (d2), s/veh	34.6	0.6	28.9	31.2	22.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.5	0.2	26.6	24.9	25.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	80.3	0.6	77.6	80.0	71.9	0.0
LnGrp LOS	F	A	E	F	F	
Approach Vol, veh/h		1398	1151		605	
Approach Delay, s/veh		19.9	78.8		71.9	
Approach LOS		B	E		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		92.8		57.2	35.0	57.8
Change Period (Y+Rc), s		6.0		6.5	6.0	6.0
Max Green Setting (Gmax), s		86.8		50.7	29.0	51.8
Max Q Clear Time (g_c+I1), s		2.0		52.7	30.0	52.9
Green Ext Time (p_c), s		9.4		0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	51.3
HCM 7th LOS	D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	880	650	60	690	480	50
Future Volume (veh/h)	880	650	60	690	480	50
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	984	1856	1870	1870	1870	1856
Adj Flow Rate, veh/h	926	547	63	726	505	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	873	1195	82	2029	541	478
Arrive On Green	0.47	0.47	0.05	0.57	0.30	0.30
Sat Flow, veh/h	1920	1537	1781	3647	1781	1573
Grp Volume(v), veh/h	926	547	63	726	505	53
Grp Sat Flow(s),veh/h/ln	935	1537	1781	1777	1781	1573
Q Serve(g_s), s	56.0	15.2	4.2	13.2	33.0	2.9
Cycle Q Clear(g_c), s	56.0	15.2	4.2	13.2	33.0	2.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	873	1195	82	2029	541	478
V/C Ratio(X)	1.06	0.46	0.77	0.36	0.93	0.11
Avail Cap(c_a), veh/h	873	1195	267	2029	683	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.64	0.64	0.50	0.50	1.00	1.00
Uniform Delay (d), s/veh	32.0	4.9	56.6	13.9	40.6	30.1
Incr Delay (d2), s/veh	42.2	0.8	7.4	0.2	17.3	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.9	12.5	2.0	5.1	16.6	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	74.2	5.7	64.1	14.1	57.9	30.2
LnGrp LOS	F	A	E	B	E	C
Approach Vol, veh/h	1473			789	558	
Approach Delay, s/veh	48.8			18.1	55.3	
Approach LOS	D			B	E	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.5	64.0			76.5	43.5
Change Period (Y+Rc), s	7.0	8.0			8.0	7.0
Max Green Setting (Gmax), s	18.6	34.0			59.0	46.0
Max Q Clear Time (g_c+I1), s	16.2	58.0			15.2	35.0
Green Ext Time (p_c), s	0.1	0.0			5.4	1.4

Intersection Summary		
HCM 7th Control Delay, s/veh	41.5	
HCM 7th LOS	D	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	780	30	50	510	340	20	10	30	430	20	220
Future Volume (veh/h)	120	780	30	50	510	340	20	10	30	430	20	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	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	1860	1860	1870	1860	1860	1860	1860	1860	1860	1860	1860
Adj Flow Rate, veh/h	126	821	30	53	537	322	21	11	29	341	177	209
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	1194	44	101	659	395	133	80	145	448	281	332
Arrive On Green	0.09	0.34	0.34	0.06	0.31	0.31	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1781	3473	127	1781	2125	1272	221	220	400	1357	777	917
Grp Volume(v), veh/h	126	418	433	53	446	413	61	0	0	341	0	386
Grp Sat Flow(s),veh/h/ln	1781	1767	1833	1781	1767	1631	841	0	0	1357	0	1694
Q Serve(g_s), s	6.3	18.4	18.4	2.6	21.1	21.2	0.6	0.0	0.0	12.6	0.0	17.1
Cycle Q Clear(g_c), s	6.3	18.4	18.4	2.6	21.1	21.2	17.7	0.0	0.0	30.3	0.0	17.1
Prop In Lane	1.00		0.07	1.00		0.78	0.34		0.48	1.00		0.54
Lane Grp Cap(c), veh/h	161	607	630	101	548	506	358	0	0	448	0	613
V/C Ratio(X)	0.78	0.69	0.69	0.52	0.81	0.82	0.17	0.00	0.00	0.76	0.00	0.63
Avail Cap(c_a), veh/h	590	780	809	590	780	720	442	0	0	459	0	627
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	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.3	25.5	25.5	41.5	28.8	28.9	20.1	0.0	0.0	30.4	0.0	23.9
Incr Delay (d2), s/veh	8.0	1.7	1.7	4.1	4.5	4.9	0.2	0.0	0.0	7.1	0.0	2.0
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	3.0	7.5	7.8	1.2	9.1	8.4	0.9	0.0	0.0	7.7	0.0	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	48.3	27.3	27.2	45.6	33.3	33.8	20.4	0.0	0.0	37.5	0.0	25.8
LnGrp LOS	D	C	C	D	C	C	C			D		C
Approach Vol, veh/h		977			912			61			727	
Approach Delay, s/veh		30.0			34.2			20.4			31.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.2	39.1		39.3	15.2	36.1		39.3
Change Period (Y+Rc), s	7.0	8.0		6.5	7.0	8.0		6.5
Max Green Setting (Gmax), s	30.0	40.0		33.5	30.0	40.0		38.5
Max Q Clear Time (g_c+I1), s	14.6	20.4		32.3	8.3	23.2		19.7
Green Ext Time (p_c), s	0.1	5.0		0.5	0.3	4.9		0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	31.6
HCM 7th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Appendix J: LOS Analysis Worksheets – Horizon Year 2050 with Project with Improvements Conditions
Peak Hour Signal Warrant - Linda Vista Drive & Grand Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	210	170	80	430	70	170	240	20	340	540	500
Future Volume (veh/h)	370	210	170	80	430	70	170	240	20	340	540	500
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1833	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	389	221	143	84	453	59	179	253	17	358	568	477
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	438	969	659	143	1037	133	270	284	240	585	614	520
Arrive On Green	0.13	0.27	0.27	0.08	0.23	0.23	0.15	0.15	0.15	0.33	0.33	0.33
Sat Flow, veh/h	3456	3554	1553	1781	4583	586	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	389	221	143	84	334	178	179	253	17	358	568	477
Grp Sat Flow(s),veh/h/ln	1728	1777	1553	1781	1702	1765	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	14.4	6.3	7.6	5.9	11.0	11.3	12.3	17.3	1.2	22.0	38.1	37.6
Cycle Q Clear(g_c), s	14.4	6.3	7.6	5.9	11.0	11.3	12.3	17.3	1.2	22.0	38.1	37.6
Prop In Lane	1.00		1.00	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	438	969	659	143	770	399	270	284	240	585	614	520
V/C Ratio(X)	0.89	0.23	0.22	0.59	0.43	0.44	0.66	0.89	0.07	0.61	0.92	0.92
Avail Cap(c_a), veh/h	460	969	659	173	770	399	314	329	279	684	718	608
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)	0.57	0.57	0.57	0.96	0.96	0.96	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.8	36.7	23.7	57.7	43.2	43.3	52.0	54.1	47.3	36.7	42.1	41.9
Incr Delay (d2), s/veh	10.9	0.3	0.4	1.4	1.7	3.4	2.4	19.2	0.0	0.6	15.3	16.0
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	6.8	2.7	3.6	2.7	4.7	5.2	5.6	9.5	0.5	9.2	19.1	16.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	66.7	37.0	24.2	59.0	44.9	46.7	54.4	73.3	47.3	37.3	57.4	58.0
LnGrp LOS	E	D	C	E	D	D	D	E	D	D	E	E
Approach Vol, veh/h		753			596			449			1403	
Approach Delay, s/veh		49.9			47.4			64.8			52.5	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.2	42.2		47.8	21.2	36.2		24.8				
Change Period (Y+Rc), s	4.7	6.8		5.1	4.7	6.8		5.1				
Max Green Setting (Gmax), s	12.6	22.9		49.9	17.3	18.2		22.9				
Max Q Clear Time (g_c+I1), s	7.9	9.6		40.1	16.4	13.3		19.3				
Green Ext Time (p_c), s	0.0	0.9		2.6	0.1	0.9		0.5				

Intersection Summary			
HCM 7th Control Delay, s/veh		52.7	
HCM 7th LOS		D	

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	490	120	160	570	60	110
Future Volume (veh/h)	490	120	160	570	60	110
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
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
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	516	113	168	600	63	104
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1694	369	207	2692	76	125
Arrive On Green	0.58	0.58	0.12	0.76	0.12	0.12
Sat Flow, veh/h	2995	632	1781	3647	621	1024
Grp Volume(v), veh/h	315	314	168	600	168	0
Grp Sat Flow(s),veh/h/ln	1777	1757	1781	1777	1655	0
Q Serve(g_s), s	8.1	8.1	8.3	4.4	8.9	0.0
Cycle Q Clear(g_c), s	8.1	8.1	8.3	4.4	8.9	0.0
Prop In Lane		0.36	1.00		0.37	0.62
Lane Grp Cap(c), veh/h	1038	1026	207	2692	202	0
V/C Ratio(X)	0.30	0.31	0.81	0.22	0.83	0.00
Avail Cap(c_a), veh/h	1038	1026	431	2692	331	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.89	0.89	1.00	0.00
Uniform Delay (d), s/veh	9.5	9.5	38.8	3.2	38.6	0.0
Incr Delay (d2), s/veh	0.7	0.7	6.8	0.2	8.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	2.8	3.8	1.0	4.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	10.1	10.2	45.6	3.4	47.4	0.0
LnGrp LOS	B	B	D	A	D	
Approach Vol, veh/h	629			768	168	
Approach Delay, s/veh	10.2			12.6	47.4	
Approach LOS	B			B	D	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		16.0	15.6	58.4		74.0
Change Period (Y+Rc), s		5.0	5.2	5.8		5.8
Max Green Setting (Gmax), s		18.0	21.8	34.2		61.2
Max Q Clear Time (g_c+I1), s		10.9	10.3	10.1		6.4
Green Ext Time (p_c), s		0.3	0.3	3.6		4.1

Intersection Summary	
HCM 7th Control Delay, s/veh	15.4
HCM 7th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	830	240	150	1140	160	180	280	230	120	230	90
Future Volume (veh/h)	120	830	240	150	1140	160	180	280	230	120	230	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.99
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	1857	1857	1870	1857	1857	1870	1857	1857	1870	1857	1857
Adj Flow Rate, veh/h	126	874	202	158	1200	134	189	295	194	126	242	86
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	377	2017	1005	206	1482	729	235	513	318	172	335	116
Arrive On Green	0.21	0.57	0.57	0.06	0.42	0.42	0.07	0.15	0.15	0.05	0.13	0.13
Sat Flow, veh/h	1781	3528	1571	3456	3528	1550	3456	3528	1543	3456	2565	886
Grp Volume(v), veh/h	126	874	202	158	1200	134	189	295	194	126	164	164
Grp Sat Flow(s),veh/h/ln	1781	1764	1571	1728	1764	1550	1728	1764	1543	1728	1764	1687
Q Serve(g_s), s	9.0	21.1	8.0	6.8	44.9	2.7	8.1	11.7	17.1	5.4	13.4	14.0
Cycle Q Clear(g_c), s	9.0	21.1	8.0	6.8	44.9	2.7	8.1	11.7	17.1	5.4	13.4	14.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	377	2017	1005	206	1482	729	235	513	318	172	230	220
V/C Ratio(X)	0.33	0.43	0.20	0.77	0.81	0.18	0.80	0.57	0.61	0.73	0.71	0.74
Avail Cap(c_a), veh/h	377	2017	1005	320	1482	729	276	823	454	242	400	382
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)	0.25	0.25	0.25	0.21	0.21	0.21	0.94	0.94	0.94	0.72	0.72	0.72
Uniform Delay (d), s/veh	50.2	18.3	11.2	69.5	38.2	8.3	68.9	59.8	54.2	70.3	62.5	62.8
Incr Delay (d2), s/veh	0.1	0.2	0.1	1.3	1.1	0.1	13.0	1.0	1.8	5.0	3.0	3.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	8.4	2.7	3.0	19.1	1.2	4.0	5.3	6.8	2.5	6.1	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	50.3	18.4	11.3	70.8	39.3	8.4	82.0	60.7	56.0	75.3	65.5	66.4
LnGrp LOS	D	B	B	E	D	A	F	E	E	E	E	E
Approach Vol, veh/h		1202			1492			678			454	
Approach Delay, s/veh		20.6			39.9			65.3			68.5	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	92.3	16.2	26.1	38.2	69.5	13.9	28.3
Change Period (Y+Rc), s	6.5	6.5	6.0	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	13.9	64.6	12.0	34.0	15.5	63.0	10.5	35.0
Max Q Clear Time (g_c+I1), s	8.8	23.1	10.1	16.0	11.0	46.9	7.4	19.1
Green Ext Time (p_c), s	0.2	7.5	0.1	1.6	0.1	7.9	0.1	2.2

Intersection Summary	
HCM 7th Control Delay, s/veh	41.7
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	870	200	230	1090	120	250	180	430	110	160	80
Future Volume (veh/h)	80	870	200	230	1090	120	250	180	430	110	160	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		1.00	1.00		0.97
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	1857	1857	1870	1870	1857	1870	1870	1857	1870	1857	1857
Adj Flow Rate, veh/h	84	916	169	242	1147	101	263	189	362	116	168	76
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	1176	664	976	1969	848	314	249	653	139	229	188
Arrive On Green	0.06	0.33	0.33	0.56	1.00	1.00	0.09	0.13	0.13	0.08	0.12	0.12
Sat Flow, veh/h	1781	3528	1564	3456	3554	1530	3456	1870	1566	1781	1857	1526
Grp Volume(v), veh/h	84	916	169	242	1147	101	263	189	362	116	168	76
Grp Sat Flow(s),veh/h/ln	1781	1764	1564	1728	1777	1530	1728	1870	1566	1781	1857	1526
Q Serve(g_s), s	7.0	35.1	3.1	5.3	0.0	0.0	11.2	14.6	5.5	9.6	13.1	6.9
Cycle Q Clear(g_c), s	7.0	35.1	3.1	5.3	0.0	0.0	11.2	14.6	5.5	9.6	13.1	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	104	1176	664	976	1969	848	314	249	653	139	229	188
V/C Ratio(X)	0.81	0.78	0.25	0.25	0.58	0.12	0.84	0.76	0.55	0.84	0.73	0.40
Avail Cap(c_a), veh/h	126	1176	664	976	1969	848	415	511	872	160	464	381
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.42	0.42	0.42	0.82	0.82	0.82	0.09	0.09	0.09	0.99	0.99	0.99
Uniform Delay (d), s/veh	69.8	45.0	11.3	24.6	0.0	0.0	67.1	62.7	15.0	68.2	63.3	60.6
Incr Delay (d2), s/veh	12.9	2.2	0.4	0.1	1.0	0.2	1.1	0.4	0.1	27.2	4.4	1.4
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	3.5	15.5	2.1	2.0	0.3	0.1	5.0	7.0	6.0	5.4	6.5	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	82.7	47.2	11.7	24.7	1.0	0.2	68.2	63.1	15.1	95.4	67.8	62.0
LnGrp LOS	F	D	B	C	A	A	E	E	B	F	E	E
Approach Vol, veh/h		1169			1490			814			360	
Approach Delay, s/veh		44.7			4.8			43.4			75.5	
Approach LOS		D			A			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	48.9	56.0	19.6	25.5	15.2	89.6	18.2	27.0
Change Period (Y+Rc), s	6.5	6.0	6.0	* 7	6.5	* 6.5	6.5	7.0
Max Green Setting (Gmax), s	19.5	50.0	18.0	* 38	10.6	* 59	13.5	41.0
Max Q Clear Time (g_c+I1), s	7.3	37.1	13.2	15.1	9.0	2.0	11.6	16.6
Green Ext Time (p_c), s	0.6	5.4	0.4	1.1	0.0	11.1	0.0	2.4

Intersection Summary	
HCM 7th Control Delay, s/veh	31.8
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	450	260	90	620	290	380	230	220	680	600	580
Future Volume (veh/h)	400	450	260	90	620	290	380	230	220	680	600	580
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1837	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	421	474	219	95	653	274	321	353	186	716	632	569
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1220	1698	1023	128	648	267	319	335	284	669	702	595
Arrive On Green	0.35	0.48	0.48	0.07	0.18	0.18	0.18	0.18	0.18	0.38	0.38	0.38
Sat Flow, veh/h	3456	3554	1557	1781	3549	1462	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	421	474	219	95	626	301	321	353	186	716	632	569
Grp Sat Flow(s),veh/h/ln	1728	1777	1557	1781	1702	1607	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	13.5	12.1	8.4	7.8	27.4	27.4	26.9	26.9	16.4	56.3	47.8	52.5
Cycle Q Clear(g_c), s	13.5	12.1	8.4	7.8	27.4	27.4	26.9	26.9	16.4	56.3	47.8	52.5
Prop In Lane	1.00		1.00	1.00		0.91	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1220	1698	1023	128	622	294	319	335	284	669	702	595
V/C Ratio(X)	0.34	0.28	0.21	0.74	1.01	1.03	1.00	1.05	0.65	1.07	0.90	0.96
Avail Cap(c_a), veh/h	1220	1698	1023	137	622	294	319	335	284	669	702	595
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)	0.56	0.56	0.56	0.86	0.86	0.86	0.70	0.70	0.70	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	23.6	10.3	68.2	61.3	61.3	61.6	61.5	57.2	46.8	44.2	45.7
Incr Delay (d2), s/veh	0.0	0.2	0.3	13.6	35.1	55.5	43.3	55.6	3.0	55.4	14.3	26.2
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	5.6	5.0	4.7	4.0	14.6	15.5	15.9	17.8	6.7	33.9	23.8	24.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.8	23.8	10.5	81.9	96.4	116.8	104.9	117.1	60.2	102.2	58.5	71.8
LnGrp LOS	D	C	B	F	F	F	F	F	E	F	E	E
Approach Vol, veh/h		1114			1022			860			1917	
Approach Delay, s/veh		25.7			101.0			100.3			78.8	
Approach LOS		C			F			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.5	78.6		61.4	59.9	34.2		32.0				
Change Period (Y+Rc), s	4.7	6.8		5.1	6.8	* 6.8		5.1				
Max Green Setting (Gmax), s	11.5	33.6		56.3	17.7	* 27		26.9				
Max Q Clear Time (g_c+I1), s	9.8	14.1		58.3	15.5	29.4		28.9				
Green Ext Time (p_c), s	0.0	2.1		0.0	0.2	0.0		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh		75.1
HCM 7th LOS		E

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1270	70	140	830	10	370
Future Volume (veh/h)	1270	70	140	830	10	370
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
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
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1337	67	147	874	11	350
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1824	91	179	2424	10	323
Arrive On Green	0.53	0.53	0.10	0.68	0.21	0.21
Sat Flow, veh/h	3537	172	1781	3647	48	1538
Grp Volume(v), veh/h	689	715	147	874	362	0
Grp Sat Flow(s),veh/h/ln	1777	1839	1781	1777	1591	0
Q Serve(g_s), s	29.8	29.9	8.1	10.4	21.0	0.0
Cycle Q Clear(g_c), s	29.8	29.9	8.1	10.4	21.0	0.0
Prop In Lane		0.09	1.00		0.03	0.97
Lane Grp Cap(c), veh/h	941	974	179	2424	334	0
V/C Ratio(X)	0.73	0.73	0.82	0.36	1.08	0.00
Avail Cap(c_a), veh/h	941	974	246	2424	334	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.46	0.46	0.76	0.76	1.00	0.00
Uniform Delay (d), s/veh	18.1	18.1	44.1	6.7	39.5	0.0
Incr Delay (d2), s/veh	2.4	2.3	11.5	0.3	73.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	11.8	4.0	3.2	14.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	20.4	20.4	55.6	7.0	112.9	0.0
LnGrp LOS	C	C	E	A	F	
Approach Vol, veh/h	1404			1021	362	
Approach Delay, s/veh	20.4			14.0	112.9	
Approach LOS	C			B	F	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	26.0	15.2	58.8		74.0
Change Period (Y+Rc), s	5.0	5.2	5.8		5.8
Max Green Setting (Gmax), s	21.0	13.8	49.2		68.2
Max Q Clear Time (g_c+I1), s	23.0	10.1	31.9		12.4
Green Ext Time (p_c), s	0.0	0.1	8.4		6.7

Intersection Summary	
HCM 7th Control Delay, s/veh	30.1
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	1190	400	390	930	230	220	430	280	260	550	120
Future Volume (veh/h)	160	1190	400	390	930	230	220	430	280	260	550	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.99
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	1859	1859	1870	1859	1859	1870	1859	1859	1870	1859	1859
Adj Flow Rate, veh/h	162	1202	323	394	939	186	222	434	226	263	556	114
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	1469	776	426	1372	741	266	702	501	306	623	127
Arrive On Green	0.15	0.42	0.42	0.12	0.39	0.39	0.08	0.20	0.20	0.09	0.21	0.21
Sat Flow, veh/h	1781	3531	1574	3456	3531	1548	3456	3531	1544	3456	2912	595
Grp Volume(v), veh/h	162	1202	323	394	939	186	222	434	226	263	336	334
Grp Sat Flow(s),veh/h/ln	1781	1766	1574	1728	1766	1548	1728	1766	1544	1728	1766	1741
Q Serve(g_s), s	12.7	45.2	19.6	16.9	33.2	5.0	9.5	16.8	17.4	11.3	27.7	28.0
Cycle Q Clear(g_c), s	12.7	45.2	19.6	16.9	33.2	5.0	9.5	16.8	17.4	11.3	27.7	28.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	268	1469	776	426	1372	741	266	702	501	306	377	372
V/C Ratio(X)	0.60	0.82	0.42	0.92	0.68	0.25	0.83	0.62	0.45	0.86	0.89	0.90
Avail Cap(c_a), veh/h	268	1469	776	426	1372	741	276	807	547	311	427	421
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)	0.09	0.09	0.09	0.17	0.17	0.17	0.93	0.93	0.93	0.41	0.41	0.41
Uniform Delay (d), s/veh	59.5	38.8	24.3	65.1	38.2	8.2	68.3	54.9	40.4	67.4	57.3	57.3
Incr Delay (d2), s/veh	0.3	0.5	0.1	6.5	0.5	0.1	17.8	1.1	0.6	9.7	9.0	9.6
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	5.7	19.0	7.3	7.8	14.2	2.1	4.8	7.5	6.7	5.3	13.2	13.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.9	39.3	24.4	71.6	38.7	8.3	86.0	55.9	41.0	77.1	66.3	66.9
LnGrp LOS	E	D	C	E	D	A	F	E	D	E	E	E
Approach Vol, veh/h		1687			1519			882			933	
Approach Delay, s/veh		38.4			43.5			59.7			69.6	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	68.9	17.5	38.6	29.1	64.8	19.8	36.3
Change Period (Y+Rc), s	6.5	6.5	6.0	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	18.5	57.7	12.0	36.3	17.9	58.3	13.5	34.3
Max Q Clear Time (g_c+I1), s	18.9	47.2	11.5	30.0	14.7	35.2	13.3	19.4
Green Ext Time (p_c), s	0.0	6.3	0.0	2.1	0.1	7.4	0.0	3.0

Intersection Summary	
HCM 7th Control Delay, s/veh	49.5
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	1300	330	340	1040	80	370	400	440	140	470	130
Future Volume (veh/h)	70	1300	330	340	1040	80	370	400	440	140	470	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		0.98
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	1859	1859	1870	1870	1859	1870	1870	1859	1870	1859	1859
Adj Flow Rate, veh/h	71	1313	266	343	1051	65	374	404	355	141	475	122
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	1295	740	632	1762	754	369	520	724	146	477	398
Arrive On Green	0.05	0.37	0.37	0.24	0.66	0.66	0.11	0.28	0.28	0.08	0.26	0.26
Sat Flow, veh/h	1781	3531	1560	3456	3554	1520	3456	1870	1567	1781	1859	1549
Grp Volume(v), veh/h	71	1313	266	343	1051	65	374	404	355	141	475	122
Grp Sat Flow(s),veh/h/ln	1781	1766	1560	1728	1777	1520	1728	1870	1567	1781	1859	1549
Q Serve(g_s), s	5.9	55.0	9.4	13.0	24.9	2.3	16.0	29.8	5.5	11.8	38.3	9.5
Cycle Q Clear(g_c), s	5.9	55.0	9.4	13.0	24.9	2.3	16.0	29.8	5.5	11.8	38.3	9.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	1295	740	632	1762	754	369	520	724	146	477	398
V/C Ratio(X)	0.79	1.01	0.36	0.54	0.60	0.09	1.01	0.78	0.49	0.97	1.00	0.31
Avail Cap(c_a), veh/h	148	1295	740	632	1762	754	369	520	724	146	477	398
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.76	0.76	0.76	0.09	0.09	0.09	0.78	0.78	0.78
Uniform Delay (d), s/veh	70.5	47.5	12.9	51.3	17.1	13.3	67.0	49.9	17.5	68.6	55.7	45.0
Incr Delay (d2), s/veh	1.5	11.4	0.1	0.7	1.1	0.2	17.8	0.7	0.0	55.5	35.3	0.3
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	2.7	25.6	3.2	5.4	8.7	0.9	8.0	14.1	6.4	7.6	22.4	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	71.9	58.9	13.1	52.0	18.2	13.4	84.8	50.6	17.6	124.2	90.9	45.3
LnGrp LOS	E	F	B	D	B	B	F	D	B	F	F	D
Approach Vol, veh/h		1650			1459			1133			738	
Approach Delay, s/veh		52.0			26.0			51.5			89.7	
Approach LOS		D			C			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.0	61.0	22.0	45.5	14.0	80.9	18.8	48.7
Change Period (Y+Rc), s	6.5	6.0	6.0	* 7	6.5	* 6.5	6.5	7.0
Max Green Setting (Gmax), s	15.5	55.0	16.0	* 39	12.5	* 58	12.3	41.2
Max Q Clear Time (g_c+I1), s	15.0	57.0	18.0	40.3	7.9	26.9	13.8	31.8
Green Ext Time (p_c), s	0.1	0.0	0.0	0.0	0.0	8.7	0.0	2.7

Intersection Summary	
HCM 7th Control Delay, s/veh	49.9
HCM 7th LOS	D

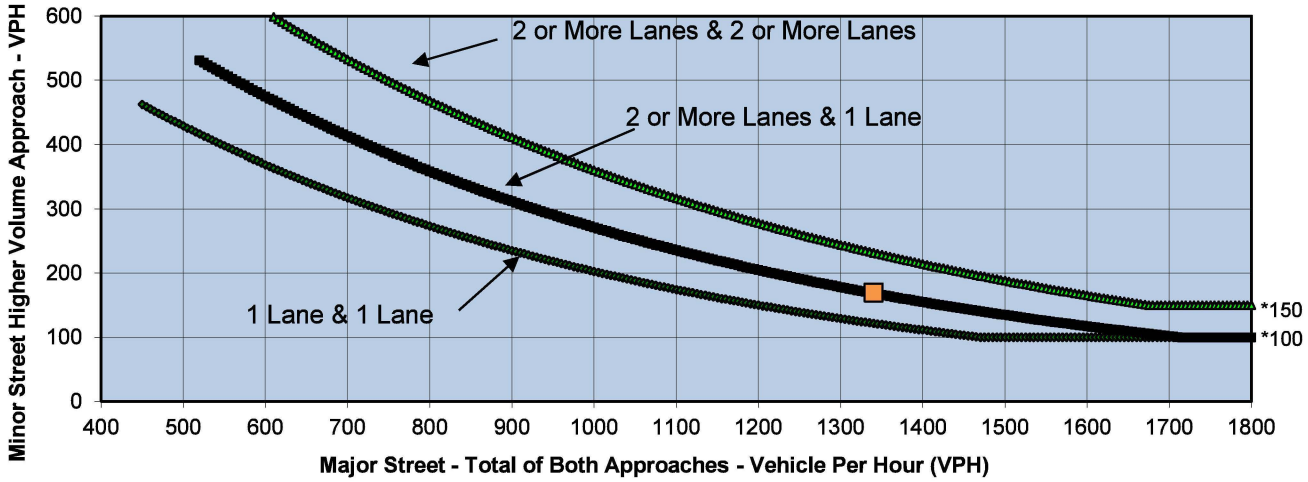
Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Sheet No 1 of 2

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

Major Street	Grand Avenue
Minor Street	Linda Vista Drive

Project	San Marco Creek Specific Plan
Scenario	2050 + Project
Peak Hour	AM

Turn Movement Volumes

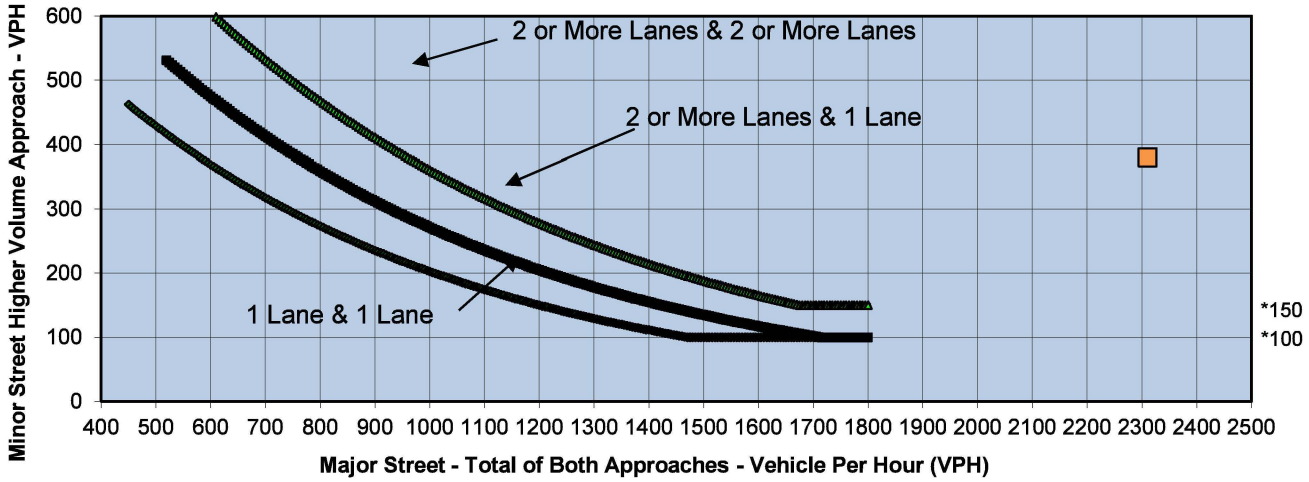
	NB	SB	EB	WB
Left	60			160
Through			490	570
Right	110		120	
Total	170	0	610	730

Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Grand Avenue	Linda Vista Drive	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,340**	**170**	

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

Major Street	Grand Avenue
Minor Street	Linda Vista Drive

Project	San Marco Creek Specific Plan
Scenario	2050 + Project
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	10			140
Through			1,270	830
Right	370		70	
Total	380	0	1,340	970

Major Street Direction

	North/South
X	East/West

	Major Street	Minor Street	Warrant Met
	Grand Avenue	Linda Vista Drive	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,310	380	