

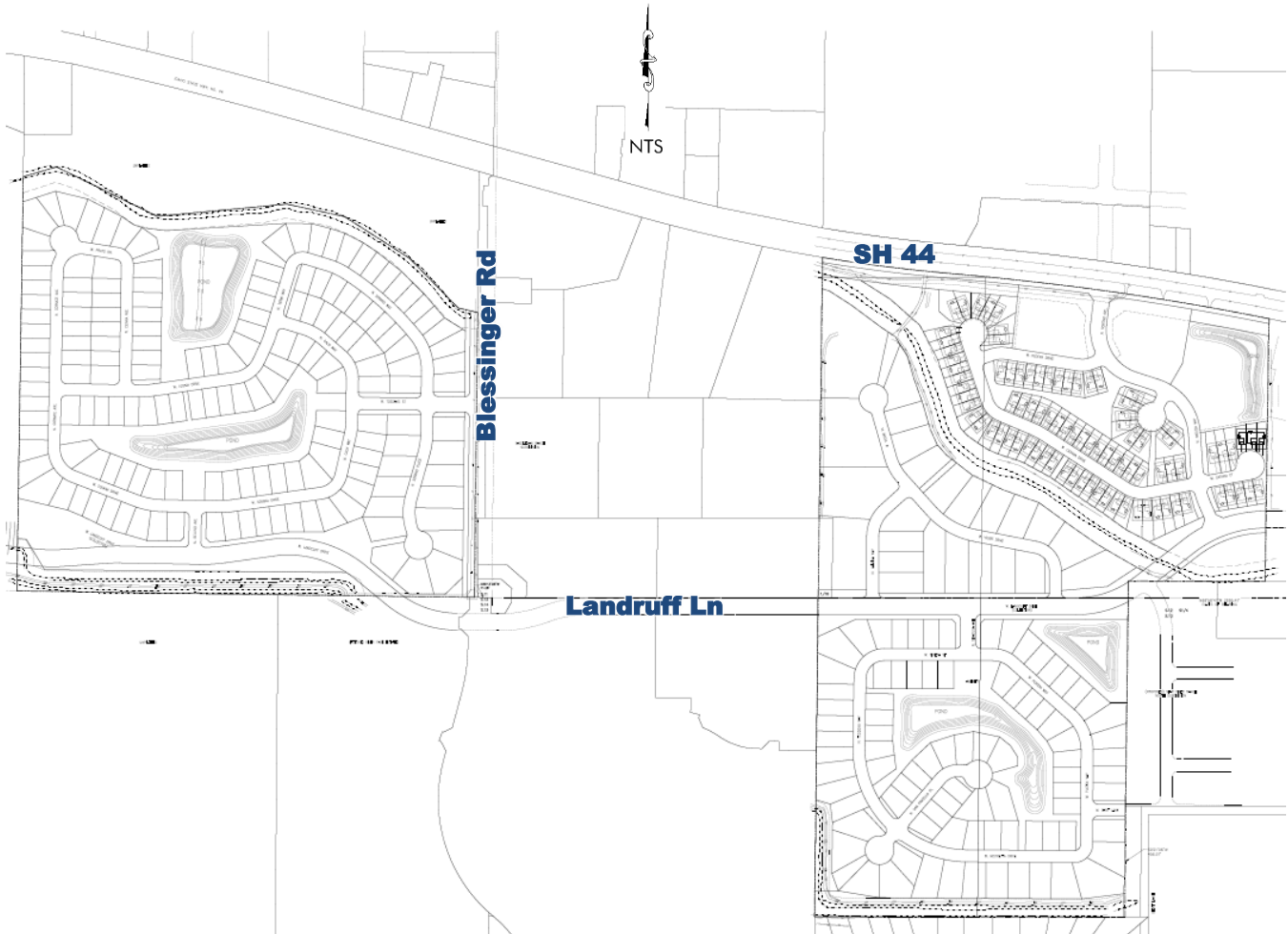
TRAFFIC IMPACT STUDY

TOSCANO ESTATES & SORANO ESTATES

Star, Idaho

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Table of Contents

EXECUTIVE SUMMARY	1
1.0 Proposed Development.....	1
2.0 Site Access.....	3
3.0 2024 Existing Traffic Conditions	4
4.0 2028 Build-Out Year Background Traffic Conditions	4
5.0 2028 Build-Out Year Total Traffic Conditions	5
6.0 2033 Horizon Year Background Traffic Conditions	6
7.0 2033 Horizon Year Total Traffic Conditions	7
1.0 INTRODUCTION	8
1.1 Proposed Development.....	9
1.1.1 Toscano Estates	9
1.1.2 Sorano Estates	10
1.2 Study Approach.....	11
1.3 Study Area	11
1.4 Study Period	11
1.5 Analysis Methods and Performance Measure Thresholds.....	11
2.0 EXISTING CONDITIONS.....	12
2.1 Roadway Network, Intersection Control, and Lane Configuration	12
2.2 Existing Traffic Volumes	12
2.3 Intersection Crash Data	12
2.4 Intersection Operations.....	12
2.5 Intersection Mitigation	15
3.0 2028 BUILD-OUT YEAR BACKGROUND TRAFFIC CONDITIONS	16
3.1 Roadway Network.....	16
3.2 Background Traffic	16
3.3 Intersection Operations.....	19
3.4 Intersection Mitigation	19
4.0 2028 BUILD-OUT YEAR TOTAL TRAFFIC CONDITIONS.....	22
4.1 Roadway Network.....	22
4.2 Site Traffic.....	22
4.2.1 Trip Generation	22
4.2.2 Trip Capture.....	23
4.2.3 Pass-By Trips.....	23
4.2.4 Modal Split	23
4.2.5 Trip Distribution and Assignment	23
4.3 Total Traffic.....	23
4.4 Intersection Operations.....	31
4.5 Intersection Mitigation	32
4.6 Toscano Estates Site Access and Circulation	34
4.7 Sorano Estates Site Access and Circulation	36
4.7.1 Sorano Estates Alternate Site Access	36
5.0 2033 HORIZON YEAR BACKGROUND TRAFFIC CONDITIONS	45
5.1 Roadway Network.....	45
5.2 Background Traffic	45
5.3 Intersection Operations.....	45
5.4 Intersection Mitigation	47
6.0 2033 HORIZON YEAR TOTAL TRAFFIC CONDITIONS	49
6.1 Roadway Network.....	49
6.2 Site Traffic.....	49

6.3	Total Traffic.....	49
6.4	Intersection Operations.....	49
6.5	Intersection Mitigation	55
6.6	Sorano Estates Alternate Site Access	55
APPENDIX A: Traffic Counts		A
APPENDIX B: Intersection Crash Data		B
APPENDIX C: 2024 Synchro Reports.....		C
APPENDIX D: Off-Site Traffic.....		D
APPENDIX E: 2028 Background Synchro Reports.....		E
APPENDIX F: 2028 Total Synchro Reports		F
APPENDIX G: 2033 Background Synchro Reports		G
APPENDIX H: 2033 Total Synchro Reports		H
APPENDIX I: Turn Lane Warrant Worksheets.....		I

List of Figures

Figure 1.1 – Site Location and Vicinity	8
Figure 1.2 – Toscano Estates Site Plan.....	9
Figure 1.3 – Sorano Estates Site Plan.....	10
Figure 2.1 – 2024 Existing Intersection Control and Lane Configuration	13
Figure 2.2 – 2024 Existing Peak Hour Traffic	14
Figure 3.1 – In-Process Developments.....	17
Figure 3.2 – 2028 Build-Out Year Peak Hour Background Traffic	18
Figure 4.1 – Estimated Site Traffic Distribution Patterns	24
Figure 4.2 – Toscano Estates AM Peak Hour Site Traffic	25
Figure 4.3 – Toscano Estates PM Peak Hour Site Traffic.....	26
Figure 4.4 – Sorano Estates AM Peak Hour Site Traffic	27
Figure 4.5 – Sorano Estates PM Peak Hour Site Traffic	28
Figure 4.6 – 2028 Build-Out Year AM Peak Hour Total Traffic.....	29
Figure 4.7 – 2028 Build-Out Year PM Peak Hour Total Traffic.....	30
Figure 4.8 – Toscano Estates Site Access and Circulation.....	35
Figure 4.9 – Sorano Estates Site Access and Circulation.....	37
Figure 4.10 – Sorano Estates AM Peak Hour Site Traffic (No Access on SH 44).....	38
Figure 4.11 – Sorano Estates PM Peak Hour Site Traffic (No Access on SH 44).....	39
Figure 4.12 – 2028 Build-Out Year AM Peak Hour Total Traffic (No Access on SH 44).....	40
Figure 4.13 – 2028 Build-Out Year PM Peak Hour Total Traffic (No Access on SH 44).....	41
Figure 5.1 – 2033 Horizon Year Peak Hour Background Traffic	46
Figure 6.1 – Sorano Estates AM Peak Hour Site Traffic (2033 Horizon Year).....	50
Figure 6.2 – Sorano Estates PM Peak Hour Site Traffic (2033 Horizon Year).....	51
Figure 6.3 – 2033 Horizon Year AM Peak Hour Total Traffic	52
Figure 6.4 – 2033 Horizon Year PM Peak Hour Total Traffic.....	53
Figure 6.5 – 2033 Horizon Year Sorano Estates AM Peak Hour Site Traffic (No Access on SH 44).....	56
Figure 6.6 – 2033 Horizon Year Sorano Estates PM Peak Hour Site Traffic (No Access on SH 44)	57
Figure 6.7 – 2033 Horizon Year AM Peak Hour Total Traffic (No Access on SH 44)	58
Figure 6.8 – 2033 Horizon Year PM Peak Hour Total Traffic (No Access on SH 44).....	59

List of Tables

Table 1 – Proposed Intersection Improvements Summary	2
Table 2.1 – Existing Roadway Characteristics	12
Table 2.2 – Intersection Operations – 2024 Existing Traffic	15
Table 2.3 – Blessinger Road and SH 44 Intersection – 2024 Existing Traffic Mitigation	15
Table 3.1 – Intersection Operations – 2028 Background Traffic	19
Table 3.2 – Blessinger Road and SH 44 Intersection – 2028 Background Traffic Mitigation.....	20
Table 3.3 – Bent Lane and SH 44 Intersection – 2028 Build-Out Year Background Traffic Mitigation.....	21
Table 4.1 – Toscano Estates Trip Generation Summary	22
Table 4.2 – Sorano Estates Trip Generation Summary	22
Table 4.3 – Build-Out Site Traffic Percentage of 2028 Total Traffic	23
Table 4.4 – Intersection Operations – 2028 Build-Out Year Total Traffic	31
Table 4.5 – Sortino Avenue and SH 44 Intersection – 2028 Total Traffic Mitigation	33
Table 4.6 – Build-Out Site Traffic Percentage of 2028 Total Traffic (No Access on SH 44)	42
Table 4.7 – Intersection Operations – 2028 Build-Out Year Total Traffic (No Access on SH 44)	43
Table 4.8 – Blessinger Road and SH 44 Intersection – 2028 Total Traffic Mitigation (No Access on SH 44)	44
Table 5.1 – Intersection Operations – 2033 Horizon Year Background Traffic	47
Table 5.2 – Blessinger Road and SH 44 Intersection – 2033 Background Traffic Mitigation.....	48
Table 6.1 – Build-Out Site Traffic Percentage of 2033 Total Traffic	49
Table 6.2 – Intersection Operations – 2033 Horizon Year Total Traffic	54
Table 6.3 – Build-Out Site Traffic Percentage of 2033 Total Traffic (No Access on SH 44)	60
Table 6.4 – Intersection Operations – 2033 Horizon Year Total Traffic (No Access on SH 44).....	60



EXECUTIVE SUMMARY

Toscano Estates and Sorano Estates are two proposed developments located south of SH 44 between Kingsbury Road and Bent Lane in Canyon County, Idaho. **Figure 1.1** shows the site locations and their vicinity. This traffic impact study (TIS) evaluated the traffic impacts generated by both proposed developments combined. The TIS was prepared following the Highway District No. 4 (HD4) and the Idaho Transportation Department (ITD) requirements.

The TIS evaluated the potential traffic impacts resulting from background traffic growth, in-process developments within the area, and the proposed developments, and identified improvements to mitigate the impacts if needed. Traffic impacts were evaluated under weekday AM and PM peak hour traffic conditions based on the proposed land uses and site accesses as shown in the preliminary site plans. **Table 1** summarizes the improvements needed to mitigate the traffic impacts for the following analysis years' traffic conditions:

- 2024 Existing traffic
- 2028 Build-out year background traffic
- 2028 Build-out year total traffic
- 2033 Horizon year background traffic
- 2033 Horizon year total traffic

1.0 Proposed Development

- 1.1 Toscano Estates is a proposed residential development containing 165 single-family lots with an expected 2028 build-out year

- Based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition, the proposed development is estimated to generate approximately 1,600 trips per weekday, 117 trips during the AM peak hour, and 159 trips during the PM peak hour at full build-out
- All trips generated by the site were assumed to be made by personal and commercial vehicles
- Based on the proposed land uses and ITE methodology, the development is not anticipated to retain trips internally within the site
- The development is not anticipated to attract pass-by trips and none were assumed in the traffic analysis
- The estimated site traffic distribution patterns are:
 - 25% west of the site traveling on SH 44
 - 5% north of the site traveling on Blessinger Road north of SH 44
 - 70% east of the site traveling on SH 44

- 1.2 Sorano Estates is a proposed mixed-use development containing 109 single-family lots, 89 townhomes, and 38,000 square feet of commercial use with an expected 2028 build-out year

- The proposed development is estimated to generate approximately 3,789 trips per weekday, 212 trips during the AM peak hour, and 358 trips during the PM peak hour at full build-out
- All trips generated by the site were assumed to be made by personal and commercial vehicles
- Based on the proposed land uses and ITE methodology, the development is estimated to retain four (4) AM peak trips and 72 PM peak trips internally within the site
- The development is not anticipated to attract pass-by trips and none were assumed in the traffic analysis
- The estimated site traffic distribution patterns are:
 - 25% west of the site traveling on SH 44
 - 5% north of the site traveling on Blessinger Road north of SH 44
 - 70% east of the site traveling on SH 44

Table 1 – Proposed Intersection Improvements Summary

Intersection		2024 Existing	2028 Build-Out Year		2033 Horizon Year	
			Background	Total	Background	Total
<i>Prior mitigation improvements included in the analysis</i>		NA	2024 Existing	2024 Existing 2028 Background	2024 Existing 2028 Background	2024 Existing 2028 Background 2028 Total 2033 Background
①	Blessinger Rd and SH 44	WB right-turn lane	Traffic signal and turn lanes	None beyond prior improvements	Widen intersection and signal modifications	None beyond prior improvements
②	Bent Ln and SH 44	None	RIROLI and widen SH 44 approaches	None beyond prior improvements	None beyond prior improvements	None beyond prior improvements
③	Blessinger Rd and Landruff Ln	Future intersection	Unsignalized intersection	None beyond prior improvements	None beyond prior improvements	None beyond prior improvements
④	Bent Ln and Landruff Ln	Future intersection	Unsignalized T-intersection	None beyond prior improvements	Construct east leg	None beyond prior improvements
⑤	Sortino Ave and SH 44	Future site access intersections		Option 1: Traffic signal/widen intersection, Option 2: RIROLI	Site access intersections	None beyond prior improvements
⑥	Valdina Wy and Landruff Ln			Unsignalized T-intersection		None beyond prior improvements
⑦	Siracusa Ave and Landruff Ln			Unsignalized T-intersection		None beyond prior improvements
⑧	Vicari Dr and Landruff Ln			Unsignalized T-intersection		None beyond prior improvements
⑨	Ragusa Wy and Landruff Ln			Unsignalized T-intersection		None beyond prior improvements
⑩	Toscana St and Blessinger Rd			Unsignalized intersection		None beyond prior improvements
⑪	Bellino Ave and Landruff Ln			Unsignalized T-intersection		None beyond prior improvements

2.0 Site Access

- 2.1 Toscano Estates plans to construct Landruff Lane along the site frontage, a future east-west collector street. Two full-movement approaches are proposed for site access, one on Blessinger Road and one on Landruff Lane:

■ Toscano Street on Blessinger Road

- Located approximately 950 feet south of SH 44 and 860 feet north of Landruff Lane, aligning with the existing approach to the east
 - Meets HD4 minimum 500-foot local road spacing requirements on Blessinger Road, a major collector street
- Does not warrant turn lanes under the 2028 build-out year and 2033 horizon year total traffic conditions based on NCHRP Report 457 *Evaluating Intersection Improvements: An Engineering Study Guide*
- Anticipated to meet minimum operational thresholds under the 2028 build-out year and 2033 horizon year total traffic conditions as an unsignalized intersection

■ Bellino Drive on Landruff Lane

- Located approximately 1,280 feet west of Blessinger Road
 - Meets HD4 minimum 500-foot local road spacing on Landruff Lane, a major collector street
- Does not warrant turn lanes under the 2028 build-out year and 2033 horizon year total traffic conditions based on NCHRP Report 457 guidelines
- Anticipated to meet minimum operational thresholds under the 2028 build-out year and 2033 horizon year total traffic conditions as an unsignalized intersection

- 2.1 Sorano Estates plans to construct Landruff Lane along the site frontage, a future east-west collector street. One full-movement access is proposed on SH 44 and four full-movement site accesses are proposed on Landruff Lane:

■ Sortino Avenue on SH 44

- Located approximately 2,600 feet east of Blessinger Road and 1,520 feet west of Bent Lane
 - Meets IDAPA minimum 1,320-foot public road spacing requirements on SH 44, a statewide route
 - Corresponds to the future north-south collector street as identified in the *West Star Neighborhood Transportation Plan*
- Anticipated to meet minimum operational thresholds under 2028 build-out year and 2033 horizon year total traffic conditions as a signalized or right-in/right-out and left-in (RIROLI) intersection

■ Valdina Way on Landruff Lane

- Located approximately 340 feet west and opposite of Siracusa Avenue
 - Meets HD4 minimum 250-foot local road spacing on Landruff Lane, a major collector street
- Does not warrant turn lanes under the 2028 build-out year and 2033 horizon year total traffic conditions based on NCHRP Report 457 guidelines
- Anticipated to meet minimum operational thresholds under the 2028 build-out year and 2033 horizon year total traffic conditions as an unsignalized intersection

■ Siracusa Avenue on Landruff Lane

- Located approximately 340 feet east and opposite Valdina Way and approximately 300 feet west and opposite Vicari Drive
 - Meets HD4 minimum 250-foot local road spacing on Landruff Lane

- Does not warrant turn lanes under the 2028 build-out year and 2033 horizon year total traffic conditions based on NCHRP Report 457 guidelines
- Anticipated to meet minimum operational thresholds under the 2028 build-out year and 2033 horizon year total traffic conditions as an unsignalized intersection

■ Vicari Drive on Landruff Lane

- Located approximately 300 feet east and opposite Siracusa Avenue and 350 feet west and opposite side of Silverthorne Avenue
 - Meets HD4 minimum 250-feet local road spacing on Landruff Lane
- Does not warrant turn lanes under the 2028 build-out year and 2033 horizon year total traffic conditions based on NCHRP Report 457 guidelines
- Anticipated to meet minimum operational thresholds under the 2028 build-out year and 2033 horizon year total traffic conditions as an unsignalized intersection

■ Ragusa Way on Landruff Lane

- Located approximately 300 feet east and opposite Silverthorne Avenue
 - Meets HD4 minimum 250-feet local road spacing on Landruff Lane
- Does not warrant turn lanes under the 2028 build-out year and 2033 horizon year total traffic conditions based on NCHRP Report 457 guidelines
- Anticipated to meet minimum operational thresholds under the 2028 build-out year and 2033 horizon year total traffic conditions as an unsignalized intersection

3.0 2024 Existing Traffic Conditions

- 3.1 Review of the most current five-year (2020-2024) crash data showed there were five reported crashes at the Blessinger Road and SH 44 intersection and two reported crashes at the Bent Lane and SH 44 intersection
- 3.2 With 2024 existing traffic, all study area intersections currently meet minimum operational thresholds analyzed with the existing intersection control and lane configuration. One study area intersection warrants a turn lane based on ITD turn lane guidelines. The intersection and warranted turn lane are:
- **Blessinger Road and SH 44 intersection**
- Westbound right-turn lane
- 3.3 The northbound and southbound approaches at the Blessinger Road and SH 44 intersection are offset by approximately 55 feet. The offset approaches should be realigned when the parcels adjacent to the intersection are developed

4.0 2028 Build-Out Year Background Traffic Conditions

- 4.1 2028 build-out year background traffic was estimated by extrapolating the 2024 existing counts with the following annual growth rates:
- 2.0% on SH 44
 - 3.0% on Blessinger Road and Bent Lane
- 4.2 Off-site traffic from the following in-process developments in the vicinity of the site was included in the 2028 background traffic conditions:
- The Quarry – A mixed-use development containing 228 residential lots and 3 commercial lots
 - River Park Estates Subdivision – A residential development containing 301 residential lots
 - Hacienda de Estrella Subdivision – A 14.142-acre development with 38 residential units and approximately 42,000 square feet of commercial space

- Star River Ranch 3 – A residential development containing 72 residential lots
- Star River Ranch Nos. 1&2 – A residential development under construction with 59 residential lots remaining
- Koa Subdivision – A residential development with 35 residential lots
- Falling Star – A residential development with 282 residential lots
- Rooster Hollow Subdivision – A mixed-use development with 48 residential dwelling units and six commercial lots
- Terramor Subdivision – A mixed-use development containing 822 residential dwelling units, an elementary school, a neighborhood park, 64,000 square feet of mini/RV storage facility, and 119,000 square of commercial space

4.3 With 2028 background traffic, two study area intersections are anticipated to exceed minimum operational thresholds analyzed with the existing intersection control and lane configuration or with the turn lane needed under 2024 existing traffic. The intersections and mitigation improvements are:

■ **Blessinger Road and SH 44 intersection**

- Traffic signal
- Construct the following turn lanes:
 - Northbound left-turn lane
 - Southbound left-turn lane

■ **Bent Lane and SH 44 intersection**

- Restrict intersection to allow right-in, right-out, and left-in movements only (RIROLI)
- Widen intersection with the following lanes:
 - Northbound approach – one right-turn lane
 - Eastbound approach – two through lanes and one right-turn lane
 - Westbound approach – one left-turn lane and two through lanes

4.4 The Blessinger Road and Landruff Lane intersection is anticipated to operate acceptably as a two-way stop-controlled intersection with stop signs on the Landruff Lane approaches based on the projected peak hour traffic

4.5 The Bent Lane and Landruff Lane intersection is anticipated to operate acceptably as a stop-controlled T-intersection with a stop sign on the Landruff Lane approach

5.0 2028 Build-Out Year Total Traffic Conditions

5.1 With 2028 total traffic, one study area intersection is anticipated to exceed minimum operational thresholds analyzed with the existing intersection control and lane configuration or with mitigation improvements needed under prior analysis years' traffic conditions. The intersections and mitigation improvements are:

■ **Sortino Avenue and SH 44 intersection (2 options)**

- Option 1: Traffic signal and widen the intersection with the following lanes:
 - Northbound approach – one left-turn and one shared through/right-turn lane
 - Southbound approach – one left-turn and one shared through/right-turn lane
 - Eastbound approach – one left-turn, one through, and one shared through/right-turn lane
 - Westbound approach – one left-turn, one through, and one shared through/right-turn lane
- Option 2: RIROLI intersection with the following lanes:
 - Northbound approach – one right-turn lane
 - Southbound approach – one right-turn lane
 - Eastbound approach – one left-turn lane, two through lanes, and one right-turn lane

- Westbound – one left-turn lane, two through lanes, and one right-turn lane

5.2 Phasing analysis was conducted to estimate the development that could occur before the intersection exceeds minimum operational thresholds and requires mitigation improvements. The timing of the mitigation improvements and amount of development are as follows:

■ **Sortino Avenue and SH 44 intersection**

- Intersection improvements are needed by 2025 when 40 residential dwelling units in Toscano Estates and 40 residential dwelling units in Sorano Estates are constructed
- With a traffic signal, two through lanes on SH 44 are needed by 2027 with an increase of approximately 900 vehicle trips in the PM peak hour, equivalent to 900 residential dwelling units
 - Toscano Estates is estimated to construct 130 residential dwelling units by 2027
 - Sorano Estates is estimated to construct 109 residential dwelling units and 89 townhomes by 2027

5.3 The proportionate share of site traffic generated by Toscano Estates as a percentage of the 2028 build-out year total traffic is as follows:

■ Blessinger Road and SH 44 intersection	: AM Peak = 5.5%, PM Peak = 6.1%, Average = 5.8%
■ Bent Lane and SH 44 intersection	: AM Peak = 3.4%, PM Peak = 3.8%, Average = 3.6%
■ Blessinger Road and Landruff Lane intersection	: AM Peak = 5.1%, PM Peak = 6.0%, Average = 5.5%
■ Bent Lane and Landruff Lane intersection	: AM Peak = 0.0%, PM Peak = 0.0%, Average = 0.0%

5.4 The proportionate share of site traffic generated by Sorano Estates development as a percentage of the 2028 build-out year total traffic is as follows:

■ Blessinger Road and SH 44 intersection	: AM Peak = 2.9%, PM Peak = 3.3%, Average = 3.1%
■ Bent Lane and SH 44 intersection	: AM Peak = 6.1%, PM Peak = 6.7%, Average = 6.4%
■ Blessinger Road and Landruff Lane intersection	: AM Peak = 5.8%, PM Peak = 5.0%, Average = 5.4%
■ Bent Lane and Landruff Lane intersection	: AM Peak=14.1%, PM Peak=15.5%, Average=14.8%

5.5 An alternate site access scenario was analyzed without the proposed Sortino Avenue on SH 44. With this site access scenario, additional improvements are needed beyond those needed to mitigate 2028 total traffic operations as discussed above at one intersection. The intersection and additional improvements are:

■ **Blessinger Road and SH 44 intersection**

- Construct a northbound right-turn lane
- Traffic signal modifications

6.0 2033 Horizon Year Background Traffic Conditions

6.1 With 2033 background traffic, one study area intersection is anticipated to exceed minimum operational thresholds analyzed with the existing intersection control and lane configuration or with mitigation improvements needed under prior analysis years' traffic conditions. The intersection and mitigation improvements are:

■ **Blessinger Road and SH 44 intersection**

- Widen intersection with the following lanes:
 - Northbound approach – one left-turn and one shared through/right-turn lane
 - Southbound approach – one left-turn and one shared through/right-turn lane
 - Eastbound approach – one left-turn, one through, and one shared through/right-turn lane
 - Westbound approach – one left-turn, one through, and one shared through/right-turn lane
- Traffic signal

- 6.2 With 2033 background traffic, none of the other study area intersections is anticipated to require turn lanes based on NCHRP Report 457 guidelines

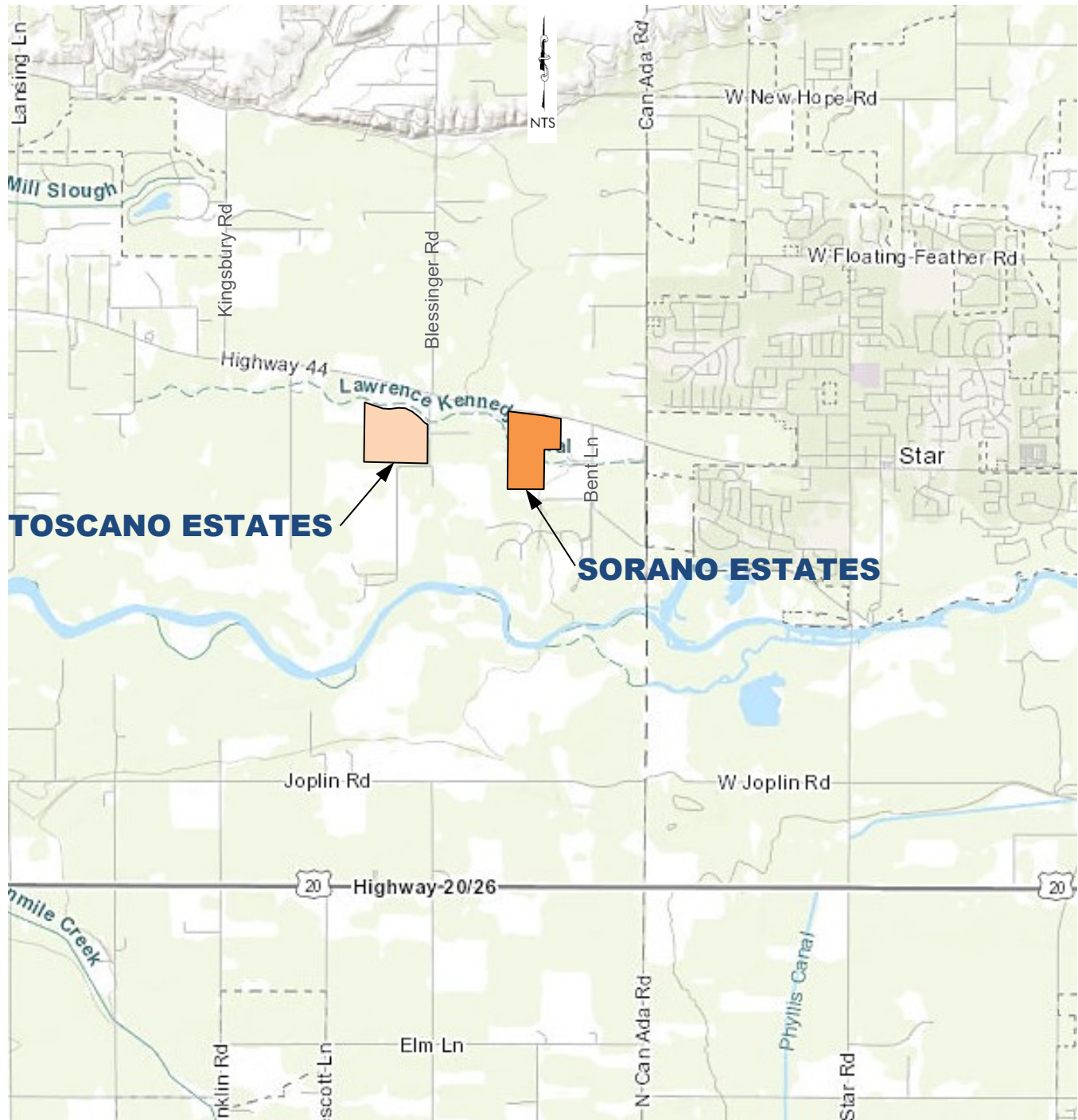
7.0 2033 Horizon Year Total Traffic Conditions

- 7.1 With 2033 total traffic, all study area intersections are anticipated to meet minimum operational thresholds analyzed with the existing intersection control and lane configuration or with mitigation improvements needed under prior analysis years' traffic conditions. Additionally, none of the study area intersections is anticipated to require turn lanes based on NCHRP Report 457 guidelines. As a result, no additional improvements are needed to mitigate 2033 horizon year total traffic operations
- 7.2 The estimated site traffic generated by Toscano Estates as a percentage of the 2033 build-out year total traffic is as follows:
- Blessinger Road and SH 44 intersection : AM Peak = 4.7%, PM Peak = 5.3%, Average = 5.0%
 - Bent Lane and SH 44 intersection : AM Peak = 3.1%, PM Peak = 3.4%, Average = 3.3%
 - Blessinger Road and Landruff Lane intersection : AM Peak = 4.8%, PM Peak = 5.6%, Average = 5.2%
 - Bent Lane and Landruff Lane intersection : AM Peak = 0.0%, PM Peak = 0.0%, Average = 0.0%
- 7.3 The estimated site traffic generated by Sorano Estates development as a percentage of the 2033 horizon year total traffic is as follows:
- Blessinger Road and SH 44 intersection : AM Peak = 2.5%, PM Peak = 2.9%, Average = 2.7%
 - Bent Lane and SH 44 intersection : AM Peak = 4.6%, PM Peak = 5.1%, Average = 4.8%
 - Blessinger Road and Landruff Lane intersection : AM Peak = 5.5%, PM Peak = 4.6%, Average = 5.1%
 - Bent Lane and Landruff Lane intersection : AM Peak=11.5%, PM Peak=14.0%, Average=12.7%
- 7.4 An alternate site access scenario was analyzed without the proposed Sortino Avenue on SH 44. With this site access scenario, no additional improvements are needed.

1.0 INTRODUCTION

CR Engineering, Inc. has been retained to prepare a traffic impact study (TIS) for the proposed Toscano Estates and Sorano Estates located south of SH 44 between Kingsbury Road and Bent Lane in Canyon County, Idaho. **Figure 1.1** shows the site locations and their vicinity. The TIS evaluated the potential traffic impacts resulting from background traffic growth, in-process developments in the area, and the proposed developments combined, and identified improvements to mitigate the impacts if needed.

Figure 1.1 – Site Location and Vicinity

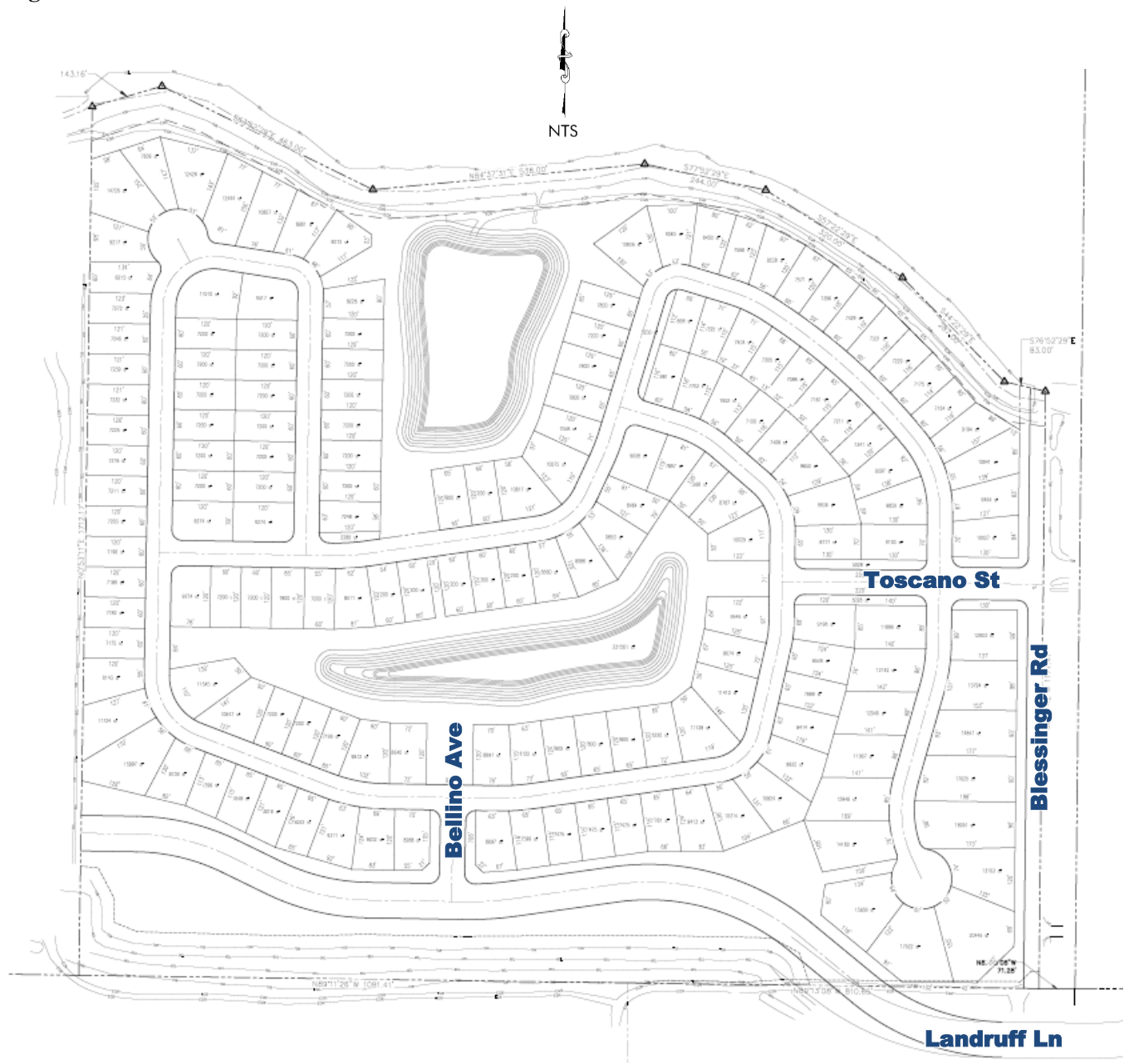


1.1 Proposed Development

1.1.1 Toscano Estates

Figure 1.2 shows the preliminary site plan for Toscano Estates. Toscano Estates is a proposed residential development estimated to contain 165 single-family lots. Based on the preliminary site plan, the development is planning to construct Landruff Lane along the southern site boundary, a future east-west collector street. Two site accesses are proposed; one on Landruff Lane and one on Blessinger Road. The expected build-out year is 2028 but this may change based on the market conditions.

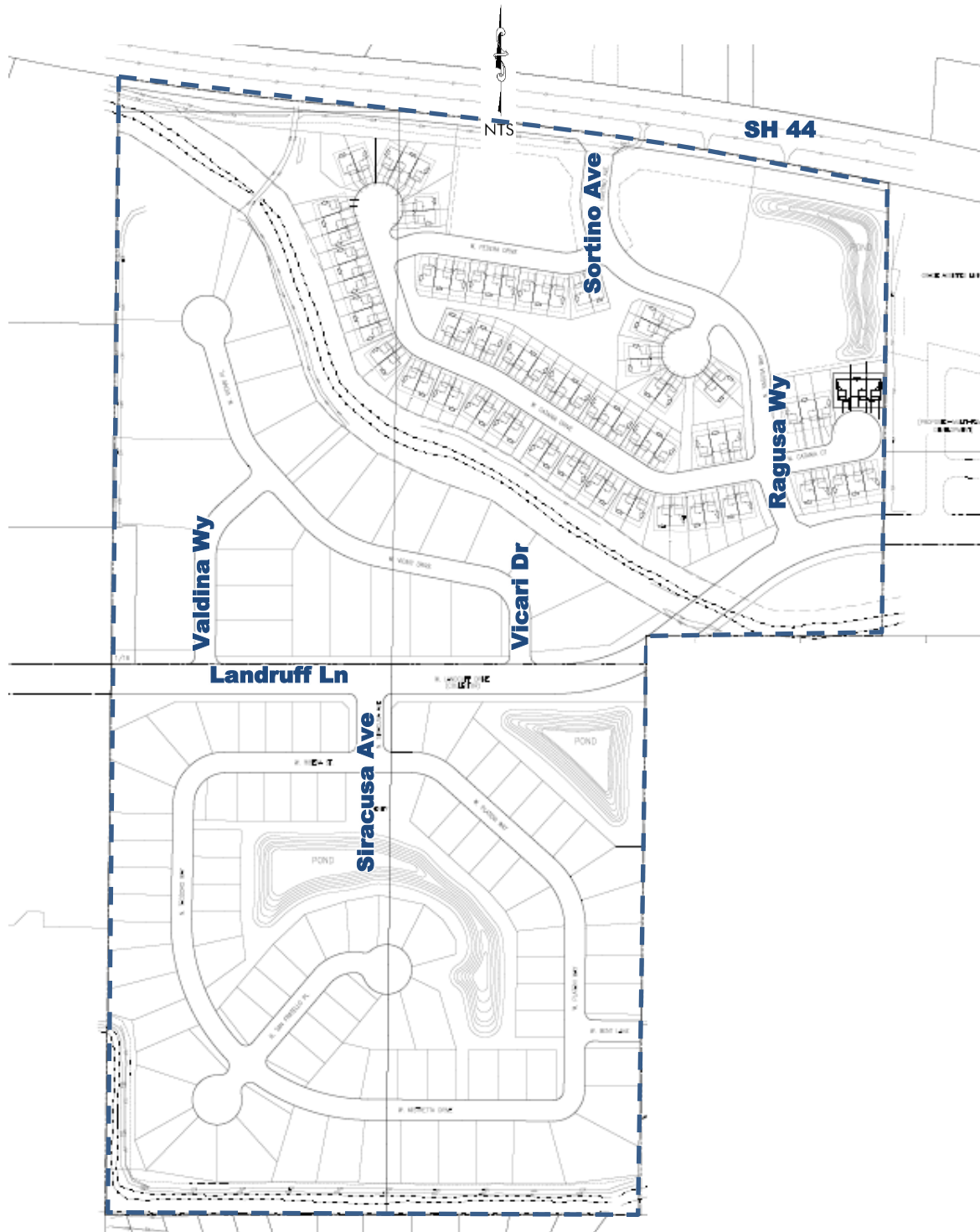
Figure 1.2 – Toscano Estates Site Plan



1.1.2 Sorano Estates

Figure 1.3 shows the preliminary site plan for Sorano Estates. Sorano Estates is a proposed mixed-use development estimated to contain 109 single-family lots, 89 townhomes, and three (3) commercial lots. Based on the preliminary site plan, the development is planning to construct Landruff Lane through the site, a future east-west collector street. One site access is proposed on SH 44 and four full-movement site accesses are proposed on Landruff Lane. The expected build-out year is 2028 but this may change based on the market conditions.

Figure 1.3 – Sorano Estates Site Plan



1.2 Study Approach

The TIS was prepared following ITD *IDAPA 39.03.42 – Rules Governing Highway Right-of-Way Encroachments on State Rights-of-Way* and the *Highway Standards and Development Procedures* for the Association of Canyon County Highway District (ACCHD). The scope of this TIS was determined through coordination with HD4 and ITD.

1.3 Study Area

The following study area intersections were evaluated for the traffic impact analysis:

- Blessinger Road and SH 44 intersection
- Bent Lane and SH 44 intersection
- Blessinger Road and Landruff Lane intersection (future)
- Bent Lane and Landruff Lane intersection (future)
- Proposed site access intersections
 - Sortino Avenue on SH 44
 - Valdina Way on Landruff Lane
 - Siracusa Avenue on Landruff Lane
 - Vicari Drive on Landruff Lane
 - Ragusa Way on Landruff Lane
 - Toscano Street on Blessinger Road
 - Bellino Avenue on Landruff Lane

1.4 Study Period

The analysis peak periods are the AM and PM peak hours of operation of the transportation system. The analysis years and traffic conditions are:

- 2024 Existing traffic
- 2028 Build-out year background traffic
- 2028 Build-out year total traffic
- 2033 Horizon year background traffic
- 2033 Horizon year total traffic

1.5 Analysis Methods and Performance Measure Thresholds

Intersection capacity analysis was performed using Synchro 12 (Version 12.2.3.12), which utilizes the HCM methodologies. All parameters used in the analysis were based on existing data when available or Synchro default values, when not available. The level of service (LOS) for intersections is based on the average delay of vehicles traveling through the intersection on a scale of A (best) to F (worst).

The study area roadways and intersections fall under the jurisdiction of HD4 and ITD. According to the HD4 Jurisdiction Map, the site and surrounding areas are within the Star and Middleton area of impact. Therefore, the study area intersections are considered within an urban area for this TIS. For this study, the minimum operational thresholds for HD4 intersections in an urban area are LOS D with a maximum volume-to-capacity (v/c) ratio of 1.00 for any lane group. For ITD intersections, mitigation improvements are required for any individual movement either operating at LOS F or with a v/c ratio greater than 0.90.

2.0 EXISTING CONDITIONS

2.1 Roadway Network, Intersection Control, and Lane Configuration

A brief description of the existing roadways within the study area is summarized in **Table 2.1** below. The roadway functional classification is based on the 2011 HD4 Functional Classification Map and the ITD iPlan OpenData ArcGIS database. **Figure 2.1** summarizes the study area intersection control and lane configuration.

The northbound and southbound approaches at the Blessinger Road and SH 44 intersection are offset by approximately 55 feet. The southbound approach is offset east of the northbound approach. This offset does not cause northbound and southbound left-turn conflicts to modify the analysis. The Blessinger Road and SH 44 intersection is evaluated as a single intersection. The offset approaches should be fixed when the parcels adjacent to the intersection are developed. Both the Toscano Estates and Sorano Estates are located beyond the intersection and do not have the right-of-way to realign the existing northbound and southbound approaches.

Table 2.1 – Existing Roadway Characteristics

Roadway	Functional Classification	Number of Lanes	Posted Speed Limit (mph)	Pedestrian Facilities
SH 44	Principal Arterial (Statewide Route)	2-3	55	• No sidewalk or bicycle lanes
Blessinger Rd	Collector Street	2	35	• No sidewalk or bicycle lanes
Bent Ln	Local Road	2	35	• No sidewalk or bicycle lanes

2.2 Existing Traffic Volumes

Weekday AM and PM peak hour traffic counts were obtained at the study area intersections on February 28, 2024. The peak hour intersection turning movement counts were collected on a weekday for a 2-hour period at 15-minute intervals between 7:00 and 9:00 during the AM peak hour and between 4:00 and 6:00 PM during the PM peak hour. Existing intersection turning movement counts are included in the appendix. **Figure 2.2** summarizes the existing 2024 peak hour traffic.

2.3 Intersection Crash Data

The most current five-year (2020-2024) crash data was obtained from the Local Highway Technical Assistance Council (LHTAC) website (<http://gis.lhtac.org/safety/>). A review of the historical crash data showed there were two crashes reported at the SH 44 and Bent Lane intersection. There were five reported rear-end crash at the Blessinger Road and SH 44 intersection. Based on the intersection crash history, there are no apparent safety issues at both study area intersections. The crash rates for both intersections are less than one crash per million entering vehicles (AC/MEV).

2.4 Intersection Operations

To determine the existing traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration and 2024 peak hour traffic. Copies of the analysis reports are included in the appendix. **Table 2.2** summarizes the intersection capacity analysis results. All study area intersections currently meet minimum operational thresholds under 2024 existing traffic conditions.

Figure 2.1 – 2024 Existing Intersection Control and Lane Configuration

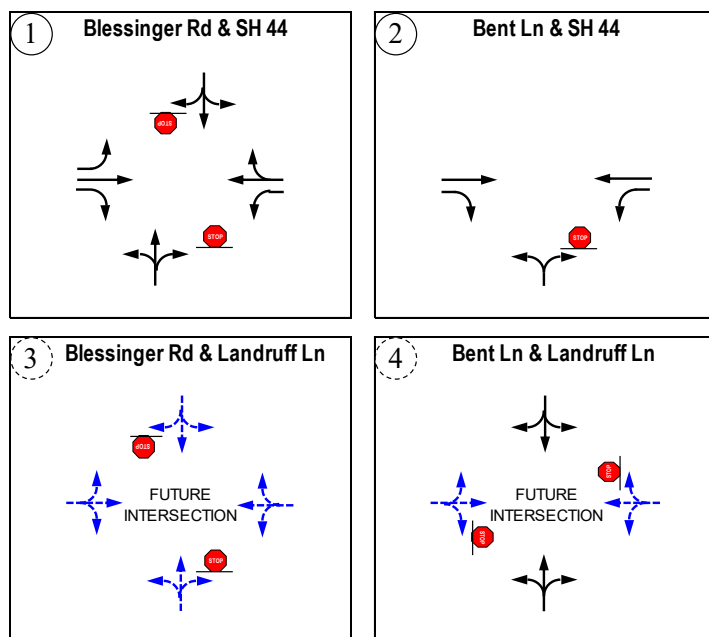
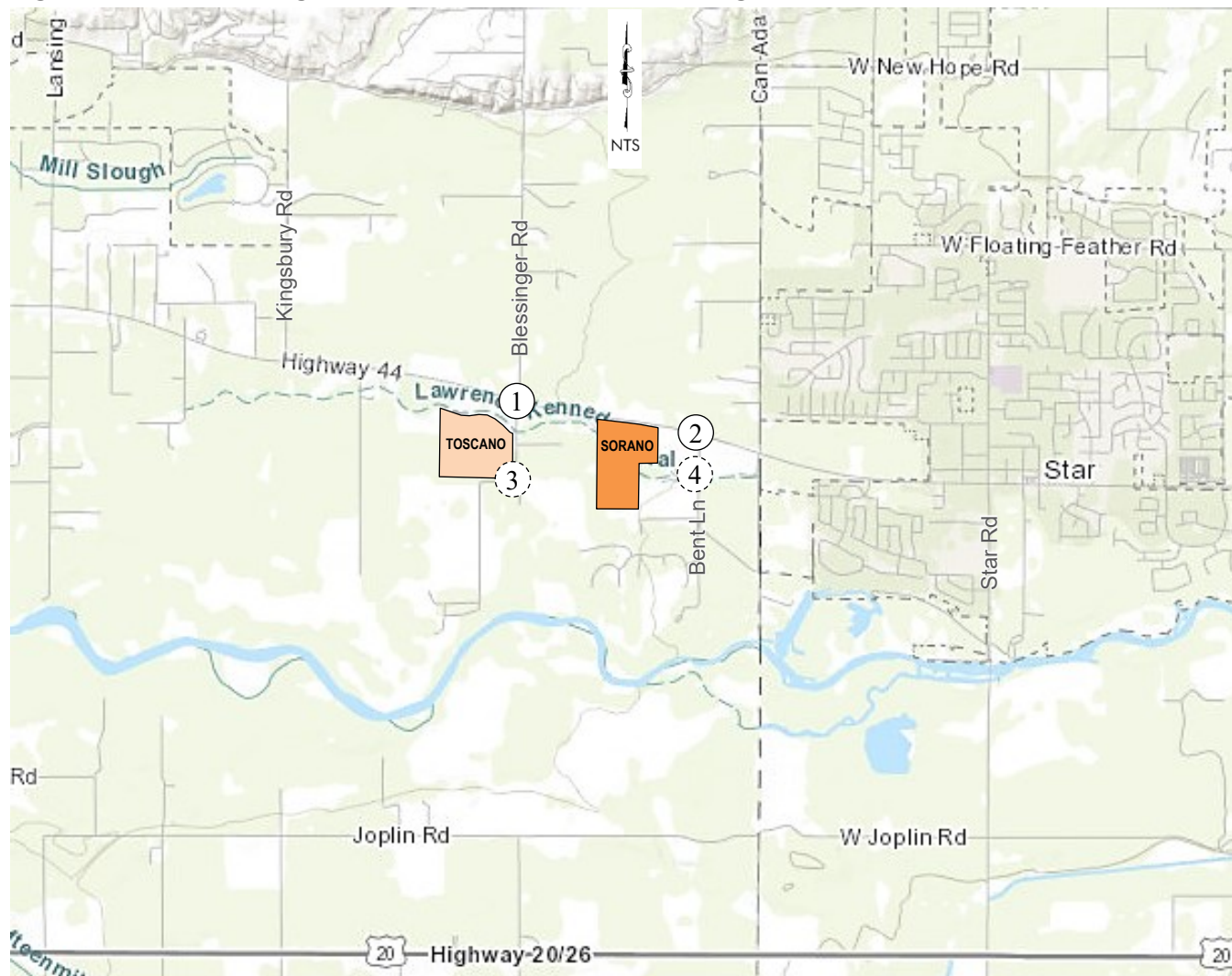


Figure 2.2 – 2024 Existing Peak Hour Traffic

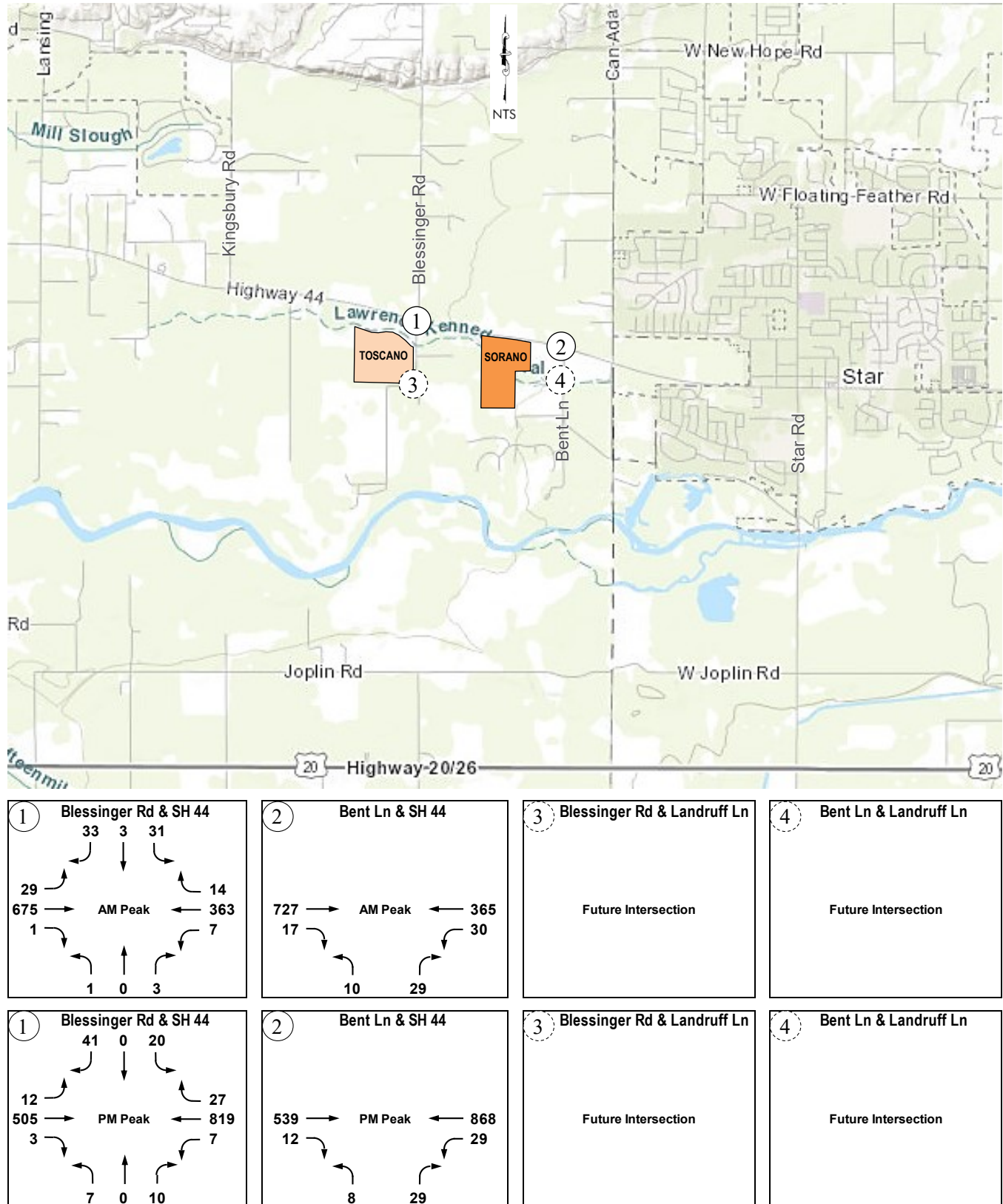
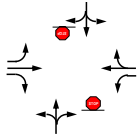
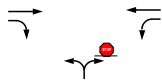


Table 2.2 – Intersection Operations – 2024 Existing Traffic

Intersection		Control / Lane	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
①	Blessinger Rd and SH 44		EBL	A	8	0.03	A	10	0.02
			EBT	-	-	-	-	-	-
			EBR	-	-	-	-	-	-
			WBL	A	10	0.01	A	9	0.01
			WBTR	-	-	-	-	-	-
			NB	C	18	0.02	D	29	0.11
			SB	D	27	0.31	D	34	0.35
②	Bent Ln and SH 44		EBT	-	-	-	-	-	-
			EBR	-	-	-	-	-	-
			WBL	B	10	0.05	A	9	0.03
			WBT	-	-	-	-	-	-
			NB	C	20	0.15	C	19	0.13
③	Blessinger Rd and Landruff Ln	FUTURE INTERSECTION							
④	Bent Ln and Landruff Ln	FUTURE INTERSECTION							

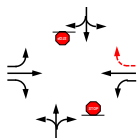
2.5 Intersection Mitigation

All study area intersections currently meet minimum operational thresholds under 2024 existing traffic conditions. One study area intersection meets ITD turn lane guidelines. Turn lane warrant worksheets are included in the appendix. The intersection and warranted turn lane are:

- Blessinger Road and SH 44 intersection
 - Westbound right-turn lane

Table 2.3 summarizes the intersection mitigation analysis results. The additional westbound right-turn lane is expected to reduce vehicle conflicts and potential rear-end crashes on SH 44.

Table 2.3 – Blessinger Road and SH 44 Intersection – 2024 Existing Traffic Mitigation

Intersection		Control / Lane Mitigation	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
①	Blessinger Rd and SH 44		EBL	A	8	0.03	A	10	0.02
			EBT	-	-	-	-	-	-
			EBR	-	-	-	-	-	-
			WBL	A	9	0.01	A	9	0.01
			WBT	-	-	-	-	-	-
			WBR	-	-	-	-	-	-
			NB	C	18	0.02	D	29	0.11
			SB	D	26	0.30	D	33	0.34

3.0 2028 BUILD-OUT YEAR BACKGROUND TRAFFIC CONDITIONS

3.1 Roadway Network

For the 2028 build-out year background traffic impact analysis, the study area roadways and intersections are assumed to remain the same as the mitigated 2024 existing conditions, except for Landruff Lane. Landruff Lane is expected to be constructed with the in-process developments in the vicinity of the site south of SH 44 as shown in **Figure 3.1**. Landruff Lane is not anticipated to be extended to Can Ada Road by 2028.

According to the current transportation plans, there are no funded projects within the study area. The Blessinger Road and SH 44 intersection is identified in the HD4 *Capital Improvements Plan* for the Middleton/Star service area (Mid-Star CIP) to be signalized in the 2030-2035 timeframe. No projects are identified at the Bent Lane and SH 44 intersection.

ITD is studying the SH 44 corridor between I-84 and Star Road to identify transportation improvements needed to accommodate future traffic volumes. SH 44 is planned to be widened to four lanes with a center median. A traffic signal is identified at the Blessinger Road and SH 44 intersection. The Bent Lane and SH 44 intersection is not planned to be signalized.

These planned improvements are not funded and were not included in the 2028 background traffic analysis. These planned improvements were considered mitigation improvements when needed.

3.2 Background Traffic

Background traffic growth from 2024 to 2028 was estimated by extrapolating the 2024 existing traffic counts with the following annual growth rates:

- SH 44 – 2.0%
- Bent Lane and Blessinger Road – 3%

In addition, in-process developments in the vicinity of the sites are expected to contribute off-site traffic to the study area intersections and were included in background traffic. **Figure 3.1** shows the in-process developments. A summary of the in-process developments and off-site traffic is included in the appendix.

Figure 3.2 summarizes the estimated 2028 AM and PM peak hour background traffic at the study area intersections.

Figure 3.1 – In-Process Developments

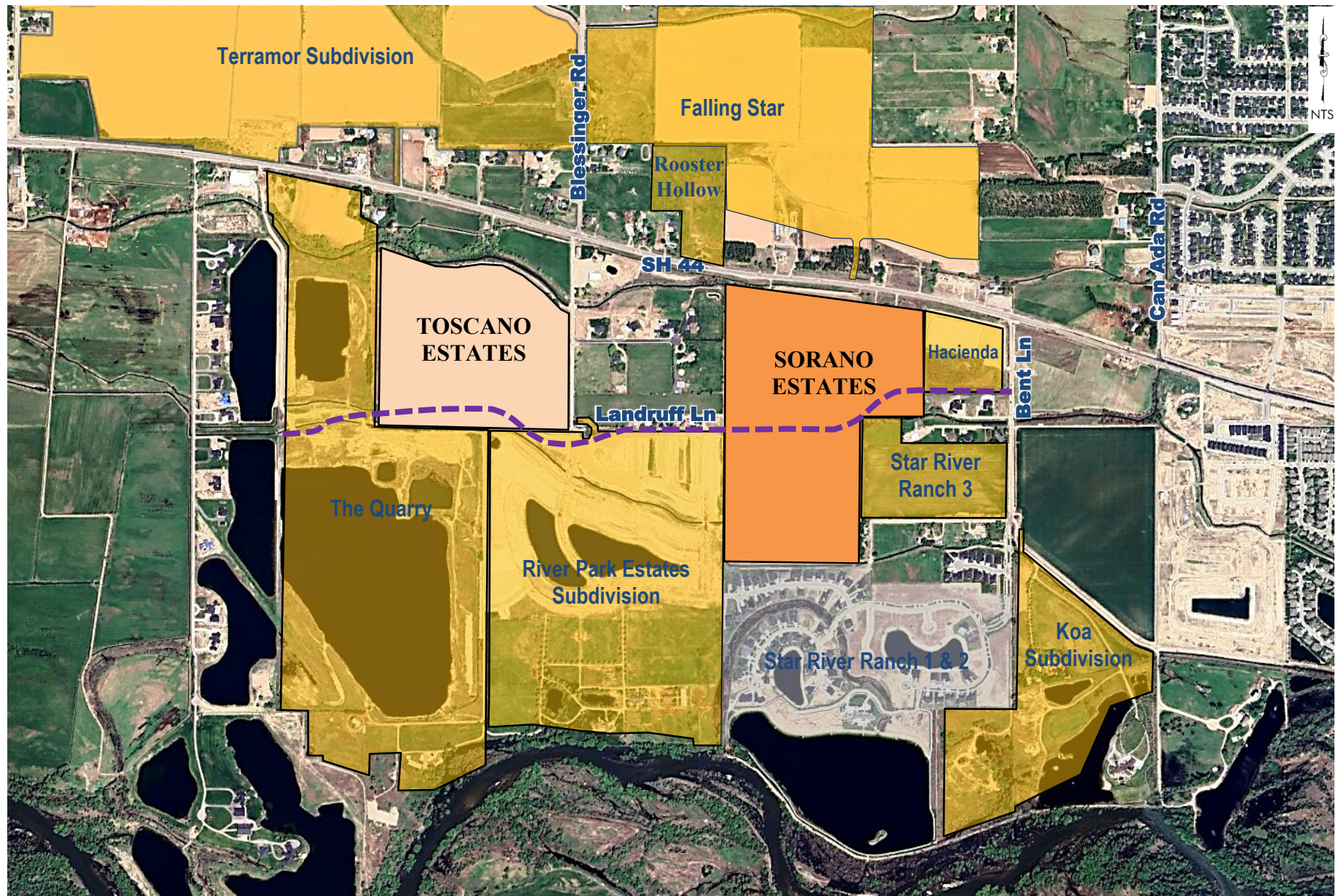
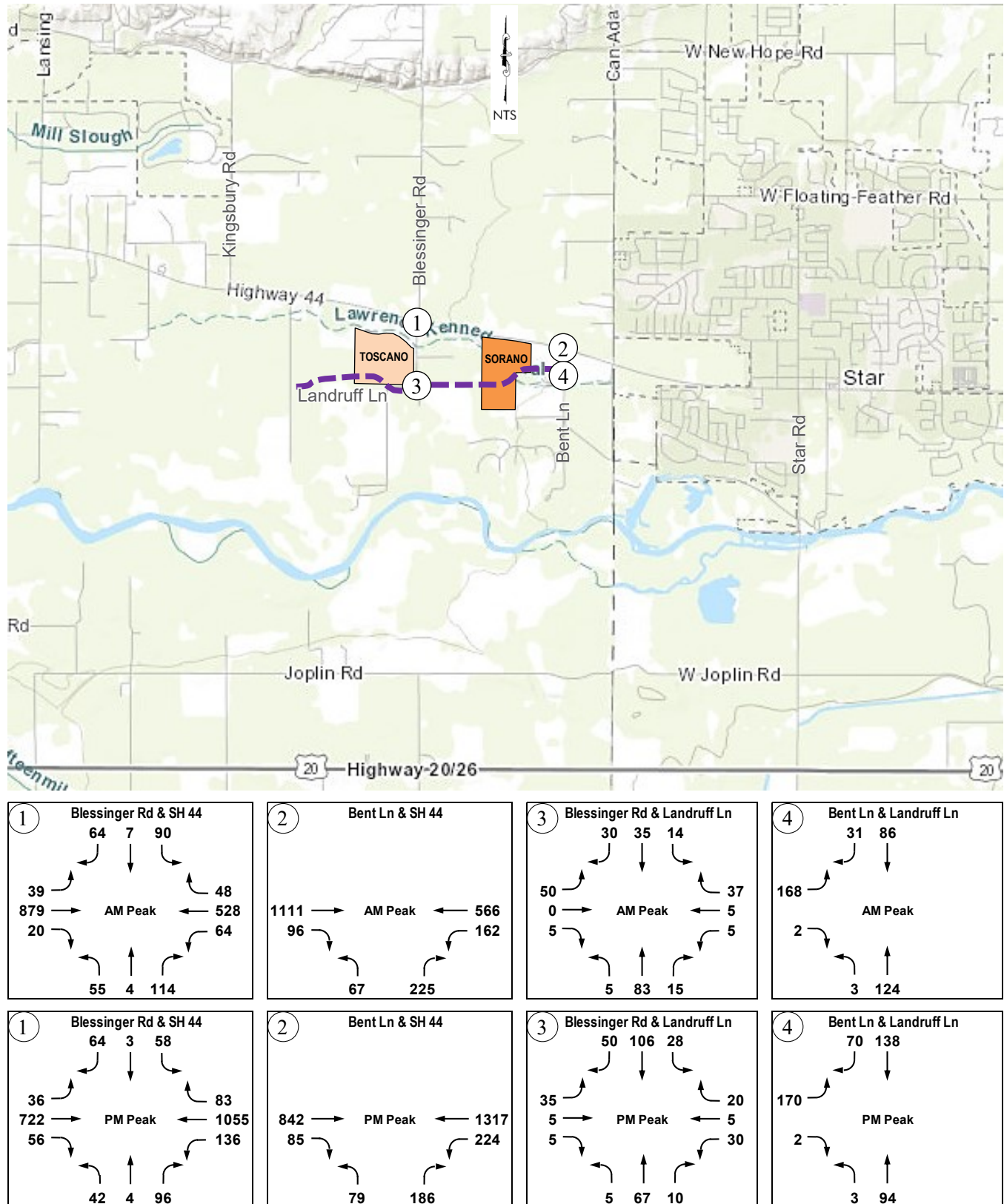


Figure 3.2 – 2028 Build-Out Year Peak Hour Background Traffic

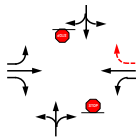
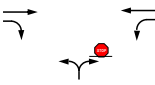
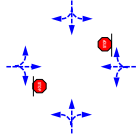
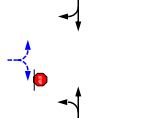


3.3 Intersection Operations

To determine the 2028 background traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration or with the mitigation improvements need under 2024 existing traffic condition. The Blessinger Road and Landruff Lane intersection was analyzed as a two-way stop-controlled intersection with stop signs on the Landruff Lane approaches based on the projected volumes. The Bent Lane and Landruff Lane intersection was analyzed as a stop-controlled T-intersection. Copies of the analysis reports are included in the appendix. **Table 3.1** summarizes the intersection capacity analysis results. Based on traffic analysis results, two study area intersections are anticipated to exceed minimum operational thresholds under 2028 background traffic conditions:

- Blessinger Road and SH 44 intersection
- Bent Lane and SH 44 intersection

Table 3.1 – Intersection Operations – 2028 Background Traffic

Intersection	Control / Lane 2024 Mitigation Off-Site Improvements	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
			LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
① Blessinger Rd and SH 44		EBL	A	9	0.04	B	12	0.07
		EBTR	-	-	-	-	-	-
		WBL	B	12	0.11	B	11	0.18
		WBT	-	-	-	-	-	-
		WBR	-	-	-	-	-	-
		NB	F	> 300	1.85	F	> 300	> 2.00
		SB	F	> 300	> 2.00	F	> 300	> 2.00
② Bent Ln and SH 44		EBT	-	-	-	-	-	-
		EBR	-	-	-	-	-	-
		WBL	C	17	0.38	B	13	0.34
		WBT	-	-	-	-	-	-
		NB	F	> 300	> 2.00	F	> 300	> 2.00
③ Blessinger Rd and Landruff Ln		EB	B	10	0.08	B	11	0.08
		WB	A	9	0.06	B	10	0.08
		NB	A	7	< 0.01	A	8	< 0.01
		SB	A	8	0.01	A	7	0.02
④ Bent Ln and Landruff Ln		EB	B	12	0.26	B	12	0.28
		NB	A	8	< 0.01	A	8	< 0.01
		SB	-	-	-	-	-	-

3.4 Intersection Mitigation

Two study area intersections are anticipated to exceed minimum operational thresholds under 2028 background traffic conditions. None of the other study area intersections are anticipated to require additional turn lanes based on NCHRP turn lane guidelines. The intersections, operational deficiencies, and mitigation improvements are discussed below.

Blessinger Road and SH 44 Intersection

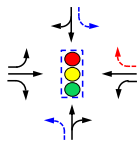
The Blessinger Road and SH 44 intersection is anticipated to exceed ITD minimum operational thresholds as an unsignalized intersection. The northbound and southbound approaches are anticipated to operate at LOS F with v/c ratios exceeding 1.00 in the peak hours, exceeding the ITD 0.90 threshold. According to ITD's transportation plans, there are no funded improvements programmed at the intersection. The intersection is identified in the SH 44 corridor plan to be signalized. Additionally, the intersection is identified in the Mid-Star CIP to be signalized in

the 2030-2035 timeframe. The following additional improvements are recommended to mitigate 2028 background traffic operations:

- Traffic signal
- Construct left-turn lanes on the northbound and southbound approaches

Table 3.2 summarizes the intersection mitigation analysis results. The intersection is anticipated to operate acceptably with the proposed mitigation improvements.

Table 3.2 – Blessinger Road and SH 44 Intersection – 2028 Background Traffic Mitigation

Intersection		Control / Lane 2024 Mitigation Mitigation	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
①	Blessinger Rd and SH 44		Intersection	C	24	0.73	C	21	0.79
			EBL	A	8	0.08	B	20	0.17
			EBT	C	21	0.78	B	12	0.59
			EBR	A	8	0.02	A	6	0.05
			WBL	B	18	0.30	A	9	0.33
			WBT	B	12	0.47	C	22	0.85
			WBR	A	8	0.05	A	6	0.08
			NBL	E	56	0.30	E	59	0.27
			NBTR	D	52	0.47	E	57	0.52
			SBL	E	62	0.57	E	64	0.45
			SBTR	D	51	0.38	D	55	0.35

Bent Lane and SH 44 Intersection

The Bent Lane and SH 44 intersection is anticipated to exceed ITD minimum operational thresholds as an unsignalized intersection. The northbound approach is anticipated to operate at LOS F with a v/c ratio exceeding 1.00 during peak hours. According to the current ITD's transportation plans, there are no funded improvements programmed at the intersection. The intersection is not identified in the SH 44 corridor plan or Mid-Star CIP to be signalized. Three mitigation options were evaluated:

- Option 1 – Traffic signal with a northbound left-turn lane
- Option 2 – Traffic signal and widen the intersection with the following lanes:
 - One left-turn and one right-turn lane on the northbound approach
 - One left-turn lane and two through lanes on the westbound approach
 - One through and one shared through/right-turn lane on the eastbound approach
- Option 3 – Restrict the intersection to allow right-in, right-out, and left-turn in movements only (RIROLI)

Table 3.3 summarizes the intersection mitigation analysis results. Installing a traffic signal with one through lane on SH 44 is not expected to mitigate the intersection operations. Installing a traffic signal with two through lanes on SH 44 approaches is expected to mitigate the intersection operations. However, the intersection is not planned to be signalized and does not meet the spacing from future signal at Can Ada Road. As a result, a traffic signal is not recommended.

With high traffic volumes on SH 44, the northbound left-turn traffic will shift to the signal at Blessinger Road intersection; thus, operating as a RIROLI intersection. Therefore, restricting the intersection to RIROLI is recommended to mitigate the intersection operations. Two through lanes on the SH 44 approaches are needed for the northbound right-turn movement to meet ITD minimum operational thresholds.

Table 3.3 – Bent Lane and SH 44 Intersection – 2028 Build-Out Year Background Traffic Mitigation

Intersection		Control / Lane Mitigation	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
2	Bent Ln and SH 44		Intersection	D	51	0.94	C	27	0.92
			EBT	F	69	1.05	B	17	0.70
			EBR	B	12	0.11	A	8	0.09
			WBL	E	76	0.90	B	20	0.64
			WBT	A	8	0.44	C	30	0.96
			NBL	E	56	0.26	E	56	0.35
			NBR	E	66	0.80	E	55	0.66
			Intersection	C	22	0.69	B	13	0.55
			EBT	B	20	0.60	B	11	0.41
			EBTR	B	20	0.60	B	11	0.41
			WBL	C	22	0.66	A	8	0.51
			WBT	A	8	0.25	A	6	0.51
			NBL	D	48	0.20	D	53	0.34
			NBR	E	60	0.78	D	53	0.65
			EBT	-	-	-	-	-	-
			EBR	-	-	-	-	-	-
			WBL	C	19	0.42	B	13	0.34
			WBT	-	-	-	-	-	-
			NBR	D	32	0.66	C	15	0.36

4.0 2028 BUILD-OUT YEAR TOTAL TRAFFIC CONDITIONS

4.1 Roadway Network

For the 2028 building-out year total traffic impact analysis, the study area roadways and intersections are assumed to remain the same as the mitigated 2028 background traffic conditions. Mitigation improvements needed under prior analysis years' traffic conditions are included in the analysis. The proposed developments are expected to improve Blessinger Road, SH 44, and Landruff Lane along the site frontages. The intersections of Blessinger Road and Bent Lane on Landruff Lane are expected to be constructed with the in-process developments. Landruff Lane is not anticipated to be extended to Can Ada Road by 2028.

4.2 Site Traffic

4.2.1 Trip Generation

Site trip generation is estimated using the procedures recommended in the latest edition of the *Trip Generation Manual (11th Edition)*, published by the Institute of Transportation Engineers. **Table 4.1** summarizes the site trip generated by Toscano Estates. At full build-out, Toscano Estates is estimated to generate approximately 1,600 trips per weekday, 117 trips during the AM peak hour, and 159 trips during the PM peak hour.

Table 4.2 summarizes the site trip generated by Sorano Estates. At full build-out, Sorano Estates is estimated to generate approximately 3,789 trips per weekday, 212 trips during the AM peak hour, and 358 trips during the PM peak hour.

Table 4.1 – Toscano Estates Trip Generation Summary

Land Use	ITE Code	Size	Unit	Period	Total Trips	Entering	Exiting
Single-Family Detached Housing	210	165	DU	Weekday Daily (vpd)	1,600	50%	800
				AM Peak Hour (vph)	117	25%	29
				PM Peak Hour (vph)	159	63%	100

Table 4.2 – Sorano Estates Trip Generation Summary

Land Use	ITE Code	Size	Unit	Total Trips	Capture Trips	Pass-by Trips	Primary Trips				
							Total	Entering	Exiting		
Weekday Daily (vpd)											
Single-Family Detached Housing	210	109	DU	1,092	130	--	962	50%	481	50%	481
Townhome	215	89	DU	628	79	--	549	50%	274	50%	275
Strip Retail Plaza	822	38.00	TSF	2,069	208	--	1,861	50%	931	50%	930
Weekday Daily Total Trips				3,789	417	--	3,372		1,686		1,686
Weekday AM Peak Hour (vph)											
Single-Family Detached Housing	210	109	DU	81	1	--	80	25%	20	75%	60
Townhome	215	89	DU	41	1	--	40	25%	10	75%	30
Strip Retail Plaza	822	38.00	TSF	90	2	--	88	60%	53	40%	35
Weekday AM Peak Hour Total Trips				212	4	--	208		83		125
Weekday PM Peak Hour (vph)											
Single-Family Detached Housing	210	109	DU	108	26	--	82	63%	52	37%	30
Townhome	215	89	DU	49	10	--	39	59%	23	41%	16
Strip Retail Plaza	822	38.00	TSF	201	36	--	165	50%	83	50%	82
Weekday PM Peak Hour Total Trips				358	72	--	286		158		128

4.2.2 Trip Capture

Based on ITE methodologies and the proposed land uses, Sorano Estates is estimated to retain four (4) AM peak trips and 72 PM Peak trips internally within the site. Toscano Estates is not anticipated to retain trips within the site.

4.2.3 Pass-By Trips

Based on the proposed land uses and ITE pass-by rates, both developments are not expected to generate pass-by trips. No pass-by trips were assumed in the traffic analysis.

4.2.4 Modal Split

For traffic analysis purposes, all trips generated by the developments were assumed to be made by personal and commercial vehicles.

4.2.5 Trip Distribution and Assignment

Site traffic for each proposed development was distributed and assigned to the external roadway system based on current travel patterns, site layout, and the general location of the site within the area. **Figure 4.1** shows the estimated site traffic distribution patterns for the proposed developments. **Figure 4.2** and **Figure 4.3** summarize the estimated AM and PM peak hour site traffic generated by Toscano Estates at the study area intersections. **Figure 4.4** and **Figure 4.5** summarize the estimated AM and PM peak hour site traffic generated by Sorano Estates at the study area intersections.

4.3 Total Traffic

The 2028 site traffic for both developments is then added to the 2028 background traffic as determined above to obtain the 2028 total traffic. **Figure 4.6** and **Figure 4.7** summarize the estimated 2028 AM and PM peak hour total traffic at the study area intersections. **Table 4.3** summarizes the proportionate share of the site traffic at each study area intersection.

Table 4.3 – Build-Out Site Traffic Percentage of 2028 Total Traffic

Intersection	Toscano Estates			Sorano Estates		
	AM Peak	PM Peak	Average	AM Peak	PM Peak	Average
① Blessinger Rd and SH 44	5.5%	6.1%	5.8%	2.9%	3.3%	3.1%
② Bent Ln and SH 44	3.4%	3.8%	3.6%	6.1%	6.7%	6.4%
③ Blessinger Rd and Landruff Ln	5.1%	6.0%	5.5%	5.8%	5.0%	5.4%
④ Bent Ln and Landruff Ln	0.0%	0.0%	0.0%	14.1%	15.5%	14.8%

Figure 4.1 – Estimated Site Traffic Distribution Patterns

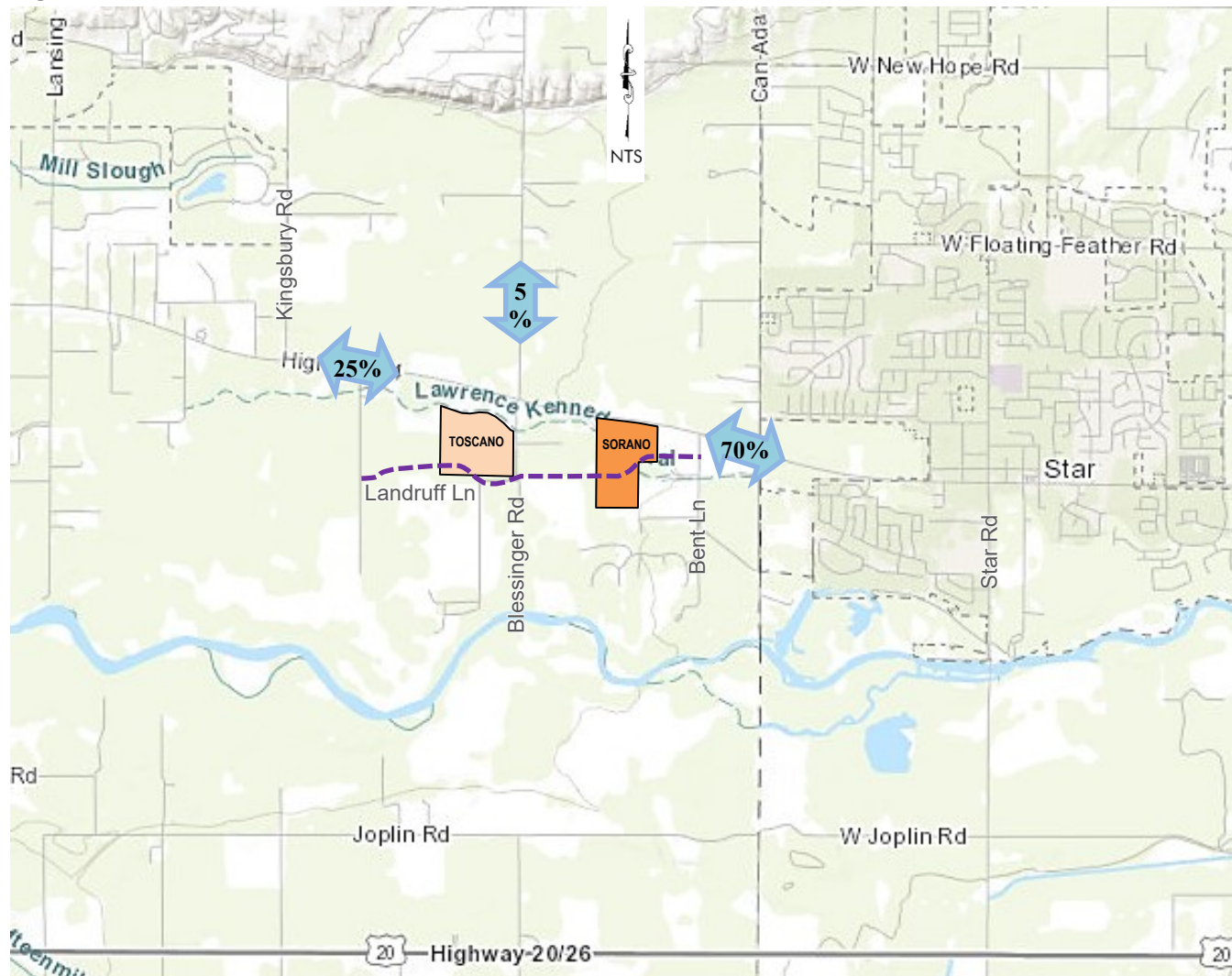


Figure 4.2 – Toscana Estates AM Peak Hour Site Traffic

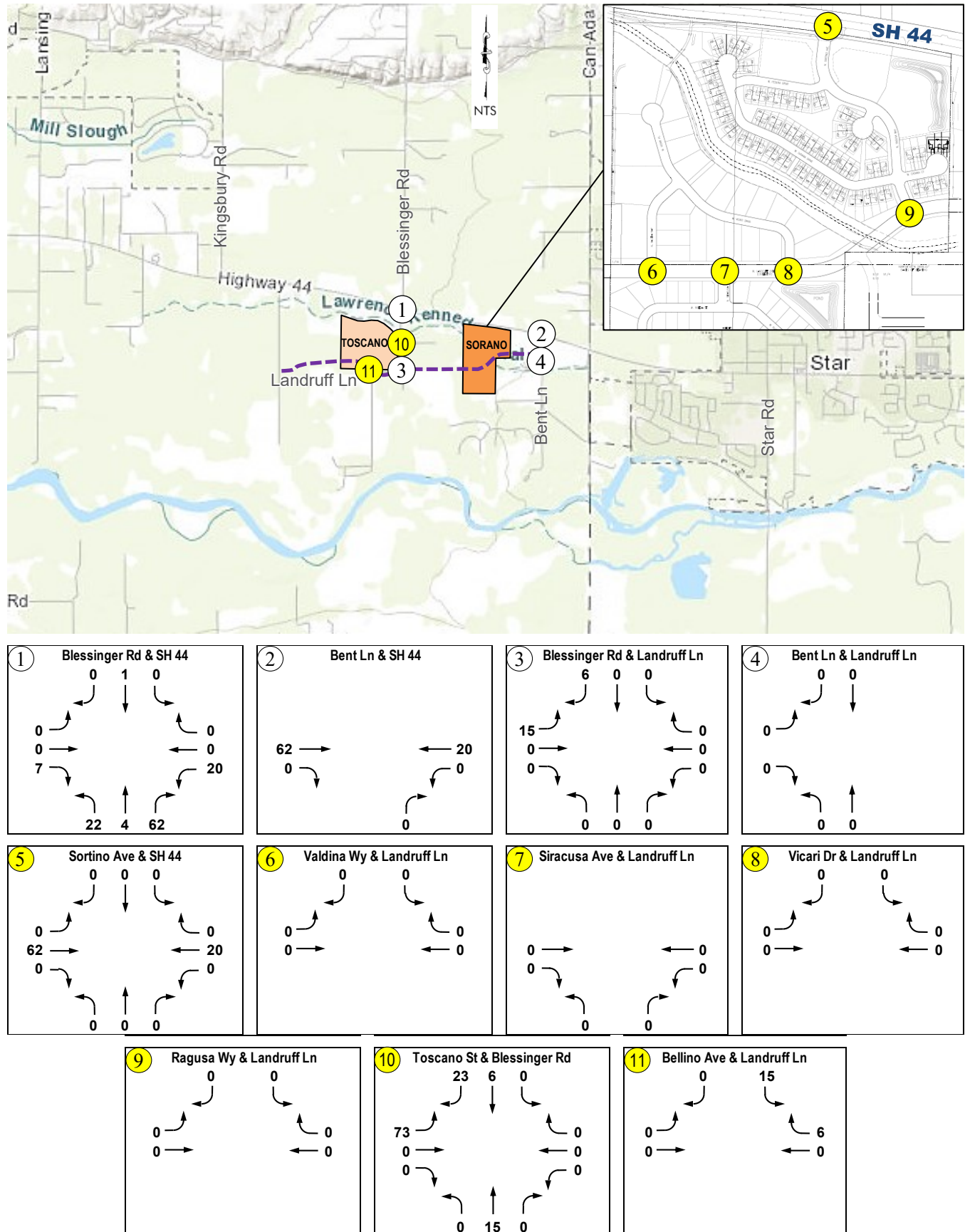


Figure 4.3 – Toscano Estates PM Peak Hour Site Traffic

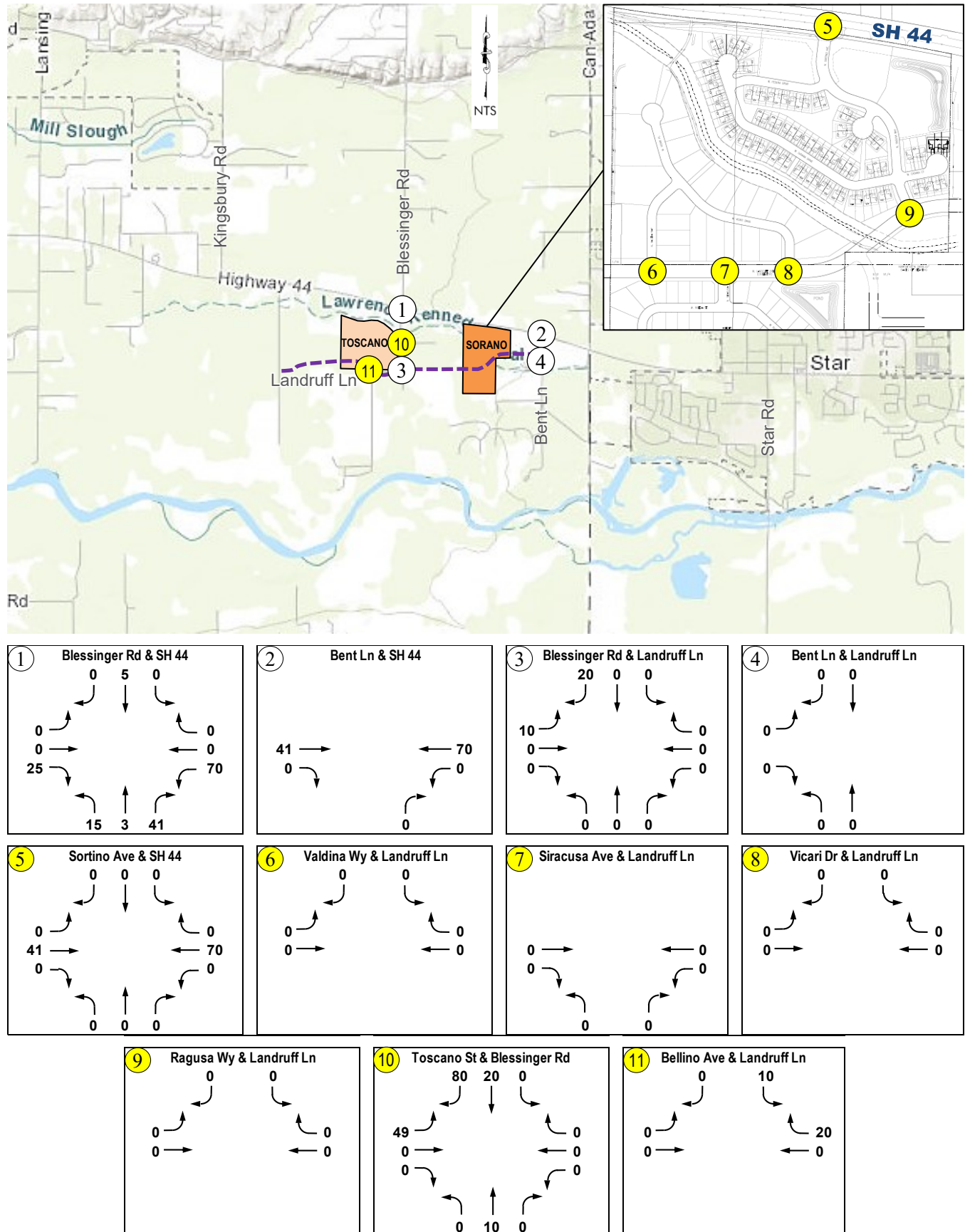


Figure 4.4 – Sorano Estates AM Peak Hour Site Traffic

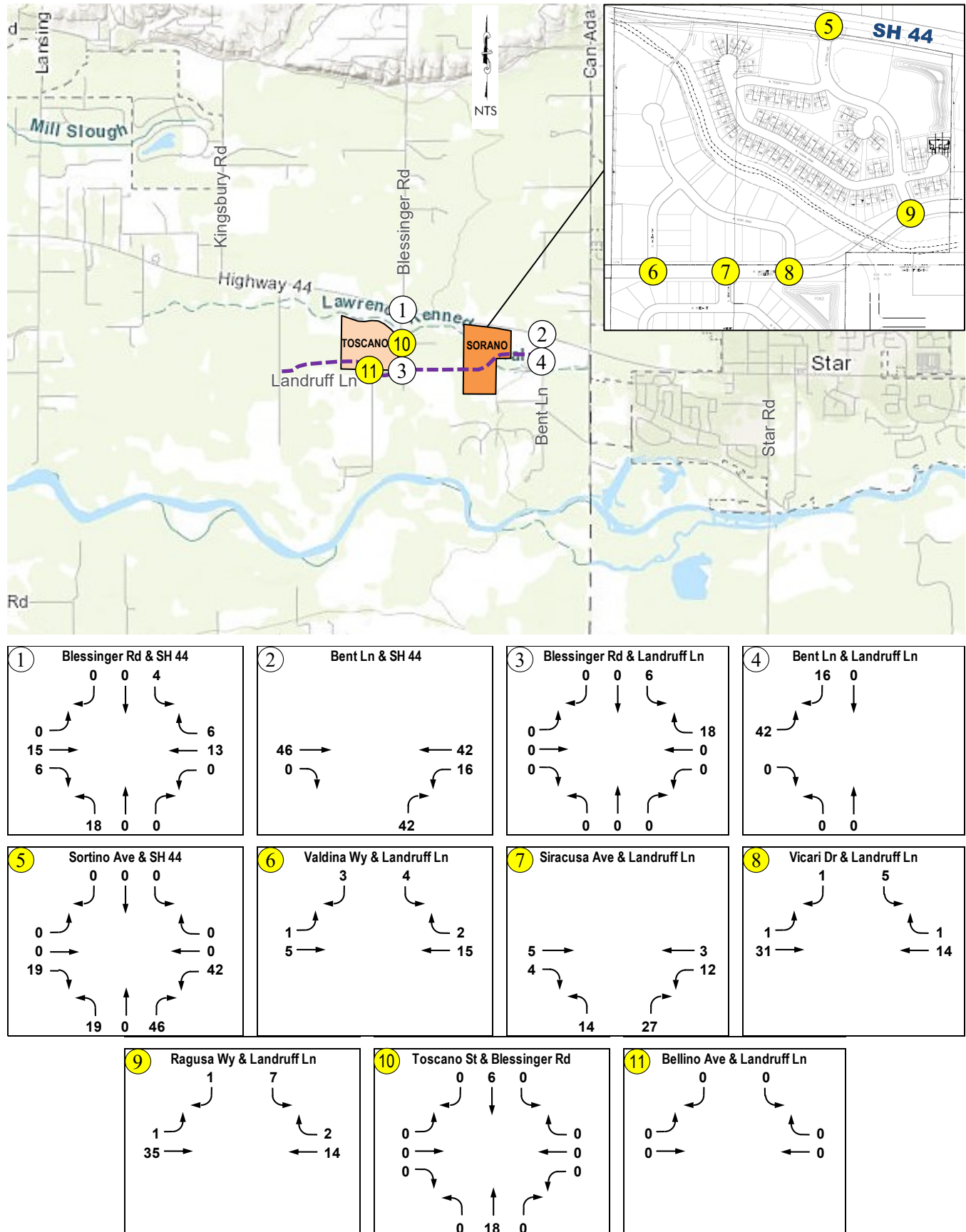


Figure 4.5 – Sorano Estates PM Peak Hour Site Traffic

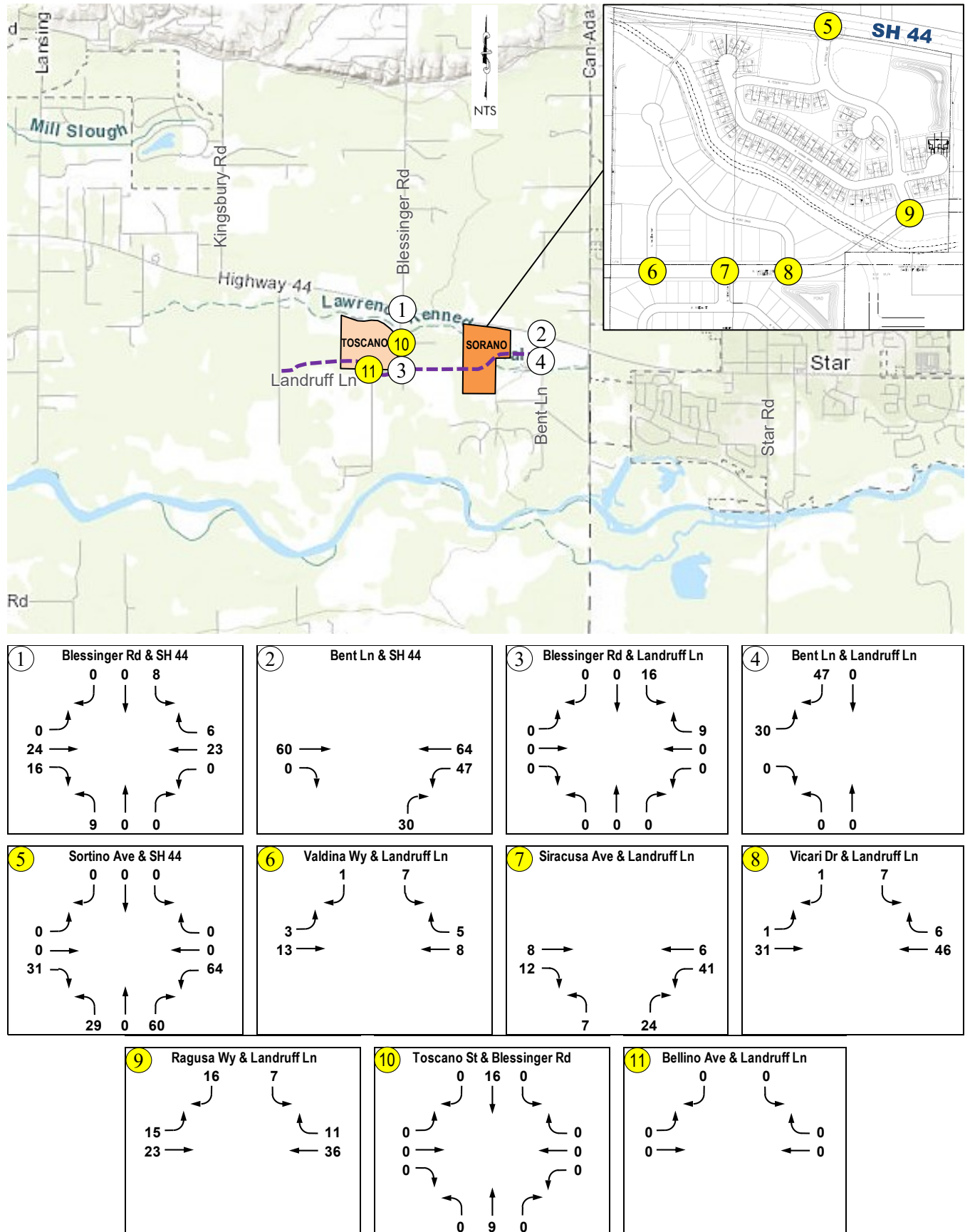


Figure 4.6 – 2028 Build-Out Year AM Peak Hour Total Traffic

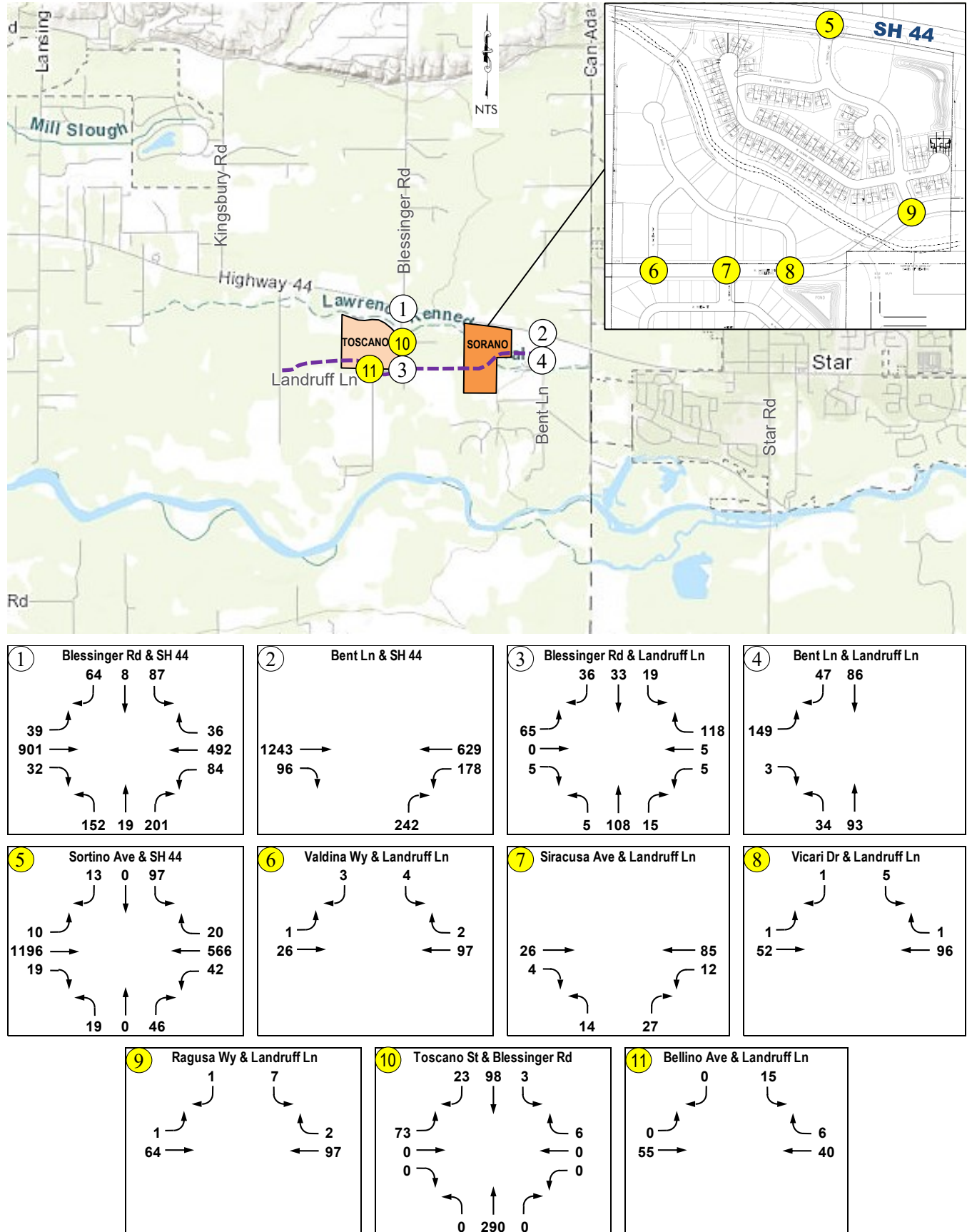
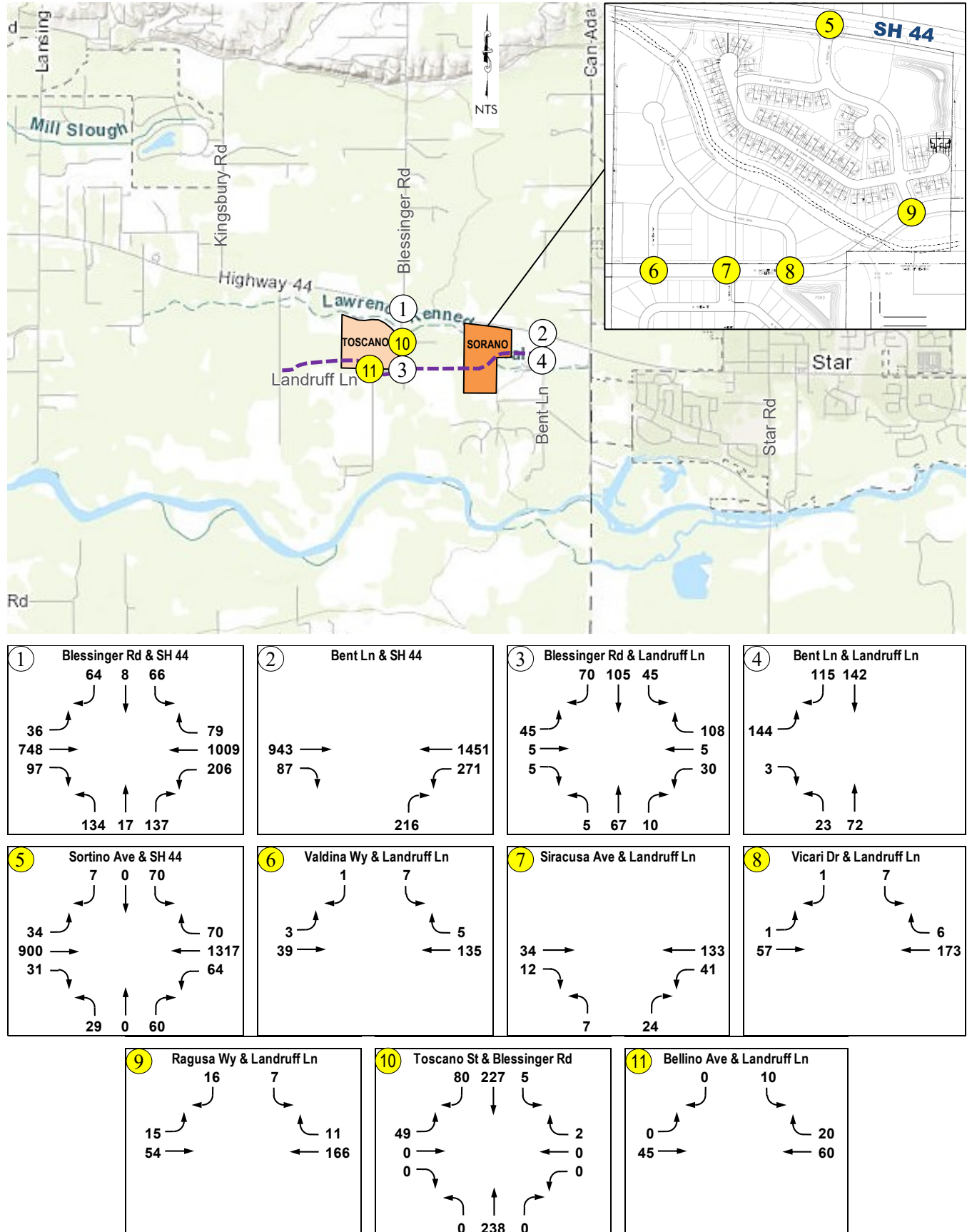


Figure 4.7 – 2028 Build-Out Year PM Peak Hour Total Traffic



4.4 Intersection Operations

To determine the 2028 total traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration or with mitigation improvements needed under prior analysis years' traffic conditions. **Table 4.4** summarizes the intersection capacity analysis results. Based on traffic analysis results, one study area intersection is anticipated to exceed minimum operational thresholds under 2028 total traffic conditions:

- Sortino Avenue and SH 44 intersection

Table 4.4 – Intersection Operations – 2028 Build-Out Year Total Traffic

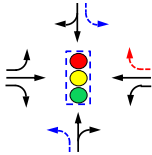
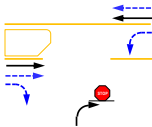
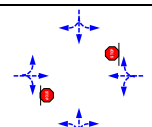
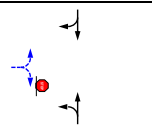
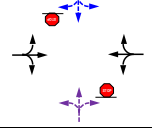
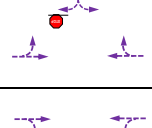
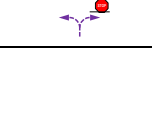
Intersection	Control / Lane 2024 Mitigation 2028 Background Mitigation Site Improvements	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
			LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
① Blessinger Rd and SH 44		Intersection	C	35	0.85	C	27	0.84
		EBL	B	12	0.09	C	22	0.19
		EBT	C	34	0.88	B	19	0.68
		EBR	B	12	0.04	A	10	0.10
		WBL	C	31	0.53	B	17	0.58
		WBT	B	17	0.47	C	27	0.87
		WBR	B	11	0.04	A	8	0.08
		NBL	E	59	0.58	E	60	0.64
		NBTR	D	54	0.64	D	53	0.60
		SBL	E	72	0.60	E	63	0.48
		SBTR	D	47	0.28	D	49	0.28
② Bent Ln and SH 44		EBT	-	-	-	-	-	-
		EBR	-	-	-	-	-	-
		WBL	D	25	0.53	C	15	0.46
		WBT	-	-	-	-	-	-
		NBR	E	48	0.80	C	18	0.45
③ Blessinger Rd and Landruff Ln		EB	B	12	0.13	B	13	0.12
		WB	A	10	0.16	B	10	0.19
		NB	A	7	< 0.01	A	8	< 0.01
		SB	A	8	0.02	A	8	0.03
④ Blessinger Rd and Landruff Ln		EB	B	12	0.25	B	13	0.26
		NB	A	8	0.03	A	8	0.02
		SB	-	-	-	-	-	-
⑤ Sortino Ave and SH 44		EB	A	9	0.01	B	14	0.09
		WB	B	13	0.09	B	11	0.11
		NB	F	188	0.96	F	> 300	> 2.00
		SB	F	> 300	> 2.00	F	> 300	> 2.00
⑥ Valdina Wy and Landruff Ln		EB	A	7	< 0.01	A	8	< 0.01
		WB	-	-	-	-	-	-
		SB	A	9	0.01	A	10	0.01
⑦ Siracusa Ave and Landruff Ln		EB	-	-	-	-	-	-
		WB	A	7	0.01	A	7	0.03
		NB	A	9	0.05	A	9	0.04

Table 4.4 – Intersection Operations – 2028 Build-Out Year Total Traffic (Continued)

Intersection	Control / Lane Site Improvements	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
			LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
8 Vicari Dr and Landruff Ln		EB	A	7	< 0.01	A	8	< 0.01
		WB	-	-	-	-	-	-
		SB	A	9	0.01	A	10	0.01
9 Ragusa Ave and Landruff Ln		EB	A	7	< 0.01	A	8	0.01
		WB	-	-	-	-	-	-
		SB	A	9	0.01	A	10	0.03
10 Toscana St and Blessinger Rd		EB	B	13	0.16	B	15	0.13
		WB	B	10	0.01	A	10	< 0.01
		NB	A	-	-	A	-	-
		SB	A	8	< 0.01	A	8	< 0.01
11 Bellino Ave and Landruff Ln		EB	A	-	-	A	-	-
		WB	-	-	-	-	-	-
		SB	A	9	0.02	A	9	0.01

4.5 Intersection Mitigation

One study area intersection is anticipated to exceed minimum operational thresholds under 2028 total traffic conditions. None of the other study area intersections are anticipated to require additional turn lanes based on NCHRP turn lane guidelines. The intersection, operational deficiencies, and mitigation improvements are discussed below.

Sortino Avenue and SH 44 Intersection

The proposed Sortino Avenue and SH 44 intersection is anticipated to exceed ITD minimum operational thresholds as an unsignalized intersection with one shared lane on all approaches. The northbound and southbound approaches are anticipated to operate at LOS F with v/c ratios exceeding 0.90 during peak hours. According to the current ITD and HD4 transportation plans, there are no improvements programmed at the intersection. Five mitigation options were evaluated to mitigate 2028 total traffic operations:

- Option 1 – Warranted turn lanes:
 - Eastbound and westbound right-turn lanes
 - Eastbound and westbound left-turn lanes
- Option 2 – Traffic signal with additional turn lanes
- Option 3 – Traffic signal with two through lanes on the SH 44 approaches
- Option 4 – RIROLI intersection with two through lanes on the SH 44 approaches
- Option 5 – Restrict to right-in and right-out (RIRO) movements only

Table 4.5 summarizes the intersection mitigation analysis results. The turn lanes are warranted based on ITD and AASHTO turn lane guidelines but are not anticipated to mitigate 2028 total traffic operations. Signalizing the intersection with additional turn lanes is also not anticipated to mitigate the intersection operations. Additional capacity is needed on the eastbound and westbound approaches to accommodate the projected through traffic on SH 44. Therefore, two through lanes on the SH 44 approaches are needed to mitigate 2028 total traffic operations and are recommended.

ITD may not approve a traffic signal at the Sortino Avenue intersection as it is not identified in the SH 44 corridor plan. Restricting the intersection to a RIROLI is recommended as an alternative mitigation option.

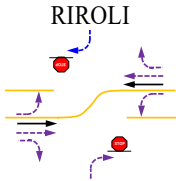
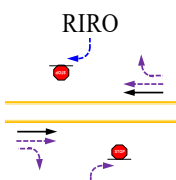
As a two-way stop-controlled intersection, the Sortino Avenue and SH 44 intersection is anticipated to fail and need mitigation improvements by 2025. Toscano Estates and Sorano Estates are estimated to construct 40 single-family lots each by 2025.

The intersection is anticipated to operate acceptably as a signalized intersection with one through lane on the SH 44 approaches up to the year 2027. The SH 44 approaches will need two through lanes by 2027. Toscano Estates is estimated to construct 130 single-family lots by 2027. Sorano Estates is estimated to construct 109 single-family lots and 89 townhomes by 2027.

Table 4.5 – Sortino Avenue and SH 44 Intersection – 2028 Total Traffic Mitigation

Intersection	Control / Lane Off-Site Improvements Mitigation	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
			LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
5 Sortino Ave and SH 44		EBL	A	9	0.01	B	14	0.09
		EBT	-	-	-	-	-	-
		EBR	-	-	-	-	-	-
		WBL	B	13	0.09	B	11	0.11
		WBT	-	-	-	-	-	-
		WBR	-	-	-	-	-	-
		NB	F	157	0.88	F	> 300	> 2.00
		SB	F	> 300	> 2.00	F	> 300	> 2.00
		Intersection	C	33	0.93	D	44	0.99
		EBL	A	6	0.02	D	42	0.37
		EBT	D	42	0.99	B	15	0.74
		EBR	A	6	0.02	A	5	0.03
		WBL	D	42	0.41	B	13	0.21
		WBT	A	9	0.46	F	65	1.07
		WBR	A	5	0.02	A	5	0.07
		NBL	E	55	0.10	E	56	0.16
		NBTR	E	56	0.26	E	58	0.38
		SBL	E	65	0.60	E	65	0.52
		SBTR	D	54	0.07	D	54	0.05
		Intersection	A	10	0.62	A	9	0.66
		EBL	A	6	0.02	A	10	0.13
		EBT	B	11	0.71	B	11	0.66
		EBTR	B	11	0.71	B	11	0.66
		WBL	A	8	0.15	A	7	0.18
		WBT	A	3	0.26	A	6	0.67
		WBTR	A	3	0.26	A	6	0.68
		NBL	C	23	0.08	B	19	0.11
		NBTR	C	24	0.36	C	21	0.42
		SBL	C	27	0.50	C	22	0.32
		SBTR	C	22	0.10	B	18	0.05

Table 4.5 – Sortino Avenue and SH 44 Intersection – 2028 Total Traffic Mitigation (Continued)

Intersection	Control / Lane Off-Site Improvements Mitigation	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
			LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
5		EBL	A	9	0.01	B	14	0.09
		EBT	-	-	-	-	-	-
		EBR	-	-	-	-	-	-
		WBL	B	14	0.10	B	12	0.11
		WBT	-	-	-	-	-	-
		WBR	-	-	-	-	-	-
		SBR	B	10	0.02	C	15	0.02
		NBR	C	16	0.14	B	14	0.14
		EBT	-	-	-	-	-	-
		EBR	-	-	-	-	-	-
		WBT	-	-	-	-	-	-
		WBR	-	-	-	-	-	-
		SBR	B	10	0.02	C	15	0.02
		NBR	C	16	0.14	B	14	0.14

4.6 Toscano Estates Site Access and Circulation

Figure 4.8 shows the proposed site access locations and internal circulation. Toscano Estates is planning to construct Landruff Lane along the southern site boundary connecting to other Landruff Lane segments constructed with the adjacent in-process developments. One access is proposed on Landruff Lane located approximately 1,280 feet west of Blessinger Road. One access is proposed on Blessinger Road located approximately 950 feet south of SH 44 and 860 feet north of Landruff Lane aligning with the existing approach to the east.

Site access spacing on Blessinger Road and Landruff Lane, a major collector street, is governed by ACCHD policy. According to the ACCHD intersection and approach policy, the minimum urban roadway spacing on a major collector street is:

- 500 feet local or private road spacing on the same side of through roadway
- 250 feet local or private road spacing on the opposite side of through roadway
- 350 feet driveway spacing for a minor generator

Both proposed site access roadways meet the minimum 500-foot local road spacing requirements on Blessinger Road and Landruff Lane.

The proposed internal roadways are local streets with front-on housing. All internal local roadways are estimated to carry less than 1,000 vehicles per weekday.

[illegible]

4.7 Sorano Estates Site Access and Circulation

Figure 4.9 shows the proposed site access locations and internal circulation. Sorano Estates is planning to construct Landruff Lane through the site connecting to other Landruff Lane segments constructed with the adjacent in-process developments. Four accesses are proposed on Landruff Lane at approximately 300 to 350 feet spacing. One full-movement access is proposed on SH 44.

Site access spacing on Landruff Lane, a major collector street, is governed by ACCHD policy. According to the ACCHD intersection and approach policy, the minimum urban roadway spacing on a major collector street is:

- 500 feet local or private road spacing on the same side of through roadway
- 250 feet local or private road spacing on the opposite side of through roadway
- 350 feet driveway spacing for a minor generator

All proposed site access roadways on Landruff Lane meet the minimum 500-foot and 250-foot local road spacing requirements on Landruff Lane.

The proposed internal roadways are local streets except for Sortino Avenue. Sortino Avenue corresponds to the future north-south collector street as identified in the *West Star Neighborhood Transportation Plan*. All internal local streets with front-on housing are estimated to carry less than 1,000 vehicles per weekday.

Access spacing on SH 44 is governed by ITD IDAPA 39.03.42. The access management plan for the SH 44 corridor will also determine access locations and restrictions. SH 44 along the site frontage is a 55-mph state highway classified as a Statewide Route. The minimum access spacing on a Statewide Route within an urban area is:

- 1,320 feet public road spacing
- 790 feet driveway spacing upstream of a public road
- The minimum driveway spacing on a Statewide Route is 650 feet

The proposed Sortino Avenue meets IDAPA 1,320 feet public road spacing. However, it does not meet the one-half mile signal spacing from Blessinger Road by approximately 40 feet.

4.7.1 Sorano Estates Alternate Site Access

The traffic impact analysis discussed in the previous sections was based on the proposed site accesses as shown in the preliminary site plan, which includes a full access on SH 44. During the TIS scoping correspondence, ITD requested an additional traffic impact scenario with no site access on SH 44. Per ITD's request, an additional site access scenario without Sortino Avenue was analyzed.

Without a direct access on SH 44, site traffic generated by Sorano Estates is expected to shift to Blessinger Road and Bent Lane. **Figures 4.10** and **4.11** summarize the estimated Sorano Estates site traffic without an access on SH 44. **Figures 4.12** and **4.13** summarize the estimated 2028 total traffic. **Table 4.6** summarizes the proportionate share of the site traffic at each study area intersection.

Figure 4.9 – Sorano Estates Site Access and Circulation

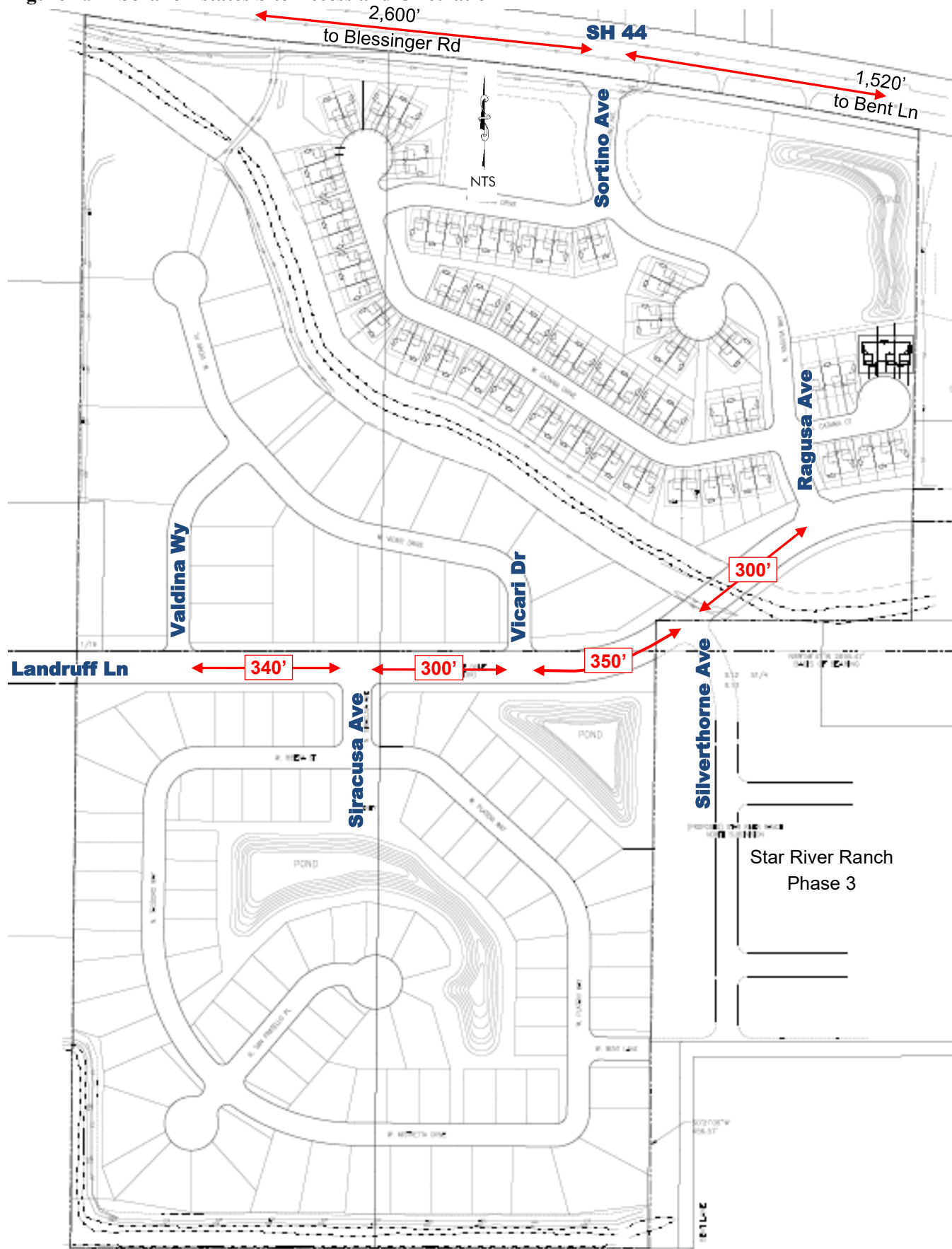


Figure 4.10 – Sorano Estates AM Peak Hour Site Traffic (No Access on SH 44)

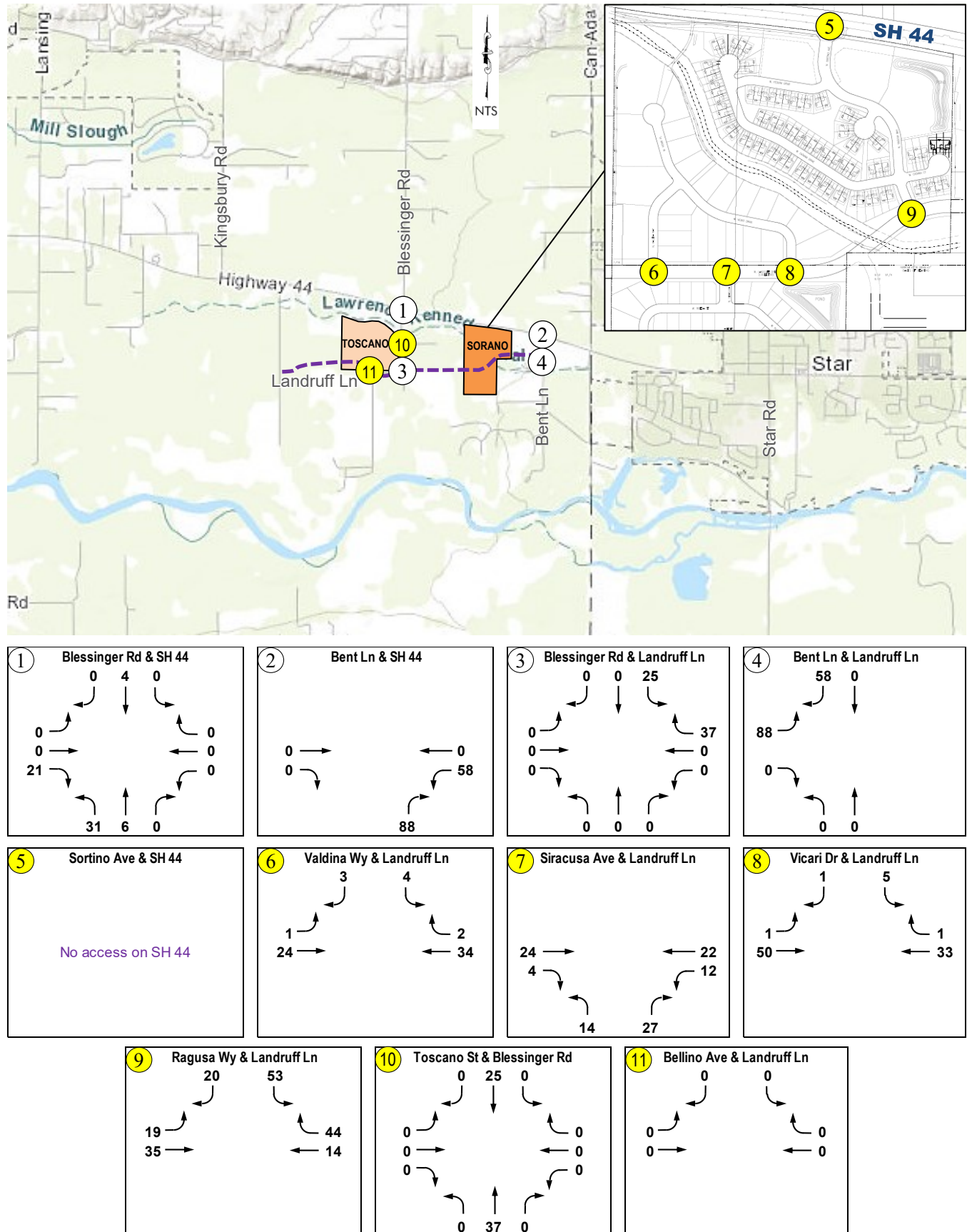


Figure 4.11 – Sorano Estates PM Peak Hour Site Traffic (No Access on SH 44)

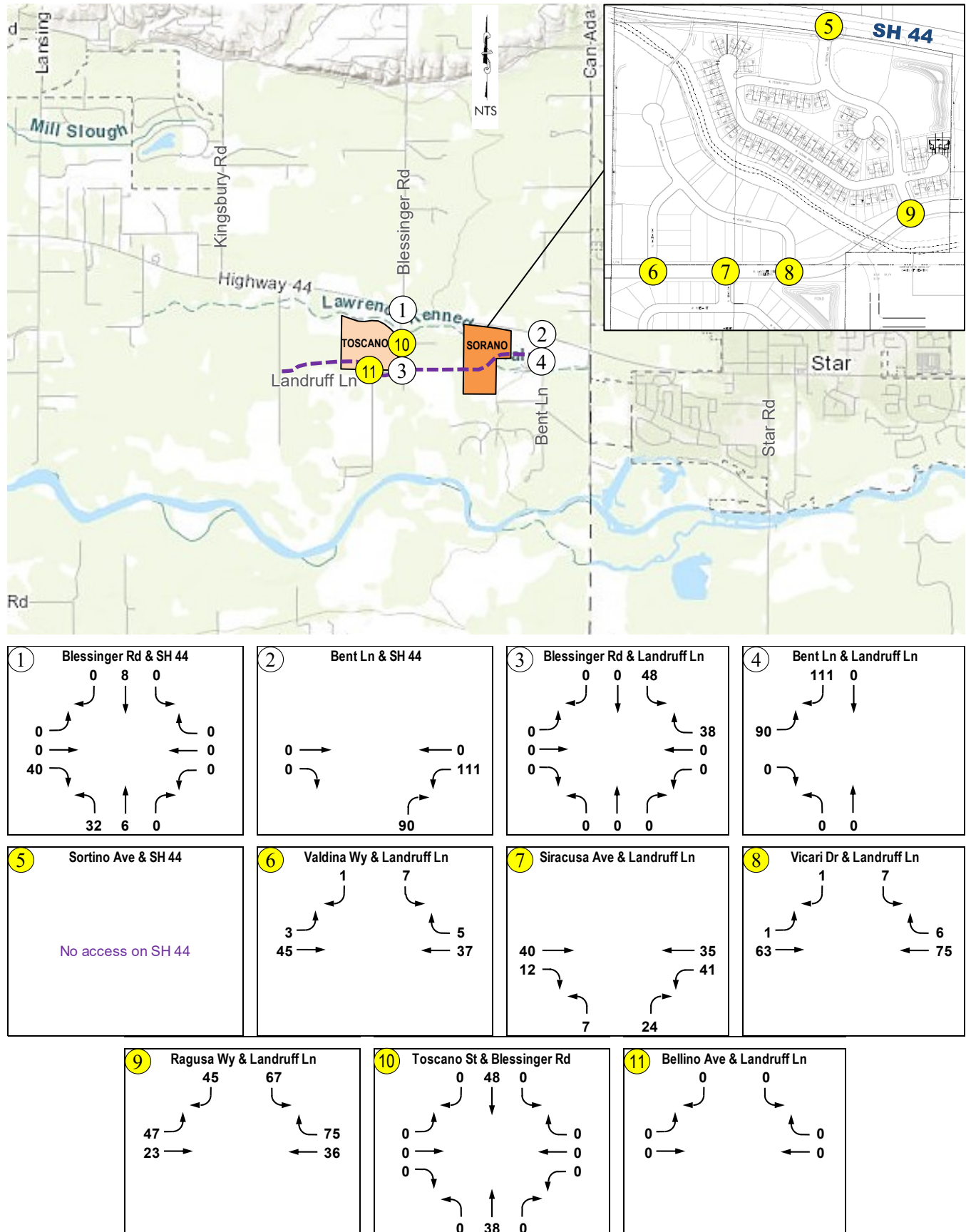


Figure 4.12 – 2028 Build-Out Year AM Peak Hour Total Traffic (No Access on SH 44)

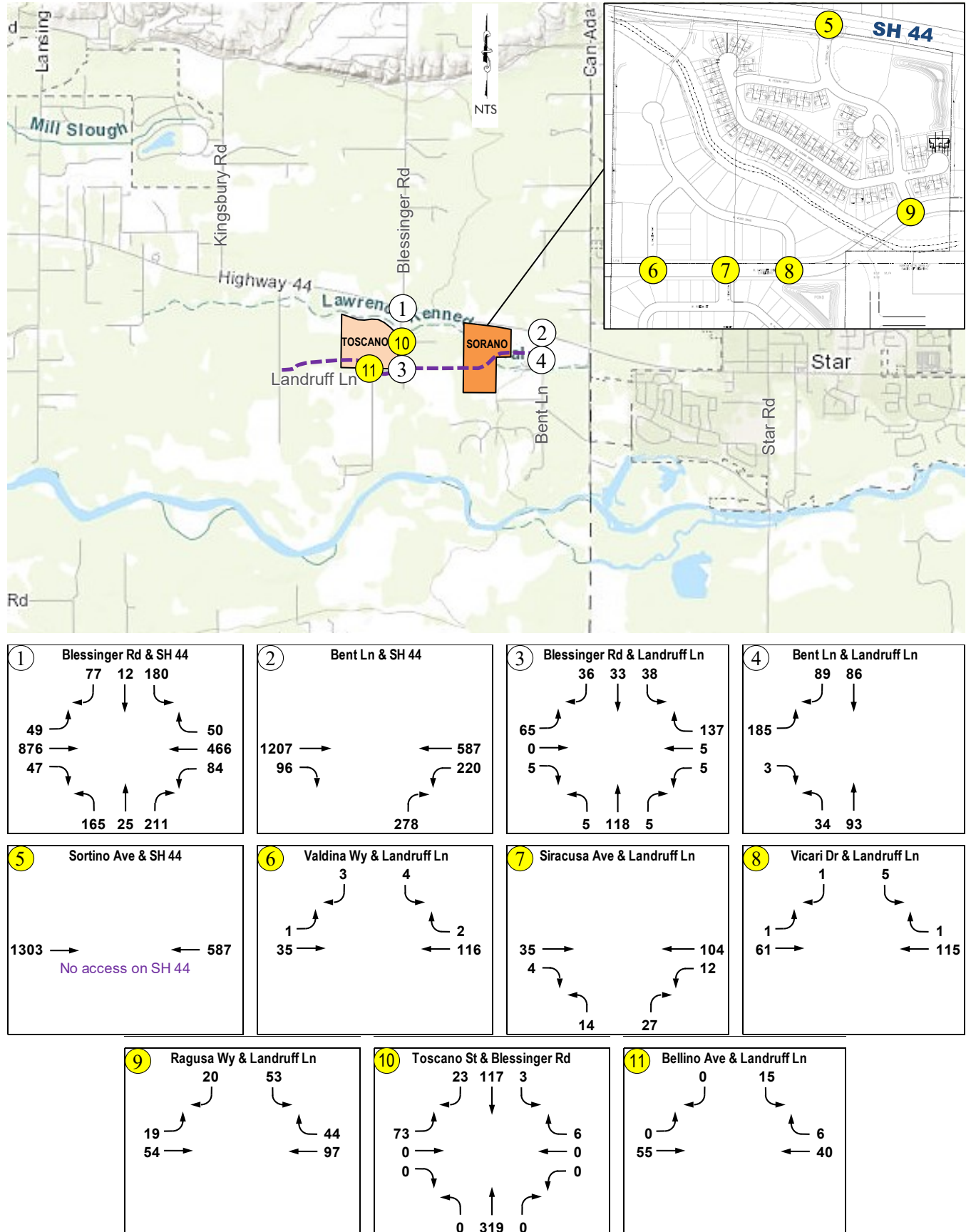


Figure 4.13 – 2028 Build-Out Year PM Peak Hour Total Traffic (No Access on SH 44)

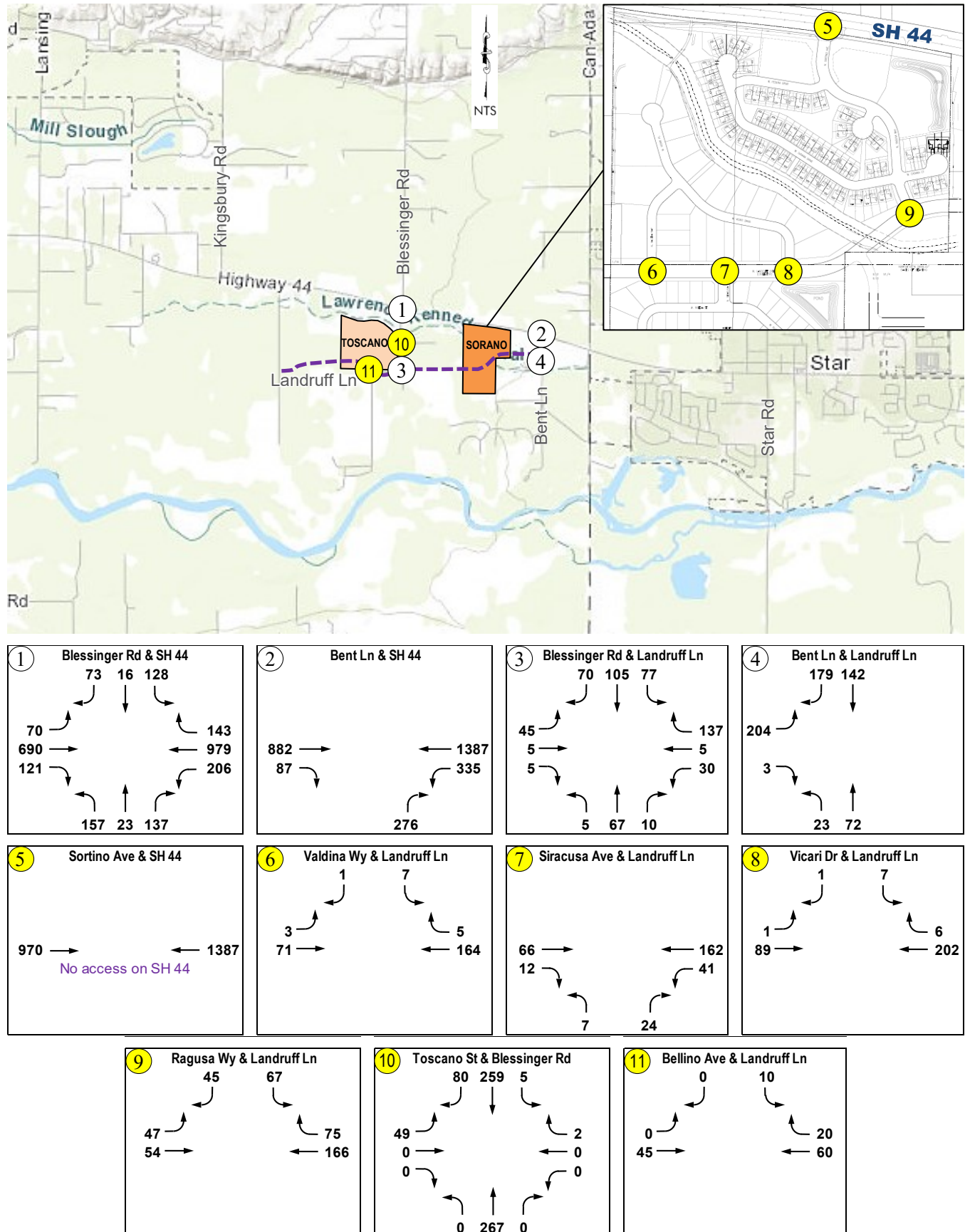


Table 4.6 – Build-Out Site Traffic Percentage of 2028 Total Traffic (No Access on SH 44)

Intersection		Toscana Estates			Sorano Estates		
		AM Peak	PM Peak	Average	AM Peak	PM Peak	Average
①	Blessinger Rd and SH 44	5.2%	5.8%	5.5%	2.8%	3.1%	3.0%
②	Bent Ln and SH 44	3.4%	3.8%	3.6%	6.1%	6.7%	6.4%
③	Blessinger Rd and Landruff Ln	4.6%	5.3%	5.0%	13.7%	15.3%	14.5%
④	Bent Ln and Landruff Ln	0.0%	0.0%	0.0%	29.8%	32.3%	31.1%

The study area intersections were analyzed with the existing intersection control and lane configuration or with mitigation improvements needed under prior analysis years' traffic conditions. Copies of the analysis results are included in the appendix. **Table 4.7** summarizes the intersection capacity analysis results for the alternate site access scenario. Two study area intersections are anticipated to exceed minimum operational thresholds. The intersections, operational deficiencies, and mitigation improvements are discussed below.

Blessinger Road and SH 44 Intersection

The Blessinger Road and SH 44 intersection is anticipated to exceed ITD minimum operational thresholds. The northbound and southbound approaches are anticipated to operate at LOS F with v/c ratios exceeding 0.90 in the peak hours. The following additional improvements are needed to mitigate 2028 total traffic operations:

- Construct a northbound right-turn lane
- Traffic signal modifications

Table 4.8 summarizes the intersection mitigation analysis results. The additional northbound right-turn lane is anticipated to mitigate the intersection operations.

Bent Lane and SH 44 Intersection

The Bent Lane and SH 44 intersection is anticipated to exceed ITD minimum operational thresholds. The northbound right-turn movement is anticipated to operate under capacity but at LOS F during the AM peak hour. The average vehicle delay for the northbound right-turn movements is not excessive. Additionally, some traffic on Bent Lane is expected to shift to the signal at Can Ada Road once Landruff Lane is connected to Can Ada Road. Therefore, no additional improvements are recommended.

Table 4.7 – Intersection Operations – 2028 Build-Out Year Total Traffic (No Access on SH 44)

Intersection		Control / Lane 2024 Mitigation 2028 Background Mitigation Mitigation	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
①	Blessinger Rd and SH 44		Intersection	D	52	0.93	C	32	0.87
			EBL	B	15	0.12	C	27	0.39
			EBT	D	42	0.90	C	21	0.64
			EBR	B	15	0.06	B	12	0.13
			WBL	D	44	0.64	B	17	0.57
			WBT	C	21	0.48	C	30	0.87
			WBR	B	15	0.06	B	11	0.15
			NBL	E	73	0.70	E	69	0.69
			NBTR	F	116	0.98	D	54	0.53
			SBL	F	110	0.98	F	87	0.79
			SBTR	D	45	0.28	D	50	0.29
			Intersection	D	38	0.86	C	29	0.84
			EBL	B	13	0.11	C	26	0.37
			EBT	C	34	0.87	B	20	0.64
			EBR	B	13	0.05	B	12	0.13
			WBL	C	32	0.54	B	17	0.56
			WBT	B	18	0.46	C	29	0.87
			WBR	B	12	0.06	B	10	0.15
			NBL	E	70	0.72	E	70	0.72
			NBT	D	54	0.09	D	48	0.07
			NBR	E	67	0.77	D	46	0.43
			SBL	E	56	0.64	E	56	0.51
			SBTR	D	46	0.32	D	51	0.30
②	Bent Ln and SH 44		EBT	-	-	-	-	-	-
			EBR	-	-	-	-	-	-
			WBL	D	29	0.63	C	16	0.53
			WBT	-	-	-	-	-	-
			NBR	F	60	0.89	C	19	0.55
③	Blessinger Rd and Landruff Ln		EB	B	13	0.14	B	14	0.14
			WB	A	10	0.18	B	11	0.23
			NB	A	7	< 0.01	A	8	< 0.01
			SB	A	8	0.03	A	8	0.06
④	Blessinger Rd and Landruff Ln		EB	B	13	0.32	B	15	0.38
			NB	A	8	0.03	A	8	0.02
			SB	-	-	-	-	-	-
⑥	Valdina Wy and Landruff Ln		EB	A	8	< 0.01	A	8	< 0.01
			WB	-	-	-	-	-	-
			SB	A	9	0.01	A	10	0.01
⑦	Siracusa Ave and Landruff Ln		EB	-	-	-	-	-	-
			WB	A	7	0.01	A	8	0.03
			NB	A	9	0.05	A	9	0.04

Table 4.7 – Intersection Operations – 2028 Build-Out Year Total Traffic (No Access on SH 44) (Continued)

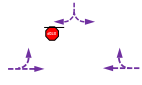
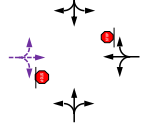
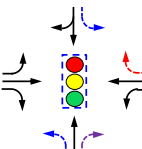
Intersection		Control / Lane 2024 Mitigation 2028 Background Mitigation Site Improvements	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
8	Vicari Dr and Landruff Ln		EB	A	8	< 0.01	A	8	< 0.01
			WB	-	-	-	-	-	-
			SB	A	10	0.01	B	10	0.01
9	Ragusa Ave and Landruff Ln		EB	A	8	0.02	A	8	0.04
			WB	-	-	-	-	-	-
			SB	B	10	0.10	B	12	0.19
10	Toscana St and Blessinger Rd		EB	B	14	0.17	C	16	0.14
			WB	B	10	0.01	A	10	< 0.01
			NB	A	-	-	A	-	-
			SB	A	8	< 0.01	A	8	< 0.01
11	Bellino Ave and Landruff Ln		EB	A	-	-	A	-	-
			WB	-	-	-	-	-	-
			SB	A	9	0.02	A	9	0.01

Table 4.8 – Blessinger Road and SH 44 Intersection – 2028 Total Traffic Mitigation (No Access on SH 44)

Intersection		Control / Lane 2024 Mitigation 2028 Background Mitigation Mitigation	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
1	Blessinger Rd and SH 44		Intersection	D	38	0.86	C	29	0.84
			EBL	B	13	0.11	C	26	0.37
			EBT	C	34	0.87	B	20	0.64
			EBR	B	13	0.05	B	12	0.13
			WBL	C	32	0.54	B	17	0.56
			WBT	B	18	0.46	C	29	0.87
			WBR	B	12	0.06	B	10	0.15
			NBL	E	70	0.72	E	70	0.72
			NBT	D	54	0.09	D	48	0.07
			NBR	E	67	0.77	D	46	0.43
			SBL	E	56	0.64	E	56	0.51
			SBTR	D	46	0.32	D	51	0.30

5.0 2033 HORIZON YEAR BACKGROUND TRAFFIC CONDITIONS

5.1 Roadway Network

For the 2033 horizon year background traffic impact analysis, the study area roadways and intersections are assumed to remain the same as the mitigated 2028 background traffic conditions, except for Landruff Lane. Landruff Lane is expected to be constructed with the in-process developments in the vicinity of the site south of SH 44 as discussed in the previous section and connected to Can Ada Road.

5.2 Background Traffic

Background traffic growth from 2028 to 2033 was estimated by extrapolating the 2028 traffic volumes determined in Section 3.2 with the following annual growth rates:

- SH 44 – 2.0%
- Blessinger Road and Bent Lane – 3%

In-process developments described in Section 3.2 are included in the background traffic. With Landruff Lane connected to Can Ada Road, some off-site traffic is anticipated to shift to Can Ada Road. A summary of the off-site traffic is included in the appendix. **Figure 5.1** summarizes the 2033 AM and PM peak hour background traffic at the study area intersections.

5.3 Intersection Operations

To determine the 2033 background traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration or with mitigation improvements needed under prior analysis years traffic conditions. Copies of the analysis reports are included in the appendix. **Table 5.1** summarizes the intersection capacity analysis results. Based on traffic analysis results, one study area intersection is anticipated to exceed minimum operational thresholds under 2033 background traffic conditions:

- Blessinger Road and SH 44 intersection

Figure 5.1 – 2033 Horizon Year Peak Hour Background Traffic

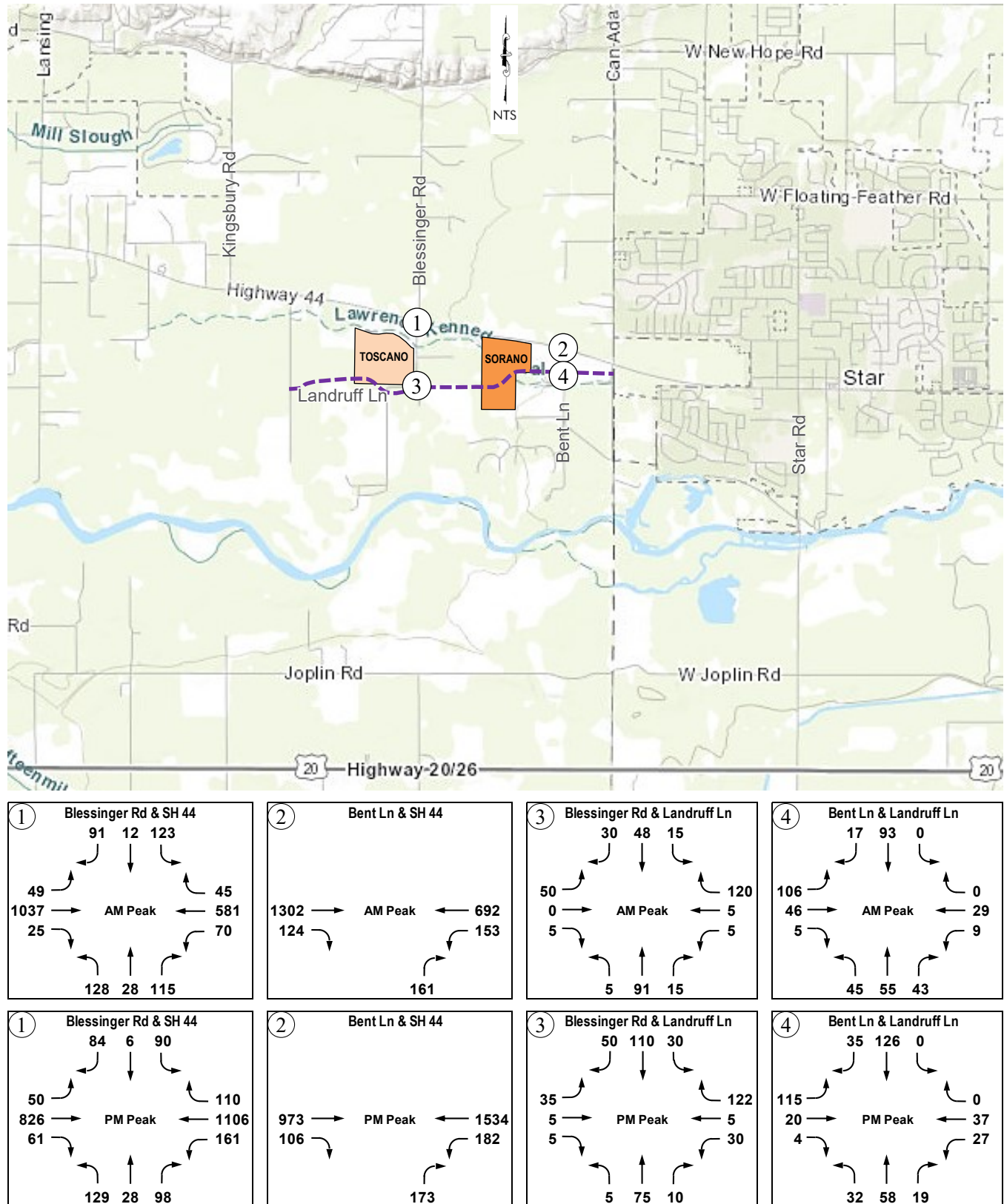
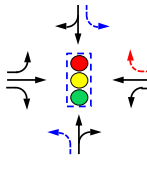
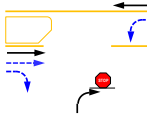
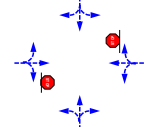
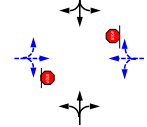


Table 5.1 – Intersection Operations – 2033 Horizon Year Background Traffic

Intersection		Control / Lane 2024 Mitigation 2028 Background Mitigation	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
①	Blessinger Rd and SH 44		Intersection	D	38	0.91	C	29	0.87
			EBL	B	11	0.12	C	30	0.31
			EBT	D	40	0.95	B	17	0.70
			EBR	A	9	0.03	A	8	0.06
			WBL	D	40	0.60	B	16	0.48
			WBT	B	16	0.53	C	30	0.91
			WBR	A	9	0.05	A	8	0.11
			NBL	E	74	0.69	E	73	0.69
			NBTR	D	53	0.48	E	56	0.48
			SBL	E	77	0.72	E	69	0.57
			SBTR	D	53	0.46	D	54	0.35
②	Bent Ln and SH 44		EBT	-	-	-	-	-	-
			EBR	-	-	-	-	-	-
			WBL	D	26	0.50	B	14	0.32
			WBT	-	-	-	-	-	-
			NBR	D	32	0.59	C	16	0.37
③	Blessinger Rd and Landruff Ln		EB	B	11	0.10	B	12	0.09
			WB	A	10	0.16	B	10	0.20
			NB	A	7	< 0.01	A	8	< 0.01
			SB	A	8	0.01	A	8	0.02
④	Bent Ln and Landruff Ln		EB	B	14	0.29	B	13	0.27
			WB	B	12	0.07	B	12	0.12
			NB	A	8	0.03	A	8	0.03
			SB	A	-	-	A	-	-

5.4 Intersection Mitigation

One study area intersection is anticipated to continue to exceed minimum operational thresholds under 2033 background traffic conditions. The intersection, operational deficiencies, and mitigation improvements are discussed below.

Blessinger Road and SH 44 Intersection

The Blessinger Road and SH 44 intersection is anticipated to exceed ITD minimum operational thresholds. The eastbound and westbound through lane groups are anticipated to operate with v/c ratios exceeding 0.90 in the peak hours, exceeding the ITD 0.90 threshold. The following additional improvements are needed to mitigate 2033 background traffic operations:

- Widen SH 44 approaches to have two through lanes in each direction
- Traffic signal modifications

Table 5.2 summarizes the intersection mitigation analysis results. The additional through lanes on the SH 44 approaches are anticipated to mitigate the intersection operations.

Table 5.2 – Blessinger Road and SH 44 Intersection – 2033 Background Traffic Mitigation

Intersection		Control / Lane 2028 Background Mitigation Mitigation	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
1	Blessinger Rd and SH 44		Intersection	C	23	0.57	C	20	0.59
			EBL	A	9	0.10	B	10	0.18
			EBT	B	17	0.53	B	13	0.41
			EBTR	B	16	0.53	B	13	0.41
			WBL	B	12	0.28	A	10	0.39
			WBT	B	13	0.31	B	14	0.55
			WBTR	B	13	0.31	B	14	0.55
			NBL	E	57	0.61	E	62	0.65
			NBTR	D	45	0.44	D	52	0.46
			SBL	E	58	0.62	E	63	0.53
			SBTR	D	45	0.43	D	50	0.34

6.0 2033 HORIZON YEAR TOTAL TRAFFIC CONDITIONS

6.1 Roadway Network

For the 2033 horizon year total traffic impact analysis, the study area roadways and intersections are assumed to remain the same as the mitigated 2033 background traffic conditions. Mitigation improvements needed under prior analysis years' traffic conditions are included in the analysis. The proposed developments are expected to improve Blessinger Road, SH 44, and Landruff Lane along the site frontages. Landruff Lane is expected to be constructed with the in-process developments in the vicinity of the site south of SH 44 and connected to Can Ada Road. The intersections of Blessinger Road and Bent Lane on Landruff Lane are expected to be constructed with the in-process developments.

6.2 Site Traffic

Site traffic trip generation, modal split, and distribution are expected to remain the same as discussed in the previous section. Site traffic for Toscano Estates is expected to remain unchanged between 2028 and 2033. With Landruff Lane connected to Can Ada Road, some site traffic generated by Sorano Estates is expected shift to Can Ada Road. **Figure 6.1** and **Figure 6.2** summarize the estimated AM and PM peak hour site traffic generated by Sorano Estates at the study area intersections with Landruff Lane connected to Can Ada Road.

6.3 Total Traffic

The build-out site traffic was added to the 2033 background traffic as determined above to obtain the 2033 horizon year total traffic. **Figure 6.3** and **Figure 6.4** summarize the estimated 2033 peak hour total traffic at the study area intersections. **Table 6.1** summarizes the proportionate share of the site traffic at each study area intersection under the 2033 horizon year total traffic conditions.

Table 6.1 – Build-Out Site Traffic Percentage of 2033 Total Traffic

Intersection		Toscano Estates			Sorano Estates		
		AM Peak	PM Peak	Average	AM Peak	PM Peak	Average
①	Blessinger Rd and SH 44	4.7%	5.3%	5.0%	2.5%	2.9%	2.7%
②	Bent Ln and SH 44	3.1%	3.4%	3.3%	4.6%	5.1%	4.8%
③	Blessinger Rd and Landruff Ln	4.8%	5.6%	5.2%	5.5%	4.6%	5.1%
④	Bent Ln and Landruff Ln	0.0%	0.0%	0.0%	11.5%	14.0%	12.7%

6.4 Intersection Operations

To determine the 2033 total traffic operations, the study area intersections were analyzed with the existing intersection control and lane configuration or with mitigation improvements needed under prior analysis years' traffic conditions. Copies of the analysis reports are included in the appendix. **Table 6.2** summarizes the intersection capacity analysis results. All study area intersections are anticipated to meet minimum operational thresholds under 2033 horizon total traffic conditions.

Figure 6.1 – Sorano Estates AM Peak Hour Site Traffic (2033 Horizon Year)

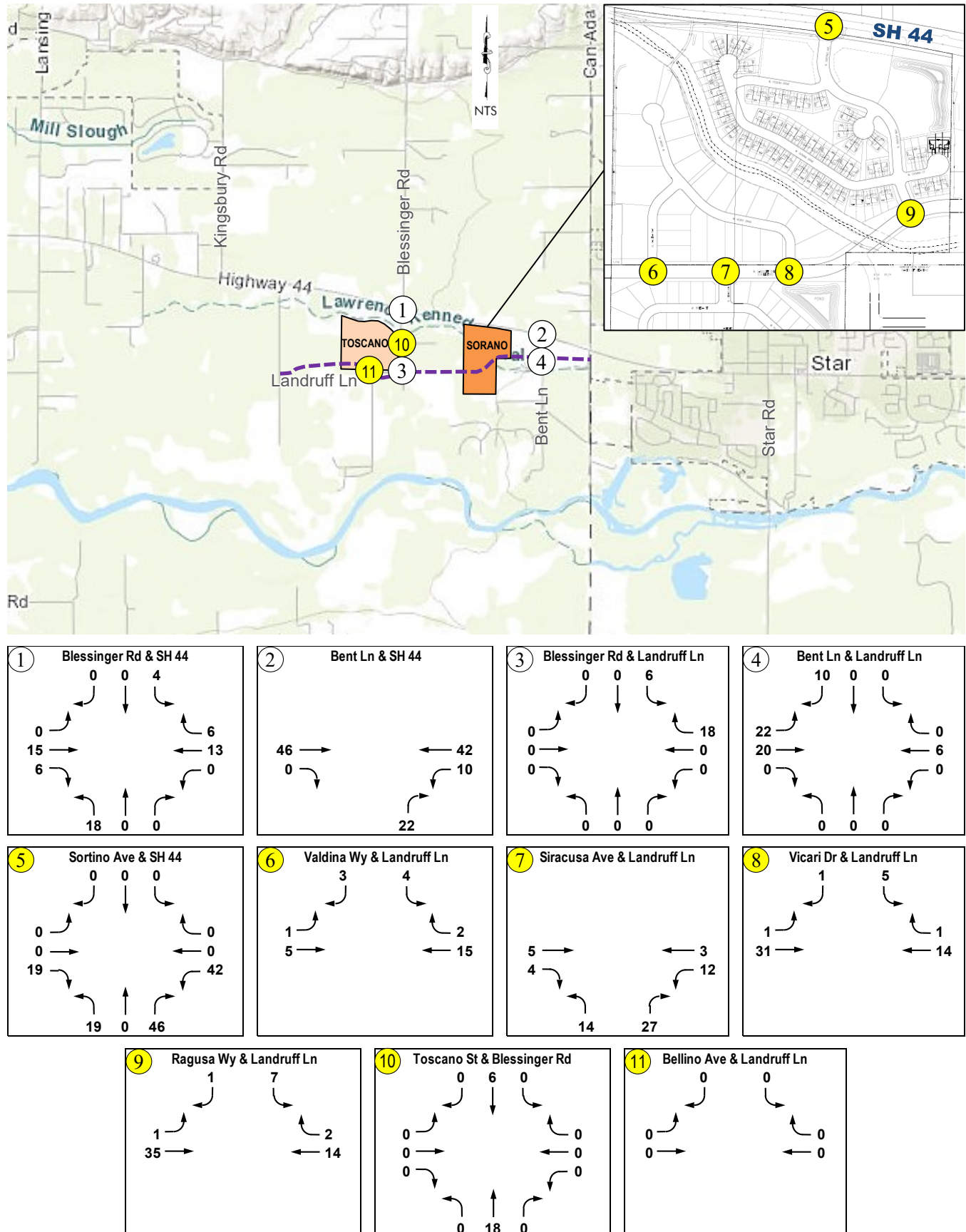


Figure 6.2 – Sorano Estates PM Peak Hour Site Traffic (2033 Horizon Year)

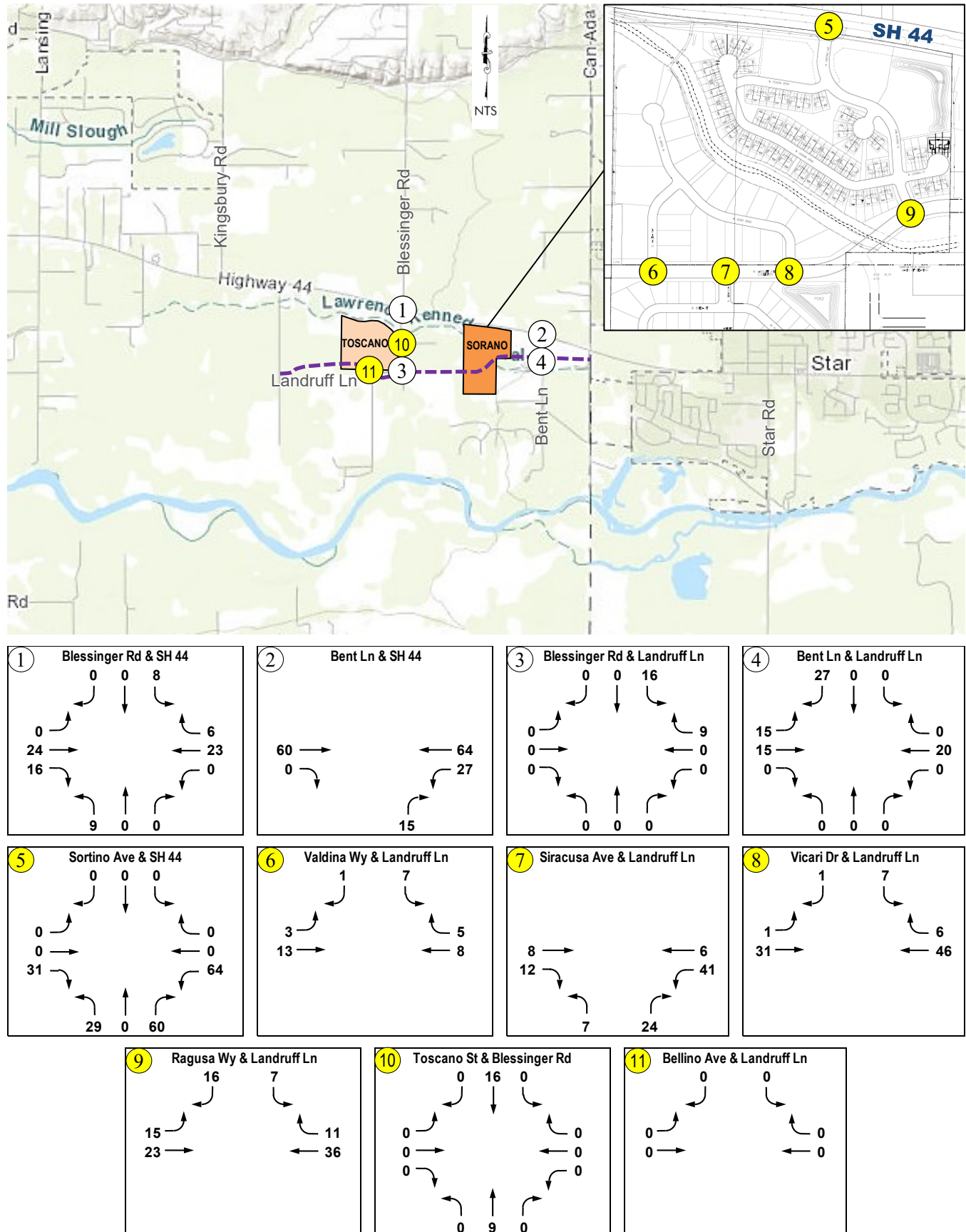


Figure 6.3 – 2033 Horizon Year AM Peak Hour Total Traffic

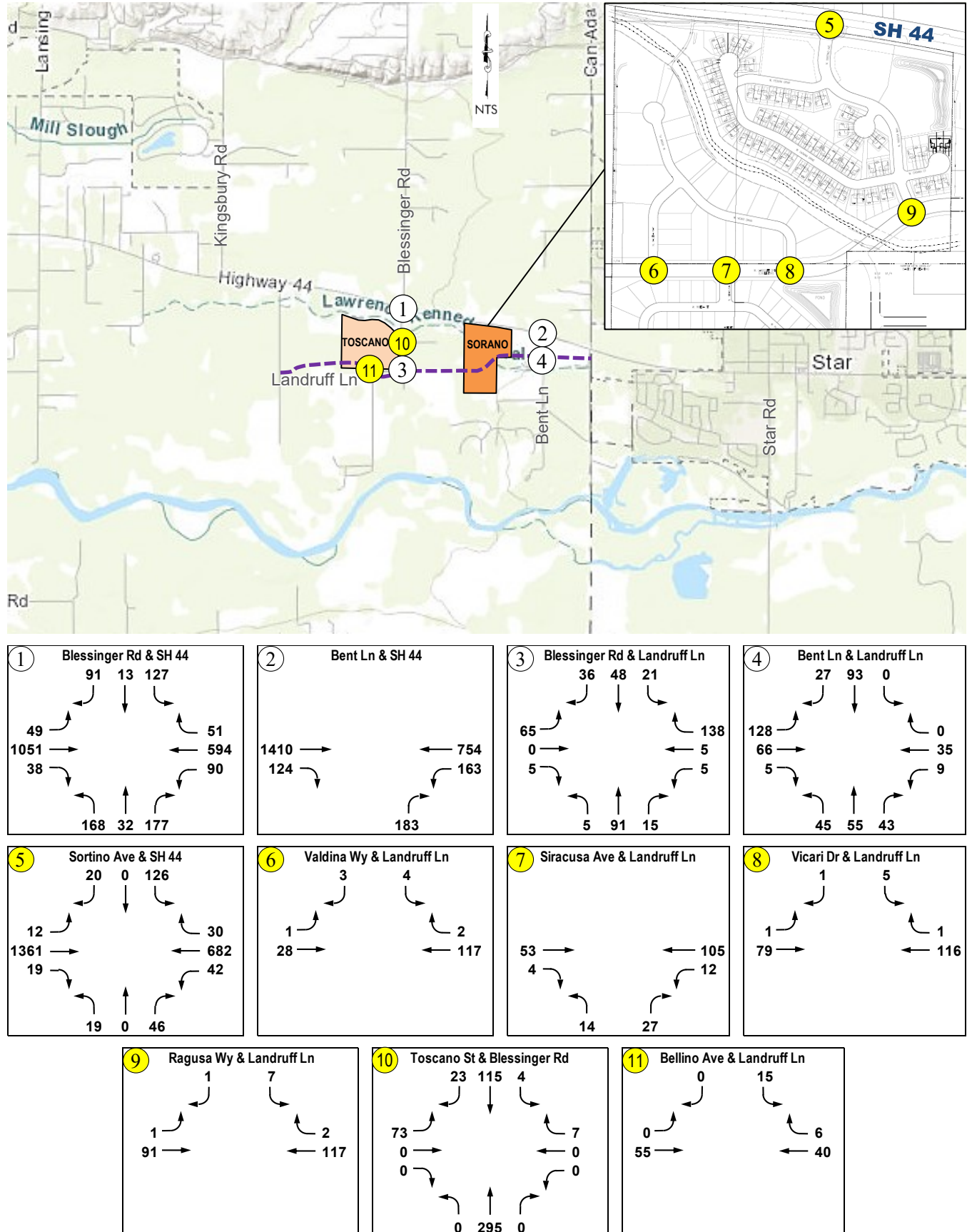


Figure 6.4 – 2033 Horizon Year PM Peak Hour Total Traffic

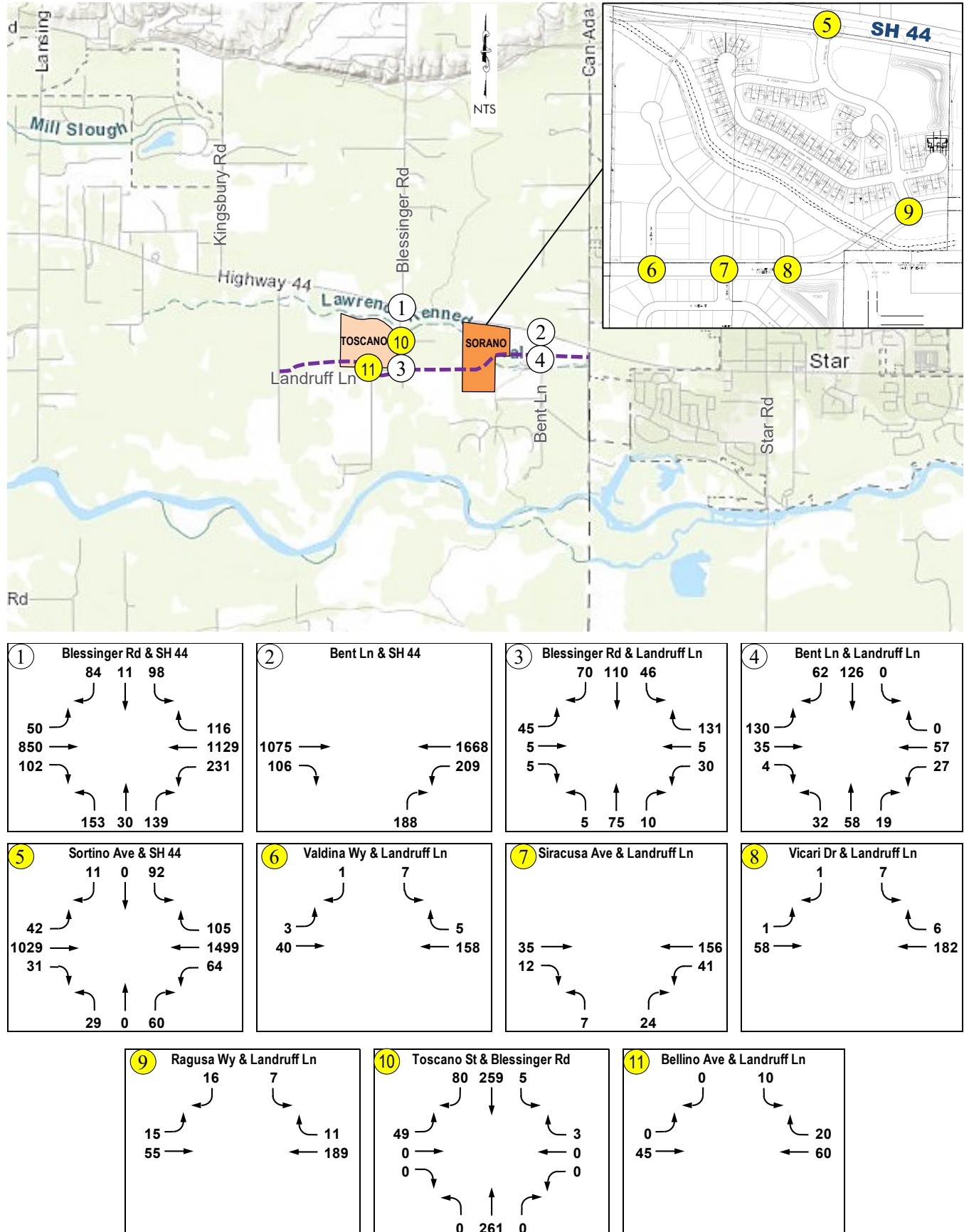


Table 6.2 – Intersection Operations – 2033 Horizon Year Total Traffic

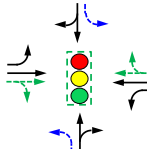
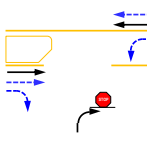
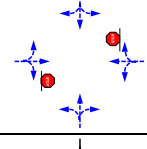
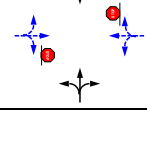
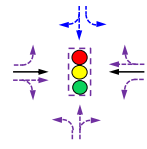
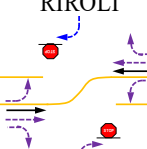
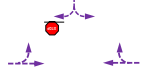
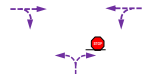
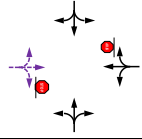
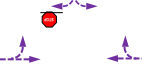
Intersection		Control / Lane 2028 Background Mitigation 2033 Background Mitigation 2028 Total Mitigation	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
1	Blessinger Rd and SH 44		Intersection	C	28	0.65	C	23	0.65
			EBL	B	12	0.11	B	13	0.19
			EBT	C	22	0.58	B	18	0.49
			EBTR	C	22	0.58	B	18	0.49
			WBL	B	17	0.40	B	14	0.60
			WBT	B	16	0.34	B	17	0.59
			WBTR	B	16	0.34	B	17	0.60
			NBL	E	60	0.65	E	58	0.66
			NBTR	D	47	0.54	D	49	0.54
			SBL	E	68	0.68	E	62	0.58
			SBTR	D	44	0.36	D	46	0.31
2	Bent Ln and SH 44		32	-	-	-	-	-	-
			EBR	-	-	-	-	-	-
			WBL	D	33	0.59	C	16	0.41
			WBT	-	-	-	-	-	-
			NBR	E	43	0.70	C	19	0.43
3	Blessinger Rd and Landruff Ln		EB	B	12	0.13	B	13	0.12
			WB	A	10	0.18	B	10	0.22
			NB	A	7	< 0.01	A	8	< 0.01
			SB	A	8	0.02	A	8	0.03
4	Bent Ln and Landruff Ln		EB	B	15	0.38	C	15	0.35
			WB	B	12	0.09	B	13	0.17
			NB	A	8	0.03	A	8	0.03
			SB	A	-	-	A	-	-
5	Sortino Ave and SH 44		Intersection	B	14	0.69	B	14	0.73
			EBL	A	7	0.03	B	13	0.22
			EBT	B	14	0.77	B	10	0.53
			EBTR	B	14	0.77	B	10	0.53
			WBL	B	11	0.19	A	7	0.19
			WBT	A	9	0.38	B	14	0.79
			WBTR	A	9	0.38	B	14	0.84
			NBL	C	27	0.07	C	34	0.12
			NBTR	C	27	0.20	D	35	0.31
			SBL	C	32	0.50	D	40	0.47
			SBTR	C	26	0.09	C	33	0.05
			EBL	A	9	0.02	C	17	0.14
			EBT	-	-	-	-	-	-
			EBR	-	-	-	-	-	-
			WBL	C	16	0.14	B	13	0.13
			WBT	-	-	-	-	-	-
			WBR	-	-	-	-	-	-
			SBR	B	11	0.04	C	17	0.04
			NBR	C	19	0.16	C	15	0.16

Table 6.2 – Intersection Operations – 2033 Horizon Year Total Traffic (Continued)

Intersection	Control / Lane 2028 Background Mitigation 2033 Background Mitigation 2028 Total Mitigation	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
			LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
6	Valdina Wy and Landruff Ln 	EB	A	8	< 0.01	A	8	< 0.01
		WB	-	-	-	-	-	-
		SB	A	9	0.01	A	10	0.01
7	Siracusa Ave and Landruff Ln 	EB	-	-	-	-	-	-
		WB	A	7	0.01	A	7	0.03
		NB	A	9	0.05	A	9	0.04
8	Vicari Dr and Landruff Ln 	EB	A	8	< 0.01	A	8	< 0.01
		WB	-	-	-	-	-	-
		SB	A	10	0.01	A	10	0.01
9	Ragusa Ave and Landruff Ln 	EB	A	8	< 0.01	A	8	0.01
		WB	-	-	-	-	-	-
		SB	A	10	0.01	A	10	0.03
10	Toscano St and Blessinger Rd 	EB	B	14	0.17	C	16	0.14
		WB	B	10	0.01	A	10	< 0.01
		NB	A	-	-	A	-	-
		SB	A	8	< 0.01	A	8	< 0.01
11	Bellino Ave and Landruff Ln 	EB	A	-	-	A	-	-
		WB	-	-	-	-	-	-
		SB	A	9	0.02	A	9	0.01

6.5 Intersection Mitigation

All study area intersections are anticipated to meet minimum operational thresholds under 2033 horizon year total traffic conditions. None of the other study area intersections are anticipated to require additional turn lanes based on NCHRP turn lane guidelines. As a result, no additional improvements beyond prior mitigation improvements are needed to mitigate 2033 horizon year total traffic conditions.

6.6 Sorano Estates Alternate Site Access

The traffic impact analysis discussed in the previous sections was based on the proposed site accesses as shown in the preliminary site plan. During the TIS scoping correspondence, ITD requested an additional traffic impact scenario with no site access on SH 44. Per ITD's request, an additional site access scenario without Sortino Avenue was analyzed.

Without a direct access on SH 44, site traffic generated by Sorano Estates is expected to shift to Blessinger Road, Bent Lane, or Can Ada Road. **Figures 6.5** and **6.6** summarize the estimated Sorano Estates site traffic without an access on SH 44. **Figures 6.7** and **6.8** summarize the estimated 2033 total traffic. **Table 6.3** summarizes the proportionate share of the site traffic at each study area intersection.

Figure 6.5 – 2033 Horizon Year Sorano Estates AM Peak Hour Site Traffic (No Access on SH 44)

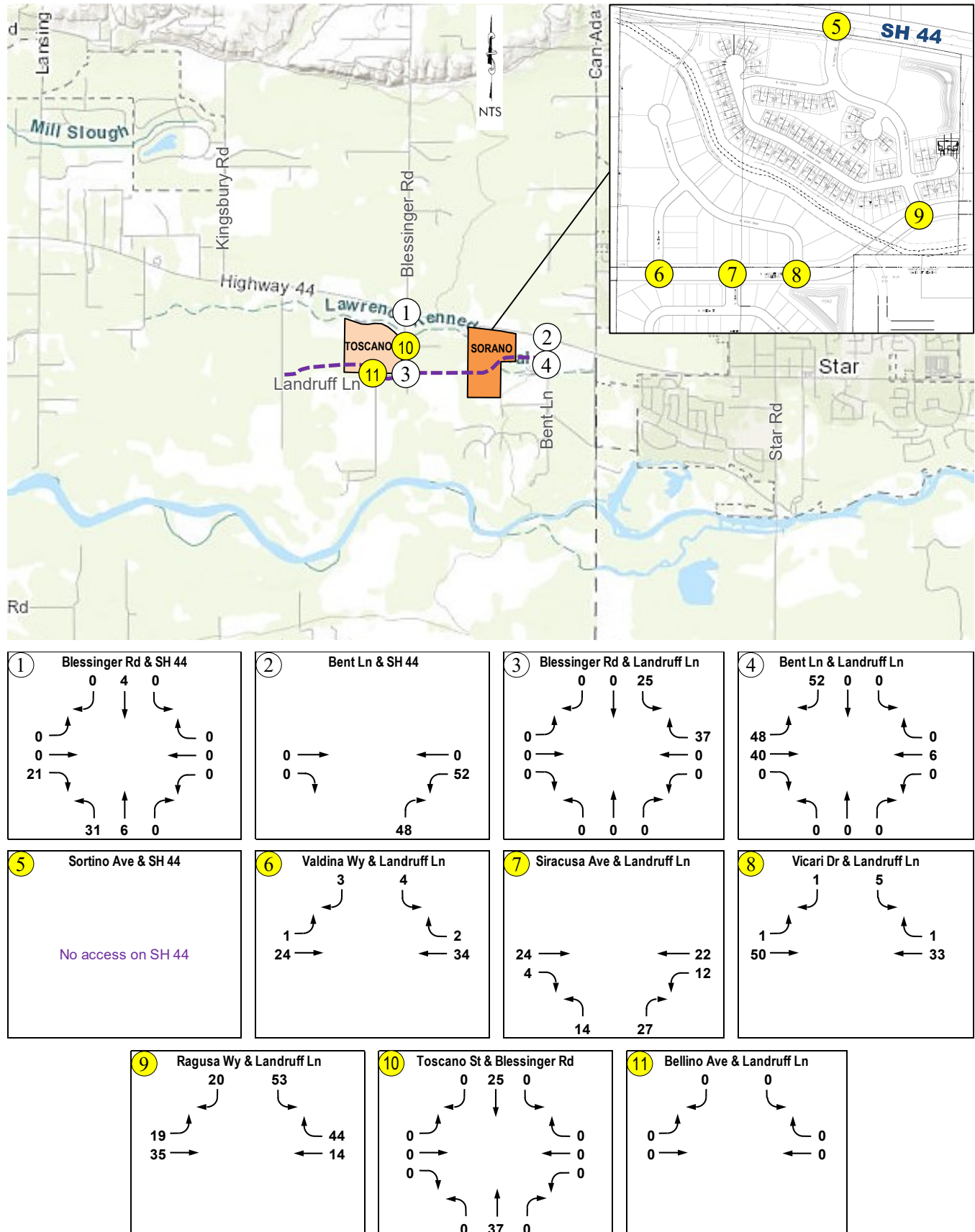


Figure 6.6 – 2033 Horizon Year Sorano Estates PM Peak Hour Site Traffic (No Access on SH 44)

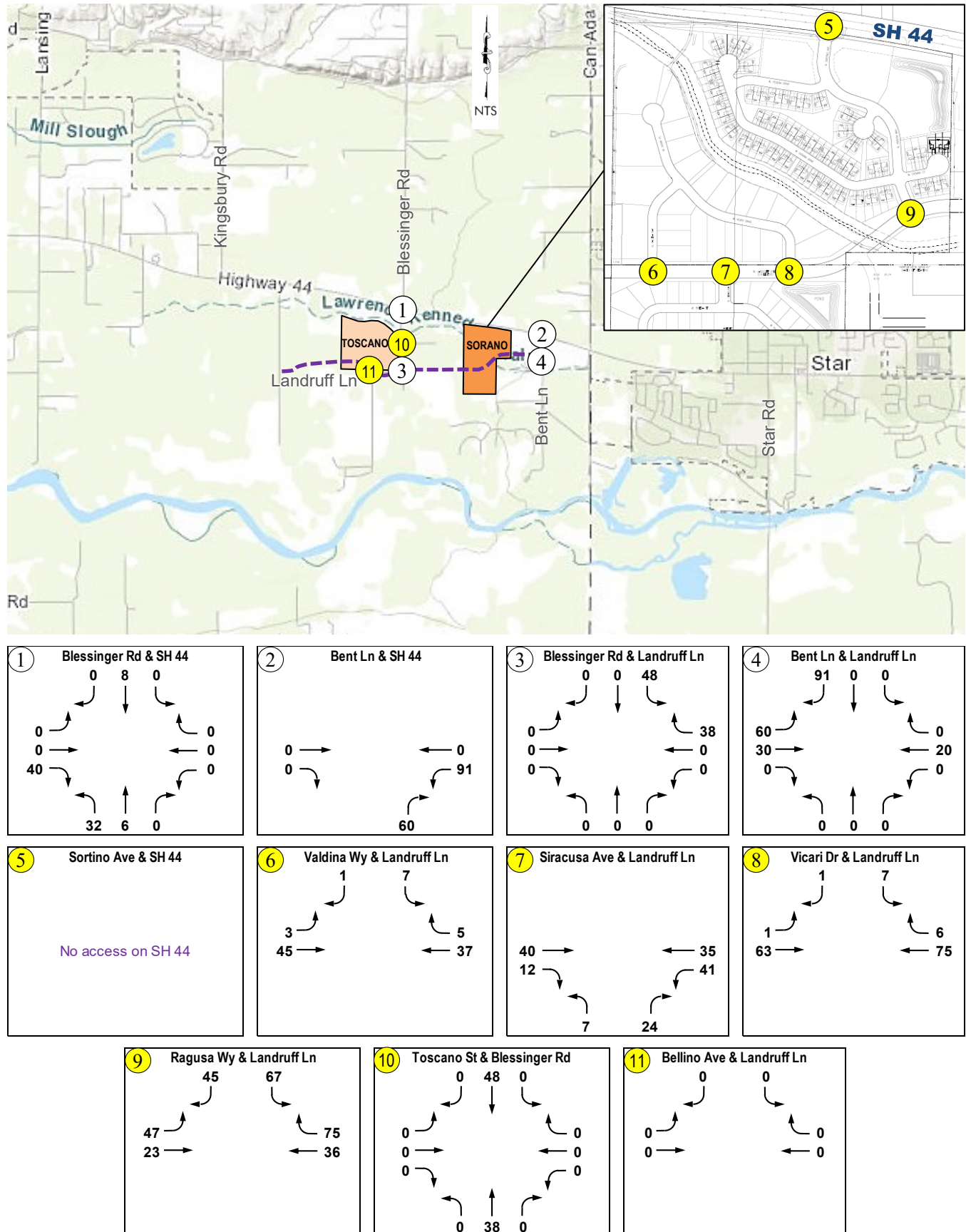


Figure 6.7 – 2033 Horizon Year AM Peak Hour Total Traffic (No Access on SH 44)

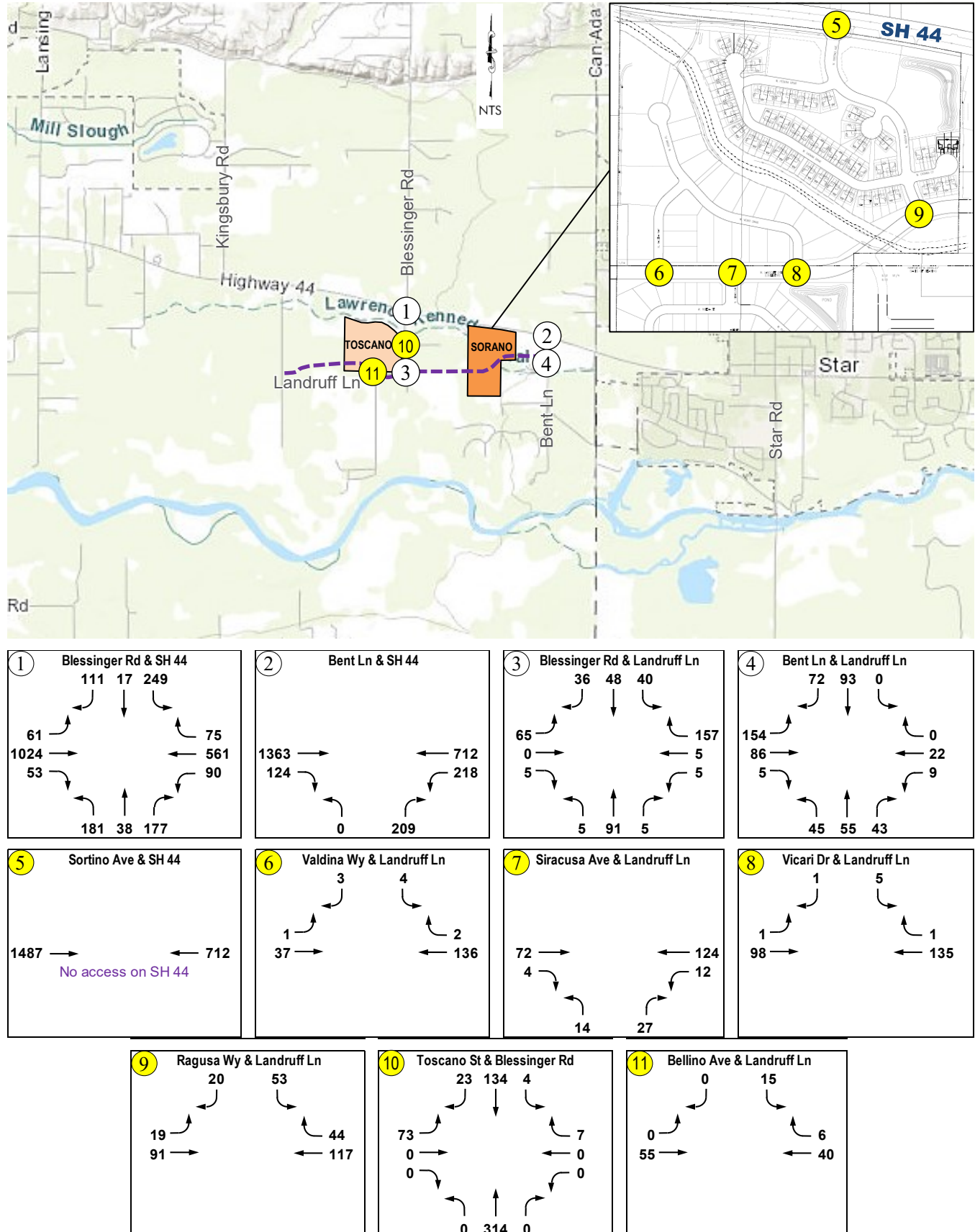


Figure 6.8 – 2033 Horizon Year PM Peak Hour Total Traffic (No Access on SH 44)

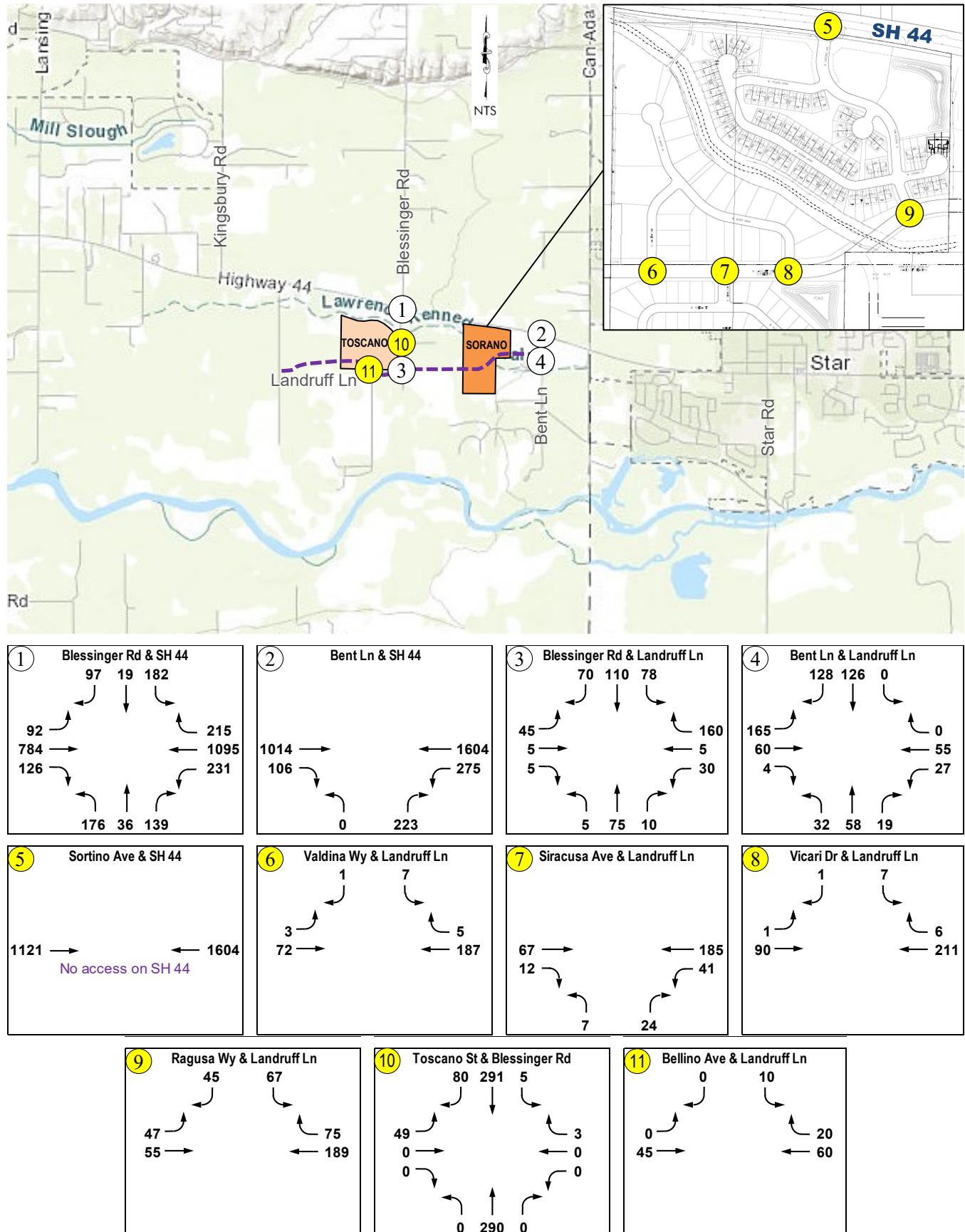


Table 6.3 – Build-Out Site Traffic Percentage of 2033 Total Traffic (No Access on SH 44)

Intersection		Toscano Estates			Sorano Estates		
		AM Peak	PM Peak	Average	AM Peak	PM Peak	Average
①	Blessinger Rd and SH 44	4.4%	5.0%	4.7%	2.4%	2.7%	2.5%
②	Bent Ln and SH 44	3.1%	3.5%	3.3%	3.8%	4.7%	4.2%
③	Blessinger Rd and Landruff Ln	4.5%	5.0%	4.8%	13.4%	14.4%	13.9%
④	Bent Ln and Landruff Ln	0.0%	0.0%	0.0%	25.0%	29.8%	27.4%

The study area intersections were analyzed with the mitigation improvements needed under prior analysis years' traffic conditions. Copies of the analysis results are included in the appendix. **Table 6.4** summarizes the intersection capacity analysis results for the alternate site access scenario. All study area intersections are anticipated to meet minimum operational thresholds; therefore, no additional mitigation improvements are needed.

Table 6.4 – Intersection Operations – 2033 Horizon Year Total Traffic (No Access on SH 44)

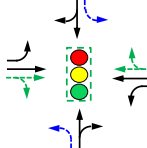
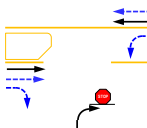
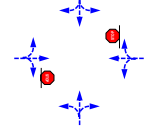
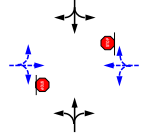
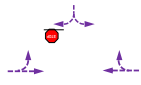
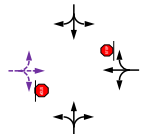
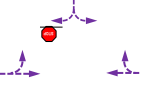
Intersection		Control / Lane 2028 Background Mitigation 2033 Background Mitigation 2028 Total Mitigation	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
				LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
①	Blessinger Rd and SH 44		Intersection	D	39	0.77	C	31	0.76
			EBL	B	19	0.17	C	22	0.43
			EBT	C	34	0.69	C	24	0.51
			EBTR	C	34	0.69	C	24	0.51
			WBL	C	26	0.49	B	19	0.63
			WBT	C	24	0.40	C	26	0.69
			WBTR	C	24	0.40	C	26	0.70
			NBL	E	66	0.73	E	58	0.61
			NBTR	E	71	0.82	D	45	0.43
			SBL	E	61	0.85	E	74	0.77
			SBTR	D	35	0.33	D	43	0.29
②	Bent Ln and SH 44		EBT	-	-	-	-	-	-
			EBR	-	-	-	-	-	-
			WBL	E	45	.75	C	17	0.50
			WBT	-	-	-	-	-	-
			NBR	E	48	0.77	C	19	0.49
③	Blessinger Rd and Landruff Ln		EB	B	13	0.14	B	15	0.14
			WB	A	10	0.20	B	11	0.26
			NB	A	7	< 0.01	A	8	< 0.01
			SB	A	8	0.03	A	8	0.06

Table 6.4 – Intersection Operations – 2033 Horizon Year Total Traffic (No Access on SH 44) (Continued)

Intersection	Control / Lane 2028 Background Mitigation 2033 Background Mitigation 2028 Total Mitigation	Intersection or Lane Group	AM Peak Hour			PM Peak Hour		
			LOS	Delay [s/veh]	v/c Ratio	LOS	Delay [s/veh]	v/c Ratio
4		EB	C	17	0.47	C	19	0.50
		WB	B	12	0.07	B	14	0.18
		NB	A	8	0.04	A	8	0.03
		SB	A	-	-	A	-	-
6		EB	A	8	< 0.01	A	8	< 0.01
		WB	-	-	-	-	-	-
		SB	A	9	0.01	B	10	0.01
7		EB	-	-	-	-	-	-
		WB	A	7	0.01	A	8	0.03
		NB	A	9	0.05	A	9	0.04
8		EB	A	8	< 0.01	A	8	< 0.01
		WB	-	-	-	-	-	-
		SB	A	10	0.01	B	10	0.01
9		EB	A	8	0.02	A	8	0.04
		WB	-	-	-	-	-	-
		SB	B	11	0.11	B	12	0.20
10		EB	B	15	0.18	C	17	0.16
		WB	B	10	0.01	B	10	0.01
		NB	A	-	-	A	-	-
		SB	A	8	< 0.01	A	8	< 0.01
11		EB	A	-	-	A	-	-
		WB	-	-	-	-	-	-
		SB	A	9	0.02	A	9	0.01

APPENDIX A: Traffic Counts

Blessinger Rd & SH 44
Star Idaho
Wednesday, February 28, 2024

Time	Southbound Blessinger Rd						Westbound SH 44						Northbound Blessinger Rd						Eastbound SH 44						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	
7:00 AM	0	7	0	10	0	17	0	1	72	0	0	73	0	0	0	2	0	2	0	5	168	1	0	174	266
7:15 AM	0	5	0	11	0	16	0	0	93	1	0	94	0	0	0	1	0	1	0	2	142	0	0	144	255
7:30 AM	0	11	0	11	0	22	0	1	89	4	0	94	0	0	0	1	0	1	0	7	190	0	0	197	314
7:45 AM	0	11	0	10	0	21	0	1	106	4	0	111	0	1	0	2	0	3	0	9	156	1	0	166	301
Hourly Total	0	34	0	42	0	76	0	3	360	9	0	372	0	1	0	6	0	7	0	23	656	2	0	681	1136
8:00 AM	0	4	3	6	0	13	0	0	81	2	0	83	0	0	0	0	0	0	0	9	175	0	0	184	280
8:15 AM	0	5	0	6	0	11	0	5	87	4	0	96	0	0	0	0	0	0	0	4	154	0	0	158	265
8:30 AM	0	2	0	5	0	7	0	1	80	8	0	89	0	0	0	1	0	1	0	6	127	1	0	134	231
8:45 AM	0	5	0	2	0	7	0	3	85	1	0	89	0	0	0	0	0	0	0	7	108	0	0	115	211
Hourly Total	0	16	3	19	0	38	0	9	333	15	0	357	0	0	0	1	0	1	0	26	564	1	0	591	987

Blessinger Rd & SH 44
Star Idaho
Wednesday, February 28, 2024

Time	Southbound Blessinger Rd						Westbound SH 44						Northbound Blessinger Rd						Eastbound SH 44						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	
4:00 PM	0	1	0	6	0	7	0	5	149	11	0	165	0	0	0	2	0	2	0	5	134	0	0	139	313
4:15 PM	0	4	0	7	0	11	0	1	145	10	0	156	0	3	0	2	0	5	0	9	123	1	0	133	305
4:30 PM	0	6	0	10	0	16	0	0	189	6	0	195	0	0	0	5	0	5	0	7	130	1	0	138	354
4:45 PM	0	6	0	13	0	19	0	2	189	7	0	198	0	2	0	2	0	4	0	2	129	2	0	133	354
Hourly Total	0	17	0	36	0	53	0	8	672	34	0	714	0	5	0	11	0	16	0	23	516	4	0	543	1326
5:00 PM	0	9	0	6	0	15	0	1	209	4	0	214	0	3	0	0	0	3	0	4	116	1	0	121	353
5:15 PM	0	2	0	12	0	14	0	1	208	5	0	214	0	1	0	5	0	6	0	3	118	0	0	121	355
5:30 PM	0	3	0	10	0	13	0	3	213	11	0	227	0	1	0	3	0	4	0	3	142	0	0	145	389
5:45 PM	0	7	0	5	0	12	0	2	176	8	0	186	0	1	0	4	0	5	0	4	113	1	0	118	321
Hourly Total	0	21	0	33	0	54	0	7	806	28	0	841	0	6	0	12	0	18	0	14	489	2	0	505	1418

Blessinger Rd & SH 44
Star Idaho
Wednesday, February 28, 2024

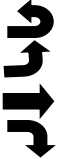
AM Peak Hour

	Southbound Blessinger Rd						Westbound SH 44						Northbound Blessinger Rd						Eastbound SH 44						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	VEHICLE TOTAL
7:30 AM	0	11	0	11	0	22	0	1	89	4	0	94	0	0	0	1	0	1	0	7	190	0	0	197	314
7:45 AM	0	11	0	10	0	21	0	1	106	4	0	111	0	1	0	2	0	3	0	9	156	1	0	166	301
8:00 AM	0	4	3	6	0	13	0	0	81	2	0	83	0	0	0	0	0	0	0	9	175	0	0	184	280
8:15 AM	0	5	0	6	0	11	0	5	87	4	0	96	0	0	0	0	0	0	0	4	154	0	0	158	265
Peak Hour Total	0	31	3	33	0	67	0	7	363	14	0	384	0	1	0	3	0	4	0	29	675	1	0	705	1160
PHF	0.000	0.705	0.250	0.750	0.000	0.761	0.000	0.350	0.856	0.875	0.000	0.865	0.000	0.250	0.000	0.375	0.000	0.333	0.000	0.806	0.888	0.250	0.000	0.895	0.924
Heavy Vehicle %	0.00%	6.45%	33.33%	3.03%	0.00%	5.97%	0.00%	28.57%	4.41%	0.00%	0.00%	4.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.70%	0.00%	0.00%	3.55%	4.1%

Total Vehicles On Leg			110		
Vehicles Entering Intersection 67			Vehicles Exiting Intersection 43		
Southbound					
Cars	32	2	29	0	0
Heavy	1	1	2	0	0
Total	33	3	31	0	0



Total Vehicles on Leg 1102	Vehicles Entering Intersection 705	Eastbound	Cars	Heavy	Total	
			0	0	0	
			0	0	0	
	Vehicles Exiting Intersection 397		29	0	29	
			650	25	675	
			1	0	1	



AM Peak Hour Volumes

Cars	Heavy	Total	Westbound	Vehicles Entering Intersection 384	Total Vehicles on Leg 1093
14	0	14			
347	16	363			
5	2	7			
0	0	0			
0	0	0			
				Vehicles Exiting Intersection 709	



Cars	0	0	1	0	3
Heavy	0	0	0	0	0
Total	0	0	1	0	3
Northbound					
Vehicles Entering Intersection 4			Vehicles Exiting Intersection 11		
Total Vehicles On Leg			15		



Blessinger Rd & SH 44
Star Idaho
Wednesday, February 28, 2024
PM Peak Hour

Time	Southbound Blessinger Rd						Westbound SH 44						Northbound Blessinger Rd						Eastbound SH 44						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	
4:45 PM	0	6	0	13	0	19	0	2	189	7	0	198	0	2	0	2	0	4	0	2	129	2	0	133	354
5:00 PM	0	9	0	6	0	15	0	1	209	4	0	214	0	3	0	0	0	3	0	4	116	1	0	121	353
5:15 PM	0	2	0	12	0	14	0	1	208	5	0	214	0	1	0	5	0	6	0	3	118	0	0	121	355
5:30 PM	0	3	0	10	0	13	0	3	213	11	0	227	0	1	0	3	0	4	0	3	142	0	0	145	389
Peak Hour Total	0	20	0	41	0	61	0	7	819	27	0	853	0	7	0	10	0	17	0	12	505	3	0	520	1451
PHF	0.000	0.556	0.000	0.788	0.000	0.803	0.000	0.583	0.961	0.614	0.000	0.939	0.000	0.583	0.000	0.500	0.000	0.708	0.000	0.750	0.889	0.375	0.000	0.897	0.933
Heavy Vehicle %	0.00%	0.00%	0.00%	2.44%	0.00%	1.64%	0.00%	0.00%	1.71%	0.00%	0.00%	1.64%	0.00%	0.00%	0.00%	20.00%	0.00%	11.76%	0.00%	0.00%	1.58%	0.00%	0.00%	1.54%	1.7%

Total Vehicles On Leg			100		
Vehicles Entering Intersection 61			Vehicles Exiting Intersection 39		
Southbound					
Cars	40	0	20	0	0
Heavy	1	0	0	0	0
Total	41	0	20	0	0



Total Vehicles on Leg 1387	Vehicles Entering Intersection 520	Eastbound	Cars	Heavy	Total
	Vehicles Exiting Intersection 867		0	0	0
			0	0	0
			12	0	12
			497	8	505
			3	0	3



PM Peak Hour Volumes



Cars	Heavy	Total	Westbound	Vehicles Entering Intersection 853	Total Vehicles on Leg 1388
27	0	27			
805	14	819			
7	0	7			
0	0	0			
0	0	0			
				Vehicles Exiting Intersection 535	

					
Cars	0	0	7	0	8
Heavy	0	0	0	0	2
Total	0	0	7	0	10
Northbound					
Vehicles Entering Intersection 17			Vehicles Exiting Intersection 10		
Total Vehicles On Leg			27		

Bent Ln & SH 44
Star Idaho
Wednesday, February 28, 2024

Time	Southbound Bent Ln						Westbound SH 44						Northbound Bent Ln						Eastbound SH 44						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	
7:00 AM	0	0	0	0	0	0	0	6	69	0	0	75	0	1	0	5	0	6	0	0	178	2	0	180	261
7:15 AM	0	0	0	0	0	0	0	5	97	0	0	102	0	2	0	6	0	8	0	0	129	4	0	133	243
7:30 AM	0	0	0	0	0	0	0	2	89	0	0	91	0	4	0	5	0	9	0	0	217	4	0	221	321
7:45 AM	0	0	0	0	0	0	0	10	105	0	0	115	0	3	0	9	0	12	0	0	175	1	0	176	303
Hourly Total	0	0	0	0	0	0	0	23	360	0	0	383	0	10	0	25	0	35	0	0	699	11	0	710	1128
8:00 AM	0	0	0	0	0	0	0	8	85	0	0	93	0	2	0	6	0	8	0	0	170	11	0	181	282
8:15 AM	0	0	0	0	0	0	0	10	86	0	0	96	0	1	0	9	0	10	0	0	165	1	0	166	272
8:30 AM	0	0	0	0	0	0	0	9	95	0	0	104	0	0	0	19	0	19	0	0	134	1	0	135	258
8:45 AM	0	0	0	0	0	0	0	13	78	0	0	91	0	1	0	7	0	8	0	0	116	1	0	117	216
Hourly Total	0	0	0	0	0	0	0	40	344	0	0	384	0	4	0	41	0	45	0	0	585	14	0	599	1028

Bent Ln & SH 44
Star Idaho
Wednesday, February 28, 2024

Time	Southbound Bent Ln						Westbound SH 44						Northbound Bent Ln						Eastbound SH 44						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	
4:00 PM	0	0	0	0	0	0	0	8	172	0	0	180	0	1	0	4	0	5	0	0	145	3	0	148	333
4:15 PM	0	0	0	0	0	0	0	8	162	0	0	170	0	2	0	7	0	9	0	0	130	2	0	132	311
4:30 PM	0	0	0	0	0	0	0	4	192	0	0	196	0	3	0	8	0	11	0	0	147	0	0	147	354
4:45 PM	0	0	0	0	0	0	0	3	213	0	0	216	0	2	0	8	0	10	0	0	138	4	0	142	368
Hourly Total	0	0	0	0	0	0	0	23	739	0	0	762	0	8	0	27	0	35	0	0	560	9	0	569	1366
5:00 PM	0	0	0	0	0	0	0	10	206	0	0	216	0	1	0	9	0	10	0	0	126	1	0	127	353
5:15 PM	0	0	0	0	0	0	0	9	220	0	0	229	0	2	0	5	0	7	0	0	128	3	0	131	367
5:30 PM	0	0	0	0	0	0	0	7	229	0	0	236	0	3	0	7	0	10	0	0	147	4	0	151	397
5:45 PM	0	0	0	0	0	0	0	8	195	0	0	203	0	1	0	7	0	8	0	0	128	3	0	131	342
Hourly Total	0	0	0	0	0	0	0	34	850	0	0	884	0	7	0	28	0	35	0	0	529	11	0	540	1459

AM Peak Hour

Peak Hour Total
8145

Cars	0	0	0	0	0
Heavy	0	0	0	0	0
Total	0	0	0	0	0



Total
Vehicles
on Leg
1119



350
23
0
0



Vehicles Entering Intersection 39	Vehicles Exiting Intersection 47
Total Vehicles On Leg	86

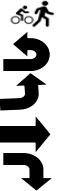
Bent Ln & SH 44
Star Idaho
Wednesday, February 28, 2024
PM Peak Hour

Time	Southbound Bent Ln						Westbound SH 44						Northbound Bent Ln						Eastbound SH 44						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	
4:45 PM	0	0	0	0	0	0	0	3	213	0	0	216	0	2	0	8	0	10	0	0	138	4	0	142	368
5:00 PM	0	0	0	0	0	0	0	10	206	0	0	216	0	1	0	9	0	10	0	0	126	1	0	127	353
5:15 PM	0	0	0	0	0	0	0	9	220	0	0	229	0	2	0	5	0	7	0	0	128	3	0	131	367
5:30 PM	0	0	0	0	0	0	0	7	229	0	0	236	0	3	0	7	0	10	0	0	147	4	0	151	397
Peak Hour Total	0	0	0	0	0	0	0	29	868	0	0	897	0	8	0	29	0	37	0	0	539	12	0	551	1485
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.725	0.948	0.000	0.000	0.950	0.000	0.667	0.000	0.806	0.000	0.925	0.000	0.000	0.917	0.750	0.000	0.912	0.935
Heavy Vehicle %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.61%	0.00%	0.00%	1.56%	0.00%	0.00%	0.00%	3.45%	0.00%	2.70%	0.00%	0.00%	1.86%	8.33%	0.00%	2.00%	1.8%

Total Vehicles On Leg			0		
Vehicles Entering Intersection		0	Vehicles Exiting Intersection		0
Southbound					
Cars	0	0	0	0	0
Heavy	0	0	0	0	0
Total	0	0	0	0	0



Total Vehicles on Leg 1427	Vehicles Entering Intersection 551	Eastbound	Cars	Heavy	Total
	Vehicles Exiting Intersection 876		0	0	0
			0	0	0
			0	0	0
			529	10	539
			11	1	12



PM Peak Hour Volumes

Cars	Heavy	Total	Westbound	Vehicles Entering Intersection 897	Total Vehicles on Leg 1465
0	0	0		Vehicles Exiting Intersection 568	
854	14	868			
29	0	29			
0	0	0			
0	0	0			



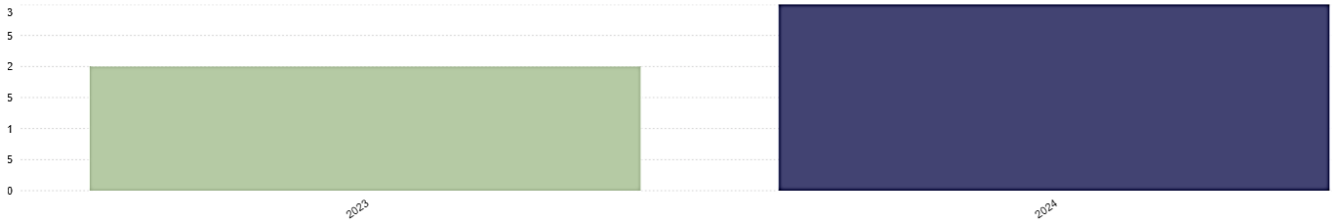
Cars	0	0	8	0	28
Heavy	0	0	0	0	1
Total	0	0	8	0	29
Northbound					
Vehicles Entering Intersection			37		
Vehicles Exiting Intersection			41		
Total Vehicles On Leg			78		

APPENDIX B: Intersection Crash Data

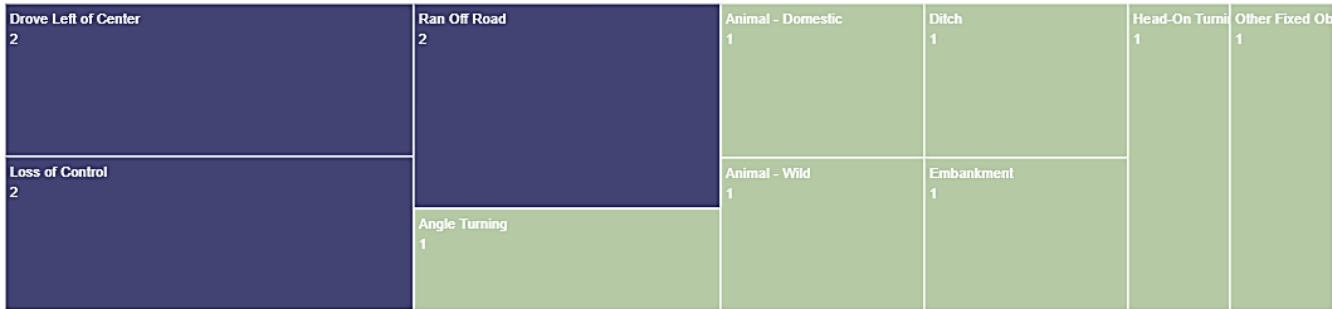
Blessinger Road and SH-44 Intersection 2020-2024 Crash Data



Crashes by Year



Crashes by Crash Type

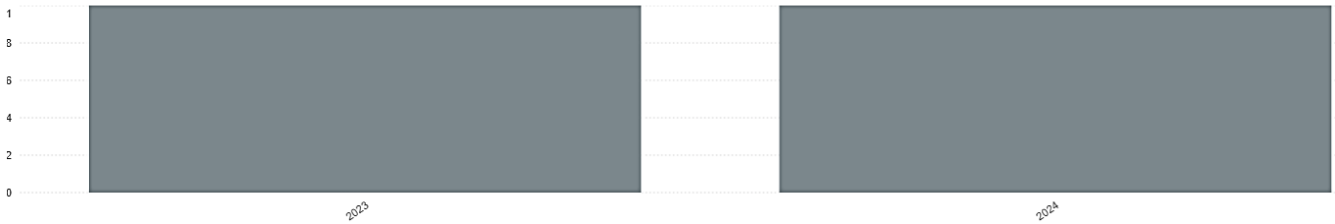


Contributing Circumstances (All)	Total Crashes	
Alcohol Impaired	1	
Animal(s) in Roadway	2	
Failed to Obey Stop Sign	1	
Improper Turn	1	
Improper Use of Turn Lane	1	
Inattention	2	
None	4	

Bent Lane and SH-44 Intersection 2020-2024 Crash Data



Crashes by Year



Crashes by Crash Type



Contributing Circumstances (All)	Total Crashes	
Animal(s) in Roadway	2	
None	2	

APPENDIX C: 2024 Synchro Reports

HCM 6th TWSC
1: Blessinger Rd & SH 44

2024 Existing
AM Peak Hour

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	675	1	7	363	14	1	0	3	31	3	33
Future Vol, veh/h	29	675	1	7	363	14	1	0	3	31	3	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	200	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	4	2	29	4	2	2	2	2	6	33	3
Mvmt Flow	32	734	1	8	395	15	1	0	3	34	3	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	410	0	0	735	0	0	1236	1224	734	1219	1218	403
Stage 1	-	-	-	-	-	-	798	798	-	419	419	-
Stage 2	-	-	-	-	-	-	438	426	-	800	799	-
Critical Hdwy	4.12	-	-	4.39	-	-	7.12	6.52	6.22	7.16	6.83	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.16	5.83	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.16	5.83	-
Follow-up Hdwy	2.218	-	-	2.461	-	-	3.518	4.018	3.318	3.554	4.297	3.327
Pot Cap-1 Maneuver	1149	-	-	759	-	-	153	179	420	154	158	645
Stage 1	-	-	-	-	-	-	380	398	-	604	540	-
Stage 2	-	-	-	-	-	-	597	586	-	373	356	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1149	-	-	759	-	-	138	172	420	148	152	645
Mov Cap-2 Maneuver	-	-	-	-	-	-	138	172	-	148	152	-
Stage 1	-	-	-	-	-	-	369	387	-	587	534	-
Stage 2	-	-	-	-	-	-	554	580	-	360	346	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.2			18.2			26.5		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	278	1149	-	-	759	-	-	239
HCM Lane V/C Ratio	0.016	0.027	-	-	0.01	-	-	0.305
HCM Control Delay (s)	18.2	8.2	-	-	9.8	-	-	26.5
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1.2

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	727	17	30	365	10	29
Future Vol, veh/h	727	17	30	365	10	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	6	23	4	2	34
Mvmt Flow	790	18	33	397	11	32
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	808	0	1253	790
Stage 1	-	-	-	-	790	-
Stage 2	-	-	-	-	463	-
Critical Hdwy	-	-	4.33	-	6.42	6.54
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.407	-	3.518	3.606
Pot Cap-1 Maneuver	-	-	732	-	190	344
Stage 1	-	-	-	-	447	-
Stage 2	-	-	-	-	634	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	732	-	181	344
Mov Cap-2 Maneuver	-	-	-	-	181	-
Stage 1	-	-	-	-	447	-
Stage 2	-	-	-	-	605	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.8		20.2	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	279	-	-	732	-	
HCM Lane V/C Ratio	0.152	-	-	0.045	-	
HCM Control Delay (s)	20.2	-	-	10.1	-	
HCM Lane LOS	C	-	-	B	-	
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-	

HCM 6th TWSC
1: Blessinger Rd & SH 44

2024 Existing
PM Peak Hour

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	505	3	7	819	27	7	0	10	20	0	41
Future Vol, veh/h	12	505	3	7	819	27	7	0	10	20	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	200	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	20	2	2	2
Mvmt Flow	13	543	3	8	881	29	8	0	11	22	0	44

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	910	0	0	546	0	0	1503	1495	543	1488	1484	896
Stage 1	-	-	-	-	-	-	569	569	-	912	912	-
Stage 2	-	-	-	-	-	-	934	926	-	576	572	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.4	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.48	3.518	4.018	3.318
Pot Cap-1 Maneuver	748	-	-	1023	-	-	100	123	506	102	125	339
Stage 1	-	-	-	-	-	-	507	506	-	328	353	-
Stage 2	-	-	-	-	-	-	319	347	-	503	504	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	748	-	-	1023	-	-	85	120	506	98	122	339
Mov Cap-2 Maneuver	-	-	-	-	-	-	85	120	-	98	122	-
Stage 1	-	-	-	-	-	-	498	497	-	322	350	-
Stage 2	-	-	-	-	-	-	275	344	-	484	495	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	29.4	34.1
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	166	748	-	-	1023	-	-	188
HCM Lane V/C Ratio	0.11	0.017	-	-	0.007	-	-	0.349
HCM Control Delay (s)	29.4	9.9	-	-	8.5	-	-	34.1
HCM Lane LOS	D	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	1.5

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	539	12	29	868	8	29
Future Vol, veh/h	539	12	29	868	8	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	8	2	2	2	3
Mvmt Flow	573	13	31	923	9	31

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	586
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	989
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	989
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	18.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	301	-	-	989	-
HCM Lane V/C Ratio	0.131	-	-	0.031	-
HCM Control Delay (s)	18.8	-	-	8.8	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

HCM 6th TWSC
1: Blessinger Rd & SH 44

Mitigation
2024 Existing AM Peak Hour

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	675	1	7	363	14	1	0	3	31	3	33
Future Vol, veh/h	29	675	1	7	363	14	1	0	3	31	3	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	200	100	-	200	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	4	2	29	4	2	2	2	2	6	33	3
Mvmt Flow	32	734	1	8	395	15	1	0	3	34	3	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	410	0	0	735	0	0	1236	1224	734	1211	1210	395
Stage 1	-	-	-	-	-	-	798	798	-	411	411	-
Stage 2	-	-	-	-	-	-	438	426	-	800	799	-
Critical Hdwy	4.12	-	-	4.39	-	-	7.12	6.52	6.22	7.16	6.83	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.16	5.83	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.16	5.83	-
Follow-up Hdwy	2.218	-	-	2.461	-	-	3.518	4.018	3.318	3.554	4.297	3.327
Pot Cap-1 Maneuver	1149	-	-	759	-	-	153	179	420	156	159	652
Stage 1	-	-	-	-	-	-	380	398	-	610	545	-
Stage 2	-	-	-	-	-	-	597	586	-	373	356	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1149	-	-	759	-	-	138	172	420	150	153	652
Mov Cap-2 Maneuver	-	-	-	-	-	-	138	172	-	150	153	-
Stage 1	-	-	-	-	-	-	369	387	-	593	539	-
Stage 2	-	-	-	-	-	-	555	580	-	360	346	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.2			18.2			26.2		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	278	1149	-	-	759	-	-	242
HCM Lane V/C Ratio	0.016	0.027	-	-	0.01	-	-	0.301
HCM Control Delay (s)	18.2	8.2	-	-	9.8	-	-	26.2
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1.2

HCM 6th TWSC
1: Blessinger Rd & SH 44

Mitigation
2024 Existing PM Peak Hour

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	505	3	7	819	27	7	0	10	20	0	41
Future Vol, veh/h	12	505	3	7	819	27	7	0	10	20	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	200	100	-	200	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	20	2	2	2
Mvmt Flow	13	543	3	8	881	29	8	0	11	22	0	44

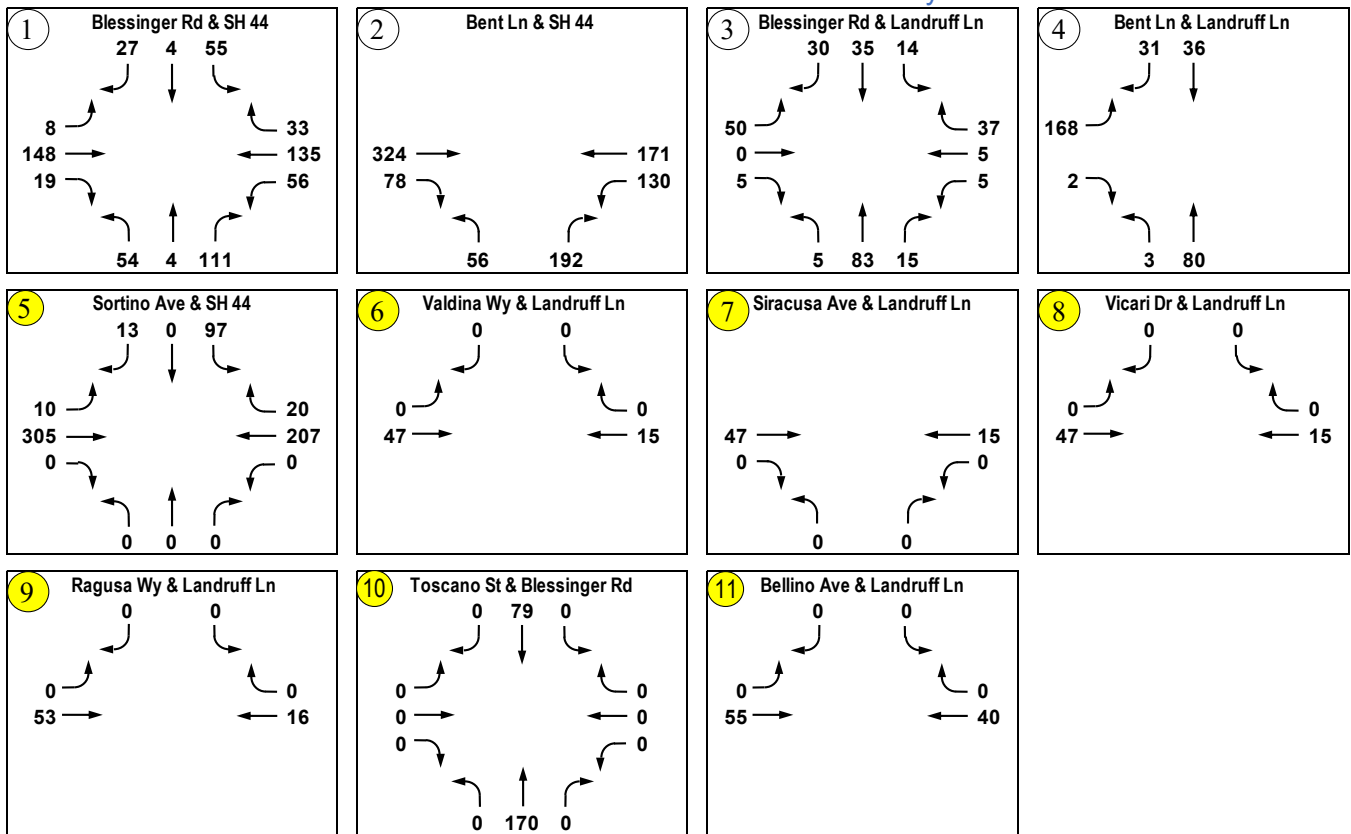
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	910	0	0	546	0	0	1503	1495	543	1473	1469	881
Stage 1	-	-	-	-	-	-	569	569	-	897	897	-
Stage 2	-	-	-	-	-	-	934	926	-	576	572	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.4	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.48	3.518	4.018	3.318
Pot Cap-1 Maneuver	748	-	-	1023	-	-	100	123	506	105	127	346
Stage 1	-	-	-	-	-	-	507	506	-	334	358	-
Stage 2	-	-	-	-	-	-	319	347	-	503	504	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	748	-	-	1023	-	-	86	120	506	101	124	346
Mov Cap-2 Maneuver	-	-	-	-	-	-	86	120	-	101	124	-
Stage 1	-	-	-	-	-	-	498	497	-	328	355	-
Stage 2	-	-	-	-	-	-	276	344	-	484	495	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			29			33		
HCM LOS							D			D		

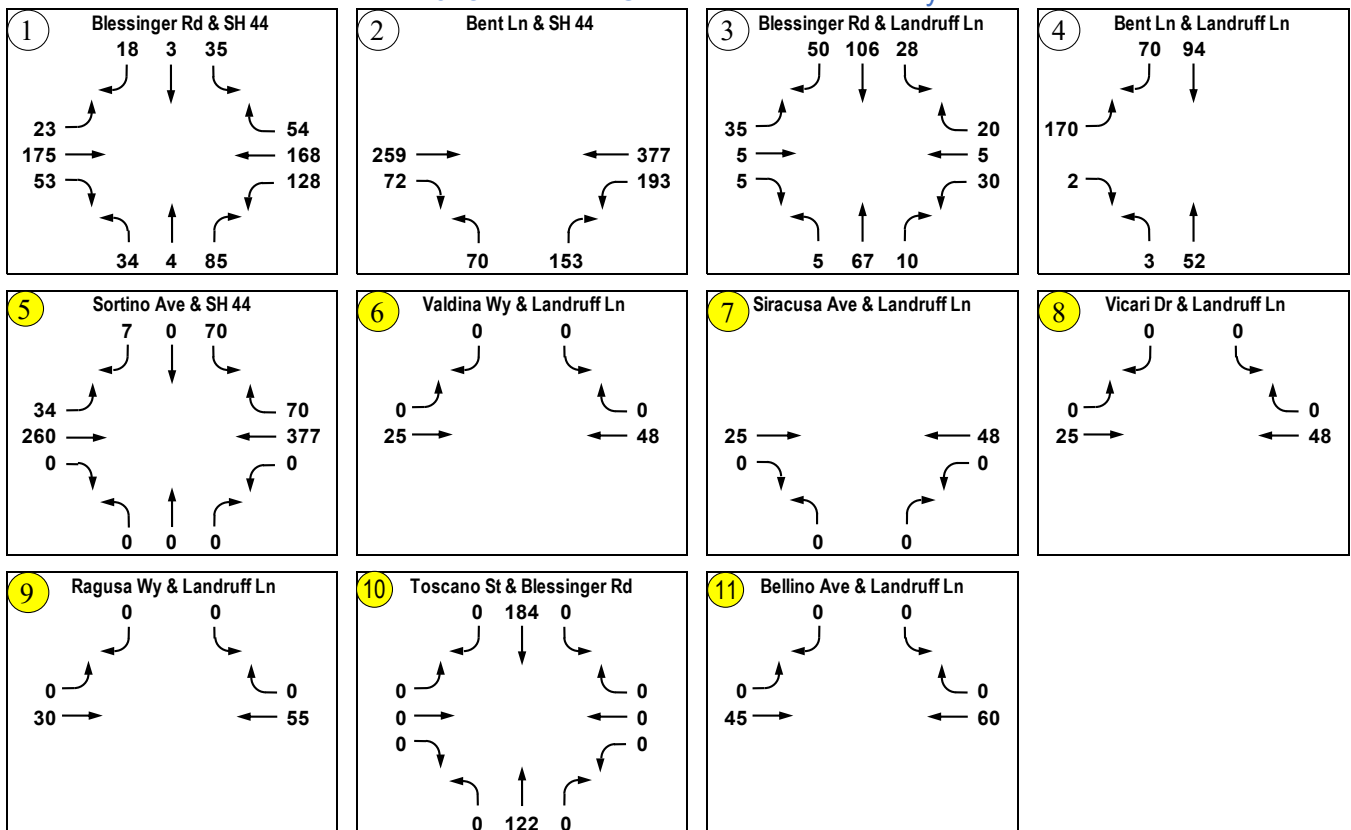
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	168	748	-	-	1023	-	-	193
HCM Lane V/C Ratio	0.109	0.017	-	-	0.007	-	-	0.34
HCM Control Delay (s)	29	9.9	-	-	8.5	-	-	33
HCM Lane LOS	D	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	1.4

APPENDIX D: Off-Site Traffic

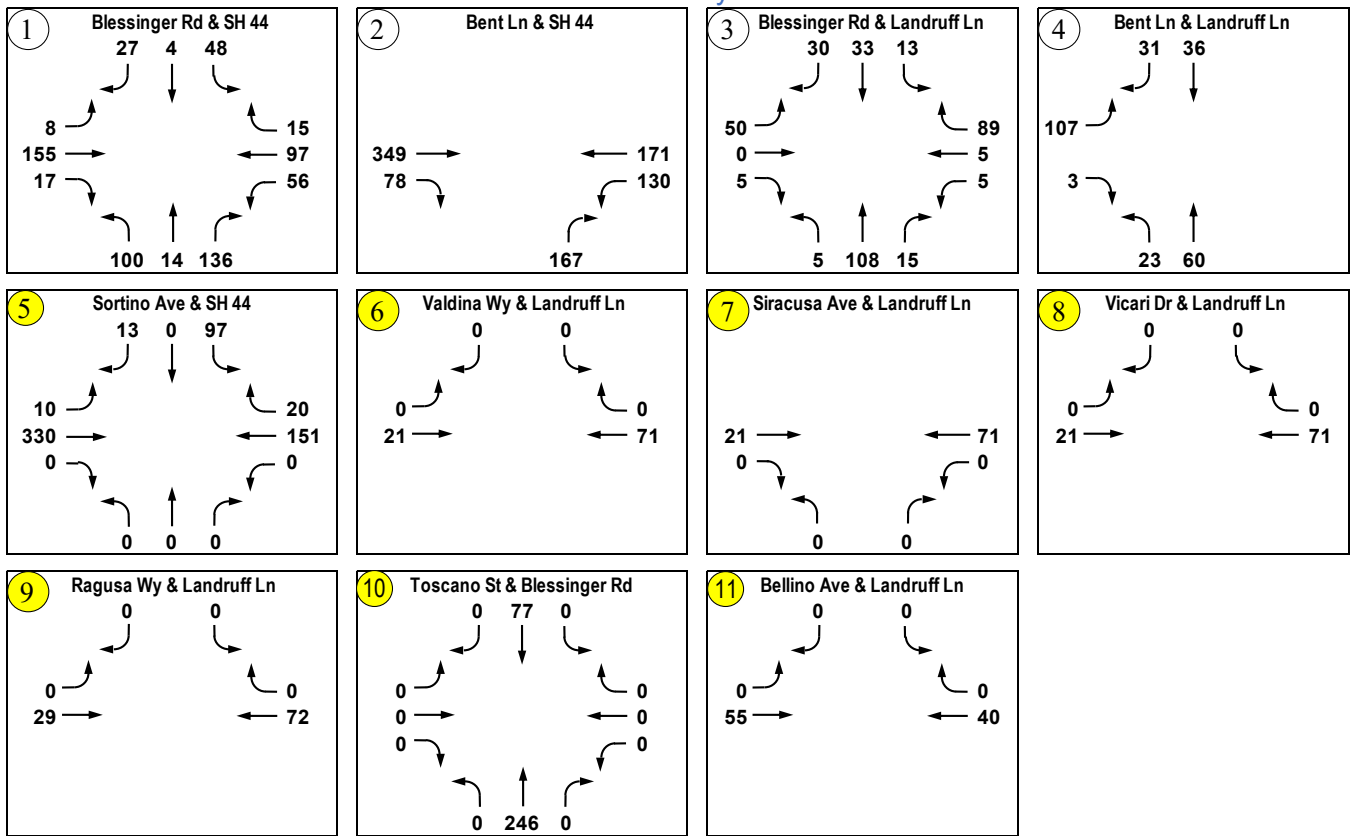
2028 AM Peak Off-Site Traffic Summary



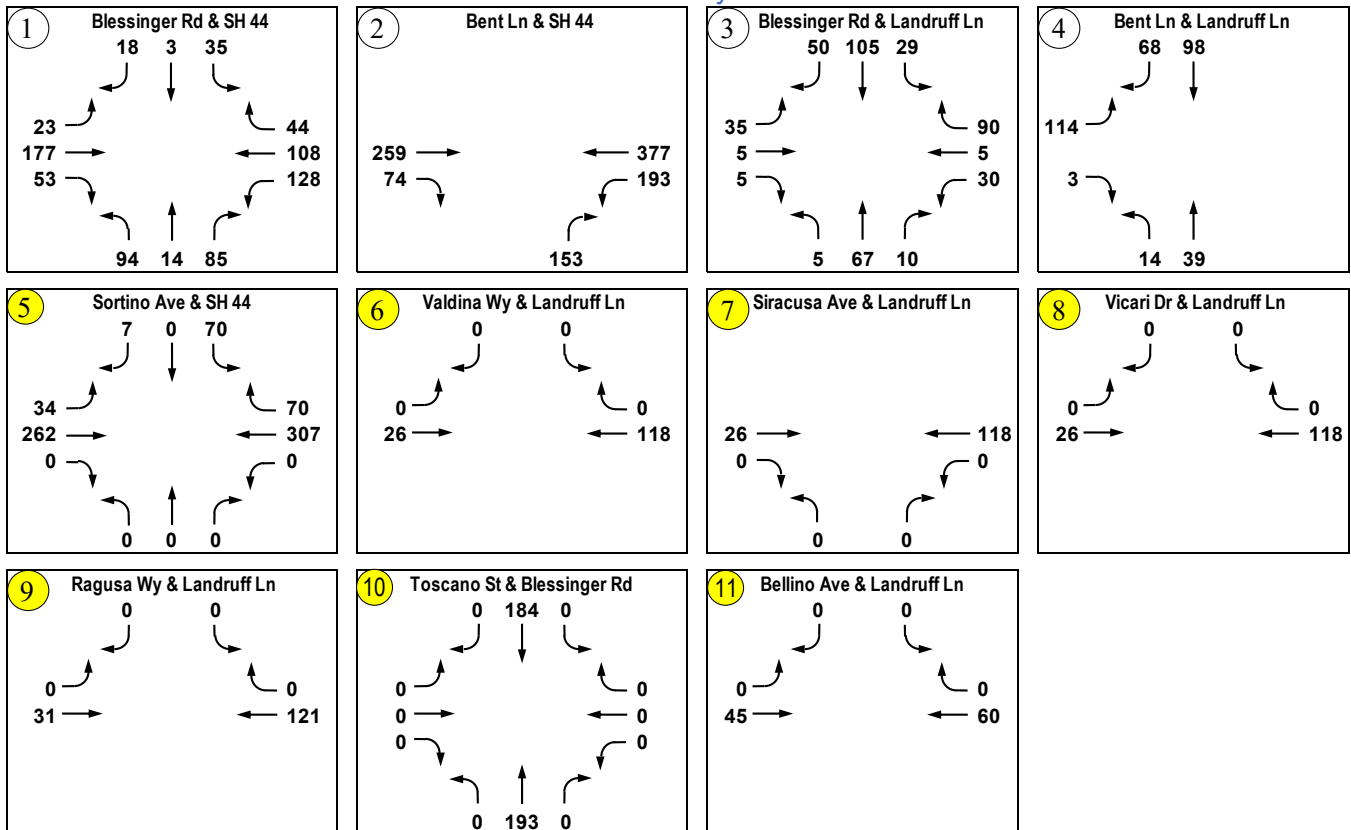
2028 PM Peak Off-Site Traffic Summary



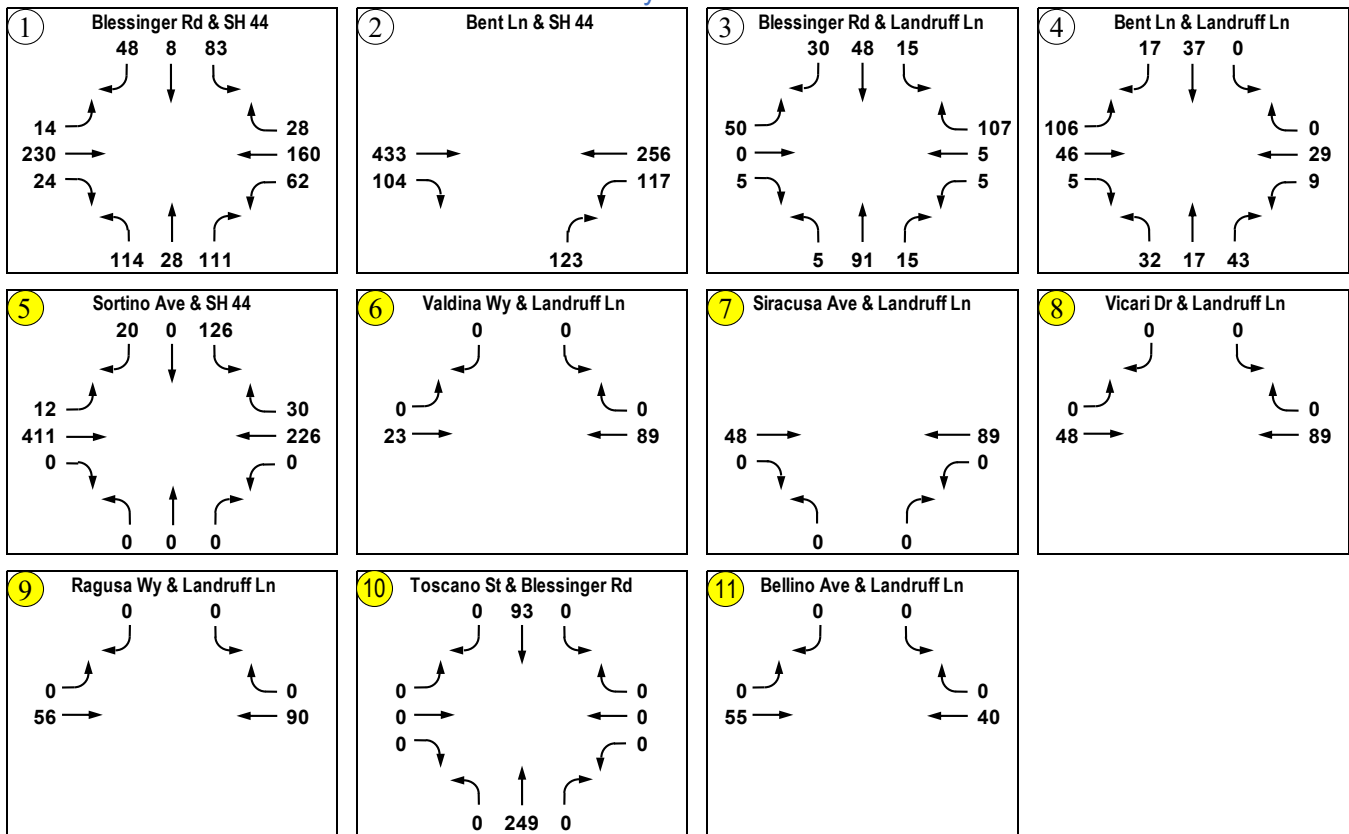
2028 AM Peak Off-Site Traffic Summary – Bent Lane RIROLI Restriction



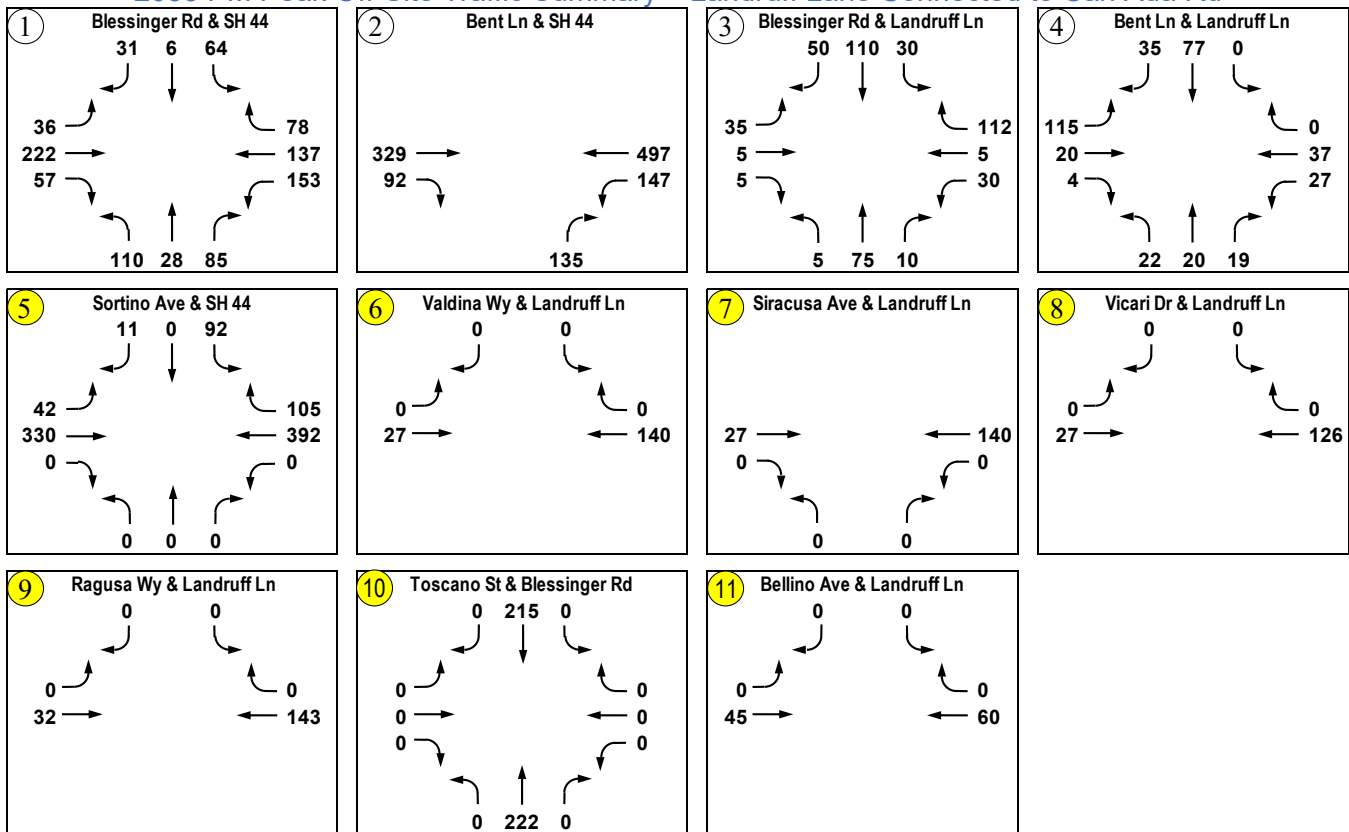
2028 PM Peak Off-Site Traffic Summary – Bent Lane RIROLI Restriction



2033 AM Peak Off-Site Traffic Summary – Landruff Lane Connected to Can Ada Rd



2033 PM Peak Off-Site Traffic Summary – Landruff Lane Connected to Can Ada Rd



APPENDIX E: 2028 Background Synchro Reports

HCM 7th TWSC
1: Blessinger Rd & SH 44

2028 Background
AM Peak Hour

Intersection												
Int Delay, s/veh	148.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	879	20	64	528	48	55	4	114	90	7	64
Future Vol, veh/h	39	879	20	64	528	48	55	4	114	90	7	64
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	200	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	4	2	29	4	2	2	2	2	6	33	3
Mvmt Flow	42	955	22	70	574	52	60	4	124	98	8	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	626	0	0	977	0	0	1757	1805	955	1755	1775	574
Stage 1	-	-	-	-	-	-	1040	1040	-	713	713	-
Stage 2	-	-	-	-	-	-	717	765	-	1042	1062	-
Critical Hdwy	4.12	-	-	4.39	-	-	7.12	6.52	6.22	7.16	6.83	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.16	5.83	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.16	5.83	-
Follow-up Hdwy	2.218	-	-	2.461	-	-	3.518	4.018	3.318	3.554	4.297	3.327
Pot Cap-1 Maneuver	956	-	-	609	-	-	66	79	313	~ 65	70	516
Stage 1	-	-	-	-	-	-	278	307	-	417	392	-
Stage 2	-	-	-	-	-	-	421	412	-	273	265	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	956	-	-	609	-	-	~ 43	67	313	~ 31	59	516
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 43	67	-	~ 31	59	-
Stage 1	-	-	-	-	-	-	266	294	-	369	347	-
Stage 2	-	-	-	-	-	-	315	365	-	155	253	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v 0.37		1.17	\$ 486.86	\$ 1237.11
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	102	956	-	-	609	-	-	52
HCM Lane V/C Ratio	1.846	0.044	-	-	0.114	-	-	3.381
HCM Control Delay (s/veh)	\$ 486.9	8.9	-	-	11.7	-	-	\$ 1237.1
HCM Lane LOS	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	15.4	0.1	-	-	0.4	-	-	18.9

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection						
Int Delay, s/veh	166.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘↗	
Traffic Vol, veh/h	1111	96	162	566	67	225
Future Vol, veh/h	1111	96	162	566	67	225
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	6	23	4	2	34
Mvmt Flow	1208	104	176	615	73	245
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1312	0	2175	1208
Stage 1	-	-	-	-	1208	-
Stage 2	-	-	-	-	967	-
Critical Hdwy	-	-	4.33	-	6.42	6.54
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.407	-	3.518	3.606
Pot Cap-1 Maneuver	-	-	464	-	~ 51	~ 192
Stage 1	-	-	-	-	283	-
Stage 2	-	-	-	-	369	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	464	-	~ 32	~ 192
Mov Cap-2 Maneuver	-	-	-	-	~ 32	-
Stage 1	-	-	-	-	283	-
Stage 2	-	-	-	-	229	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		3.88		\$ 1257.63	
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	89	-	-	464	-	
HCM Lane V/C Ratio	3.574	-	-	0.38	-	
HCM Control Delay (s/veh)	\$ 1257.6	-	-	17.4	-	
HCM Lane LOS	F	-	-	C	-	
HCM 95th %tile Q(veh)	32.3	-	-	1.8	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 7th TWSC
3: Blessinger Rd & Landcuff Ln

2028 Background
AM Peak Hour

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	50	0	5	5	5	37	5	83	15	14	35	30
Future Vol, veh/h	50	0	5	5	5	37	5	83	15	14	35	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	56	0	6	6	6	41	6	92	17	16	39	33

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	193	207	56	182	215	101	72	0	0	109	0	0
Stage 1	87	87	-	112	112	-	-	-	-	-	-	-
Stage 2	106	120	-	70	103	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	767	690	1011	780	683	955	1528	-	-	1482	-	-
Stage 1	921	823	-	893	803	-	-	-	-	-	-	-
Stage 2	899	796	-	940	810	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	717	680	1011	764	673	955	1528	-	-	1482	-	-
Mov Cap-2 Maneuver	717	680	-	764	673	-	-	-	-	-	-	-
Stage 1	911	814	-	890	800	-	-	-	-	-	-	-
Stage 2	851	793	-	924	801	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v10.33		9.29	0.36	1.32
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	85	-	-	737 891	292	-	-
HCM Lane V/C Ratio	0.004	-	-	0.083 0.059	0.01	-	-
HCM Control Delay (s/veh)	7.4	0	-	10.3 9.3	7.5	0	-
HCM Lane LOS	A	A	-	B A	A A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3 0.2	0	-	-

HCM 7th TWSC
4: Bent Ln & Landruff Ln

2028 Background
AM Peak Hour

Intersection						
Int Delay, s/veh	4.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	168	2	3	124	86	31
Future Vol, veh/h	168	2	3	124	86	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	187	2	3	138	96	34

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	257	113	130	0	-	0
Stage 1	113	-	-	-	-	-
Stage 2	144	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	732	940	1455	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	883	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	730	940	1455	-	-	-
Mov Cap-2 Maneuver	730	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	883	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.62	0.18	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	43	-	732	-	-
HCM Lane V/C Ratio	0.002	-	0.258	-	-
HCM Control Delay (s/veh)	7.5	0	11.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	1	-	-

HCM 7th TWSC
1: Blessinger Rd & SH 44

2028 Background
PM Peak Hour

Intersection												
Int Delay, s/veh	211.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	722	56	136	1055	83	42	4	96	58	3	64
Future Vol, veh/h	36	722	56	136	1055	83	42	4	96	58	3	64
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	200	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	20	2	2	2
Mvmt Flow	39	776	60	146	1134	89	45	4	103	62	3	69

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1224	0	0	837	0	0	2282	2370	776	2327	2385	1179
Stage 1	-	-	-	-	-	-	854	854	-	1472	1472	-
Stage 2	-	-	-	-	-	-	1428	1516	-	856	914	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.4	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.48	3.518	4.018	3.318
Pot Cap-1 Maneuver	570	-	-	797	-	-	~ 28	35	370	~ 26	34	232
Stage 1	-	-	-	-	-	-	353	375	-	158	191	-
Stage 2	-	-	-	-	-	-	167	182	-	352	352	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	570	-	-	797	-	-	~ 14	27	370	~ 12	26	232
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 14	27	-	~ 12	26	-
Stage 1	-	-	-	-	-	-	329	350	-	129	156	-
Stage 2	-	-	-	-	-	-	94	148	-	234	328	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.52	1.12	\$ 1454.95	\$ 2311.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	40	570	-	-	797	-	-	25
HCM Lane V/C Ratio	3.777	0.068	-	-	0.183	-	-	5.436
HCM Control Delay (s/veh)	\$ 1454.9	11.8	-	-	10.5	-	-	\$ 2311.6
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	17.3	0.2	-	-	0.7	-	-	16.7

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection						
Int Delay, s/veh	263.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘↗	
Traffic Vol, veh/h	842	85	224	1317	79	186
Future Vol, veh/h	842	85	224	1317	79	186
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	8	2	2	2	3
Mvmt Flow	896	90	238	1401	84	198
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	986	0	2773	896
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	1878	-
Critical Hdwy	-	-	4.12	-	6.42	6.23
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.327
Pot Cap-1 Maneuver	-	-	701	-	~ 21	338
Stage 1	-	-	-	-	399	-
Stage 2	-	-	-	-	132	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	701	-	~ 14	338
Mov Cap-2 Maneuver	-	-	-	-	~ 14	-
Stage 1	-	-	-	-	399	-
Stage 2	-	-	-	-	87	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		1.86		\$ 2711.26	
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	43	-	-	701	-	
HCM Lane V/C Ratio	6.613	-	-	0.34	-	
HCM Control Delay (s/veh)	\$ 2711.3	-	-	12.8	-	
HCM Lane LOS	F	-	-	B	-	
HCM 95th %tile Q(veh)	33.1	-	-	1.5	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 7th TWSC
3: Blessinger Rd & Landcuff Ln

2028 Background
PM Peak Hour

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	35	5	5	30	5	20	5	67	10	28	106	50
Future Vol, veh/h	35	5	5	30	5	20	5	67	10	28	106	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	6	6	33	6	22	6	74	11	31	118	56

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	296	304	146	274	327	80	173	0	0	86	0	0
Stage 1	208	208	-	91	91	-	-	-	-	-	-	-
Stage 2	88	97	-	183	236	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	656	609	902	679	592	980	1403	-	-	1511	-	-
Stage 1	794	730	-	916	819	-	-	-	-	-	-	-
Stage 2	919	815	-	819	710	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	618	592	902	650	576	980	1403	-	-	1511	-	-
Mov Cap-2 Maneuver	618	592	-	650	576	-	-	-	-	-	-	-
Stage 1	776	713	-	912	816	-	-	-	-	-	-	-
Stage 2	889	812	-	789	694	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v11.13		10.37	0.46	1.13
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	107	-	-	637	731	257	-
HCM Lane V/C Ratio	0.004	-	-	0.078	0.084	0.021	-
HCM Control Delay (s/veh)	7.6	0	-	11.1	10.4	7.4	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.3	0.3	0.1	-

HCM 7th TWSC
4: Bent Ln & Landruff Ln

2028 Background
PM Peak Hour

Intersection						
Int Delay, s/veh	4.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	170	2	3	94	138	70
Future Vol, veh/h	170	2	3	94	138	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	189	2	3	104	153	78

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	303	192	231	0	-	0
Stage 1	192	-	-	-	-	-
Stage 2	111	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	688	849	1337	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	914	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	687	849	1337	-	-	-
Mov Cap-2 Maneuver	687	-	-	-	-	-
Stage 1	838	-	-	-	-	-
Stage 2	914	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v12.23		0.24	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	56	-	688	-	-
HCM Lane V/C Ratio	0.002	-	0.278	-	-
HCM Control Delay (s/veh)	7.7	0	12.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	1.1	-	-

HCM 7th Signalized Intersection Summary

1: Blessinger Rd & SH 44

Mitigation - Signal
2028 Background AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	879	20	64	528	48	55	4	114	90	7	64
Future Volume (veh/h)	39	879	20	64	528	48	55	4	114	90	7	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		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	1841	1870	1470	1841	1870	1870	1870	1870	1811	1411	1856
Adj Flow Rate, veh/h	42	955	22	70	574	52	60	4	124	98	8	70
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	4	2	29	4	2	2	2	2	6	33	3
Cap, veh/h	518	1218	1049	236	1227	1057	203	8	263	173	21	185
Arrive On Green	0.03	0.66	0.66	0.03	0.67	0.67	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	1841	1585	1400	1841	1585	1321	50	1543	1222	125	1090
Grp Volume(v), veh/h	42	955	22	70	574	52	60	0	128	98	0	78
Grp Sat Flow(s),veh/h/ln	1781	1841	1585	1400	1841	1585	1321	0	1593	1222	0	1215
Q Serve(g_s), s	1.0	49.1	0.6	2.2	20.3	1.5	5.7	0.0	9.8	10.6	0.0	7.7
Cycle Q Clear(g_c), s	1.0	49.1	0.6	2.2	20.3	1.5	13.3	0.0	9.8	20.3	0.0	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.90
Lane Grp Cap(c), veh/h	518	1218	1049	236	1227	1057	203	0	271	173	0	207
V/C Ratio(X)	0.08	0.78	0.02	0.30	0.47	0.05	0.30	0.00	0.47	0.57	0.00	0.38
Avail Cap(c_a), veh/h	585	1218	1049	281	1227	1057	312	0	403	274	0	307
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.1	16.0	7.8	17.1	10.9	7.7	55.4	0.0	50.4	59.5	0.0	49.5
Incr Delay (d2), s/veh	0.1	5.1	0.0	0.7	1.3	0.1	0.8	0.0	1.3	2.9	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	28.7	0.4	1.5	12.0	0.9	3.5	0.0	7.2	6.2	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.2	21.1	7.8	17.8	12.1	7.8	56.2	0.0	51.6	62.4	0.0	50.6
LnGrp LOS	A	C	A	B	B	A	E		D	E		D
Approach Vol, veh/h	1019			696			188			176		
Approach Delay, s/veh	20.3			12.4			53.1			57.2		
Approach LOS	C			B			D			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	95.7		28.9	10.6	95.0		28.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	89.0		34.0	9.0	89.0		34.0				
Max Q Clear Time (g_c+I1), s	3.0	22.3		22.3	4.2	51.1		15.3				
Green Ext Time (p_c), s	0.0	3.7		0.6	0.0	10.0		0.8				
Intersection Summary												
HCM 7th Control Delay, s/veh				23.7								
HCM 7th LOS				C								

HCM2000 Intersection V/C
1: Blessinger Rd & SH 44

Mitigation - Signal
2028 Background AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	879	20	64	528	48	55	4	114	90	7	64
Future Volume (vph)	39	879	20	64	528	48	55	4	114	90	7	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1827	1583	1399	1827	1583	1770	1592		1703	1550	
Flt Permitted	0.39	1.00	1.00	0.17	1.00	1.00	0.71	1.00		0.56	1.00	
Satd. Flow (perm)	727	1827	1583	256	1827	1583	1316	1592		1011	1550	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	955	22	70	574	52	60	4	124	98	8	70
RTOR Reduction (vph)	0	0	7	0	0	16	0	108	0	0	61	0
Lane Group Flow (vph)	42	955	15	70	574	36	60	20	0	98	17	0
Heavy Vehicles (%)	2%	4%	2%	29%	4%	2%	2%	2%	2%	6%	33%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	95.6	90.6	90.6	97.4	91.5	91.5	16.8	16.8		16.8	16.8	
Effective Green, g (s)	95.6	90.6	90.6	97.4	91.5	91.5	16.8	16.8		16.8	16.8	
Actuated g/C Ratio	0.73	0.69	0.69	0.74	0.70	0.70	0.13	0.13		0.13	0.13	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	569	1260	1092	241	1273	1103	168	203		129	198	
v/s Ratio Prot	0.00	c0.52		c0.01	0.31			0.01			0.01	
v/s Ratio Perm	0.05		0.01	0.20		0.02	0.05			c0.10		
v/c Ratio	0.07	0.76	0.01	0.29	0.45	0.03	0.36	0.10		0.76	0.09	
Uniform Delay, d1	5.5	13.2	6.4	12.1	8.8	6.2	52.3	50.6		55.3	50.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	4.3	0.0	0.7	1.2	0.1	1.3	0.2		22.3	0.2	
Delay (s)	5.6	17.5	6.4	12.8	10.0	6.2	53.6	50.8		77.6	50.7	
Level of Service	A	B	A	B	A	A	D	D		E	D	
Approach Delay (s/veh)		16.8			10.0			51.7			65.7	
Approach LOS		B			A			D			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			21.8									
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			131.3							18.0		
Intersection Capacity Utilization			74.8%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

1: Blessinger Rd & SH 44

Mitigation - Signal
2028 Background PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	722	56	136	1055	83	42	4	96	58	3	64
Future Volume (veh/h)	36	722	56	136	1055	83	42	4	96	58	3	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		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	1604	1870	1870	1870
Adj Flow Rate, veh/h	39	776	60	146	1134	89	45	4	103	62	3	69
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	2	2	2	2	2	20	2	2	2
Cap, veh/h	224	1308	1108	442	1327	1125	169	8	196	137	9	196
Arrive On Green	0.03	0.70	0.70	0.04	0.71	0.71	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1328	60	1535	1287	66	1529
Grp Volume(v), veh/h	39	776	60	146	1134	89	45	0	107	62	0	72
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1328	0	1594	1287	0	1595
Q Serve(g_s), s	0.8	28.7	1.6	3.1	60.1	2.3	4.3	0.0	8.4	6.4	0.0	5.5
Cycle Q Clear(g_c), s	0.8	28.7	1.6	3.1	60.1	2.3	9.8	0.0	8.4	14.8	0.0	5.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.96	1.00		0.96
Lane Grp Cap(c), veh/h	224	1308	1108	442	1327	1125	169	0	204	137	0	204
V/C Ratio(X)	0.17	0.59	0.05	0.33	0.85	0.08	0.27	0.00	0.52	0.45	0.00	0.35
Avail Cap(c_a), veh/h	293	1308	1108	492	1327	1125	285	0	344	250	0	344
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.1	10.4	6.3	8.9	14.4	6.0	58.0	0.0	54.8	61.7	0.0	53.5
Incr Delay (d2), s/veh	0.4	2.0	0.1	0.4	7.2	0.1	0.8	0.0	2.1	2.3	0.0	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	0.5	10.3	0.5	1.0	22.4	0.7	1.5	0.0	3.5	2.2	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.5	12.4	6.4	9.4	21.6	6.1	58.9	0.0	56.9	64.0	0.0	54.6
LnGrp LOS	B	B	A	A	C	A	E		E	E		D
Approach Vol, veh/h	875			1369			152			134		
Approach Delay, s/veh	12.3			19.3			57.5			58.9		
Approach LOS	B			B			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	101.4		23.2	11.2	100.0		23.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	94.0		29.0	9.0	94.0		29.0				
Max Q Clear Time (g_c+I1), s	2.8	62.1		16.8	5.1	30.7		11.8				
Green Ext Time (p_c), s	0.0	10.9		0.4	0.1	5.7		0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh				21.2								
HCM 7th LOS				C								

HCM2000 Intersection V/C
1: Blessinger Rd & SH 44

Mitigation - Signal
2028 Background PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	722	56	136	1055	83	42	4	96	58	3	64
Future Volume (vph)	36	722	56	136	1055	83	42	4	96	58	3	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1362		1770	1595	
Flt Permitted	0.12	1.00	1.00	0.27	1.00	1.00	0.71	1.00		0.59	1.00	
Satd. Flow (perm)	231	1863	1583	511	1863	1583	1323	1362		1105	1595	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	39	776	60	146	1134	89	45	4	103	62	3	69
RTOR Reduction (vph)	0	0	17	0	0	17	0	94	0	0	63	0
Lane Group Flow (vph)	39	776	43	146	1134	72	45	13	0	62	9	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	20%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	100.4	95.4	95.4	106.2	98.3	98.3	12.1	12.1		12.1	12.1	
Effective Green, g (s)	100.4	95.4	95.4	106.2	98.3	98.3	12.1	12.1		12.1	12.1	
Actuated g/C Ratio	0.75	0.72	0.72	0.80	0.74	0.74	0.09	0.09		0.09	0.09	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	231	1332	1132	481	1372	1166	120	123		100	144	
v/s Ratio Prot	0.01	0.42		c0.02	c0.61			0.01			0.01	
v/s Ratio Perm	0.12		0.03	0.22		0.05	0.03			c0.06		
v/c Ratio	0.17	0.58	0.04	0.30	0.83	0.06	0.38	0.11		0.62	0.06	
Uniform Delay, d1	14.7	9.3	5.6	6.2	11.8	4.8	57.1	55.7		58.4	55.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	1.9	0.1	0.4	5.8	0.1	2.0	0.4		11.3	0.2	
Delay (s)	15.0	11.1	5.6	6.5	17.6	4.9	59.1	56.1		69.8	55.7	
Level of Service	B	B	A	A	B	A	E	E		E	E	
Approach Delay (s/veh)		10.9			15.6			57.0			62.2	
Approach LOS		B			B			E			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			19.0			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			133.4			Sum of lost time (s)				18.0		
Intersection Capacity Utilization			84.6%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

2: Bent Ln & SH 44

Mitigation - Signal
2028 Background AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↙	↑	↙	↗
Traffic Volume (veh/h)	1111	96	162	566	67	225
Future Volume (veh/h)	1111	96	162	566	67	225
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	1856	1811	1559	1841	1870	1396
Adj Flow Rate, veh/h	1208	104	176	615	73	245
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	6	23	4	2	34
Cap, veh/h	1151	952	196	1399	285	307
Arrive On Green	0.62	0.62	0.10	0.76	0.16	0.16
Sat Flow, veh/h	1856	1535	1485	1841	1781	1183
Grp Volume(v), veh/h	1208	104	176	615	73	245
Grp Sat Flow(s),veh/h/ln	1856	1535	1485	1841	1781	1183
Q Serve(g_s), s	93.0	4.1	12.7	18.1	5.4	24.0
Cycle Q Clear(g_c), s	93.0	4.1	12.7	18.1	5.4	24.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1151	952	196	1399	285	307
V/C Ratio(X)	1.05	0.11	0.90	0.44	0.26	0.80
Avail Cap(c_a), veh/h	1151	952	286	1399	285	307
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	28.5	11.6	53.8	6.5	55.2	51.8
Incr Delay (d2), s/veh	40.6	0.2	21.7	1.0	0.5	13.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	66.9	2.7	12.4	11.3	4.5	14.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	69.0	11.8	75.6	7.5	55.7	65.5
LnGrp LOS	F	B	E	A	E	E
Approach Vol, veh/h	1312			791	318	
Approach Delay, s/veh	64.5			22.6	63.2	
Approach LOS	E			C	E	
Timer - Assigned Phs	2		5		6	8
Phs Duration (G+Y+Rc), s	120.0		21.0		99.0	30.0
Change Period (Y+Rc), s	6.0		6.0		6.0	6.0
Max Green Setting (Gmax), s	114.0		24.0		84.0	24.0
Max Q Clear Time (g_c+l1), s	20.1		14.7		95.0	26.0
Green Ext Time (p_c), s	5.0		0.3		0.0	0.0
Intersection Summary						
HCM 7th Control Delay, s/veh	50.7					
HCM 7th LOS	D					
Notes						
User approved pedestrian interval to be less than phase max green.						

HCM2000 Intersection V/C
2: Bent Ln & SH 44

Mitigation - Signal
2028 Background AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	1111	96	162	566	67	225
Future Volume (vph)	1111	96	162	566	67	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1845	1524	1467	1827	1770	1205
Flt Permitted	1.00	1.00	0.04	1.00	0.95	1.00
Satd. Flow (perm)	1845	1524	64	1827	1770	1205
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1208	104	176	615	73	245
RTOR Reduction (vph)	0	8	0	0	0	49
Lane Group Flow (vph)	1208	96	176	615	73	196
Heavy Vehicles (%)	3%	6%	23%	4%	2%	34%
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	8	5
Permitted Phases		6	2			8
Actuated Green, G (s)	90.7	90.7	114.4	114.4	9.4	27.1
Effective Green, g (s)	90.7	90.7	114.4	114.4	9.4	27.1
Actuated g/C Ratio	0.67	0.67	0.84	0.84	0.07	0.20
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1232	1017	236	1539	122	293
v/s Ratio Prot	c0.65		0.10	0.34	0.04	c0.09
v/s Ratio Perm		0.06	0.53			0.08
v/c Ratio	0.98	0.09	0.75	0.40	0.60	0.67
Uniform Delay, d1	21.7	8.0	48.7	2.5	61.4	50.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.4	0.2	12.1	0.8	7.7	5.7
Delay (s)	43.1	8.2	60.7	3.3	69.0	55.9
Level of Service	D	A	E	A	E	E
Approach Delay (s/veh)	40.3			16.1	58.9	
Approach LOS	D			B	E	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			34.8		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.94			
Actuated Cycle Length (s)			135.8		Sum of lost time (s)	18.0
Intersection Capacity Utilization			86.6%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM 7th Signalized Intersection Summary

2: Bent Ln & SH 44

Mitigation - 5 lanes on SH 44
2028 Background AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	 			 		
Traffic Volume (veh/h)	1111	96	162	566	67	225
Future Volume (veh/h)	1111	96	162	566	67	225
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	1856	1811	1559	1841	1870	1396
Adj Flow Rate, veh/h	1208	104	176	615	73	245
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	6	23	4	2	34
Cap, veh/h	2011	173	268	2482	371	314
Arrive On Green	0.61	0.61	0.06	0.71	0.21	0.21
Sat Flow, veh/h	3378	282	1485	3589	1781	1183
Grp Volume(v), veh/h	647	665	176	615	73	245
Grp Sat Flow(s),veh/h/ln	1763	1805	1485	1749	1781	1183
Q Serve(g_s), s	33.0	33.1	6.3	9.1	5.0	28.1
Cycle Q Clear(g_c), s	33.0	33.1	6.3	9.1	5.0	28.1
Prop In Lane		0.16	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1079	1105	268	2482	371	314
V/C Ratio(X)	0.60	0.60	0.66	0.25	0.20	0.78
Avail Cap(c_a), veh/h	1079	1105	275	2482	413	341
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	17.4	17.4	16.9	7.5	47.9	49.9
Incr Delay (d2), s/veh	2.5	2.4	5.4	0.2	0.3	10.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	20.1	20.5	5.1	6.1	4.1	14.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	19.9	19.9	22.3	7.7	48.1	60.3
LnGrp LOS	B	B	C	A	D	E
Approach Vol, veh/h	1312			791	318	
Approach Delay, s/veh	19.9			11.0	57.5	
Approach LOS	B			B	E	
Timer - Assigned Phs	2		5		6	8
Phs Duration (G+Y+Rc), s	110.0		14.3		95.7	36.5
Change Period (Y+Rc), s	6.0		6.0		6.0	6.0
Max Green Setting (Gmax), s	104.0		9.0		89.0	34.0
Max Q Clear Time (g_c+l1), s	11.1		8.3		35.1	30.1
Green Ext Time (p_c), s	5.0		0.0		13.2	0.4
Intersection Summary						
HCM 7th Control Delay, s/veh			21.9			
HCM 7th LOS			C			

HCM2000 Intersection V/C
2: Bent Ln & SH 44

Mitigation - 5 lanes on SH 44
2028 Background AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Traffic Volume (vph)	1111	96	162	566	67	225
Future Volume (vph)	1111	96	162	566	67	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3455		1467	3471	1770	1205
Flt Permitted	1.00		0.16	1.00	0.95	1.00
Satd. Flow (perm)	3455		248	3471	1770	1205
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1208	104	176	615	73	245
RTOR Reduction (vph)	3	0	0	0	0	62
Lane Group Flow (vph)	1309	0	176	615	73	183
Heavy Vehicles (%)	3%	6%	23%	4%	2%	34%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	8	5
Permitted Phases			2			8
Actuated Green, G (s)	89.4		104.4	104.4	9.0	18.0
Effective Green, g (s)	89.4		104.4	104.4	9.0	18.0
Actuated g/C Ratio	0.71		0.83	0.83	0.07	0.14
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2463		293	2889	127	230
v/s Ratio Prot	0.38		0.04	0.18	0.04	c0.06
v/s Ratio Perm			c0.46			0.10
v/c Ratio	0.53		0.60	0.21	0.57	0.80
Uniform Delay, d1	8.3		6.4	2.1	56.3	51.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8		3.4	0.2	6.2	17.2
Delay (s)	9.1		9.8	2.3	62.5	69.2
Level of Service	A		A	A	E	E
Approach Delay (s/veh)	9.1			4.0	67.6	
Approach LOS	A			A	E	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			15.1		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.69			
Actuated Cycle Length (s)			125.4		Sum of lost time (s)	18.0
Intersection Capacity Utilization			61.9%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM 7th TWSC
2: Bent Ln & SH 44

Mitigation - RIROLI
2028 Background AM Peak Hour

Intersection						
Int Delay, s/veh	4.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑		↑
Traffic Vol, veh/h	1111	96	162	566	0	225
Future Vol, veh/h	1111	96	162	566	0	225
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	6	23	4	2	34
Mvmt Flow	1208	104	176	615	0	245
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1312	0	-	604
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.56	-	-	7.58
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.43	-	-	3.64
Pot Cap-1 Maneuver	-	-	424	-	0	371
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	424	-	-	371
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		4.32		31.68	
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	371	-	-	424	-	
HCM Lane V/C Ratio	0.66	-	-	0.415	-	
HCM Control Delay (s/veh)	31.7	-	-	19.4	-	
HCM Lane LOS	D	-	-	C	-	
HCM 95th %tile Q(veh)	4.5	-	-	2	-	

HCM 7th Signalized Intersection Summary

2: Bent Ln & SH 44

Mitigation - Signal
2028 Background PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↙	↑	↙	↗
Traffic Volume (veh/h)	842	85	224	1317	79	186
Future Volume (veh/h)	842	85	224	1317	79	186
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	1781	1870	1870	1870	1856
Adj Flow Rate, veh/h	896	90	238	1401	84	198
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	8	2	2	2	3
Cap, veh/h	1276	1030	369	1456	242	298
Arrive On Green	0.68	0.68	0.05	0.78	0.14	0.14
Sat Flow, veh/h	1870	1510	1781	1870	1781	1572
Grp Volume(v), veh/h	896	90	238	1401	84	198
Grp Sat Flow(s),veh/h/ln	1870	1510	1781	1870	1781	1572
Q Serve(g_s), s	40.9	2.8	5.4	92.6	6.0	16.3
Cycle Q Clear(g_c), s	40.9	2.8	5.4	92.6	6.0	16.3
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1276	1030	369	1456	242	298
V/C Ratio(X)	0.70	0.09	0.64	0.96	0.35	0.66
Avail Cap(c_a), veh/h	1276	1030	388	1456	369	410
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	13.6	7.5	16.3	13.7	54.9	52.6
Incr Delay (d2), s/veh	3.3	0.2	3.4	16.1	0.9	2.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.5	1.0	4.0	38.6	2.8	6.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	16.8	7.7	19.7	29.8	55.7	55.2
LnGrp LOS	B	A	B	C	E	E
Approach Vol, veh/h	986			1639	282	
Approach Delay, s/veh	16.0			28.4	55.3	
Approach LOS	B			C	E	
Timer - Assigned Phs	2		5		6	8
Phs Duration (G+Y+Rc), s	115.0		13.5		101.5	25.0
Change Period (Y+Rc), s	6.0		6.0		6.0	6.0
Max Green Setting (Gmax), s	109.0		9.0		94.0	29.0
Max Q Clear Time (g_c+l1), s	94.6		7.4		42.9	18.3
Green Ext Time (p_c), s	11.1		0.1		9.6	0.7
Intersection Summary						
HCM 7th Control Delay, s/veh			26.8			
HCM 7th LOS			C			
Notes						
User approved pedestrian interval to be less than phase max green.						

HCM2000 Intersection V/C
2: Bent Ln & SH 44

Mitigation - Signal
2028 Background PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	842	85	224	1317	79	186
Future Volume (vph)	842	85	224	1317	79	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1495	1770	1863	1770	1568
Flt Permitted	1.00	1.00	0.21	1.00	0.95	1.00
Satd. Flow (perm)	1863	1495	384	1863	1770	1568
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	896	90	238	1401	84	198
RTOR Reduction (vph)	0	9	0	0	0	141
Lane Group Flow (vph)	896	81	238	1401	84	57
Heavy Vehicles (%)	2%	8%	2%	2%	2%	3%
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	8	5
Permitted Phases		6	2			8
Actuated Green, G (s)	94.3	94.3	109.1	109.1	11.6	20.4
Effective Green, g (s)	94.3	94.3	109.1	109.1	11.6	20.4
Actuated g/C Ratio	0.71	0.71	0.82	0.82	0.09	0.15
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1323	1062	407	1531	154	311
v/s Ratio Prot	0.48		0.04	c0.75	c0.05	0.01
v/s Ratio Perm		0.05	0.44			0.02
v/c Ratio	0.68	0.08	0.58	0.92	0.55	0.18
Uniform Delay, d1	10.7	5.9	11.3	8.5	58.0	48.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	0.1	2.1	10.0	3.9	0.3
Delay (s)	13.5	6.0	13.4	18.5	61.9	49.2
Level of Service	B	A	B	B	E	D
Approach Delay (s/veh)	12.8			17.8	53.0	
Approach LOS	B			B	D	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			19.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.92			
Actuated Cycle Length (s)			132.7		Sum of lost time (s)	18.0
Intersection Capacity Utilization			83.7%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM 7th Signalized Intersection Summary

2: Bent Ln & SH 44

Mitigation - 5 lanes on SH 44
2028 Background PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↘		↙	↑↑	↙	↗
Traffic Volume (veh/h)	842	85	224	1317	79	186
Future Volume (veh/h)	842	85	224	1317	79	186
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	1781	1870	1870	1870	1856
Adj Flow Rate, veh/h	896	90	238	1401	84	198
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	8	2	2	2	3
Cap, veh/h	2197	221	466	2749	244	303
Arrive On Green	0.67	0.67	0.06	0.77	0.14	0.14
Sat Flow, veh/h	3354	328	1781	3647	1781	1572
Grp Volume(v), veh/h	488	498	238	1401	84	198
Grp Sat Flow(s),veh/h/ln	1777	1811	1781	1777	1781	1572
Q Serve(g_s), s	16.6	16.6	5.3	19.8	5.7	15.6
Cycle Q Clear(g_c), s	16.6	16.6	5.3	19.8	5.7	15.6
Prop In Lane		0.18	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1197	1220	466	2749	244	303
V/C Ratio(X)	0.41	0.41	0.51	0.51	0.34	0.65
Avail Cap(c_a), veh/h	1197	1220	487	2749	451	485
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	9.9	9.9	7.3	5.7	52.5	50.2
Incr Delay (d2), s/veh	1.0	1.0	0.9	0.7	0.8	2.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	6.7	1.9	6.7	2.6	6.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	10.9	10.9	8.2	6.4	53.4	52.6
LnGrp LOS	B	B	A	A	D	D
Approach Vol, veh/h	986			1639	282	
Approach Delay, s/veh	10.9			6.6	52.8	
Approach LOS	B			A	D	
Timer - Assigned Phs	2		5		6	8
Phs Duration (G+Y+Rc), s	110.0		13.4		96.6	24.4
Change Period (Y+Rc), s	6.0		6.0		6.0	6.0
Max Green Setting (Gmax), s	104.0		9.0		89.0	34.0
Max Q Clear Time (g_c+l1), s	21.8		7.3		18.6	17.6
Green Ext Time (p_c), s	17.4		0.1		8.3	0.8
Intersection Summary						
HCM 7th Control Delay, s/veh			12.6			
HCM 7th LOS			B			
Notes						
User approved pedestrian interval to be less than phase max green.						

HCM2000 Intersection V/C
2: Bent Ln & SH 44

Mitigation - 5 lanes on SH 44
2028 Background PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Traffic Volume (vph)	842	85	224	1317	79	186
Future Volume (vph)	842	85	224	1317	79	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3472		1770	3539	1770	1568
Flt Permitted	1.00		0.24	1.00	0.95	1.00
Satd. Flow (perm)	3472		455	3539	1770	1568
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	896	90	238	1401	84	198
RTOR Reduction (vph)	4	0	0	0	0	127
Lane Group Flow (vph)	982	0	238	1401	84	71
Heavy Vehicles (%)	2%	8%	2%	2%	2%	3%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	8	5
Permitted Phases			2			8
Actuated Green, G (s)	89.7		104.1	104.1	11.4	19.8
Effective Green, g (s)	89.7		104.1	104.1	11.4	19.8
Actuated g/C Ratio	0.70		0.82	0.82	0.09	0.16
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2442		458	2889	158	317
v/s Ratio Prot	0.28		0.03	c0.40	c0.05	0.01
v/s Ratio Perm			c0.39			0.03
v/c Ratio	0.40		0.52	0.48	0.53	0.22
Uniform Delay, d1	7.8		4.1	3.6	55.5	47.1
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5		1.0	0.6	3.4	0.4
Delay (s)	8.3		5.1	4.1	58.9	47.5
Level of Service	A		A	A	E	D
Approach Delay (s/veh)	8.3			4.3	50.9	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			10.2		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.55			
Actuated Cycle Length (s)			127.5		Sum of lost time (s)	18.0
Intersection Capacity Utilization			57.8%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM 7th TWSC
2: Bent Ln & SH 44

Mitigation - RIROLI
2028 Background PM Peak Hour

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑		↑
Traffic Vol, veh/h	842	85	224	1317	0	186
Future Vol, veh/h	842	85	224	1317	0	186
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	8	2	2	2	3
Mvmt Flow	896	90	238	1401	0	198
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	986	0	-	448
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.33
Pot Cap-1 Maneuver	-	-	696	-	0	555
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	696	-	-	555
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	1.87		15.02		
HCM LOS				C		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	555	-	-	696	-	
HCM Lane V/C Ratio	0.356	-	-	0.342	-	
HCM Control Delay (s/veh)	15	-	-	12.8	-	
HCM Lane LOS	C	-	-	B	-	
HCM 95th %tile Q(veh)	1.6	-	-	1.5	-	

APPENDIX F: 2028 Total Synchro Reports

HCM 7th Signalized Intersection Summary

2028 Total

1: Blessinger Rd & SH 44

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	901	32	84	492	36	152	19	201	87	8	64
Future Volume (veh/h)	39	901	32	84	492	36	152	19	201	87	8	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		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	1841	1870	1470	1841	1870	1870	1870	1870	1811	1411	1856
Adj Flow Rate, veh/h	42	979	35	91	535	39	165	21	218	95	9	70
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	4	2	29	4	2	2	2	2	6	33	3
Cap, veh/h	485	1118	963	172	1136	978	285	33	340	157	32	250
Arrive On Green	0.03	0.61	0.61	0.04	0.62	0.62	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	1841	1585	1400	1841	1585	1320	141	1465	1105	139	1078
Grp Volume(v), veh/h	42	979	35	91	535	39	165	0	239	95	0	79
Grp Sat Flow(s),veh/h/ln	1781	1841	1585	1400	1841	1585	1320	0	1607	1105	0	1217
Q Serve(g_s), s	1.3	65.4	1.3	3.6	23.0	1.4	17.2	0.0	19.7	12.4	0.0	7.8
Cycle Q Clear(g_c), s	1.3	65.4	1.3	3.6	23.0	1.4	25.0	0.0	19.7	32.1	0.0	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.91	1.00		0.89
Lane Grp Cap(c), veh/h	485	1118	963	172	1136	978	285	0	373	157	0	282
V/C Ratio(X)	0.09	0.88	0.04	0.53	0.47	0.04	0.58	0.00	0.64	0.60	0.00	0.28
Avail Cap(c_a), veh/h	545	1118	963	206	1136	978	285	0	373	157	0	282
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.6	24.1	11.5	28.3	15.1	11.0	56.5	0.0	50.8	65.2	0.0	46.2
Incr Delay (d2), s/veh	0.1	9.7	0.1	2.5	1.4	0.1	2.9	0.0	3.7	6.4	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	30.4	0.5	1.7	9.2	0.5	6.0	0.0	8.3	3.8	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.7	33.8	11.6	30.8	16.5	11.1	59.4	0.0	54.4	71.6	0.0	46.7
LnGrp LOS	B	C	B	C	B	B	E		D	E		D
Approach Vol, veh/h	1056			665			404			174		
Approach Delay, s/veh	32.2			18.2			56.5			60.3		
Approach LOS	C			B			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	96.4		40.0	11.5	95.0		40.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	89.0		34.0	9.0	89.0		34.0				
Max Q Clear Time (g_c+I1), s	3.3	25.0		34.1	5.6	67.4		27.0				
Green Ext Time (p_c), s	0.0	3.3		0.0	0.0	8.6		1.2				
Intersection Summary												
HCM 7th Control Delay, s/veh				34.5								
HCM 7th LOS				C								

HCM2000 Intersection V/C
1: Blessinger Rd & SH 44

2028 Total
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	901	32	84	492	36	152	19	201	87	8	64
Future Volume (vph)	39	901	32	84	492	36	152	19	201	87	8	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1827	1583	1399	1827	1583	1770	1608		1703	1548	
Flt Permitted	0.41	1.00	1.00	0.12	1.00	1.00	0.71	1.00		0.30	1.00	
Satd. Flow (perm)	761	1827	1583	183	1827	1583	1314	1608		540	1548	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	979	35	91	535	39	165	21	218	95	9	70
RTOR Reduction (vph)	0	0	12	0	0	13	0	177	0	0	58	0
Lane Group Flow (vph)	42	979	23	91	535	26	165	62	0	95	21	0
Heavy Vehicles (%)	2%	4%	2%	29%	4%	2%	2%	2%	2%	6%	33%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	95.8	90.6	90.6	101.2	93.3	93.3	23.4	23.4		23.4	23.4	
Effective Green, g (s)	95.8	90.6	90.6	101.2	93.3	93.3	23.4	23.4		23.4	23.4	
Actuated g/C Ratio	0.68	0.65	0.65	0.72	0.67	0.67	0.17	0.17		0.17	0.17	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	558	1183	1025	201	1218	1055	219	268		90	258	
v/s Ratio Prot	0.00	c0.54		c0.03	0.29			0.04			0.01	
v/s Ratio Perm	0.05		0.01	c0.30		0.02	0.13			c0.18		
v/c Ratio	0.08	0.83	0.02	0.45	0.44	0.02	0.75	0.23		1.06	0.08	
Uniform Delay, d1	7.6	18.7	8.8	19.5	11.0	7.9	55.5	50.5		58.3	49.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	6.7	0.0	1.6	1.2	0.0	13.6	0.4		110.8	0.1	
Delay (s)	7.6	25.4	8.9	21.1	12.1	7.9	69.1	50.9		169.0	49.3	
Level of Service	A	C	A	C	B	A	E	D		F	D	
Approach Delay (s/veh)		24.2			13.1			58.4			114.7	
Approach LOS		C			B			E			F	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			33.8									
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			139.9							18.0		
Intersection Capacity Utilization			90.3%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th TWSC
2: Bent Ln & SH 44

2028 Total
AM Peak Hour

Intersection						
Int Delay, s/veh	6.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑		↑
Traffic Vol, veh/h	1243	96	178	629	0	242
Future Vol, veh/h	1243	96	178	629	0	242
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	6	23	4	2	34
Mvmt Flow	1351	104	193	684	0	263

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1455
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.56
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.43
Pot Cap-1 Maneuver	-	-	368
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	368
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	5.54	48.05
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	329	-	-	368	-
HCM Lane V/C Ratio	0.799	-	-	0.526	-
HCM Control Delay (s/veh)	48.1	-	-	25.1	-
HCM Lane LOS	E	-	-	D	-
HCM 95th %tile Q(veh)	6.6	-	-	2.9	-

HCM 7th TWSC
3: Blessinger Rd & Landcuff Ln

2028 Total
AM Peak Hour

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	65	0	5	5	5	118	5	108	15	19	33	36
Future Vol, veh/h	65	0	5	5	5	118	5	108	15	19	33	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	72	0	6	6	6	131	6	120	17	21	37	40

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	233	247	57	218	258	128	77	0	0	137	0	0
Stage 1	99	99	-	139	139	-	-	-	-	-	-	-
Stage 2	134	148	-	79	119	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	722	656	1010	738	646	922	1522	-	-	1447	-	-
Stage 1	907	813	-	864	781	-	-	-	-	-	-	-
Stage 2	869	775	-	930	797	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	602	643	1010	720	634	922	1522	-	-	1447	-	-
Mov Cap-2 Maneuver	602	643	-	720	634	-	-	-	-	-	-	-
Stage 1	894	801	-	860	778	-	-	-	-	-	-	-
Stage 2	738	772	-	911	785	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v11.64			9.78		0.29		1.62	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	69	-	-	620	896	352	-
HCM Lane V/C Ratio	0.004	-	-	0.125	0.159	0.015	-
HCM Control Delay (s/veh)	7.4	0	-	11.6	9.8	7.5	0
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.6	0	-

HCM 7th TWSC
4: Bent Ln & Landruff Ln

2028 Total
AM Peak Hour

Intersection						
Int Delay, s/veh	5.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	149	3	34	93	86	47
Future Vol, veh/h	149	3	34	93	86	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	166	3	38	103	96	52
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	301	122	148	0	-	0
Stage 1	122	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	691	930	1434	-	-	-
Stage 1	904	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	672	930	1434	-	-	-
Mov Cap-2 Maneuver	672	-	-	-	-	-
Stage 1	878	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v	12.1	2.03		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1434	-	675	-	-	
HCM Lane V/C Ratio	0.026	-	0.25	-	-	
HCM Control Delay (s/veh)	7.6	-	12.1	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	1	-	-	

HCM 7th TWSC
5: Sortino Ave & SH 44

2028 Total
AM Peak Hour

Intersection												
Int Delay, s/veh	113.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	1196	19	42	566	20	19	0	46	97	0	13
Future Vol, veh/h	10	1196	19	42	566	20	19	0	46	97	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	4	2	2	4	2	2	2	2	2	2	2
Mvmt Flow	11	1329	21	47	629	22	21	0	51	108	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	651	0	0	1350	0	0	2084	2106	1339	2084	2106	640
Stage 1	-	-	-	-	-	-	1362	1362	-	733	733	-
Stage 2	-	-	-	-	-	-	722	744	-	1351	1372	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	935	-	-	510	-	-	39	51	187	~ 39	51	475
Stage 1	-	-	-	-	-	-	183	216	-	412	426	-
Stage 2	-	-	-	-	-	-	418	421	-	185	214	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	935	-	-	510	-	-	31	42	187	~ 23	42	475
Mov Cap-2 Maneuver	-	-	-	-	-	-	31	42	-	~ 23	42	-
Stage 1	-	-	-	-	-	-	174	206	-	353	365	-
Stage 2	-	-	-	-	-	-	347	361	-	128	203	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.07	0.85	188.3	\$ 1978.21
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	75	15	-	-	120	-	-	26
HCM Lane V/C Ratio	0.961	0.012	-	-	0.092	-	-	4.719
HCM Control Delay (s/veh)	188.3	8.9	0	-	12.8	0	-	\$ 1978.2
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	5	0	-	-	0.3	-	-	15.1

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 7th TWSC
6: Landcuff Ln & Valdina Wy

2028 Total
AM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	26	97	2	4	3
Future Vol, veh/h	1	26	97	2	4	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	29	108	2	4	3

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	110	0	0 140 109
Stage 1	-	-	- 109 -
Stage 2	-	-	- 31 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1480	-	- 853 945
Stage 1	-	-	- 916 -
Stage 2	-	-	- 991 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1480	-	- 852 945
Mov Cap-2 Maneuver	-	-	- 852 -
Stage 1	-	-	- 915 -
Stage 2	-	-	- 991 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.28	0	9.08
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	67	-	-	-	890
HCM Lane V/C Ratio	0.001	-	-	-	0.009
HCM Control Delay (s/veh)	7.4	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	26	4	12	85	14	27
Future Vol, veh/h	26	4	12	85	14	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	4	13	94	16	30
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	33	0	152	31
Stage 1	-	-	-	-	31	-
Stage 2	-	-	-	-	121	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1578	-	839	1043
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	904	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1578	-	832	1043
Mov Cap-2 Maneuver	-	-	-	-	832	-
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	896	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0.9		8.94		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	960	-	-	223	-	
HCM Lane V/C Ratio	0.047	-	-	0.008	-	
HCM Control Delay (s/veh)	8.9	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 7th TWSC
8: Landcuff Ln & Vicari Wy

2028 Total
AM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	52	96	1	5	1
Future Vol, veh/h	1	52	96	1	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	58	107	1	6	1

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	108	0	0 167 107
Stage 1	-	-	- 107 -
Stage 2	-	-	- 60 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1483	-	- 823 947
Stage 1	-	-	- 917 -
Stage 2	-	-	- 963 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1483	-	- 823 947
Mov Cap-2 Maneuver	-	-	- 823 -
Stage 1	-	-	- 916 -
Stage 2	-	-	- 963 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.14	0	9.32
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	34	-	-	-	841
HCM Lane V/C Ratio	0.001	-	-	-	0.008
HCM Control Delay (s/veh)	7.4	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM 7th TWSC
9: Landruff Ln & Ragusa Ave

2028 Total
AM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	64	97	2	7	1
Future Vol, veh/h	1	64	97	2	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	71	108	2	8	1

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	110	0	0 182 109
Stage 1	-	-	- 109 -
Stage 2	-	-	- 73 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1480	-	- 807 945
Stage 1	-	-	- 916 -
Stage 2	-	-	- 950 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1480	-	- 807 945
Mov Cap-2 Maneuver	-	-	- 807 -
Stage 1	-	-	- 915 -
Stage 2	-	-	- 950 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.11	0	9.43
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	28	-	-	-	822
HCM Lane V/C Ratio	0.001	-	-	-	0.011
HCM Control Delay (s/veh)	7.4	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM 7th TWSC
10: Blessinger Rd & Toscano St/Saddleman Ranch Ct

2028 Total
AM Peak Hour

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	73	0	0	0	0	6	0	290	0	3	98	23
Future Vol, veh/h	73	0	0	0	0	6	0	290	0	3	98	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	0	0	0	0	7	0	322	0	3	109	26

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	451	451	122	438	463	322	134	0	0	322	0	0
Stage 1	128	128	-	322	322	-	-	-	-	-	-	-
Stage 2	322	322	-	116	141	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	519	504	930	529	496	719	1450	-	-	1238	-	-
Stage 1	875	790	-	690	651	-	-	-	-	-	-	-
Stage 2	690	651	-	889	780	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	513	503	930	528	494	719	1450	-	-	1238	-	-
Mov Cap-2 Maneuver	513	503	-	528	494	-	-	-	-	-	-	-
Stage 1	873	788	-	690	651	-	-	-	-	-	-	-
Stage 2	683	651	-	887	778	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v13.34		10.06	0	0.19
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1450	-	-	513 719	42	-	-
HCM Lane V/C Ratio	-	-	-	0.158 0.009	0.003	-	-
HCM Control Delay (s/veh)	0	-	-	13.3 10.1	7.9	0	-
HCM Lane LOS	A	-	-	B B	A A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6 0	0	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	55	40	6	15	0
Future Vol, veh/h	0	55	40	6	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	61	44	7	17	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	51	0	-	0	109	48
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	61	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1555	-	-	-	888	1021
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	962	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1555	-	-	-	888	1021
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	962	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0	0		9.13		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1555	-	-	-	888	
HCM Lane V/C Ratio	-	-	-	-	0.019	
HCM Control Delay (s/veh)	0	-	-	-	9.1	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

HCM 7th Signalized Intersection Summary

2028 Total

1: Blessinger Rd & SH 44

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	748	97	206	1009	79	134	17	137	66	8	64
Future Volume (veh/h)	36	748	97	206	1009	79	134	17	137	66	8	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		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	1604	1870	1870	1870
Adj Flow Rate, veh/h	39	804	104	222	1085	85	144	18	147	71	9	69
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	2	2	2	2	2	20	2	2	2
Cap, veh/h	202	1184	1004	381	1244	1054	225	30	247	148	32	245
Arrive On Green	0.03	0.63	0.63	0.06	0.67	0.67	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1321	176	1436	1221	186	1427
Grp Volume(v), veh/h	39	804	104	222	1085	85	144	0	165	71	0	78
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1321	0	1612	1221	0	1613
Q Serve(g_s), s	1.0	37.0	3.4	5.8	61.9	2.5	14.2	0.0	12.6	7.6	0.0	5.6
Cycle Q Clear(g_c), s	1.0	37.0	3.4	5.8	61.9	2.5	19.9	0.0	12.6	20.3	0.0	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.89	1.00		0.88
Lane Grp Cap(c), veh/h	202	1184	1004	381	1244	1054	225	0	277	148	0	277
V/C Ratio(X)	0.19	0.68	0.10	0.58	0.87	0.08	0.64	0.00	0.60	0.48	0.00	0.28
Avail Cap(c_a), veh/h	271	1184	1004	459	1244	1054	334	0	409	249	0	410
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.4	15.8	9.6	15.2	17.9	7.9	56.9	0.0	51.1	60.5	0.0	48.2
Incr Delay (d2), s/veh	0.5	3.1	0.2	1.4	8.6	0.1	3.0	0.0	2.0	2.4	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	14.6	1.1	2.4	24.8	0.8	4.9	0.0	5.3	2.5	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.8	18.9	9.8	16.6	26.5	8.1	59.9	0.0	53.2	62.8	0.0	48.8
LnGrp LOS	C	B	A	B	C	A	E		D	E		D
Approach Vol, veh/h	947			1392			309			149		
Approach Delay, s/veh	18.1			23.8			56.3			55.5		
Approach LOS	B			C			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	95.0		29.0	14.1	90.7		29.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	89.0		34.0	14.0	84.0		34.0				
Max Q Clear Time (g_c+I1), s	3.0	63.9		22.3	7.8	39.0		21.9				
Green Ext Time (p_c), s	0.0	9.1		0.5	0.3	6.1		1.1				
Intersection Summary												
HCM 7th Control Delay, s/veh				27.1								
HCM 7th LOS				C								

HCM2000 Intersection V/C
1: Blessinger Rd & SH 44

2028 Total
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	748	97	206	1009	79	134	17	137	66	8	64
Future Volume (vph)	36	748	97	206	1009	79	134	17	137	66	8	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1395		1770	1616	
Flt Permitted	0.10	1.00	1.00	0.21	1.00	1.00	0.71	1.00		0.47	1.00	
Satd. Flow (perm)	195	1863	1583	392	1863	1583	1316	1395		873	1616	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	39	804	104	222	1085	85	144	18	147	71	9	69
RTOR Reduction (vph)	0	0	23	0	0	21	0	125	0	0	59	0
Lane Group Flow (vph)	39	804	81	222	1085	64	144	40	0	71	19	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	20%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	91.3	86.2	86.2	102.1	91.6	91.6	19.8	19.8		19.8	19.8	
Effective Green, g (s)	91.3	86.2	86.2	102.1	91.6	91.6	19.8	19.8		19.8	19.8	
Actuated g/C Ratio	0.68	0.64	0.64	0.76	0.68	0.68	0.15	0.15		0.15	0.15	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	192	1193	1014	405	1268	1078	193	205		128	237	
v/s Ratio Prot	0.01	0.43		c0.04	c0.58			0.03			0.01	
v/s Ratio Perm	0.13		0.05	0.37		0.04	c0.11			0.08		
v/c Ratio	0.20	0.67	0.08	0.55	0.86	0.06	0.75	0.19		0.55	0.08	
Uniform Delay, d1	18.7	15.3	9.1	12.6	16.4	7.1	54.9	50.3		53.3	49.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	3.1	0.2	1.5	7.5	0.1	14.5	0.5		5.1	0.1	
Delay (s)	19.2	18.3	9.3	14.1	23.9	7.2	69.4	50.8		58.4	49.6	
Level of Service	B	B	A	B	C	A	E	D		E	D	
Approach Delay (s/veh)		17.4			21.4			59.5			53.8	
Approach LOS		B			C			E			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			25.9									
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			134.5									
Intersection Capacity Utilization			90.8%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th TWSC
2: Bent Ln & SH 44

2028 Total
PM Peak Hour

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑		↑
Traffic Vol, veh/h	943	87	271	1451	0	216
Future Vol, veh/h	943	87	271	1451	0	216
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	8	2	2	2	3
Mvmt Flow	1003	93	288	1544	0	230
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1096	0	-	502
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.33
Pot Cap-1 Maneuver	-	-	633	-	0	512
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	633	-	-	512
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		2.42		17.61	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBL	WBT
Capacity (veh/h)	512		-	-	633	-
HCM Lane V/C Ratio	0.449		-	-	0.456	-
HCM Control Delay (s/veh)	17.6		-	-	15.4	-
HCM Lane LOS	C		-	-	C	-
HCM 95th %tile Q(veh)	2.3		-	-	2.4	-

HCM 7th TWSC
3: Blessinger Rd & Landcuff Ln

2028 Total
PM Peak Hour

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	5	5	30	5	108	5	67	10	45	105	70
Future Vol, veh/h	45	5	5	30	5	108	5	67	10	45	105	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	6	6	33	6	120	6	74	11	50	117	78

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	344	352	156	311	386	80	194	0	0	86	0	0
Stage 1	256	256	-	91	91	-	-	-	-	-	-	-
Stage 2	88	97	-	219	294	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	610	573	890	642	548	980	1379	-	-	1511	-	-
Stage 1	749	696	-	916	819	-	-	-	-	-	-	-
Stage 2	919	815	-	783	669	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	508	549	890	605	526	980	1379	-	-	1511	-	-
Mov Cap-2 Maneuver	508	549	-	605	526	-	-	-	-	-	-	-
Stage 1	721	670	-	912	816	-	-	-	-	-	-	-
Stage 2	798	812	-	743	644	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v12.63		10.24	0.46	1.53
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	107	-	-	533 845	341	-	-
HCM Lane V/C Ratio	0.004	-	-	0.115 0.188	0.033	-	-
HCM Control Delay (s/veh)	7.6	0	-	12.6 10.2	7.5	0	-
HCM Lane LOS	A	A	-	B B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4 0.7	0.1	-	-

HCM 7th TWSC
4: Bent Ln & Landruff Ln

2028 Total
PM Peak Hour

Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	144	3	23	72	142	115
Future Vol, veh/h	144	3	23	72	142	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	160	3	26	80	158	128
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	353	222	286	0	-	0
Stage 1	222	-	-	-	-	-
Stage 2	131	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	645	818	1277	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	895	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	631	818	1277	-	-	-
Mov Cap-2 Maneuver	631	-	-	-	-	-
Stage 1	798	-	-	-	-	-
Stage 2	895	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v	12.63	1.91		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1277	-	634	-	-	
HCM Lane V/C Ratio	0.02	-	0.257	-	-	
HCM Control Delay (s/veh)	7.9	-	12.6	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	1	-	-	

HCM 7th TWSC
5: Sortino Ave & SH 44

2028 Total
PM Peak Hour

Intersection												
Int Delay, s/veh	923.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	34	900	31	64	1317	70	29	0	60	70	0	7
Future Vol, veh/h	34	900	31	64	1317	70	29	0	60	70	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	1000	34	71	1463	78	32	0	67	78	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1541	0	0	1034	0	0	2698	2776	1017	2720	2754	1502
Stage 1	-	-	-	-	-	-	1093	1093	-	1644	1644	-
Stage 2	-	-	-	-	-	-	1606	1683	-	1076	1110	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	431	-	-	672	-	-	~ 14	19	288	~ 13	20	150
Stage 1	-	-	-	-	-	-	260	290	-	126	157	-
Stage 2	-	-	-	-	-	-	132	150	-	266	285	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	431	-	-	672	-	-	~ 2	3	288	~ 2	3	150
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 2	3	-	~ 2	3	-
Stage 1	-	-	-	-	-	-	206	230	-	~ 27	34	-
Stage 2	-	-	-	-	-	-	~ 27	33	-	162	226	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.5	0.48	\$ 7063.18	\$ 22786.57
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	7	63	-	-	79	-	-	2
HCM Lane V/C Ratio	14.372	0.088	-	-	0.106	-	-	-43.702
HCM Control Delay (s/veh)	\$ 7063.2	14.2	0	-	11	0	-	\$ 22786.6
HCM Lane LOS	F	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	14.1	0.3	-	-	0.4	-	-	12.9

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 7th TWSC
6: Landcuff Ln & Valdina Wy

2028 Total
PM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	39	135	5	7	1
Future Vol, veh/h	3	39	135	5	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	43	150	6	8	1

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	156	0	203
Stage 1	-	-	153
Stage 2	-	-	50
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1425	-	786
Stage 1	-	-	875
Stage 2	-	-	972
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1425	-	784
Mov Cap-2 Maneuver	-	-	784
Stage 1	-	-	873
Stage 2	-	-	972

Approach	EB	WB	SB
HCM Control Delay, s/v	0.54	0	9.57
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	129	-	-	-	796
HCM Lane V/C Ratio	0.002	-	-	-	0.011
HCM Control Delay (s/veh)	7.5	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	2.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	34	12	41	133	7	24
Future Vol, veh/h	34	12	41	133	7	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	13	46	148	8	27

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	51	0	283	44
Stage 1	-	-	-	-	44	-
Stage 2	-	-	-	-	239	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1555	-	707	1026
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	801	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1555	-	684	1026
Mov Cap-2 Maneuver	-	-	-	-	684	-
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	775	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.74	9.06
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	922	-	-	424	-
HCM Lane V/C Ratio	0.037	-	-	0.029	-
HCM Control Delay (s/veh)	9.1	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

HCM 7th TWSC
8: Landcuff Ln & Vicari Wy

2028 Total
PM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	57	173	6	7	1
Future Vol, veh/h	1	57	173	6	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	63	192	7	8	1

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	199	0	0 261 196
Stage 1	-	-	- 196 -
Stage 2	-	-	- 66 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1373	-	- 728 846
Stage 1	-	-	- 837 -
Stage 2	-	-	- 957 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1373	-	- 727 846
Mov Cap-2 Maneuver	-	-	- 727 -
Stage 1	-	-	- 837 -
Stage 2	-	-	- 957 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.13	0	9.92
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	31	-	-	-	740
HCM Lane V/C Ratio	0.001	-	-	-	0.012
HCM Control Delay (s/veh)	7.6	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM 7th TWSC
9: Landruff Ln & Ragusa Ave

2028 Total
PM Peak Hour

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	54	166	11	7	16
Future Vol, veh/h	15	54	166	11	7	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	60	184	12	8	18
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	197	0	-	0	284	191
Stage 1	-	-	-	-	191	-
Stage 2	-	-	-	-	93	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1376	-	-	-	706	851
Stage 1	-	-	-	-	842	-
Stage 2	-	-	-	-	930	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1376	-	-	-	697	851
Mov Cap-2 Maneuver	-	-	-	-	697	-
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	930	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	1.66	0		9.66		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	391	-	-	-	798	
HCM Lane V/C Ratio	0.012	-	-	-	0.032	
HCM Control Delay (s/veh)	7.6	0	-	-	9.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

HCM 7th TWSC
10: Blessinger Rd & Toscano St/Saddleman Ranch Ct

2028 Total
PM Peak Hour

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	49	0	0	0	0	2	0	238	0	5	227	80
Future Vol, veh/h	49	0	0	0	0	2	0	238	0	5	227	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	0	0	0	0	2	0	264	0	6	252	89

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	572	572	297	528	617	264	341	0	0	264	0	0
Stage 1	308	308	-	264	264	-	-	-	-	-	-	-
Stage 2	264	264	-	263	352	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	431	430	743	461	406	774	1218	-	-	1300	-	-
Stage 1	702	660	-	741	690	-	-	-	-	-	-	-
Stage 2	741	690	-	742	631	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	427	428	743	459	403	774	1218	-	-	1300	-	-
Mov Cap-2 Maneuver	427	428	-	459	403	-	-	-	-	-	-	-
Stage 1	698	657	-	741	690	-	-	-	-	-	-	-
Stage 2	739	690	-	738	628	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v14.65			9.66		0		0.12	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1218	-	-	427 774	27	-	-
HCM Lane V/C Ratio	-	-	-	0.127 0.003 0.004	-	-	-
HCM Control Delay (s/veh)	0	-	-	14.7 9.7 7.8	0	-	-
HCM Lane LOS	A	-	-	B A A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4 0 0	0	-	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	45	60	20	10	0
Future Vol, veh/h	0	45	60	20	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	50	67	22	11	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	89	0	0	128	78
Stage 1	-	-	-	78	-
Stage 2	-	-	-	50	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1507	-	-	867	983
Stage 1	-	-	-	945	-
Stage 2	-	-	-	972	-
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	1507	-	-	867	983
Mov Cap-2 Maneuver	-	-	-	867	-
Stage 1	-	-	-	945	-
Stage 2	-	-	-	972	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	9.21
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1507	-	-	-	867
HCM Lane V/C Ratio	-	-	-	-	0.013
HCM Control Delay (s/veh)	0	-	-	-	9.2
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM 7th TWSC
5: Sortino Ave & SH 44

Mitigation - Turn Lane
2028 Total AM Peak Hour

Intersection												
Int Delay, s/veh	98.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1196	19	42	566	20	19	0	46	97	0	13
Future Vol, veh/h	10	1196	19	42	566	20	19	0	46	97	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	100	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	4	2	2	4	2	2	2	2	2	2	2
Mvmt Flow	11	1329	21	47	629	22	21	0	51	108	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	651	0	0	1350	0	0	2073	2096	1329	2073	2094	629
Stage 1	-	-	-	-	-	-	1351	1351	-	722	722	-
Stage 2	-	-	-	-	-	-	722	744	-	1351	1372	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	935	-	-	510	-	-	40	52	189	~ 40	52	482
Stage 1	-	-	-	-	-	-	185	219	-	418	431	-
Stage 2	-	-	-	-	-	-	418	421	-	185	214	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	935	-	-	510	-	-	34	47	189	~ 26	47	482
Mov Cap-2 Maneuver	-	-	-	-	-	-	34	47	-	~ 26	47	-
Stage 1	-	-	-	-	-	-	183	216	-	380	392	-
Stage 2	-	-	-	-	-	-	368	383	-	134	211	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.07	0.85	157.42	\$ 1709.37
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	82	935	-	-	510	-	-	29
HCM Lane V/C Ratio	0.883	0.012	-	-	0.092	-	-	4.187
HCM Control Delay (s/veh)	157.4	8.9	-	-	12.8	-	-	\$ 1709.4
HCM Lane LOS	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	4.6	0	-	-	0.3	-	-	14.7

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 7th Signalized Intersection Summary

5: Sortino Ave & SH 44

Mitigation
2028 Total AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1196	19	42	566	20	19	0	46	97	0	13
Future Volume (veh/h)	10	1196	19	42	566	20	19	0	46	97	0	13
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	11	1329	21	47	629	22	21	0	51	108	0	14
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	542	1340	1135	114	1373	1163	214	0	195	180	0	195
Arrive On Green	0.01	0.72	0.72	0.03	0.73	0.73	0.12	0.00	0.12	0.12	0.00	0.12
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1400	0	1585	1354	0	1585
Grp Volume(v), veh/h	11	1329	21	47	629	22	21	0	51	108	0	14
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1400	0	1585	1354	0	1585
Q Serve(g_s), s	0.2	96.3	0.5	0.9	18.6	0.5	1.9	0.0	4.0	10.9	0.0	1.1
Cycle Q Clear(g_c), s	0.2	96.3	0.5	0.9	18.6	0.5	2.9	0.0	4.0	14.9	0.0	1.1
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	542	1340	1135	114	1373	1163	214	0	195	180	0	195
V/C Ratio(X)	0.02	0.99	0.02	0.41	0.46	0.02	0.10	0.00	0.26	0.60	0.00	0.07
Avail Cap(c_a), veh/h	636	1340	1135	176	1373	1163	284	0	275	248	0	275
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.1	19.2	5.6	39.8	7.4	5.0	54.9	0.0	54.9	61.6	0.0	53.6
Incr Delay (d2), s/veh	0.0	22.8	0.0	2.4	1.1	0.0	0.2	0.0	0.7	3.2	0.0	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(95%),veh/ln	0.1	50.6	0.3	2.1	10.4	0.3	1.2	0.0	3.0	7.0	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	6.1	42.0	5.7	42.2	8.5	5.0	55.1	0.0	55.6	64.8	0.0	53.7
LnGrp LOS	A	D	A	D	A	A	E		E	E		D
Approach Vol, veh/h	1361			698			72			122		
Approach Delay, s/veh	41.1			10.6			55.4			63.6		
Approach LOS	D			B			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	107.5		23.0	10.2	105.0		23.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	99.0		24.0	9.0	99.0		24.0				
Max Q Clear Time (g_c+l1), s	2.2	20.6		16.9	2.9	98.3		6.0				
Green Ext Time (p_c), s	0.0	4.0		0.2	0.0	0.6		0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh	33.4											
HCM 7th LOS	C											

HCM2000 Intersection V/C 5: Sortino Ave & SH 44

Mitigation
2028 Total AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1196	19	42	566	20	19	0	46	97	0	13
Future Volume (vph)	10	1196	19	42	566	20	19	0	46	97	0	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1583		1770	1583	
Flt Permitted	0.38	1.00	1.00	0.04	1.00	1.00	0.75	1.00		0.72	1.00	
Satd. Flow (perm)	713	1863	1583	71	1863	1583	1394	1583		1348	1583	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	1329	21	47	629	22	21	0	51	108	0	14
RTOR Reduction (vph)	0	0	6	0	0	6	0	45	0	0	12	0
Lane Group Flow (vph)	11	1329	15	47	629	16	21	6	0	108	2	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	104.1	101.9	101.9	110.5	105.1	105.1	16.2	16.2		16.2	16.2	
Effective Green, g (s)	104.1	101.9	101.9	110.5	105.1	105.1	16.2	16.2		16.2	16.2	
Actuated g/C Ratio	0.74	0.72	0.72	0.78	0.74	0.74	0.11	0.11		0.11	0.11	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	540	1341	1139	120	1383	1175	159	181		154	181	
v/s Ratio Prot	0.00	c0.71		c0.01	c0.34			0.00			0.00	
v/s Ratio Perm	0.01		0.01	0.29		0.01	0.02			c0.08		
v/c Ratio	0.02	0.99	0.01	0.39	0.45	0.01	0.13	0.03		0.70	0.01	
Uniform Delay, d1	5.4	19.4	5.6	40.5	7.1	4.7	56.3	55.7		60.3	55.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	22.5	0.0	2.1	1.1	0.0	0.4	0.1		13.5	0.0	
Delay (s)	5.4	41.9	5.6	42.6	8.2	4.8	56.7	55.8		73.8	55.6	
Level of Service	A	D	A	D	A	A	E	E		E	E	
Approach Delay (s/veh)		41.0			10.4			56.0			71.7	
Approach LOS		D			B			E			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			33.7									
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			141.5									
Intersection Capacity Utilization			85.0%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

5: Sortino Ave & SH 44

Mitigation - 5 lanes on SH 44
2028 Total AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1196	19	42	566	20	19	0	46	97	0	13
Future Volume (veh/h)	10	1196	19	42	566	20	19	0	46	97	0	13
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	11	1329	21	47	629	22	21	0	51	108	0	14
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	548	1868	30	317	2392	84	250	0	142	217	0	142
Arrive On Green	0.00	0.52	0.52	0.05	0.68	0.68	0.09	0.00	0.09	0.09	0.00	0.09
Sat Flow, veh/h	1781	3580	57	1781	3503	122	1400	0	1585	1354	0	1585
Grp Volume(v), veh/h	11	659	691	47	319	332	21	0	51	108	0	14
Grp Sat Flow(s),veh/h/ln	1781	1777	1860	1781	1777	1848	1400	0	1585	1354	0	1585
Q Serve(g_s), s	0.1	14.9	14.9	0.6	3.7	3.7	0.7	0.0	1.6	3.1	0.0	0.4
Cycle Q Clear(g_c), s	0.1	14.9	14.9	0.6	3.7	3.7	1.2	0.0	1.6	4.7	0.0	0.4
Prop In Lane	1.00		0.03	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	548	927	971	317	1213	1262	250	0	142	217	0	142
V/C Ratio(X)	0.02	0.71	0.71	0.15	0.26	0.26	0.08	0.00	0.36	0.50	0.00	0.10
Avail Cap(c_a), veh/h	848	3002	3143	538	3002	3123	1029	0	1023	969	0	1023
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.0	9.6	9.6	7.2	3.2	3.2	22.6	0.0	22.6	25.2	0.0	22.0
Incr Delay (d2), s/veh	0.0	1.0	1.0	0.2	0.1	0.1	0.1	0.0	1.5	1.8	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(95%),veh/ln	0.1	6.1	6.3	0.2	0.5	0.5	0.4	0.0	1.1	2.5	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	6.0	10.6	10.6	7.5	3.3	3.3	22.7	0.0	24.1	27.0	0.0	22.3
LnGrp LOS	A	B	B	A	A	A	C		C	C		C
Approach Vol, veh/h	1361			698			72			122		
Approach Delay, s/veh	10.5			3.6			23.7			26.4		
Approach LOS	B			A			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	42.0		10.7	8.5	33.5		10.7				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	89.0		34.0	9.0	89.0		34.0				
Max Q Clear Time (g_c+I1), s	0.0	5.7		0.0	2.6	16.9		3.2				
Green Ext Time (p_c), s	0.0	3.6		0.0	0.0	10.6		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh				9.7								
HCM 7th LOS				A								

HCM2000 Intersection V/C
5: Sortino Ave & SH 44

Mitigation - 5 lanes on SH 44
2028 Total AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1196	19	42	566	20	19	0	46	97	0	13
Future Volume (vph)	10	1196	19	42	566	20	19	0	46	97	0	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3531		1770	3521		1770	1583		1770	1583	
Flt Permitted	0.40	1.00		0.12	1.00		0.75	1.00		0.72	1.00	
Satd. Flow (perm)	753	3531		217	3521		1394	1583		1348	1583	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	1329	21	47	629	22	21	0	51	108	0	14
RTOR Reduction (vph)	0	1	0	0	2	0	0	43	0	0	12	0
Lane Group Flow (vph)	11	1349	0	47	649	0	21	8	0	108	2	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	45.1	44.2		51.9	47.6		12.5	12.5		12.5	12.5	
Effective Green, g (s)	45.1	44.2		51.9	47.6		12.5	12.5		12.5	12.5	
Actuated g/C Ratio	0.57	0.56		0.66	0.60		0.16	0.16		0.16	0.16	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	441	1975		227	2121		220	250		213	250	
v/s Ratio Prot	0.00	c0.38		c0.01	c0.18			0.01			0.00	
v/s Ratio Perm	0.01			0.12			0.02			c0.08		
v/c Ratio	0.02	0.68		0.21	0.31		0.10	0.03		0.51	0.01	
Uniform Delay, d1	7.3	12.4		7.7	7.7		28.4	28.1		30.4	28.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	1.0		0.5	0.1		0.2	0.1		1.9	0.0	
Delay (s)	7.3	13.4		8.2	7.7		28.6	28.2		32.3	28.0	
Level of Service	A	B		A	A		C	C		C	C	
Approach Delay (s/veh)		13.3			7.8			28.3			31.8	
Approach LOS		B			A			C			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			13.1			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			79.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			56.9%			ICU Level of Service			B			
Analysis Period (min)			15									

c Critical Lane Group

HCM 7th TWSC
5: Sortino Ave & SH 44

Mitigation - Turn Lane
2028 Total PM Peak Hour

Intersection												
Int Delay, s/veh	166.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	900	31	64	1317	70	29	0	60	70	0	7
Future Vol, veh/h	34	900	31	64	1317	70	29	0	60	70	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	100	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	1000	34	71	1463	78	32	0	67	78	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1541	0	0	1034	0	0	2681	2759	1000	2681	2716	1463
Stage 1	-	-	-	-	-	-	1076	1076	-	1606	1606	-
Stage 2	-	-	-	-	-	-	1606	1683	-	1076	1110	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	431	-	-	672	-	-	~ 14	20	295	~ 14	21	158
Stage 1	-	-	-	-	-	-	266	296	-	132	164	-
Stage 2	-	-	-	-	-	-	132	150	-	266	285	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	431	-	-	672	-	-	~ 11	16	295	~ 9	17	158
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 11	16	-	~ 9	17	-
Stage 1	-	-	-	-	-	-	242	270	-	118	147	-
Stage 2	-	-	-	-	-	-	112	134	-	188	260	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.5	0.48	\$ 1213.61	\$ 4159.35
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	32	431	-	-	672	-	-	10
HCM Lane V/C Ratio	3.112	0.088	-	-	0.106	-	-	8.606
HCM Control Delay (s/veh)	\$ 1213.6	14.2	-	-	11	-	-	\$ 4159.3
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	11.6	0.3	-	-	0.4	-	-	12.1

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 7th Signalized Intersection Summary

5: Sortino Ave & SH 44

Mitigation
2028 Total PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	900	31	64	1317	70	29	0	60	70	0	7
Future Volume (veh/h)	34	900	31	64	1317	70	29	0	60	70	0	7
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	38	1000	34	71	1463	78	32	0	67	78	0	8
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	102	1351	1145	333	1363	1155	204	0	178	150	0	178
Arrive On Green	0.03	0.72	0.72	0.03	0.73	0.73	0.11	0.00	0.11	0.11	0.00	0.11
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1407	0	1585	1334	0	1585
Grp Volume(v), veh/h	38	1000	34	71	1463	78	32	0	67	78	0	8
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1407	0	1585	1334	0	1585
Q Serve(g_s), s	0.7	43.7	0.8	1.4	99.8	1.9	2.8	0.0	5.4	7.9	0.0	0.6
Cycle Q Clear(g_c), s	0.7	43.7	0.8	1.4	99.8	1.9	3.5	0.0	5.4	13.3	0.0	0.6
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	102	1351	1145	333	1363	1155	204	0	178	150	0	178
V/C Ratio(X)	0.37	0.74	0.03	0.21	1.07	0.07	0.16	0.00	0.38	0.52	0.00	0.05
Avail Cap(c_a), veh/h	170	1351	1145	390	1363	1155	293	0	278	234	0	278
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.1	11.3	5.4	12.2	18.6	5.3	55.8	0.0	56.4	62.5	0.0	54.3
Incr Delay (d2), s/veh	2.2	3.7	0.0	0.3	46.7	0.1	0.4	0.0	1.3	2.8	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	1.0	15.5	0.2	0.7	49.5	0.6	1.0	0.0	2.2	2.8	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.4	15.0	5.4	12.6	65.3	5.4	56.2	0.0	57.7	65.3	0.0	54.4
LnGrp LOS	D	B	A	B	F	A	E		E	E		D
Approach Vol, veh/h	1072			1612			99			86		
Approach Delay, s/veh	15.7			60.1			57.2			64.3		
Approach LOS	B			E			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	105.8		21.4	10.7	105.0		21.4				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	99.0		24.0	9.0	99.0		24.0				
Max Q Clear Time (g_c+I1), s	2.7	101.8		15.3	3.4	45.7		7.4				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.1	8.9		0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	43.5											
HCM 7th LOS	D											

HCM2000 Intersection V/C 5: Sortino Ave & SH 44

Mitigation
2028 Total PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	900	31	64	1317	70	29	0	60	70	0	7
Future Volume (vph)	34	900	31	64	1317	70	29	0	60	70	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1583		1770	1583	
Flt Permitted	0.04	1.00	1.00	0.18	1.00	1.00	0.75	1.00		0.71	1.00	
Satd. Flow (perm)	75	1863	1583	335	1863	1583	1402	1583		1329	1583	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	38	1000	34	71	1463	78	32	0	67	78	0	8
RTOR Reduction (vph)	0	0	9	0	0	17	0	60	0	0	7	0
Lane Group Flow (vph)	38	1000	25	71	1463	61	32	7	0	78	1	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	104.6	99.7	99.7	105.6	100.2	100.2	13.3	13.3		13.3	13.3	
Effective Green, g (s)	104.6	99.7	99.7	105.6	100.2	100.2	13.3	13.3		13.3	13.3	
Actuated g/C Ratio	0.77	0.73	0.73	0.77	0.73	0.73	0.10	0.10		0.10	0.10	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	118	1361	1157	316	1368	1162	136	154		129	154	
v/s Ratio Prot	c0.01	0.54		0.01	c0.79			0.00			0.00	
v/s Ratio Perm	0.24		0.02	0.16		0.04	0.02			c0.06		
v/c Ratio	0.32	0.73	0.02	0.22	1.07	0.05	0.24	0.04		0.60	0.01	
Uniform Delay, d1	38.1	10.7	5.0	10.5	18.1	5.0	56.9	55.8		59.0	55.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	3.6	0.0	0.4	45.2	0.1	0.9	0.1		7.8	0.0	
Delay (s)	39.6	14.2	5.1	10.8	63.3	5.1	57.7	55.9		66.8	55.6	
Level of Service	D	B	A	B	E	A	E	E		E	E	
Approach Delay (s/veh)		14.8			58.2			56.5			65.8	
Approach LOS		B			E			E			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			42.2									
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			136.4									
Intersection Capacity Utilization			89.9%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

5: Sortino Ave & SH 44

Mitigation - 5 lanes on SH 44
2028 Total PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	900	31	64	1317	70	29	0	60	70	0	7
Future Volume (veh/h)	34	900	31	64	1317	70	29	0	60	70	0	7
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	38	1000	34	71	1463	78	32	0	67	78	0	8
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	285	1517	52	390	2169	115	295	0	159	242	0	159
Arrive On Green	0.00	0.43	0.43	0.07	0.63	0.63	0.10	0.00	0.10	0.10	0.00	0.10
Sat Flow, veh/h	1781	3507	119	1781	3432	182	1407	0	1585	1334	0	1585
Grp Volume(v), veh/h	38	507	527	71	755	786	32	0	67	78	0	8
Grp Sat Flow(s),veh/h/ln	1781	1777	1849	1781	1777	1838	1407	0	1585	1334	0	1585
Q Serve(g_s), s	0.1	10.1	10.1	0.9	12.2	12.3	0.9	0.0	1.8	2.6	0.0	0.2
Cycle Q Clear(g_c), s	0.1	10.1	10.1	0.9	12.2	12.3	1.1	0.0	1.8	4.4	0.0	0.2
Prop In Lane	1.00		0.06	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	285	769	800	390	1123	1161	295	0	159	242	0	159
V/C Ratio(X)	0.13	0.66	0.66	0.18	0.67	0.68	0.11	0.00	0.42	0.32	0.00	0.05
Avail Cap(c_a), veh/h	638	3527	3670	631	3527	3648	1221	0	1202	1119	0	1202
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.7	10.1	10.1	6.8	5.3	5.3	18.8	0.0	18.9	21.0	0.0	18.2
Incr Delay (d2), s/veh	0.2	1.0	0.9	0.2	0.7	0.7	0.2	0.0	1.8	0.8	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(95%),veh/ln	0.3	4.3	4.4	0.3	1.8	1.9	0.5	0.0	1.2	1.4	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.0	11.1	11.0	7.0	6.0	6.0	18.9	0.0	20.7	21.8	0.0	18.4
LnGrp LOS	A	B	B	A	A	A	B		C	C		B
Approach Vol, veh/h	1072			1612			99			86		
Approach Delay, s/veh	11.0			6.0			20.1			21.5		
Approach LOS	B			A			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	34.3		10.5	8.9	25.4		10.5				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	89.0		34.0	9.0	89.0		34.0				
Max Q Clear Time (g_c+I1), s	0.0	14.3		0.0	2.9	12.1		3.1				
Green Ext Time (p_c), s	0.0	14.0		0.0	0.1	6.8		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh				8.8								
HCM 7th LOS				A								

HCM2000 Intersection V/C
5: Sortino Ave & SH 44

Mitigation - 5 lanes on SH 44
2028 Total PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	900	31	64	1317	70	29	0	60	70	0	7
Future Volume (vph)	34	900	31	64	1317	70	29	0	60	70	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3522		1770	3512		1770	1583		1770	1583	
Flt Permitted	0.11	1.00		0.21	1.00		0.75	1.00		0.71	1.00	
Satd. Flow (perm)	200	3522		400	3512		1402	1583		1329	1583	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	38	1000	34	71	1463	78	32	0	67	78	0	8
RTOR Reduction (vph)	0	2	0	0	2	0	0	59	0	0	7	0
Lane Group Flow (vph)	38	1032	0	71	1539	0	32	8	0	78	1	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	49.1	45.9		54.3	48.5		9.2	9.2		9.2	9.2	
Effective Green, g (s)	49.1	45.9		54.3	48.5		9.2	9.2		9.2	9.2	
Actuated g/C Ratio	0.62	0.58		0.69	0.61		0.12	0.12		0.12	0.12	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	188	2048		375	2158		163	184		154	184	
v/s Ratio Prot	0.01	0.29		c0.01	c0.44			0.00			0.00	
v/s Ratio Perm	0.12			0.12			0.02			c0.06		
v/c Ratio	0.20	0.50		0.19	0.71		0.20	0.04		0.51	0.01	
Uniform Delay, d1	7.7	9.8		4.9	10.4		31.5	30.9		32.7	30.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.2		0.2	1.1		0.6	0.1		2.6	0.0	
Delay (s)	8.2	10.0		5.1	11.6		32.1	31.0		35.3	30.8	
Level of Service	A	A		A	B		C	C		D	C	
Approach Delay (s/veh)		9.9			11.3			31.4			34.9	
Approach LOS		A			B			C			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			12.2			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			78.9			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			68.3%			ICU Level of Service			C			
Analysis Period (min)			15									

c Critical Lane Group

HCM 7th TWSC
5: Sortino Ave & SH 44

Mitigation - RIROLI
2028 Total AM Peak Hour

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1293	19	42	566	20	0	0	46	0	0	13
Future Vol, veh/h	10	1293	19	42	566	20	0	0	46	0	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	100	100	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	1437	21	47	629	22	0	0	51	0	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	651	0	0	1458	0	0	-	-	718	-	-	314
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	931	-	-	460	-	-	0	0	371	0	0	681
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	931	-	-	460	-	-	-	-	371	-	-	681
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.07			0.92			16.24			10.4		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	371	931	-	-	460	-	-	681
HCM Lane V/C Ratio	0.138	0.012	-	-	0.101	-	-	0.021
HCM Control Delay (s/veh)	16.2	8.9	-	-	13.7	-	-	10.4
HCM Lane LOS	C	A	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.3	-	-	0.1

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑			↑			↑
Traffic Vol, veh/h	0	1293	19	0	566	20	0	0	46	0	0	13
Future Vol, veh/h	0	1293	19	0	566	20	0	0	46	0	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1437	21	0	629	22	0	0	51	0	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	718	-	-	314
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	371	0	0	681
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	371	-	-	681
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	16.24	10.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	371	-	-	-	-	681
HCM Lane V/C Ratio	0.138	-	-	-	-	0.021
HCM Control Delay (s/veh)	16.2	-	-	-	-	10.4
HCM Lane LOS	C	-	-	-	-	B
HCM 95th %tile Q(veh)	0.5	-	-	-	-	0.1

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↗↗	↰	↰	↗↗	↰			↰			↰
Traffic Vol, veh/h	34	970	31	64	1317	70	0	0	60	0	0	7
Future Vol, veh/h	34	970	31	64	1317	70	0	0	60	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	100	100	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	1078	34	71	1463	78	0	0	67	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1541	0	0	1112	0	0	-	-	539	-	-	732
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	427	-	-	624	-	-	0	0	487	0	0	364
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	427	-	-	624	-	-	-	-	487	-	-	364
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.47			0.51			13.56			15.11		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	487	427	-	-	624	-	-	364
HCM Lane V/C Ratio	0.137	0.088	-	-	0.114	-	-	0.021
HCM Control Delay (s/veh)	13.6	14.2	-	-	11.5	-	-	15.1
HCM Lane LOS	B	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.5	0.3	-	-	0.4	-	-	0.1

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑			↑			↑
Traffic Vol, veh/h	0	970	31	0	1317	70	0	0	60	0	0	7
Future Vol, veh/h	0	970	31	0	1317	70	0	0	60	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1078	34	0	1463	78	0	0	67	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	539	-	-	732
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	487	0	0	364
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	487	-	-	364
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	13.56	15.11
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	487	-	-	-	-	364
HCM Lane V/C Ratio	0.137	-	-	-	-	0.021
HCM Control Delay (s/veh)	13.6	-	-	-	-	15.1
HCM Lane LOS	B	-	-	-	-	C
HCM 95th %tile Q(veh)	0.5	-	-	-	-	0.1

HCM 7th Signalized Intersection Summary

1: Blessinger Rd & SH 44

No Access on SH 44

2028 Total AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	876	47	84	466	50	165	25	211	180	12	77
Future Volume (veh/h)	49	876	47	84	466	50	165	25	211	180	12	77
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	1841	1870	1470	1841	1870	1870	1870	1870	1811	1411	1856
Adj Flow Rate, veh/h	53	952	51	91	507	54	179	27	229	196	13	84
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	4	2	29	4	2	2	2	2	6	33	3
Cap, veh/h	450	1058	911	142	1064	916	256	28	234	201	46	297
Arrive On Green	0.03	0.57	0.57	0.03	0.58	0.58	0.16	0.16	0.16	0.09	0.28	0.28
Sat Flow, veh/h	1781	1841	1585	1400	1841	1585	1298	170	1441	1725	164	1057
Grp Volume(v), veh/h	53	952	51	91	507	54	179	0	256	196	0	97
Grp Sat Flow(s),veh/h/ln	1781	1841	1585	1400	1841	1585	1298	0	1611	1725	0	1221
Q Serve(g_s), s	1.9	72.8	2.3	4.4	25.7	2.4	21.4	0.0	25.3	14.0	0.0	9.9
Cycle Q Clear(g_c), s	1.9	72.8	2.3	4.4	25.7	2.4	21.4	0.0	25.3	14.0	0.0	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.89	1.00		0.87
Lane Grp Cap(c), veh/h	450	1058	911	142	1064	916	256	0	262	201	0	343
V/C Ratio(X)	0.12	0.90	0.06	0.64	0.48	0.06	0.70	0.00	0.98	0.98	0.00	0.28
Avail Cap(c_a), veh/h	500	1058	911	142	1064	916	256	0	262	201	0	343
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.1	29.9	14.9	34.2	19.7	14.8	65.1	0.0	66.7	53.0	0.0	44.9
Incr Delay (d2), s/veh	0.1	12.0	0.1	9.5	1.5	0.1	8.1	0.0	49.3	56.8	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	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	42.3	1.6	4.0	16.2	1.5	12.3	0.0	20.2	14.9	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.2	41.9	15.0	43.6	21.2	14.9	73.2	0.0	116.0	109.8	0.0	45.3
LnGrp LOS	B	D	B	D	C	B	E		F	F		D
Approach Vol, veh/h	1056			652			435			293		
Approach Delay, s/veh	39.3			23.8			98.4			88.5		
Approach LOS	D			C			F			F		
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.5	98.5		51.0	11.0	98.0	19.0	32.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	9.0	88.0		45.0	5.0	92.0	14.0	26.0				
Max Q Clear Time (g_c+I1), s	3.9	27.7		11.9	6.4	74.8	16.0	27.3				
Green Ext Time (p_c), s	0.0	3.1		0.6	0.0	6.1	0.0	0.0				

Intersection Summary

HCM 7th Control Delay, s/veh	51.6
HCM 7th LOS	D

Notes

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

HCM2000 Intersection V/C
1: Blessinger Rd & SH 44

No Access on SH 44
2028 Total AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	876	47	84	466	50	165	25	211	180	12	77
Future Volume (vph)	49	876	47	84	466	50	165	25	211	180	12	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1827	1583	1399	1827	1583	1770	1613		1703	1545	
Flt Permitted	0.37	1.00	1.00	0.08	1.00	1.00	0.69	1.00		0.16	1.00	
Satd. Flow (perm)	684	1827	1583	124	1827	1583	1293	1613		292	1545	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	952	51	91	507	54	179	27	229	196	13	84
RTOR Reduction (vph)	0	0	21	0	0	23	0	143	0	0	61	0
Lane Group Flow (vph)	53	952	30	91	507	31	179	113	0	196	36	0
Heavy Vehicles (%)	2%	4%	2%	29%	4%	2%	2%	2%	2%	6%	33%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases	1	6		5	2			8		7	4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	99.2	93.2	93.2	97.2	92.2	92.2	24.4	24.4		43.4	43.4	
Effective Green, g (s)	99.2	93.2	93.2	97.2	92.2	92.2	24.4	24.4		43.4	43.4	
Actuated g/C Ratio	0.62	0.58	0.58	0.61	0.58	0.58	0.15	0.15		0.27	0.27	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	465	1066	924	115	1055	914	197	246		203	420	
v/s Ratio Prot	0.00	c0.52		c0.02	0.28			0.07		c0.08	0.02	
v/s Ratio Perm	0.07		0.02	0.45		0.02	0.14			c0.18		
v/c Ratio	0.11	0.89	0.03	0.79	0.48	0.03	0.91	0.46		0.97	0.09	
Uniform Delay, d1	13.3	28.9	14.1	30.8	19.7	14.5	66.5	61.6		51.0	43.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	11.4	0.1	30.0	1.6	0.1	39.1	1.4		52.8	0.1	
Delay (s)	13.4	40.3	14.1	60.8	21.3	14.6	105.6	62.9		103.8	43.4	
Level of Service	B	D	B	E	C	B	F	E		F	D	
Approach Delay (s/veh)		37.7			26.2			80.5			83.8	
Approach LOS		D			C			F			F	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			47.8									
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			159.6							23.0		
Intersection Capacity Utilization			94.2%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

1: Blessinger Rd & SH 44

No Access on SH 44 - Mitigation
2028 Total AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	876	47	84	466	50	165	25	211	180	12	77
Future Volume (veh/h)	49	876	47	84	466	50	165	25	211	180	12	77
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	1841	1870	1470	1841	1870	1870	1870	1870	1811	1411	1856
Adj Flow Rate, veh/h	53	952	51	91	507	54	179	27	229	196	13	84
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	4	2	29	4	2	2	2	2	6	33	3
Cap, veh/h	482	1097	944	168	1104	950	248	288	298	308	41	263
Arrive On Green	0.03	0.60	0.60	0.03	0.60	0.60	0.15	0.15	0.15	0.06	0.25	0.25
Sat Flow, veh/h	1781	1841	1585	1400	1841	1585	1298	1870	1585	1725	164	1057
Grp Volume(v), veh/h	53	952	51	91	507	54	179	27	229	196	0	97
Grp Sat Flow(s),veh/h/ln	1781	1841	1585	1400	1841	1585	1298	1870	1585	1725	0	1221
Q Serve(g_s), s	1.7	64.0	2.0	3.8	22.5	2.1	20.0	1.8	20.3	9.0	0.0	9.6
Cycle Q Clear(g_c), s	1.7	64.0	2.0	3.8	22.5	2.1	20.0	1.8	20.3	9.0	0.0	9.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.87
Lane Grp Cap(c), veh/h	482	1097	944	168	1104	950	248	288	298	308	0	303
V/C Ratio(X)	0.11	0.87	0.05	0.54	0.46	0.06	0.72	0.09	0.77	0.64	0.00	0.32
Avail Cap(c_a), veh/h	537	1097	944	168	1104	950	268	317	322	308	0	322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.4	25.0	12.5	28.3	16.3	12.3	61.3	53.7	57.0	51.7	0.0	45.3
Incr Delay (d2), s/veh	0.1	9.3	0.1	3.5	1.4	0.1	8.4	0.1	10.1	4.3	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	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.1	36.3	1.2	3.1	14.1	1.4	11.6	1.6	13.9	5.1	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.5	34.4	12.6	31.8	17.7	12.4	69.7	53.8	67.1	56.0	0.0	45.9
LnGrp LOS	B	C	B	C	B	B	E	D	E	E		D
Approach Vol, veh/h	1056			652			435			293		
Approach Delay, s/veh	32.2			19.2			67.3			52.6		
Approach LOS	C			B			E			D		
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.4	94.6		42.7	11.0	94.0	14.0	28.7				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	9.0	84.0		39.0	5.0	88.0	9.0	25.0				
Max Q Clear Time (g_c+I1), s	3.7	24.5		11.6	5.8	66.0	11.0	22.3				
Green Ext Time (p_c), s	0.0	3.1		0.6	0.0	6.8	0.0	0.5				

Intersection Summary

HCM 7th Control Delay, s/veh 37.5
HCM 7th LOS D

Notes

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

HCM2000 Intersection V/C
1: Blessinger Rd & SH 44

No Access on SH 44 - Mitigation
2028 Total AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	876	47	84	466	50	165	25	211	180	12	77
Future Volume (vph)	49	876	47	84	466	50	165	25	211	180	12	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1827	1583	1399	1827	1583	1770	1863	1583	1703	1545	
Flt Permitted	0.38	1.00	1.00	0.10	1.00	1.00	0.69	1.00	1.00	0.61	1.00	
Satd. Flow (perm)	702	1827	1583	145	1827	1583	1293	1863	1583	1091	1545	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	952	51	91	507	54	179	27	229	196	13	84
RTOR Reduction (vph)	0	0	21	0	0	22	0	0	117	0	63	0
Lane Group Flow (vph)	53	952	30	91	507	32	179	27	112	196	34	0
Heavy Vehicles (%)	2%	4%	2%	29%	4%	2%	2%	2%	2%	6%	33%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	pm+pt	NA	
Protected Phases	1	6		5	2			8	5	7	4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	95.0	89.2	89.2	93.4	88.4	88.4	23.2	23.2	28.2	37.2	37.2	
Effective Green, g (s)	95.0	89.2	89.2	93.4	88.4	88.4	23.2	23.2	28.2	37.2	37.2	
Actuated g/C Ratio	0.64	0.60	0.60	0.63	0.59	0.59	0.16	0.16	0.19	0.25	0.25	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	487	1090	945	132	1081	936	200	289	362	308	384	
v/s Ratio Prot	0.00	c0.52		c0.02	0.28			0.01	0.01	c0.04	0.02	
v/s Ratio Perm	0.06		0.02	0.41		0.02	c0.14		0.06	0.12		
v/c Ratio	0.11	0.87	0.03	0.69	0.47	0.03	0.90	0.09	0.31	0.64	0.09	
Uniform Delay, d1	11.5	25.3	12.4	26.6	17.2	12.7	61.9	54.1	52.2	49.7	43.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	9.7	0.1	14.0	1.5	0.1	35.9	0.1	0.5	4.3	0.1	
Delay (s)	11.6	35.1	12.4	40.6	18.7	12.8	97.8	54.2	52.7	53.9	43.2	
Level of Service	B	D	B	D	B	B	F	D	D	D	D	
Approach Delay (s/veh)		32.8			21.3			71.4			50.4	
Approach LOS		C			C			E			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			38.7									HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			149.4									Sum of lost time (s) 23.0
Intersection Capacity Utilization			83.3%									ICU Level of Service E
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th TWSC
2: Bent Ln & SH 44

No Access on SH 44
2028 Total AM Peak Hour

Intersection						
Int Delay, s/veh	9.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑		↑
Traffic Vol, veh/h	1207	96	220	587	0	278
Future Vol, veh/h	1207	96	220	587	0	278
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	6	23	4	2	34
Mvmt Flow	1312	104	239	638	0	302
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1416	0	-	656
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.56	-	-	7.58
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.43	-	-	3.64
Pot Cap-1 Maneuver	-	-	383	-	0	340
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	383	-	-	340
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	7.87		60.29		
HCM LOS				F		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	340	-	-	383	-	
HCM Lane V/C Ratio	0.889	-	-	0.625	-	
HCM Control Delay (s/veh)	60.3	-	-	28.9	-	
HCM Lane LOS	F	-	-	D	-	
HCM 95th %tile Q(veh)	8.5	-	-	4.1	-	

HCM 7th TWSC
3: Blessinger Rd & Landruff Ln

No Access on SH 44
2028 Total AM Peak Hour

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	65	0	5	5	5	137	5	118	5	38	33	36
Future Vol, veh/h	65	0	5	5	5	137	5	118	5	38	33	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	72	0	6	6	6	152	6	131	6	42	37	40

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	286	289	57	266	306	134	77	0	0	137	0	0
Stage 1	141	141	-	145	145	-	-	-	-	-	-	-
Stage 2	145	148	-	121	161	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	666	621	1010	687	608	915	1522	-	-	1447	-	-
Stage 1	862	780	-	858	777	-	-	-	-	-	-	-
Stage 2	858	775	-	883	765	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	531	600	1010	659	587	915	1522	-	-	1447	-	-
Mov Cap-2 Maneuver	531	600	-	659	587	-	-	-	-	-	-	-
Stage 1	835	756	-	854	774	-	-	-	-	-	-	-
Stage 2	707	772	-	851	741	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v12.62			9.98		0.29		2.69	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	70	-	-	550 887	579	-	-
HCM Lane V/C Ratio	0.004	-	-	0.141 0.184	0.029	-	-
HCM Control Delay (s/veh)	7.4	0	-	12.6 10	7.6	0	-
HCM Lane LOS	A	A	-	B A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5 0.7	0.1	-	-

HCM 7th TWSC
4: Bent Ln & Landruff Ln

No Access on SH 44
2028 Total AM Peak Hour

Intersection						
Int Delay, s/veh	5.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	185	3	34	93	86	89
Future Vol, veh/h	185	3	34	93	86	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	206	3	38	103	96	99
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	324	145	194	0	-	0
Stage 1	145	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	670	902	1379	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	651	902	1379	-	-	-
Mov Cap-2 Maneuver	651	-	-	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v13.08		2.06		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	482	-	653	-	-	
HCM Lane V/C Ratio	0.027	-	0.32	-	-	
HCM Control Delay (s/veh)	7.7	0	13.1	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	1.4	-	-	

HCM 7th TWSC
6: Landruff Ln & Valdina Wy

No Access on SH 44
2028 Total AM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	35	116	2	4	3
Future Vol, veh/h	1	35	116	2	4	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	39	129	2	4	3
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	131	0	-	0	171	130
Stage 1	-	-	-	-	130	-
Stage 2	-	-	-	-	41	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1454	-	-	-	819	920
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	981	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1454	-	-	-	818	920
Mov Cap-2 Maneuver	-	-	-	-	818	-
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	981	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.21	0		9.23		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	50	-	-	-	859	
HCM Lane V/C Ratio	0.001	-	-	-	0.009	
HCM Control Delay (s/veh)	7.5	0	-	-	9.2	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Intersection						
Int Delay, s/veh	2.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	35	4	12	104	14	27
Future Vol, veh/h	35	4	12	104	14	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	4	13	116	16	30
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	43	0	183	41
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	142	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1565	-	806	1030
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	885	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1565	-	799	1030
Mov Cap-2 Maneuver	-	-	-	-	799	-
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	877	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0.76		9.04		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	937	-	-	186	-	
HCM Lane V/C Ratio	0.049	-	-	0.009	-	
HCM Control Delay (s/veh)	9	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.2	-	-	0	-	

HCM 7th TWSC
8: Landruff Ln & Vicari Wy

No Access on SH 44
2028 Total AM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	61	115	1	5	1
Future Vol, veh/h	1	61	115	1	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	68	128	1	6	1
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	129	0	-	0	198	128
Stage 1	-	-	-	-	128	-
Stage 2	-	-	-	-	70	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1457	-	-	-	790	922
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	953	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1457	-	-	-	790	922
Mov Cap-2 Maneuver	-	-	-	-	790	-
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	953	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.12	0		9.49		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	29	-	-	-	809	
HCM Lane V/C Ratio	0.001	-	-	-	0.008	
HCM Control Delay (s/veh)	7.5	0	-	-	9.5	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 7th TWSC
9: Landruff Ln & Ragusa Ave

No Access on SH 44
2028 Total AM Peak Hour

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	54	97	44	53	20
Future Vol, veh/h	19	54	97	44	53	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	60	108	49	59	22
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	157	0	-	0	234	132
Stage 1	-	-	-	-	132	-
Stage 2	-	-	-	-	102	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1423	-	-	-	754	917
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	922	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1423	-	-	-	742	917
Mov Cap-2 Maneuver	-	-	-	-	742	-
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	922	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	1.97	0		10.13		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	468	-	-	-	783	
HCM Lane V/C Ratio	0.015	-	-	-	0.104	
HCM Control Delay (s/veh)	7.6	0	-	-	10.1	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.3	

HCM 7th TWSC
10: Blessinger Rd & Toscano St/Saddleman Ranch Ct

No Access on SH 44
2028 Total AM Peak Hour

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	73	0	0	0	0	6	0	319	0	3	117	23
Future Vol, veh/h	73	0	0	0	0	6	0	319	0	3	117	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	0	0	0	0	7	0	354	0	3	130	26

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	504	504	143	491	517	354	156	0	0	354	0	0
Stage 1	149	149	-	354	354	-	-	-	-	-	-	-
Stage 2	354	354	-	137	162	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	478	470	905	488	463	689	1425	-	-	1204	-	-
Stage 1	853	774	-	663	630	-	-	-	-	-	-	-
Stage 2	663	630	-	867	764	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	472	469	905	486	461	689	1425	-	-	1204	-	-
Mov Cap-2 Maneuver	472	469	-	486	461	-	-	-	-	-	-	-
Stage 1	851	771	-	663	630	-	-	-	-	-	-	-
Stage 2	656	630	-	864	761	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	14.2		10.27		0		0.17	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1425	-	-	472	689	37	-
HCM Lane V/C Ratio	-	-	-	0.172	0.01	0.003	-
HCM Control Delay (s/veh)	0	-	-	14.2	10.3	8	0
HCM Lane LOS	A	-	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.6	0	0	-

HCM 7th TWSC
11: Landcuff Ln/Landruff Ln & Bellino Ave

No Access on SH 44
2028 Total AM Peak Hour

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	55	40	6	15	0
Future Vol, veh/h	0	55	40	6	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	61	44	7	17	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	51	0	-	0	109	48
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	61	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1555	-	-	-	888	1021
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	962	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1555	-	-	-	888	1021
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	962	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0	0		9.13		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1555	-	-	-	888	
HCM Lane V/C Ratio	-	-	-	-	0.019	
HCM Control Delay (s/veh)	0	-	-	-	9.1	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

HCM 7th Signalized Intersection Summary

1: Blessinger Rd & SH 44

No Access on SH 44

2028 Total PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	690	121	206	979	143	157	23	137	128	16	73
Future Volume (veh/h)	70	690	121	206	979	143	157	23	137	128	16	73
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	1604	1870	1870	1870
Adj Flow Rate, veh/h	75	742	130	222	1053	154	169	25	147	138	17	78
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	2	2	2	2	2	20	2	2	2
Cap, veh/h	194	1151	975	390	1206	1022	244	47	276	175	58	266
Arrive On Green	0.03	0.62	0.62	0.06	0.64	0.64	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1301	236	1385	1213	292	1338
Grp Volume(v), veh/h	75	742	130	222	1053	154	169	0	172	138	0	95
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1301	0	1621	1213	0	1630
Q Serve(g_s), s	2.3	36.9	5.0	6.6	66.7	5.6	18.5	0.0	13.9	15.1	0.0	7.2
Cycle Q Clear(g_c), s	2.3	36.9	5.0	6.6	66.7	5.6	25.7	0.0	13.9	29.0	0.0	7.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.85	1.00		0.82
Lane Grp Cap(c), veh/h	194	1151	975	390	1206	1022	244	0	323	175	0	324
V/C Ratio(X)	0.39	0.64	0.13	0.57	0.87	0.15	0.69	0.00	0.53	0.79	0.00	0.29
Avail Cap(c_a), veh/h	246	1151	975	512	1206	1022	244	0	323	175	0	324
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.4	17.9	11.7	15.8	21.0	10.2	60.6	0.0	52.3	66.0	0.0	49.7
Incr Delay (d2), s/veh	1.3	2.8	0.3	1.3	8.9	0.3	8.2	0.0	1.7	20.7	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	15.1	1.7	2.4	28.0	1.9	6.7	0.0	5.8	6.2	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.6	20.7	12.0	17.1	29.9	10.5	68.8	0.0	54.0	86.7	0.0	50.2
LnGrp LOS	C	C	B	B	C	B	E		D	F		D
Approach Vol, veh/h	947			1429			341			233		
Approach Delay, s/veh	19.9			25.8			61.3			71.8		
Approach LOS	B			C			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.8	100.0		35.0	15.1	95.7		35.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	94.0		29.0	19.0	84.0		29.0				
Max Q Clear Time (g_c+I1), s	4.3	68.7		31.0	8.6	38.9		27.7				
Green Ext Time (p_c), s	0.0	8.9		0.0	0.4	5.5		0.2				

Intersection Summary

HCM 7th Control Delay, s/veh	31.7
HCM 7th LOS	C

Notes

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

HCM2000 Intersection V/C
1: Blessinger Rd & SH 44

No Access on SH 44
2028 Total PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	690	121	206	979	143	157	23	137	128	16	73
Future Volume (vph)	70	690	121	206	979	143	157	23	137	128	16	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1411		1770	1633	
Flt Permitted	0.09	1.00	1.00	0.24	1.00	1.00	0.68	1.00		0.48	1.00	
Satd. Flow (perm)	175	1863	1583	445	1863	1583	1262	1411		887	1633	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	75	742	130	222	1053	154	169	25	147	138	17	78
RTOR Reduction (vph)	0	0	41	0	0	30	0	122	0	0	65	0
Lane Group Flow (vph)	75	742	89	222	1053	124	169	50	0	138	30	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	20%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	97.6	90.4	90.4	105.2	94.2	94.2	24.9	24.9		24.9	24.9	
Effective Green, g (s)	97.6	90.4	90.4	105.2	94.2	94.2	24.9	24.9		24.9	24.9	
Actuated g/C Ratio	0.68	0.63	0.63	0.73	0.65	0.65	0.17	0.17		0.17	0.17	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	197	1167	991	425	1216	1033	217	243		153	281	
v/s Ratio Prot	0.02	0.40		c0.04	c0.57			0.04			0.02	
v/s Ratio Perm	0.24		0.06	0.34		0.08	0.13			c0.16		
v/c Ratio	0.38	0.64	0.09	0.52	0.87	0.12	0.78	0.21		0.90	0.11	
Uniform Delay, d1	22.8	16.7	10.7	12.4	20.0	9.4	57.1	51.2		58.5	50.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	2.7	0.2	1.2	8.4	0.2	16.0	0.4		45.0	0.2	
Delay (s)	24.0	19.4	10.8	13.6	28.4	9.7	73.1	51.7		103.5	50.5	
Level of Service	C	B	B	B	C	A	E	D		F	D	
Approach Delay (s/veh)		18.6			24.1			62.3			81.9	
Approach LOS		B			C			E			F	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			31.3									
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			144.3							18.0		
Intersection Capacity Utilization			92.4%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

1: Blessinger Rd & SH 44

No Access on SH 44 - Mitigation
2028 Total PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	690	121	206	979	143	157	23	137	128	16	73
Future Volume (veh/h)	70	690	121	206	979	143	157	23	137	128	16	73
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	1604	1870	1870	1870
Adj Flow Rate, veh/h	75	742	130	222	1053	154	169	25	147	138	17	78
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	2	2	2	2	2	20	2	2	2
Cap, veh/h	200	1163	986	395	1215	1030	236	361	345	271	56	258
Arrive On Green	0.03	0.62	0.62	0.06	0.65	0.65	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1301	1870	1359	1213	292	1338
Grp Volume(v), veh/h	75	742	130	222	1053	154	169	25	147	138	0	95
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1301	1870	1359	1213	0	1630
Q Serve(g_s), s	2.2	36.0	4.9	6.5	65.3	5.5	18.5	1.6	13.1	15.2	0.0	7.2
Cycle Q Clear(g_c), s	2.2	36.0	4.9	6.5	65.3	5.5	25.7	1.6	13.1	16.8	0.0	7.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	200	1163	986	395	1215	1030	236	361	345	271	0	314
V/C Ratio(X)	0.37	0.64	0.13	0.56	0.87	0.15	0.72	0.07	0.43	0.51	0.00	0.30
Avail Cap(c_a), veh/h	253	1163	986	459	1215	1030	246	375	355	280	0	327
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.5	17.1	11.3	15.2	20.3	9.8	61.1	47.8	45.2	54.6	0.0	50.0
Incr Delay (d2), s/veh	1.2	2.7	0.3	1.3	8.4	0.3	9.2	0.1	0.8	1.5	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	14.6	1.7	2.3	27.1	1.8	6.7	0.8	4.5	4.8	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.6	19.8	11.5	16.5	28.7	10.1	70.3	47.8	46.0	56.1	0.0	50.6
LnGrp LOS	C	B	B	B	C	B	E	D	D	E		D
Approach Vol, veh/h	947			1429			341			233		
Approach Delay, s/veh	19.2			24.8			58.2			53.8		
Approach LOS	B			C			E			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.8	100.0		33.9	14.8	96.0		33.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	94.0		29.0	14.0	89.0		29.0				
Max Q Clear Time (g_c+I1), s	4.2	67.3		18.8	8.5	38.0		27.7				
Green Ext Time (p_c), s	0.0	9.1		0.7	0.3	5.6		0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh	29.1											
HCM 7th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM2000 Intersection V/C
1: Blessinger Rd & SH 44

No Access on SH 44 - Mitigation
2028 Total PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	690	121	206	979	143	157	23	137	128	16	73
Future Volume (vph)	70	690	121	206	979	143	157	23	137	128	16	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1346	1770	1633	
Flt Permitted	0.10	1.00	1.00	0.25	1.00	1.00	0.68	1.00	1.00	0.74	1.00	
Satd. Flow (perm)	187	1863	1583	457	1863	1583	1259	1863	1346	1380	1633	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	75	742	130	222	1053	154	169	25	147	138	17	78
RTOR Reduction (vph)	0	0	34	0	0	29	0	0	112	0	65	0
Lane Group Flow (vph)	75	742	96	222	1053	125	169	25	35	138	30	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	20%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	1	6		5	2			8	5		4	
Permitted Phases	6		6	2		2	8		8	4		
Actuated Green, G (s)	97.9	90.7	90.7	104.9	94.2	94.2	23.3	23.3	34.0	23.3	23.3	
Effective Green, g (s)	97.9	90.7	90.7	104.9	94.2	94.2	23.3	23.3	34.0	23.3	23.3	
Actuated g/C Ratio	0.69	0.64	0.64	0.74	0.66	0.66	0.16	0.16	0.24	0.16	0.16	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	208	1184	1006	434	1229	1044	205	304	377	225	266	
v/s Ratio Prot	0.02	0.40		c0.04	c0.57			0.01	0.01		0.02	
v/s Ratio Perm	0.23		0.06	0.34		0.08	c0.13		0.02	0.10		
v/c Ratio	0.36	0.63	0.10	0.51	0.86	0.12	0.82	0.08	0.09	0.61	0.11	
Uniform Delay, d1	21.5	15.7	10.1	11.6	19.0	8.9	57.7	50.6	42.3	55.5	50.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	2.5	0.2	1.0	7.8	0.2	22.8	0.1	0.1	4.9	0.2	
Delay (s)	22.5	18.3	10.3	12.6	26.8	9.2	80.5	50.7	42.4	60.4	51.1	
Level of Service	C	B	B	B	C	A	F	D	D	E	D	
Approach Delay (s/veh)		17.5			22.7			61.9			56.6	
Approach LOS		B			C			E			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			28.2									
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			142.7									
Intersection Capacity Utilization			86.1%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th TWSC
2: Bent Ln & SH 44

No Access on SH 44
2028 Total PM Peak Hour

Intersection						
Int Delay, s/veh	3.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑		↑
Traffic Vol, veh/h	882	87	335	1387	0	276
Future Vol, veh/h	882	87	335	1387	0	276
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	8	2	2	2	3
Mvmt Flow	938	93	356	1476	0	294
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1031	0	-	469
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.33
Pot Cap-1 Maneuver	-	-	670	-	0	538
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	670	-	-	538
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		3.18		19.44	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	538	-	-	670	-	
HCM Lane V/C Ratio	0.546	-	-	0.532	-	
HCM Control Delay (s/veh)	19.4	-	-	16.3	-	
HCM Lane LOS	C	-	-	C	-	
HCM 95th %tile Q(veh)	3.3	-	-	3.2	-	

HCM 7th TWSC
3: Blessinger Rd & Landruff Ln

No Access on SH 44
2028 Total PM Peak Hour

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	5	5	30	5	137	5	67	10	77	105	70
Future Vol, veh/h	45	5	5	30	5	137	5	67	10	77	105	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	6	6	33	6	152	6	74	11	86	117	78

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	415	423	156	382	457	80	194	0	0	86	0	0
Stage 1	327	327	-	91	91	-	-	-	-	-	-	-
Stage 2	88	97	-	291	366	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	548	522	890	576	500	980	1379	-	-	1511	-	-
Stage 1	686	648	-	916	819	-	-	-	-	-	-	-
Stage 2	919	815	-	717	623	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	426	487	890	528	466	980	1379	-	-	1511	-	-
Mov Cap-2 Maneuver	426	487	-	528	466	-	-	-	-	-	-	-
Stage 1	642	606	-	912	816	-	-	-	-	-	-	-
Stage 2	768	812	-	661	583	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v14.18		10.63	0.46	2.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	107	-	-	453	830	509	-
HCM Lane V/C Ratio	0.004	-	-	0.135	0.23	0.057	-
HCM Control Delay (s/veh)	7.6	0	-	14.2	10.6	7.5	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.5	0.9	0.2	-

HCM 7th TWSC
4: Bent Ln & Landruff Ln

No Access on SH 44
2028 Total PM Peak Hour

Intersection						
Int Delay, s/veh	5.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	204	3	23	72	142	179
Future Vol, veh/h	204	3	23	72	142	179
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	227	3	26	80	158	199
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	388	257	357	0	-	0
Stage 1	257	-	-	-	-	-
Stage 2	131	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	615	781	1202	-	-	-
Stage 1	786	-	-	-	-	-
Stage 2	895	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	602	781	1202	-	-	-
Mov Cap-2 Maneuver	602	-	-	-	-	-
Stage 1	768	-	-	-	-	-
Stage 2	895	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v	14.59	1.95		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	436	-	604	-	-	
HCM Lane V/C Ratio	0.021	-	0.381	-	-	
HCM Control Delay (s/veh)	8.1	0	14.6	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	1.8	-	-	

HCM 7th TWSC
6: Landruff Ln & Valdina Wy

No Access on SH 44
2028 Total PM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	71	164	5	7	1
Future Vol, veh/h	3	71	164	5	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	79	182	6	8	1
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	188	0	-	0	271	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	86	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1386	-	-	-	719	857
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	938	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1386	-	-	-	717	857
Mov Cap-2 Maneuver	-	-	-	-	717	-
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	938	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.31	0		9.98		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	73	-	-	-	732	
HCM Lane V/C Ratio	0.002	-	-	-	0.012	
HCM Control Delay (s/veh)	7.6	0	-	-	10	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	66	12	41	162	7	24
Future Vol, veh/h	66	12	41	162	7	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	73	13	46	180	8	27

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	87	0	351	80
Stage 1	-	-	-	-	80	-
Stage 2	-	-	-	-	271	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1509	-	646	980
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	774	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1509	-	625	980
Mov Cap-2 Maneuver	-	-	-	-	625	-
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	748	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.51	9.32
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	869	-	-	364	-
HCM Lane V/C Ratio	0.04	-	-	0.03	-
HCM Control Delay (s/veh)	9.3	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

HCM 7th TWSC
8: Landruff Ln & Vicari Wy

No Access on SH 44
2028 Total PM Peak Hour

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	89	202	6	7	1
Future Vol, veh/h	1	89	202	6	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	99	224	7	8	1

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	231	0	0 329 228
Stage 1	-	-	- - 228 -
Stage 2	-	-	- - 101 -
Critical Hdwy	4.12	-	- - 6.42 6.22
Critical Hdwy Stg 1	-	-	- - 5.42 -
Critical Hdwy Stg 2	-	-	- - 5.42 -
Follow-up Hdwy	2.218	-	- - 3.518 3.318
Pot Cap-1 Maneuver	1337	-	- - 666 812
Stage 1	-	-	- - 810 -
Stage 2	-	-	- - 923 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1337	-	- - 665 812
Mov Cap-2 Maneuver	-	-	- - 665 -
Stage 1	-	-	- - 809 -
Stage 2	-	-	- - 923 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.09	0	10.36
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	20	-	-	-	680
HCM Lane V/C Ratio	0.001	-	-	-	0.013
HCM Control Delay (s/veh)	7.7	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM 7th TWSC
9: Landruff Ln & Ragusa Ave

No Access on SH 44
2028 Total PM Peak Hour

Intersection						
Int Delay, s/veh	3.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	47	54	166	75	67	45
Future Vol, veh/h	47	54	166	75	67	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	60	184	83	74	50
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	268	0	-	0	391	226
Stage 1	-	-	-	-	226	-
Stage 2	-	-	-	-	164	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1296	-	-	-	613	813
Stage 1	-	-	-	-	811	-
Stage 2	-	-	-	-	865	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1296	-	-	-	588	813
Mov Cap-2 Maneuver	-	-	-	-	588	-
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	865	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	3.67	0		11.7		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	838	-	-	-	662	
HCM Lane V/C Ratio	0.04	-	-	-	0.188	
HCM Control Delay (s/veh)	7.9	0	-	-	11.7	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7	

HCM 7th TWSC
10: Blessinger Rd & Toscano St/Saddleman Ranch Ct

No Access on SH 44
2028 Total PM Peak Hour

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	49	0	0	0	0	2	0	267	0	5	259	80
Future Vol, veh/h	49	0	0	0	0	2	0	267	0	5	259	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	0	0	0	0	2	0	297	0	6	288	89

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	640	640	332	596	684	297	377	0	0	297	0	0
Stage 1	343	343	-	297	297	-	-	-	-	-	-	-
Stage 2	297	297	-	299	388	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	388	393	709	416	371	743	1182	-	-	1265	-	-
Stage 1	672	637	-	712	668	-	-	-	-	-	-	-
Stage 2	712	668	-	710	609	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	385	391	709	413	369	743	1182	-	-	1265	-	-
Mov Cap-2 Maneuver	385	391	-	413	369	-	-	-	-	-	-	-
Stage 1	668	634	-	712	668	-	-	-	-	-	-	-
Stage 2	710	668	-	706	606	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v15.89		9.86	0	0.11
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1182	-	-	385 743	25	-	-
HCM Lane V/C Ratio	-	-	-	0.141 0.003 0.004	-	-	-
HCM Control Delay (s/veh)	0	-	-	15.9 9.9 7.9	0	-	-
HCM Lane LOS	A	-	-	C A A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5 0 0	0	-	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	45	60	20	10	0
Future Vol, veh/h	0	45	60	20	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	50	67	22	11	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	89	0	-	0	128	78
Stage 1	-	-	-	-	78	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1507	-	-	-	867	983
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1507	-	-	-	867	983
Mov Cap-2 Maneuver	-	-	-	-	867	-
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	972	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0	0		9.21		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1507	-	-	-	867	
HCM Lane V/C Ratio	-	-	-	-	0.013	
HCM Control Delay (s/veh)	0	-	-	-	9.2	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

APPENDIX G: 2033 Background Synchro Reports

HCM 7th Signalized Intersection Summary

1: Blessinger Rd & SH 44

2033 Background
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	1037	25	70	581	45	128	28	115	123	12	91
Future Volume (veh/h)	49	1037	25	70	581	45	128	28	115	123	12	91
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	1841	1870	1470	1841	1870	1870	1870	1870	1811	1411	1856
Adj Flow Rate, veh/h	53	1127	27	76	632	49	139	30	125	134	13	99
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	4	2	29	4	2	2	2	2	6	33	3
Cap, veh/h	455	1187	1022	127	1191	1026	200	63	262	187	28	214
Arrive On Green	0.03	0.64	0.64	0.03	0.65	0.65	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	1841	1585	1400	1841	1585	1281	316	1317	1193	141	1076
Grp Volume(v), veh/h	53	1127	27	76	632	49	139	0	155	134	0	112
Grp Sat Flow(s),veh/h/ln	1781	1841	1585	1400	1841	1585	1281	0	1633	1193	0	1217
Q Serve(g_s), s	1.5	81.7	0.9	2.7	26.9	1.6	15.7	0.0	12.2	16.3	0.0	11.8
Cycle Q Clear(g_c), s	1.5	81.7	0.9	2.7	26.9	1.6	27.5	0.0	12.2	28.6	0.0	11.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.81	1.00		0.88
Lane Grp Cap(c), veh/h	455	1187	1022	127	1191	1026	200	0	325	187	0	242
V/C Ratio(X)	0.12	0.95	0.03	0.60	0.53	0.05	0.69	0.00	0.48	0.72	0.00	0.46
Avail Cap(c_a), veh/h	511	1187	1022	168	1191	1026	200	0	325	187	0	242
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.5	23.7	9.4	35.7	13.8	9.4	63.6	0.0	51.7	64.3	0.0	51.5
Incr Delay (d2), s/veh	0.1	16.5	0.0	4.4	1.7	0.1	9.9	0.0	1.1	12.5	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	38.8	0.3	1.8	10.4	0.5	5.7	0.0	5.2	5.6	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.6	40.2	9.4	40.1	15.5	9.4	73.5	0.0	52.8	76.8	0.0	52.9
LnGrp LOS	B	D	A	D	B	A	E		D	E		D
Approach Vol, veh/h	1207			757			294			246		
Approach Delay, s/veh	38.2			17.6			62.6			65.9		
Approach LOS	D			B			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	100.4		35.0	10.8	100.0		35.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	94.0		29.0	9.0	94.0		29.0				
Max Q Clear Time (g_c+I1), s	3.5	28.9		30.6	4.7	83.7		29.5				
Green Ext Time (p_c), s	0.0	4.2		0.0	0.0	6.5		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh				37.6								
HCM 7th LOS				D								

HCM2000 Intersection V/C
1: Blessinger Rd & SH 44

2033 Background
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	1037	25	70	581	45	128	28	115	123	12	91
Future Volume (vph)	49	1037	25	70	581	45	128	28	115	123	12	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1827	1583	1399	1827	1583	1770	1637		1703	1548	
Flt Permitted	0.35	1.00	1.00	0.05	1.00	1.00	0.63	1.00		0.51	1.00	
Satd. Flow (perm)	651	1827	1583	73	1827	1583	1165	1637		910	1548	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	1127	27	76	632	49	139	30	125	134	13	99
RTOR Reduction (vph)	0	0	9	0	0	16	0	104	0	0	83	0
Lane Group Flow (vph)	53	1127	18	76	632	33	139	51	0	134	29	0
Heavy Vehicles (%)	2%	4%	2%	29%	4%	2%	2%	2%	2%	6%	33%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	100.9	95.5	95.5	106.1	98.1	98.1	23.8	23.8		23.8	23.8	
Effective Green, g (s)	100.9	95.5	95.5	106.1	98.1	98.1	23.8	23.8		23.8	23.8	
Actuated g/C Ratio	0.69	0.66	0.66	0.73	0.68	0.68	0.16	0.16		0.16	0.16	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	493	1200	1040	126	1233	1068	190	268		149	253	
v/s Ratio Prot	0.00	c0.62		c0.03	0.35			0.03			0.02	
v/s Ratio Perm	0.07		0.01	c0.41		0.02	0.12			c0.15		
v/c Ratio	0.11	0.94	0.02	0.60	0.51	0.03	0.73	0.19		0.90	0.12	
Uniform Delay, d1	8.1	22.3	8.6	34.1	11.7	7.8	57.7	52.4		59.6	51.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	15.0	0.0	7.9	1.5	0.1	13.5	0.3		44.7	0.2	
Delay (s)	8.1	37.3	8.7	42.0	13.2	7.9	71.2	52.8		104.3	52.0	
Level of Service	A	D	A	D	B	A	E	D		F	D	
Approach Delay (s/veh)		35.4			15.8			61.5			80.5	
Approach LOS		D			B			E			F	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			36.9									
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			145.3							18.0		
Intersection Capacity Utilization			88.5%									
Analysis Period (min)			15									
c Critical Lane Group												

Intersection						
Int Delay, s/veh	3.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑		↑
Traffic Vol, veh/h	1302	124	153	692	0	168
Future Vol, veh/h	1302	124	153	692	0	168
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	6	23	4	2	34
Mvmt Flow	1415	135	166	752	0	183
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1550	0	-	708
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.56	-	-	7.58
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.43	-	-	3.64
Pot Cap-1 Maneuver	-	-	335	-	0	312
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	335	-	-	312
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		4.68		31.59	
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBL	WBT
Capacity (veh/h)	312		-	-	335	-
HCM Lane V/C Ratio	0.585		-	-	0.496	-
HCM Control Delay (s/veh)	31.6		-	-	25.8	-
HCM Lane LOS	D		-	-	D	-
HCM 95th %tile Q(veh)	3.5		-	-	2.6	-

HCM 7th TWSC
3: Blessinger Rd & Landcuff Ln

2033 Background
AM Peak Hour

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	50	0	5	5	5	120	5	91	15	15	48	30
Future Vol, veh/h	50	0	5	5	5	120	5	91	15	15	48	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	56	0	6	6	6	133	6	101	17	17	53	33

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	218	232	70	207	241	109	87	0	0	118	0	0
Stage 1	103	103	-	121	121	-	-	-	-	-	-	-
Stage 2	115	129	-	87	120	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	738	668	993	750	661	944	1509	-	-	1470	-	-
Stage 1	903	810	-	884	796	-	-	-	-	-	-	-
Stage 2	890	789	-	921	796	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	618	657	993	734	650	944	1509	-	-	1470	-	-
Mov Cap-2 Maneuver	618	657	-	734	650	-	-	-	-	-	-	-
Stage 1	892	800	-	880	793	-	-	-	-	-	-	-
Stage 2	756	786	-	905	787	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v11.21		9.65	0.33	1.21
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	79	-	-	640	918	270	-
HCM Lane V/C Ratio	0.004	-	-	0.095	0.157	0.011	-
HCM Control Delay (s/veh)	7.4	0	-	11.2	9.7	7.5	0
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.6	0	-

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	106	46	5	9	29	0	45	62	36	0	93	17
Future Vol, veh/h	106	46	5	9	29	0	45	62	36	0	93	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	118	51	6	10	32	0	50	69	40	0	103	19

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	298	322	113	318	311	89	122	0	0	109	0	0
Stage 1	113	113	-	189	189	-	-	-	-	-	-	-
Stage 2	185	209	-	129	122	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	654	596	940	635	604	969	1465	-	-	1482	-	-
Stage 1	892	802	-	813	744	-	-	-	-	-	-	-
Stage 2	817	729	-	875	795	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	597	574	940	556	582	969	1465	-	-	1482	-	-
Mov Cap-2 Maneuver	597	574	-	556	582	-	-	-	-	-	-	-
Stage 1	892	802	-	783	717	-	-	-	-	-	-	-
Stage 2	752	703	-	814	795	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	13.5		11.75		2.37		0	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	528	-	-	597	575	1482	-
HCM Lane V/C Ratio	0.034	-	-	0.292	0.073	-	-
HCM Control Delay (s/veh)	7.5	0	-	13.5	11.8	0	-
HCM Lane LOS	A	A	-	B	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	0.2	0	-

HCM 7th Signalized Intersection Summary

1: Blessinger Rd & SH 44

2033 Background
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	826	61	161	1106	110	129	28	98	90	6	84
Future Volume (veh/h)	50	826	61	161	1106	110	129	28	98	90	6	84
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	1604	1870	1870	1870
Adj Flow Rate, veh/h	54	888	66	173	1189	118	139	30	105	97	6	90
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	2	2	2	2	2	20	2	2	2
Cap, veh/h	173	1277	1082	361	1303	1104	202	62	218	170	17	256
Arrive On Green	0.03	0.68	0.68	0.04	0.70	0.70	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1300	365	1276	1254	100	1500
Grp Volume(v), veh/h	54	888	66	173	1189	118	139	0	135	97	0	96
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1300	0	1641	1254	0	1600
Q Serve(g_s), s	1.3	42.0	2.0	4.3	77.6	3.6	15.5	0.0	10.9	11.1	0.0	7.7
Cycle Q Clear(g_c), s	1.3	42.0	2.0	4.3	77.6	3.6	23.2	0.0	10.9	22.0	0.0	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.78	1.00		0.94
Lane Grp Cap(c), veh/h	173	1277	1082	361	1303	1104	202	0	280	170	0	273
V/C Ratio(X)	0.31	0.70	0.06	0.48	0.91	0.11	0.69	0.00	0.48	0.57	0.00	0.35
Avail Cap(c_a), veh/h	241	1277	1082	404	1303	1104	202	0	280	170	0	273
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.6	14.0	7.7	14.6	18.5	7.3	63.8	0.0	54.9	64.8	0.0	53.6
Incr Delay (d2), s/veh	1.0	3.1	0.1	1.0	11.2	0.2	9.3	0.0	1.3	4.5	0.0	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	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	16.2	0.6	2.0	31.3	1.1	5.7	0.0	4.6	3.8	0.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.6	17.2	7.8	15.6	29.7	7.5	73.2	0.0	56.2	69.3	0.0	54.3
LnGrp LOS	C	B	A	B	C	A	E		E	E		D
Approach Vol, veh/h	1008			1480			274			193		
Approach Delay, s/veh	17.2			26.3			64.8			61.8		
Approach LOS	B			C			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	107.0		30.0	11.4	105.0		30.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	100.0		25.0	10.0	100.0		25.0				
Max Q Clear Time (g_c+I1), s	3.3	79.6		24.0	6.3	44.0		25.2				
Green Ext Time (p_c), s	0.0	9.9		0.1	0.1	7.2		0.0				
Intersection Summary												
HCM 7th Control Delay, s/veh				29.1								
HCM 7th LOS				C								

HCM2000 Intersection V/C
1: Blessinger Rd & SH 44

2033 Background
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	826	61	161	1106	110	129	28	98	90	6	84
Future Volume (vph)	50	826	61	161	1106	110	129	28	98	90	6	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1447		1770	1601	
Flt Permitted	0.07	1.00	1.00	0.20	1.00	1.00	0.63	1.00		0.50	1.00	
Satd. Flow (perm)	132	1863	1583	375	1863	1583	1167	1447		940	1601	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	54	888	66	173	1189	118	139	30	105	97	6	90
RTOR Reduction (vph)	0	0	16	0	0	15	0	87	0	0	77	0
Lane Group Flow (vph)	54	888	50	173	1189	103	139	48	0	97	19	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	20%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	107.1	101.3	101.3	113.3	104.4	104.4	20.8	20.8		20.8	20.8	
Effective Green, g (s)	107.1	101.3	101.3	113.3	104.4	104.4	20.8	20.8		20.8	20.8	
Actuated g/C Ratio	0.73	0.69	0.69	0.78	0.72	0.72	0.14	0.14		0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	161	1292	1098	376	1332	1131	166	206		133	228	
v/s Ratio Prot	0.01	0.48		c0.03	c0.64			0.03			0.01	
v/s Ratio Perm	0.23		0.03	0.33		0.07	c0.12			0.10		
v/c Ratio	0.34	0.69	0.05	0.46	0.89	0.09	0.84	0.23		0.73	0.08	
Uniform Delay, d1	25.9	13.1	7.1	12.3	16.4	6.3	61.0	55.5		59.9	54.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	3.0	0.1	0.9	9.4	0.2	29.1	0.6		18.0	0.2	
Delay (s)	27.1	16.1	7.1	13.2	25.8	6.5	90.0	56.1		77.9	54.5	
Level of Service	C	B	A	B	C	A	F	E		E	D	
Approach Delay (s/veh)		16.1			22.8			73.3			66.3	
Approach LOS		B			C			E			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			28.0									
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			146.0							15.0		
Intersection Capacity Utilization			91.7%									
Analysis Period (min)			15									
c Critical Lane Group												

Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑		↑
Traffic Vol, veh/h	973	106	182	1534	0	173
Future Vol, veh/h	973	106	182	1534	0	173
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	8	2	2	2	3
Mvmt Flow	1035	113	194	1632	0	184

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1148
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	4.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	2.22	-
Pot Cap-1 Maneuver	-	604	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	604	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.46	16.33
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	500	-	-	604	-
HCM Lane V/C Ratio	0.368	-	-	0.32	-
HCM Control Delay (s/veh)	16.3	-	-	13.7	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	1.7	-	-	1.4	-

HCM 7th TWSC
3: Blessinger Rd & Landcuff Ln

2033 Background
PM Peak Hour

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	35	5	5	30	5	122	5	75	10	30	110	50
Future Vol, veh/h	35	5	5	30	5	122	5	75	10	30	110	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	6	6	33	6	136	6	83	11	33	122	56

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	314	322	150	292	344	89	178	0	0	94	0	0
Stage 1	217	217	-	100	100	-	-	-	-	-	-	-
Stage 2	97	106	-	192	244	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	639	595	896	661	578	969	1398	-	-	1500	-	-
Stage 1	786	724	-	906	812	-	-	-	-	-	-	-
Stage 2	909	808	-	810	704	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	528	578	896	632	562	969	1398	-	-	1500	-	-
Mov Cap-2 Maneuver	528	578	-	632	562	-	-	-	-	-	-	-
Stage 1	766	706	-	902	809	-	-	-	-	-	-	-
Stage 2	773	804	-	779	686	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v12.07		10.24	0.42	1.18
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	98	-	-	559 861	267	-	-
HCM Lane V/C Ratio	0.004	-	-	0.089 0.203	0.022	-	-
HCM Control Delay (s/veh)	7.6	0	-	12.1 10.2	7.5	0	-
HCM Lane LOS	A	A	-	B B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3 0.8	0.1	-	-

HCM 7th TWSC
4: Bent Ln & Landruff Ln

2033 Background
PM Peak Hour

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	115	20	4	27	37	0	32	58	19	0	126	35
Future Vol, veh/h	115	20	4	27	37	0	32	58	19	0	126	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	128	22	4	30	41	0	36	64	21	0	140	39

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	316	316	159	297	325	75	179	0	0	86	0	0
Stage 1	159	159	-	146	146	-	-	-	-	-	-	-
Stage 2	156	157	-	151	179	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	637	600	886	655	593	986	1397	-	-	1511	-	-
Stage 1	843	766	-	857	776	-	-	-	-	-	-	-
Stage 2	846	768	-	851	751	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	577	584	886	611	577	986	1397	-	-	1511	-	-
Mov Cap-2 Maneuver	577	584	-	611	577	-	-	-	-	-	-	-
Stage 1	843	766	-	834	755	-	-	-	-	-	-	-
Stage 2	779	747	-	823	751	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v13.37		11.92	2.24	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	504	-	-	584	591	1511	-
HCM Lane V/C Ratio	0.025	-	-	0.265	0.12	-	-
HCM Control Delay (s/veh)	7.6	0	-	13.4	11.9	0	-
HCM Lane LOS	A	A	-	B	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.1	0.4	0	-

HCM 7th Signalized Intersection Summary

1: Blessinger Rd & SH 44

Mitigation

2033 Background AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	1037	25	70	581	45	128	28	115	123	12	91
Future Volume (veh/h)	49	1037	25	70	581	45	128	28	115	123	12	91
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	1841	1870	1470	1841	1870	1870	1870	1870	1811	1411	1856
Adj Flow Rate, veh/h	53	1127	27	76	632	49	139	30	125	134	13	99
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	4	2	29	4	2	2	2	2	6	33	3
Cap, veh/h	509	2128	51	268	2015	156	230	68	284	214	30	232
Arrive On Green	0.03	0.61	0.61	0.04	0.61	0.61	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3491	84	1400	3289	255	1281	316	1317	1193	141	1076
Grp Volume(v), veh/h	53	564	590	76	336	345	139	0	155	134	0	112
Grp Sat Flow(s),veh/h/ln	1781	1749	1826	1400	1749	1795	1281	0	1633	1193	0	1217
Q Serve(g_s), s	1.4	24.1	24.1	2.6	11.9	12.0	13.6	0.0	10.7	14.2	0.0	10.3
Cycle Q Clear(g_c), s	1.4	24.1	24.1	2.6	11.9	12.0	23.9	0.0	10.7	24.9	0.0	10.3
Prop In Lane	1.00		0.05	1.00		0.14	1.00		0.81	1.00		0.88
Lane Grp Cap(c), veh/h	509	1066	1113	268	1072	1100	230	0	352	214	0	262
V/C Ratio(X)	0.10	0.53	0.53	0.28	0.31	0.31	0.61	0.00	0.44	0.62	0.00	0.43
Avail Cap(c_a), veh/h	575	1066	1113	315	1072	1100	389	0	555	362	0	413
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.1	14.6	14.6	11.4	12.0	12.0	54.3	0.0	44.1	54.8	0.0	43.9
Incr Delay (d2), s/veh	0.1	1.9	1.8	0.6	0.8	0.7	2.6	0.0	0.9	3.0	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	15.0	15.5	1.3	7.8	7.9	8.1	0.0	7.9	7.9	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.2	16.5	16.4	12.0	12.8	12.8	56.8	0.0	44.9	57.8	0.0	45.0
LnGrp LOS	A	B	B	B	B	B	E		D	E		D
Approach Vol, veh/h	1207			757			294			246		
Approach Delay, s/veh	16.1			12.7			50.6			52.0		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.3	85.4		33.9	10.7	85.0		33.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	79.0		44.0	9.0	79.0		44.0				
Max Q Clear Time (g_c+l1), s	3.4	14.0		26.9	4.6	26.1		25.9				
Green Ext Time (p_c), s	0.0	3.9		1.0	0.0	10.5		1.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	22.7											
HCM 7th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM2000 Intersection V/C
1: Blessinger Rd & SH 44

Mitigation
2033 Background AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	1037	25	70	581	45	128	28	115	123	12	91
Future Volume (vph)	49	1037	25	70	581	45	128	28	115	123	12	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3461		1399	3438		1770	1637		1703	1548	
Flt Permitted	0.37	1.00		0.19	1.00		0.66	1.00		0.54	1.00	
Satd. Flow (perm)	692	3461		283	3438		1221	1637		965	1548	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	1127	27	76	632	49	139	30	125	134	13	99
RTOR Reduction (vph)	0	1	0	0	3	0	0	104	0	0	82	0
Lane Group Flow (vph)	53	1153	0	76	678	0	139	51	0	134	30	0
Heavy Vehicles (%)	2%	4%	2%	29%	4%	2%	2%	2%	2%	6%	33%	3%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	85.2	79.9		86.6	80.6		20.8	20.8		20.8	20.8	
Effective Green, g (s)	85.2	79.9		86.6	80.6		20.8	20.8		20.8	20.8	
Actuated g/C Ratio	0.68	0.64		0.69	0.65		0.17	0.17		0.17	0.17	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	518	2217		250	2222		203	273		160	258	
v/s Ratio Prot	0.00	c0.33		c0.01	0.20			0.03			0.02	
v/s Ratio Perm	0.07			0.20			0.11			c0.14		
v/c Ratio	0.10	0.52		0.30	0.31		0.68	0.19		0.84	0.11	
Uniform Delay, d1	6.5	12.1		7.7	9.7		48.9	44.7		50.3	44.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.9		0.7	0.4		9.2	0.3		29.9	0.2	
Delay (s)	6.6	12.9		8.4	10.1		58.1	45.0		80.3	44.3	
Level of Service	A	B		A	B		E	D		F	D	
Approach Delay (s/veh)		12.7			9.9			51.2			63.9	
Approach LOS		B			A			D			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			21.4			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			124.7			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			69.0%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

1: Blessinger Rd & SH 44

Mitigation

2033 Background PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	826	61	161	1106	110	129	28	98	90	6	84
Future Volume (veh/h)	50	826	61	161	1106	110	129	28	98	90	6	84
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	1604	1870	1870	1870
Adj Flow Rate, veh/h	54	888	66	173	1189	118	139	30	105	97	6	90
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	2	2	2	2	2	20	2	2	2
Cap, veh/h	304	2158	160	441	2156	214	215	65	227	183	18	267
Arrive On Green	0.03	0.64	0.64	0.05	0.66	0.66	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1781	3353	249	1781	3266	323	1300	365	1276	1254	100	1500
Grp Volume(v), veh/h	54	471	483	173	646	661	139	0	135	97	0	96
Grp Sat Flow(s),veh/h/ln	1781	1777	1826	1781	1777	1812	1300	0	1641	1254	0	1600
Q Serve(g_s), s	1.4	17.7	17.7	4.6	26.8	27.0	14.5	0.0	10.2	10.4	0.0	7.3
Cycle Q Clear(g_c), s	1.4	17.7	17.7	4.6	26.8	27.0	21.7	0.0	10.2	20.6	0.0	7.3
Prop In Lane	1.00		0.14	1.00		0.18	1.00		0.78	1.00		0.94
Lane Grp Cap(c), veh/h	304	1144	1175	441	1173	1197	215	0	292	183	0	285
V/C Ratio(X)	0.18	0.41	0.41	0.39	0.55	0.55	0.65	0.00	0.46	0.53	0.00	0.34
Avail Cap(c_a), veh/h	364	1144	1175	471	1173	1197	303	0	403	268	0	394
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.0	11.9	11.9	8.9	12.5	12.6	59.2	0.0	50.9	60.1	0.0	49.7
Incr Delay (d2), s/veh	0.3	1.1	1.1	0.6	1.9	1.8	3.2	0.0	1.1	2.4	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	0.5	6.5	6.7	1.6	9.8	10.0	5.0	0.0	4.3	3.4	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.3	13.0	13.0	9.5	14.4	14.4	62.4	0.0	52.1	62.5	0.0	50.4
LnGrp LOS	B	B	B	A	B	B	E		D	E		D
Approach Vol, veh/h	1008			1480			274			193		
Approach Delay, s/veh	12.9			13.8			57.3			56.5		
Approach LOS	B			B			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	97.3		30.6	12.7	95.0		30.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	89.0		34.0	9.0	89.0		34.0				
Max Q Clear Time (g_c+I1), s	3.4	29.0		22.6	6.6	19.7		23.7				
Green Ext Time (p_c), s	0.0	10.1		0.6	0.1	6.0		0.9				
Intersection Summary												
HCM 7th Control Delay, s/veh				20.3								
HCM 7th LOS				C								

HCM2000 Intersection V/C
1: Blessinger Rd & SH 44

Mitigation
2033 Background PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	826	61	161	1106	110	129	28	98	90	6	84
Future Volume (vph)	50	826	61	161	1106	110	129	28	98	90	6	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.88		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3502		1770	3491		1770	1447		1770	1601	
Flt Permitted	0.17	1.00		0.25	1.00		0.67	1.00		0.55	1.00	
Satd. Flow (perm)	316	3502		469	3491		1256	1447		1032	1601	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	54	888	66	173	1189	118	139	30	105	97	6	90
RTOR Reduction (vph)	0	3	0	0	4	0	0	90	0	0	77	0
Lane Group Flow (vph)	54	951	0	173	1303	0	139	45	0	97	19	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	20%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	95.9	90.5		102.1	93.6		20.0	20.0		20.0	20.0	
Effective Green, g (s)	95.9	90.5		102.1	93.6		20.0	20.0		20.0	20.0	
Actuated g/C Ratio	0.70	0.66		0.75	0.68		0.15	0.15		0.15	0.15	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	278	2313		430	2385		183	211		150	233	
v/s Ratio Prot	0.01	0.27		c0.02	c0.37			0.03			0.01	
v/s Ratio Perm	0.13			0.27			c0.11			0.09		
v/c Ratio	0.19	0.41		0.40	0.55		0.76	0.21		0.65	0.08	
Uniform Delay, d1	7.7	10.8		6.1	11.0		56.2	51.6		55.2	50.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.5		0.6	0.9		16.5	0.5		9.2	0.2	
Delay (s)	8.0	11.4		6.7	11.9		72.6	52.1		64.4	50.7	
Level of Service	A	B		A	B		E	D		E	D	
Approach Delay (s/veh)		11.2			11.3			62.5			57.6	
Approach LOS		B			B			E			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			19.0			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			137.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			70.9%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

APPENDIX H: 2033 Total Synchro Reports

HCM 7th Signalized Intersection Summary

2033 Total

1: Blessinger Rd & SH 44

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	1051	38	90	594	51	168	32	177	127	13	91
Future Volume (veh/h)	49	1051	38	90	594	51	168	32	177	127	13	91
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	1841	1870	1470	1841	1870	1870	1870	1870	1811	1411	1856
Adj Flow Rate, veh/h	53	1142	41	98	646	55	183	35	192	138	14	99
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	4	2	29	4	2	2	2	2	6	33	3
Cap, veh/h	465	1976	71	245	1911	163	283	65	354	204	39	275
Arrive On Green	0.03	0.57	0.57	0.04	0.59	0.59	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1781	3444	124	1400	3262	277	1280	250	1373	1117	151	1068
Grp Volume(v), veh/h	53	580	603	98	346	355	183	0	227	138	0	113
Grp Sat Flow(s),veh/h/ln	1781	1749	1818	1400	1749	1791	1280	0	1623	1117	0	1219
Q Serve(g_s), s	1.7	30.3	30.3	4.1	14.6	14.7	19.6	0.0	17.3	17.4	0.0	10.9
Cycle Q Clear(g_c), s	1.7	30.3	30.3	4.1	14.6	14.7	30.4	0.0	17.3	34.7	0.0	10.9
Prop In Lane	1.00		0.07	1.00		0.15	1.00		0.85	1.00		0.88
Lane Grp Cap(c), veh/h	465	1003	1043	245	1024	1049	283	0	419	204	0	314
V/C Ratio(X)	0.11	0.58	0.58	0.40	0.34	0.34	0.65	0.00	0.54	0.68	0.00	0.36
Avail Cap(c_a), veh/h	522	1003	1043	322	1024	1049	301	0	441	219	0	331
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.2	19.5	19.5	15.7	15.3	15.3	56.0	0.0	45.9	60.9	0.0	43.5
Incr Delay (d2), s/veh	0.1	2.4	2.3	1.1	0.9	0.9	4.3	0.0	1.2	7.4	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(95%),veh/ln	1.2	17.6	18.2	2.3	9.5	9.7	10.9	0.0	11.6	9.2	0.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.3	21.9	21.8	16.8	16.2	16.2	60.3	0.0	47.1	68.3	0.0	44.2
LnGrp LOS	B	C	C	B	B	B	E		D	E		D
Approach Vol, veh/h	1236			799			410			251		
Approach Delay, s/veh	21.5			16.3			53.0			57.4		
Approach LOS	C			B			D			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	90.0		43.0	12.1	88.3		43.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	84.0		39.0	14.0	79.0		39.0				
Max Q Clear Time (g_c+I1), s	3.7	16.7		36.7	6.1	32.3		32.4				
Green Ext Time (p_c), s	0.0	4.0		0.3	0.1	8.3		1.1				
Intersection Summary												
HCM 7th Control Delay, s/veh	28.1											
HCM 7th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM2000 Intersection V/C
1: Blessinger Rd & SH 44

2033 Total
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	1051	38	90	594	51	168	32	177	127	13	91
Future Volume (vph)	49	1051	38	90	594	51	168	32	177	127	13	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.87		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3455		1399	3435		1770	1626		1703	1546	
Flt Permitted	0.37	1.00		0.17	1.00		0.65	1.00		0.39	1.00	
Satd. Flow (perm)	685	3455		246	3435		1211	1626		704	1546	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	1142	41	98	646	55	183	35	192	138	14	99
RTOR Reduction (vph)	0	2	0	0	4	0	0	132	0	0	79	0
Lane Group Flow (vph)	53	1181	0	98	697	0	183	95	0	138	34	0
Heavy Vehicles (%)	2%	4%	2%	29%	4%	2%	2%	2%	2%	6%	33%	3%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	88.5	83.0		95.1	86.3		27.1	27.1		27.1	27.1	
Effective Green, g (s)	88.5	83.0		95.1	86.3		27.1	27.1		27.1	27.1	
Actuated g/C Ratio	0.65	0.61		0.69	0.63		0.20	0.20		0.20	0.20	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	486	2094		245	2165		239	321		139	306	
v/s Ratio Prot	0.00	c0.34		c0.03	0.20			0.06			0.02	
v/s Ratio Perm	0.07			c0.25			0.15			c0.20		
v/c Ratio	0.11	0.56		0.40	0.32		0.77	0.29		0.99	0.11	
Uniform Delay, d1	8.9	16.1		10.2	11.7		51.9	46.8		54.8	45.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.1		1.1	0.4		13.6	0.5		73.8	0.2	
Delay (s)	9.0	17.2		11.3	12.1		65.5	47.3		128.7	45.2	
Level of Service	A	B		B	B		E	D		F	D	
Approach Delay (s/veh)		16.9			12.0			55.4			91.1	
Approach LOS		B			B			E			F	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			28.2			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			136.9			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			74.9%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th TWSC
2: Bent Ln & SH 44

2033 Total
AM Peak Hour

Intersection						
Int Delay, s/veh	5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑		↑
Traffic Vol, veh/h	1410	124	163	754	0	183
Future Vol, veh/h	1410	124	163	754	0	183
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	6	23	4	2	34
Mvmt Flow	1533	135	177	820	0	199

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1667
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.56
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.43
Pot Cap-1 Maneuver	-	-	299
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	299
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	5.9	43
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	283	-	-	299	-
HCM Lane V/C Ratio	0.703	-	-	0.593	-
HCM Control Delay (s/veh)	43	-	-	33.2	-
HCM Lane LOS	E	-	-	D	-
HCM 95th %tile Q(veh)	4.9	-	-	3.5	-

HCM 7th TWSC
3: Blessinger Rd & Landruff Ln

2033 Total
AM Peak Hour

Intersection												
Int Delay, s/veh	5.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	65	0	5	5	5	138	5	91	15	21	48	36
Future Vol, veh/h	65	0	5	5	5	138	5	91	15	21	48	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	72	0	6	6	6	153	6	101	17	23	53	40

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	235	249	73	221	261	109	93	0	0	118	0	0
Stage 1	120	120	-	121	121	-	-	-	-	-	-	-
Stage 2	115	129	-	100	140	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	720	654	989	735	644	944	1501	-	-	1470	-	-
Stage 1	884	796	-	884	796	-	-	-	-	-	-	-
Stage 2	890	789	-	906	781	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	585	640	989	716	631	944	1501	-	-	1470	-	-
Mov Cap-2 Maneuver	585	640	-	716	631	-	-	-	-	-	-	-
Stage 1	869	783	-	880	793	-	-	-	-	-	-	-
Stage 2	737	786	-	886	768	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v11.86		9.77	0.33	1.5
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	79	-	-	603	919	332	-
HCM Lane V/C Ratio	0.004	-	-	0.129	0.179	0.016	-
HCM Control Delay (s/veh)	7.4	0	-	11.9	9.8	7.5	0
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.6	0	-

HCM 7th TWSC
4: Bent Ln & Landruff Ln

2033 Total
AM Peak Hour

Intersection												
Int Delay, s/veh	7.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	128	66	5	9	35	0	45	55	43	0	93	27
Future Vol, veh/h	128	66	5	9	35	0	45	55	43	0	93	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	142	73	6	10	39	0	50	61	48	0	103	30

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	299	327	118	325	318	85	133	0	0	109	0	0
Stage 1	118	118	-	185	185	-	-	-	-	-	-	-
Stage 2	181	209	-	140	133	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	653	591	933	628	598	974	1451	-	-	1482	-	-
Stage 1	886	798	-	817	747	-	-	-	-	-	-	-
Stage 2	821	729	-	863	786	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	588	569	933	526	576	974	1451	-	-	1482	-	-
Mov Cap-2 Maneuver	588	569	-	526	576	-	-	-	-	-	-	-
Stage 1	886	798	-	787	719	-	-	-	-	-	-	-
Stage 2	748	702	-	779	786	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v14.78		11.97	2.38	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	521	-	-	587 565	1482	-	-
HCM Lane V/C Ratio	0.034	-	-	0.376 0.087	-	-	-
HCM Control Delay (s/veh)	7.6	0	-	14.8 12	0	-	-
HCM Lane LOS	A	A	-	B B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.7 0.3	0	-	-

HCM 7th Signalized Intersection Summary

5: Sortino Ave & SH 44

2033 Total
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1361	19	42	682	30	19	0	46	126	0	20
Future Volume (veh/h)	12	1361	19	42	682	30	19	0	46	126	0	20
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	13	1512	21	47	758	33	21	0	51	140	0	22
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	440	1964	27	249	1991	87	306	0	254	279	0	254
Arrive On Green	0.02	0.55	0.55	0.04	0.57	0.57	0.16	0.00	0.16	0.16	0.00	0.16
Sat Flow, veh/h	1781	3588	50	1781	3469	151	1390	0	1585	1354	0	1585
Grp Volume(v), veh/h	13	748	785	47	388	403	21	0	51	140	0	22
Grp Sat Flow(s),veh/h/ln	1781	1777	1861	1781	1777	1843	1390	0	1585	1354	0	1585
Q Serve(g_s), s	0.2	23.7	23.8	0.8	8.6	8.6	0.9	0.0	2.0	7.2	0.0	0.9
Cycle Q Clear(g_c), s	0.2	23.7	23.8	0.8	8.6	8.6	1.8	0.0	2.0	9.2	0.0	0.9
Prop In Lane	1.00		0.03	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	440	973	1019	249	1020	1058	306	0	254	279	0	254
V/C Ratio(X)	0.03	0.77	0.77	0.19	0.38	0.38	0.07	0.00	0.20	0.50	0.00	0.09
Avail Cap(c_a), veh/h	634	2318	2429	396	2318	2405	643	0	638	607	0	638
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.2	12.7	12.8	10.8	8.4	8.4	26.5	0.0	26.2	30.2	0.0	25.7
Incr Delay (d2), s/veh	0.0	1.3	1.3	0.4	0.2	0.2	0.1	0.0	0.4	1.4	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(95%),veh/ln	0.1	11.2	11.6	0.4	4.2	4.3	0.6	0.0	1.4	4.3	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.3	14.1	14.0	11.1	8.6	8.6	26.6	0.0	26.6	31.6	0.0	25.9
LnGrp LOS	A	B	B	B	A	A	C		C	C		C
Approach Vol, veh/h	1546			838			72			162		
Approach Delay, s/veh	14.0			8.7			26.6			30.8		
Approach LOS	B			A			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	47.3		17.6	9.0	45.4		17.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	94.0		29.0	9.0	94.0		29.0				
Max Q Clear Time (g_c+I1), s	2.2	10.6		11.2	2.8	25.8		4.0				
Green Ext Time (p_c), s	0.0	4.6		0.4	0.0	13.7		0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh				13.7								
HCM 7th LOS				B								

HCM2000 Intersection V/C
5: Sortino Ave & SH 44

2033 Total
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1361	19	42	682	30	19	0	46	126	0	20
Future Volume (vph)	12	1361	19	42	682	30	19	0	46	126	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3532		1770	3517		1770	1583		1770	1583	
Flt Permitted	0.35	1.00		0.08	1.00		0.74	1.00		0.72	1.00	
Satd. Flow (perm)	657	3532		152	3517		1384	1583		1348	1583	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	13	1512	21	47	758	33	21	0	51	140	0	22
RTOR Reduction (vph)	0	1	0	0	2	0	0	43	0	0	18	0
Lane Group Flow (vph)	13	1532	0	47	789	0	21	8	0	140	4	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	56.9	56.0		67.1	61.1		15.7	15.7		15.7	15.7	
Effective Green, g (s)	56.9	56.0		67.1	61.1		15.7	15.7		15.7	15.7	
Actuated g/C Ratio	0.59	0.59		0.70	0.64		0.16	0.16		0.16	0.16	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	401	2066		208	2245		227	259		221	259	
v/s Ratio Prot	0.00	c0.43		c0.01	c0.22			0.01			0.00	
v/s Ratio Perm	0.02			0.14			0.02			c0.10		
v/c Ratio	0.03	0.74		0.23	0.35		0.09	0.03		0.63	0.01	
Uniform Delay, d1	7.9	14.5		10.4	8.1		34.0	33.6		37.3	33.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	1.5		0.6	0.1		0.2	0.1		5.8	0.0	
Delay (s)	8.0	16.0		11.0	8.2		34.1	33.7		43.1	33.5	
Level of Service	A	B		B	A		C	C		D	C	
Approach Delay (s/veh)		16.0			8.3			33.8			41.8	
Approach LOS		B			A			C			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			15.6			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			95.7			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			61.9%			ICU Level of Service			B			
Analysis Period (min)			15									

c Critical Lane Group

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↗↗	↰	↰	↗↗	↰			↰			↰
Traffic Vol, veh/h	12	1487	19	48	682	30	0	0	46	0	0	20
Future Vol, veh/h	12	1487	19	48	682	30	0	0	46	0	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	100	100	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	1652	21	53	758	33	0	0	51	0	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	791	0	0	1673	0	0	-	-	826	-	-	379
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	825	-	-	379	-	-	0	0	315	0	0	619
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	825	-	-	379	-	-	-	-	315	-	-	619
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.07			1.01			18.62			11.03		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	315	825	-	-	379	-	-	619
HCM Lane V/C Ratio	0.162	0.016	-	-	0.141	-	-	0.036
HCM Control Delay (s/veh)	18.6	9.4	-	-	16	-	-	11
HCM Lane LOS	C	A	-	-	C	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0.5	-	-	0.1

HCM 7th TWSC
6: Landruff Ln & Valdina Wy

2033 Total
AM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	28	117	2	4	3
Future Vol, veh/h	1	28	117	2	4	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	31	130	2	4	3

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	132	0	0 164 131
Stage 1	-	-	- 131 -
Stage 2	-	-	- 33 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1453	-	- 826 918
Stage 1	-	-	- 895 -
Stage 2	-	-	- 989 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1453	-	- 826 918
Mov Cap-2 Maneuver	-	-	- 826 -
Stage 1	-	-	- 894 -
Stage 2	-	-	- 989 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.26	0	9.21
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	62	-	-	-	863
HCM Lane V/C Ratio	0.001	-	-	-	0.009
HCM Control Delay (s/veh)	7.5	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM 7th TWSC
7: Siracusa Ave & Landruff Ln

2033 Total
AM Peak Hour

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	53	4	12	105	14	27
Future Vol, veh/h	53	4	12	105	14	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	4	13	117	16	30
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	63	0	204	61
Stage 1	-	-	-	-	61	-
Stage 2	-	-	-	-	143	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1539	-	784	1004
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	884	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1539	-	777	1004
Mov Cap-2 Maneuver	-	-	-	-	777	-
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	876	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0.75		9.15		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	913	-	-	185	-	
HCM Lane V/C Ratio	0.05	-	-	0.009	-	
HCM Control Delay (s/veh)	9.2	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.2	-	-	0	-	

HCM 7th TWSC
8: Landruff Ln & Vicari Wy

2033 Total
AM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	79	116	1	5	1
Future Vol, veh/h	1	79	116	1	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	88	129	1	6	1

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	130	0	0 219 129
Stage 1	-	-	- 129 -
Stage 2	-	-	- 90 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1455	-	- 769 920
Stage 1	-	-	- 896 -
Stage 2	-	-	- 934 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1455	-	- 768 920
Mov Cap-2 Maneuver	-	-	- 768 -
Stage 1	-	-	- 896 -
Stage 2	-	-	- 934 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.09	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	23	-	-	-	790
HCM Lane V/C Ratio	0.001	-	-	-	0.008
HCM Control Delay (s/veh)	7.5	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM 7th TWSC
9: Landruff Ln & Ragusa Ave

2033 Total
AM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	91	117	2	7	1
Future Vol, veh/h	1	91	117	2	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	101	130	2	8	1

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	132	0	0 234 131
Stage 1	-	-	- - 131 -
Stage 2	-	-	- - 103 -
Critical Hdwy	4.12	-	- - 6.42 6.22
Critical Hdwy Stg 1	-	-	- - 5.42 -
Critical Hdwy Stg 2	-	-	- - 5.42 -
Follow-up Hdwy	2.218	-	- - 3.518 3.318
Pot Cap-1 Maneuver	1453	-	- - 754 918
Stage 1	-	-	- - 895 -
Stage 2	-	-	- - 921 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1453	-	- - 753 918
Mov Cap-2 Maneuver	-	-	- - 753 -
Stage 1	-	-	- - 894 -
Stage 2	-	-	- - 921 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.08	0	9.73
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	20	-	-	-	770
HCM Lane V/C Ratio	0.001	-	-	-	0.012
HCM Control Delay (s/veh)	7.5	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM 7th TWSC
10: Blessinger Rd & Toscano St/Saddleman Ranch Ct

2033 Total
AM Peak Hour

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	73	0	0	0	0	7	0	295	0	4	115	23
Future Vol, veh/h	73	0	0	0	0	7	0	295	0	4	115	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	0	0	0	0	8	0	328	0	4	128	26

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	477	477	141	464	490	328	153	0	0	328	0	0
Stage 1	149	149	-	328	328	-	-	-	-	-	-	-
Stage 2	328	328	-	137	162	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	498	487	907	508	479	714	1427	-	-	1232	-	-
Stage 1	853	774	-	685	647	-	-	-	-	-	-	-
Stage 2	685	647	-	867	764	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	491	485	907	506	477	714	1427	-	-	1232	-	-
Mov Cap-2 Maneuver	491	485	-	506	477	-	-	-	-	-	-	-
Stage 1	850	770	-	685	647	-	-	-	-	-	-	-
Stage 2	678	647	-	863	761	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB				
HCM Control Delay, s/v13.78			10.1		0			0.22				
HCM LOS	B		B									

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1427	-	-	491 714	49	-	-
HCM Lane V/C Ratio	-	-	-	0.165 0.011 0.004	-	-	-
HCM Control Delay (s/veh)	0	-	-	13.8 10.1 7.9	0	-	-
HCM Lane LOS	A	-	-	B B A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6 0 0	-	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	55	40	6	15	0
Future Vol, veh/h	0	55	40	6	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	61	44	7	17	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	51	0	-	0	109	48
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	61	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1555	-	-	-	888	1021
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	962	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1555	-	-	-	888	1021
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	962	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0	0		9.13		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1555	-	-	-	888	
HCM Lane V/C Ratio	-	-	-	-	0.019	
HCM Control Delay (s/veh)	0	-	-	-	9.1	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

HCM 7th Signalized Intersection Summary

2033 Total

1: Blessinger Rd & SH 44

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	850	102	231	1129	116	153	30	139	98	11	84
Future Volume (veh/h)	50	850	102	231	1129	116	153	30	139	98	11	84
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	1604	1870	1870	1870
Adj Flow Rate, veh/h	54	914	110	248	1214	125	165	32	149	105	12	90
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	2	2	2	2	2	20	2	2	2
Cap, veh/h	277	1880	226	415	2043	210	250	59	275	181	39	292
Arrive On Green	0.03	0.59	0.59	0.07	0.63	0.63	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	3194	384	1781	3253	334	1293	288	1341	1203	190	1424
Grp Volume(v), veh/h	54	508	516	248	662	677	165	0	181	105	0	102
Grp Sat Flow(s),veh/h/ln	1781	1777	1801	1781	1777	1810	1293	0	1629	1203	0	1614
Q Serve(g_s), s	1.6	22.1	22.1	7.1	29.5	29.7	16.6	0.0	13.3	11.4	0.0	7.2
Cycle Q Clear(g_c), s	1.6	22.1	22.1	7.1	29.5	29.7	23.8	0.0	13.3	24.7	0.0	7.2
Prop In Lane	1.00		0.21	1.00		0.18	1.00		0.82	1.00		0.88
Lane Grp Cap(c), veh/h	277	1046	1060	415	1116	1137	250	0	334	181	0	331
V/C Ratio(X)	0.19	0.49	0.49	0.60	0.59	0.60	0.66	0.00	0.54	0.58	0.00	0.31
Avail Cap(c_a), veh/h	339	1046	1060	540	1116	1137	361	0	475	285	0	471
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.5	15.9	15.9	12.2	14.8	14.8	55.2	0.0	47.5	58.6	0.0	45.1
Incr Delay (d2), s/veh	0.3	1.6	1.6	1.4	2.3	2.3	3.0	0.0	1.4	2.9	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(90%),veh/ln	1.1	12.2	12.4	4.5	15.3	15.6	8.7	0.0	8.6	6.1	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.8	17.5	17.5	13.6	17.1	17.1	58.2	0.0	48.9	61.5	0.0	45.6
LnGrp LOS	B	B	B	B	B	B	E		D	E		D
Approach Vol, veh/h	1078			1587			346			207		
Approach Delay, s/veh	17.2			16.5			53.3			53.7		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.3	90.0		33.4	15.6	84.7		33.4				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	84.0		39.0	19.0	74.0		39.0				
Max Q Clear Time (g_c+I1), s	3.6	31.7		26.7	9.1	24.1		25.8				
Green Ext Time (p_c), s	0.0	10.4		0.7	0.5	6.7		1.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	23.1											
HCM 7th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM2000 Intersection V/C
1: Blessinger Rd & SH 44

2033 Total
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	850	102	231	1129	116	153	30	139	98	11	84
Future Volume (vph)	50	850	102	231	1129	116	153	30	139	98	11	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3482		1770	3490		1770	1426		1770	1616	
Flt Permitted	0.16	1.00		0.21	1.00		0.67	1.00		0.46	1.00	
Satd. Flow (perm)	300	3482		384	3490		1255	1426		865	1616	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	54	914	110	248	1214	125	165	32	149	105	12	90
RTOR Reduction (vph)	0	5	0	0	4	0	0	124	0	0	75	0
Lane Group Flow (vph)	54	1019	0	248	1335	0	165	57	0	105	27	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	20%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	84.4	79.0		97.1	85.7		22.3	22.3		22.3	22.3	
Effective Green, g (s)	84.4	79.0		97.1	85.7		22.3	22.3		22.3	22.3	
Actuated g/C Ratio	0.64	0.60		0.74	0.65		0.17	0.17		0.17	0.17	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	253	2093		411	2276		212	242		146	274	
v/s Ratio Prot	0.01	0.29		c0.06	c0.38			0.04			0.02	
v/s Ratio Perm	0.13			c0.39			c0.13			0.12		
v/c Ratio	0.21	0.49		0.60	0.59		0.78	0.24		0.72	0.10	
Uniform Delay, d1	9.9	14.8		8.8	12.9		52.2	47.2		51.6	46.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.8		2.5	1.1		16.3	0.5		15.6	0.2	
Delay (s)	10.3	15.6		11.3	14.0		68.5	47.7		67.2	46.2	
Level of Service	B	B		B	B		E	D		E	D	
Approach Delay (s/veh)		15.3			13.6			57.6			56.8	
Approach LOS		B			B			E			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			21.7			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			131.4			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			75.1%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑		↑
Traffic Vol, veh/h	1075	106	209	1668	0	188
Future Vol, veh/h	1075	106	209	1668	0	188
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	8	2	2	2	3
Mvmt Flow	1144	113	222	1774	0	200
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1256	0	-	572
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.33
Pot Cap-1 Maneuver	-	-	549	-	0	461
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	549	-	-	461
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		1.77		18.67	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBL	WBT
Capacity (veh/h)	461		-	-	549	-
HCM Lane V/C Ratio	0.434		-	-	0.405	-
HCM Control Delay (s/veh)	18.7		-	-	15.9	-
HCM Lane LOS	C		-	-	C	-
HCM 95th %tile Q(veh)	2.2		-	-	1.9	-

HCM 7th TWSC
3: Blessinger Rd & Landruff Ln

2033 Total
PM Peak Hour

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	5	5	30	5	131	5	75	10	46	110	70
Future Vol, veh/h	45	5	5	30	5	131	5	75	10	46	110	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	6	6	33	6	146	6	83	11	51	122	78

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	361	369	161	327	402	89	200	0	0	94	0	0
Stage 1	263	263	-	100	100	-	-	-	-	-	-	-
Stage 2	97	106	-	227	302	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	595	560	884	626	537	969	1372	-	-	1500	-	-
Stage 1	742	691	-	906	812	-	-	-	-	-	-	-
Stage 2	909	808	-	775	664	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	479	536	884	589	514	969	1372	-	-	1500	-	-
Mov Cap-2 Maneuver	479	536	-	589	514	-	-	-	-	-	-	-
Stage 1	713	664	-	902	809	-	-	-	-	-	-	-
Stage 2	764	804	-	735	638	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v13.11		10.42	0.42	1.52
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	98	-	-	505 848	340	-	-
HCM Lane V/C Ratio	0.004	-	-	0.121 0.218	0.034	-	-
HCM Control Delay (s/veh)	7.6	0	-	13.1 10.4	7.5	0	-
HCM Lane LOS	A	A	-	B B	A A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4 0.8	0.1	-	-

HCM 7th TWSC
4: Bent Ln & Landruff Ln

2033 Total
PM Peak Hour

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	130	35	4	27	57	0	32	58	19	0	126	62
Future Vol, veh/h	130	35	4	27	57	0	32	58	19	0	126	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	144	39	4	30	63	0	36	64	21	0	140	69

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	342	331	174	306	355	75	209	0	0	86	0	0
Stage 1	174	174	-	146	146	-	-	-	-	-	-	-
Stage 2	167	157	-	159	209	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	612	588	869	647	571	986	1362	-	-	1511	-	-
Stage 1	827	755	-	857	776	-	-	-	-	-	-	-
Stage 2	835	768	-	843	729	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	529	572	869	584	555	986	1362	-	-	1511	-	-
Mov Cap-2 Maneuver	529	572	-	584	555	-	-	-	-	-	-	-
Stage 1	827	755	-	833	755	-	-	-	-	-	-	-
Stage 2	744	747	-	795	729	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	15.1		12.64		2.26		0	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	504	-	-	543 564	1511	-	-
HCM Lane V/C Ratio	0.026	-	-	0.346 0.165	-	-	-
HCM Control Delay (s/veh)	7.7	0	-	15.1 12.6	0	-	-
HCM Lane LOS	A	A	-	C B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.5 0.6	0	-	-

HCM 7th Signalized Intersection Summary

5: Sortino Ave & SH 44

2033 Total
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	1029	31	64	1499	105	29	0	60	92	0	11
Future Volume (veh/h)	42	1029	31	64	1499	105	29	0	60	92	0	11
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	47	1143	34	71	1666	117	32	0	67	102	0	12
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	215	2150	64	367	2083	145	266	0	218	215	0	218
Arrive On Green	0.04	0.61	0.61	0.05	0.62	0.62	0.14	0.00	0.14	0.14	0.00	0.14
Sat Flow, veh/h	1781	3524	105	1781	3370	235	1402	0	1585	1334	0	1585
Grp Volume(v), veh/h	47	576	601	71	872	911	32	0	67	102	0	12
Grp Sat Flow(s),veh/h/ln	1781	1777	1851	1781	1777	1828	1402	0	1585	1334	0	1585
Q Serve(g_s), s	0.8	16.4	16.4	1.2	32.3	33.3	1.8	0.0	3.3	6.5	0.0	0.6
Cycle Q Clear(g_c), s	0.8	16.4	16.4	1.2	32.3	33.3	2.4	0.0	3.3	9.9	0.0	0.6
Prop In Lane	1.00		0.06	1.00		0.13	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	215	1084	1130	367	1098	1130	266	0	218	215	0	218
V/C Ratio(X)	0.22	0.53	0.53	0.19	0.79	0.81	0.12	0.00	0.31	0.47	0.00	0.05
Avail Cap(c_a), veh/h	328	1904	1984	466	1904	1959	536	0	524	472	0	524
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.9	9.9	9.9	7.2	12.6	12.7	33.9	0.0	34.0	38.5	0.0	32.9
Incr Delay (d2), s/veh	0.5	0.4	0.4	0.3	1.3	1.4	0.2	0.0	0.8	1.6	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(90%),veh/ln	0.6	7.6	7.9	0.6	13.4	14.1	1.1	0.0	2.4	4.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.4	10.3	10.3	7.4	13.9	14.2	34.1	0.0	34.8	40.1	0.0	33.0
LnGrp LOS	B	B	B	A	B	B	C		C	D		C
Approach Vol, veh/h	1224			1854			99			114		
Approach Delay, s/veh	10.4			13.8			34.6			39.4		
Approach LOS	B			B			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	60.2		18.1	10.1	59.5		18.1				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	94.0		29.0	9.0	94.0		29.0				
Max Q Clear Time (g_c+I1), s	2.8	35.3		11.9	3.2	18.4		5.3				
Green Ext Time (p_c), s	0.0	18.9		0.3	0.1	8.3		0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh				14.0								
HCM 7th LOS				B								

HCM2000 Intersection V/C
5: Sortino Ave & SH 44

2033 Total
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	1029	31	64	1499	105	29	0	60	92	0	11
Future Volume (vph)	42	1029	31	64	1499	105	29	0	60	92	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3524		1770	3504		1770	1583		1770	1583	
Flt Permitted	0.06	1.00		0.18	1.00		0.75	1.00		0.71	1.00	
Satd. Flow (perm)	119	3524		343	3504		1397	1583		1329	1583	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	47	1143	34	71	1666	117	32	0	67	102	0	12
RTOR Reduction (vph)	0	2	0	0	3	0	0	57	0	0	10	0
Lane Group Flow (vph)	47	1175	0	71	1780	0	32	10	0	102	2	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	67.4	62.5		69.0	63.3		14.3	14.3		14.3	14.3	
Effective Green, g (s)	67.4	62.5		69.0	63.3		14.3	14.3		14.3	14.3	
Actuated g/C Ratio	0.67	0.62		0.69	0.63		0.14	0.14		0.14	0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	160	2191		316	2206		198	225		189	225	
v/s Ratio Prot	c0.01	0.33		0.01	c0.51			0.01			0.00	
v/s Ratio Perm	0.18			0.14			0.02			c0.08		
v/c Ratio	0.29	0.54		0.22	0.81		0.16	0.04		0.54	0.01	
Uniform Delay, d1	12.5	10.8		6.4	14.0		37.8	37.2		40.0	37.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.3		0.4	2.3		0.4	0.1		3.0	0.0	
Delay (s)	13.5	11.0		6.8	16.3		38.2	37.3		43.0	37.0	
Level of Service	B	B		A	B		D	D		D	D	
Approach Delay (s/veh)		11.1			15.9			37.6			42.4	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			15.7			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			100.5			Sum of lost time (s)				18.0		
Intersection Capacity Utilization			74.9%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th TWSC
5: Sortino Ave & SH 44

2033 Total - RIROLI
PM Peak Hour

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	1121	31	64	1499	105	0	0	60	0	0	11
Future Vol, veh/h	42	1121	31	64	1499	105	0	0	60	0	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	100	100	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	1246	34	71	1666	117	0	0	67	0	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1782	0	0	1280	0	0	-	-	623	-	-	833
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	344	-	-	538	-	-	0	0	429	0	0	312
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	344	-	-	538	-	-	-	-	429	-	-	312
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.6			0.49			14.93			17.01		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	429	344	-	-	538	-	-	312
HCM Lane V/C Ratio	0.155	0.136	-	-	0.132	-	-	0.039
HCM Control Delay (s/veh)	14.9	17.1	-	-	12.7	-	-	17
HCM Lane LOS	B	C	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.5	0.5	-	-	0.5	-	-	0.1

HCM 7th TWSC
6: Landruff Ln & Valdina Wy

2033 Total
PM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	40	158	5	7	1
Future Vol, veh/h	3	40	158	5	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	44	176	6	8	1

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	181	0	0 229 178
Stage 1	-	-	- 178 -
Stage 2	-	-	- 51 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1394	-	- 759 865
Stage 1	-	-	- 853 -
Stage 2	-	-	- 971 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1394	-	- 757 865
Mov Cap-2 Maneuver	-	-	- 757 -
Stage 1	-	-	- 850 -
Stage 2	-	-	- 971 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.53	0	9.74
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	126	-	-	-	769
HCM Lane V/C Ratio	0.002	-	-	-	0.012
HCM Control Delay (s/veh)	7.6	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	35	12	41	156	7	24
Future Vol, veh/h	35	12	41	156	7	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	13	46	173	8	27
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	52	0	310	46
Stage 1	-	-	-	-	46	-
Stage 2	-	-	-	-	264	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1554	-	682	1024
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	780	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1554	-	660	1024
Mov Cap-2 Maneuver	-	-	-	-	660	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	755	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	1.54		9.11		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	911	-	-	375	-	
HCM Lane V/C Ratio	0.038	-	-	0.029	-	
HCM Control Delay (s/veh)	9.1	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	

HCM 7th TWSC
8: Landruff Ln & Vicari Wy

2033 Total
PM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	58	182	6	7	1
Future Vol, veh/h	1	58	182	6	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	64	202	7	8	1

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	209	0	0 272 206
Stage 1	-	-	- - 206 -
Stage 2	-	-	- - 67 -
Critical Hdwy	4.12	-	- - 6.42 6.22
Critical Hdwy Stg 1	-	-	- - 5.42 -
Critical Hdwy Stg 2	-	-	- - 5.42 -
Follow-up Hdwy	2.218	-	- - 3.518 3.318
Pot Cap-1 Maneuver	1362	-	- - 717 835
Stage 1	-	-	- - 829 -
Stage 2	-	-	- - 956 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1362	-	- - 717 835
Mov Cap-2 Maneuver	-	-	- - 717 -
Stage 1	-	-	- - 828 -
Stage 2	-	-	- - 956 -

Approach	EB	WB	SB
HCM Control Delay, s/v 0.13		0	10
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	31	-	-	-	730
HCM Lane V/C Ratio	0.001	-	-	-	0.012
HCM Control Delay (s/veh)	7.6	0	-	-	10
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	55	189	11	7	16
Future Vol, veh/h	15	55	189	11	7	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	61	210	12	8	18

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	222	0	0	311	216
Stage 1	-	-	-	216	-
Stage 2	-	-	-	94	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1347	-	-	682	824
Stage 1	-	-	-	820	-
Stage 2	-	-	-	929	-
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	1347	-	-	673	824
Mov Cap-2 Maneuver	-	-	-	673	-
Stage 1	-	-	-	809	-
Stage 2	-	-	-	929	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.65	0	9.83
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	386	-	-	-	771
HCM Lane V/C Ratio	0.012	-	-	-	0.033
HCM Control Delay (s/veh)	7.7	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

HCM 7th TWSC
10: Blessinger Rd & Toscano St/Saddleman Ranch Ct

2033 Total
PM Peak Hour

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	49	0	0	0	0	3	0	261	0	5	259	80
Future Vol, veh/h	49	0	0	0	0	3	0	261	0	5	259	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	0	0	0	0	3	0	290	0	6	288	89

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	633	633	332	589	678	290	377	0	0	290	0	0
Stage 1	343	343	-	290	290	-	-	-	-	-	-	-
Stage 2	290	290	-	299	388	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	392	397	709	420	374	749	1182	-	-	1272	-	-
Stage 1	672	637	-	718	672	-	-	-	-	-	-	-
Stage 2	718	672	-	710	609	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	388	395	709	418	372	749	1182	-	-	1272	-	-
Mov Cap-2 Maneuver	388	395	-	418	372	-	-	-	-	-	-	-
Stage 1	668	634	-	718	672	-	-	-	-	-	-	-
Stage 2	715	672	-	706	606	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v15.78		9.83	0	0.11
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1182	-	-	388 749	25	-	-
HCM Lane V/C Ratio	-	-	-	0.14 0.004 0.004	-	-	-
HCM Control Delay (s/veh)	0	-	-	15.8 9.8 7.8	0	-	-
HCM Lane LOS	A	-	-	C A A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5 0 0	0	-	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	45	60	20	10	0
Future Vol, veh/h	0	45	60	20	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	50	67	22	11	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	89	0	-	0	128	78
Stage 1	-	-	-	-	78	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1507	-	-	-	867	983
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1507	-	-	-	867	983
Mov Cap-2 Maneuver	-	-	-	-	867	-
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	972	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0	0		9.21		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1507	-	-	-	867	
HCM Lane V/C Ratio	-	-	-	-	0.013	
HCM Control Delay (s/veh)	0	-	-	-	9.2	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 7th Signalized Intersection Summary

1: Blessinger Rd & SH 44

No Access on SH 44

2033 Total AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	1024	53	90	561	75	181	38	177	249	17	111
Future Volume (veh/h)	61	1024	53	90	561	75	181	38	177	249	17	111
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	1841	1870	1470	1841	1870	1870	1870	1870	1811	1411	1856
Adj Flow Rate, veh/h	66	1113	58	98	610	82	197	41	192	271	18	121
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	4	2	29	4	2	2	2	2	6	33	3
Cap, veh/h	386	1618	84	202	1534	206	268	50	235	318	55	370
Arrive On Green	0.03	0.48	0.48	0.05	0.49	0.49	0.17	0.17	0.17	0.13	0.35	0.35
Sat Flow, veh/h	1781	3382	176	1400	3099	416	1250	287	1342	1725	158	1062
Grp Volume(v), veh/h	66	575	596	98	344	348	197	0	233	271	0	139
Grp Sat Flow(s),veh/h/ln	1781	1749	1809	1400	1749	1766	1250	0	1629	1725	0	1220
Q Serve(g_s), s	2.7	36.9	36.9	5.1	17.8	17.9	22.3	0.0	19.9	18.3	0.0	12.1
Cycle Q Clear(g_c), s	2.7	36.9	36.9	5.1	17.8	17.9	22.3	0.0	19.9	18.3	0.0	12.1
Prop In Lane	1.00		0.10	1.00		0.24	1.00		0.82	1.00		0.87
Lane Grp Cap(c), veh/h	386	837	865	202	865	874	268	0	285	318	0	425
V/C Ratio(X)	0.17	0.69	0.69	0.49	0.40	0.40	0.73	0.00	0.82	0.85	0.00	0.33
Avail Cap(c_a), veh/h	440	837	865	221	865	874	301	0	327	318	0	457
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.9	29.2	29.3	23.7	22.9	22.9	58.3	0.0	57.3	41.7	0.0	34.6
Incr Delay (d2), s/veh	0.2	4.6	4.5	1.8	1.4	1.4	7.9	0.0	13.4	19.3	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	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	22.0	22.6	3.0	11.7	11.8	12.2	0.0	14.3	14.6	0.0	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.1	33.8	33.7	25.5	24.3	24.3	66.2	0.0	70.7	61.0	0.0	35.0
LnGrp LOS	B	C	C	C	C	C	E		E	E		D
Approach Vol, veh/h	1237			790			430			410		
Approach Delay, s/veh	33.0			24.4			68.7			52.2		
Approach LOS	C			C			E			D		
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.6	77.4		56.2	13.0	75.0	25.0	31.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	9.0	69.0		54.0	9.0	69.0	19.0	29.0				
Max Q Clear Time (g_c+I1), s	4.7	19.9		14.1	7.1	38.9	20.3	24.3				
Green Ext Time (p_c), s	0.0	3.9		1.0	0.0	7.6	0.0	0.9				
Intersection Summary												
HCM 7th Control Delay, s/veh				38.7								
HCM 7th LOS				D								

HCM2000 Intersection V/C
1: Blessinger Rd & SH 44

No Access on SH 44
2033 Total AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	1024	53	90	561	75	181	38	177	249	17	111
Future Volume (vph)	61	1024	53	90	561	75	181	38	177	249	17	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3449		1399	3417		1770	1633		1703	1546	
Flt Permitted	0.33	1.00		0.12	1.00		0.67	1.00		0.27	1.00	
Satd. Flow (perm)	610	3449		176	3417		1245	1633		480	1546	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	1113	58	98	610	82	197	41	192	271	18	121
RTOR Reduction (vph)	0	3	0	0	7	0	0	114	0	0	79	0
Lane Group Flow (vph)	66	1168	0	98	685	0	197	119	0	271	60	0
Heavy Vehicles (%)	2%	4%	2%	29%	4%	2%	2%	2%	2%	6%	33%	3%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		pm+pt	NA	
Protected Phases	1	6		5	2			8		7	4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	76.9	70.4		81.1	72.5		26.2	26.2		51.2	51.2	
Effective Green, g (s)	76.9	70.4		81.1	72.5		26.2	26.2		51.2	51.2	
Actuated g/C Ratio	0.52	0.48		0.55	0.49		0.18	0.18		0.35	0.35	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	367	1638		167	1671		220	288		322	534	
v/s Ratio Prot	0.01	c0.34		c0.03	0.20			0.07		c0.11	0.04	
v/s Ratio Perm	0.09			0.29			0.16			c0.18		
v/c Ratio	0.18	0.71		0.59	0.41		0.90	0.41		0.84	0.11	
Uniform Delay, d1	18.3	30.9		22.6	24.2		59.7	54.2		39.2	33.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	2.7		5.2	0.7		33.7	1.0		17.7	0.1	
Delay (s)	18.5	33.6		27.8	24.9		93.3	55.1		56.9	33.1	
Level of Service	B	C		C	C		F	E		E	C	
Approach Delay (s/veh)		32.8			25.3			72.6			48.9	
Approach LOS		C			C			E			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			39.0			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			148.2			Sum of lost time (s)			24.0			
Intersection Capacity Utilization			81.7%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th TWSC
2: Bent Ln & SH 44

No Access on SH 44
2033 Total AM Peak Hour

Intersection						
Int Delay, s/veh	7.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑		↑
Traffic Vol, veh/h	1363	124	218	712	0	209
Future Vol, veh/h	1363	124	218	712	0	209
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	6	23	4	2	34
Mvmt Flow	1482	135	237	774	0	227
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1616	0	-	741
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.56	-	-	7.58
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.43	-	-	3.64
Pot Cap-1 Maneuver	-	-	314	-	0	295
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	314	-	-	295
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		10.44		48.41	
HCM LOS					E	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	295	-	-	314	-	
HCM Lane V/C Ratio	0.769	-	-	0.754	-	
HCM Control Delay (s/veh)	48.4	-	-	44.5	-	
HCM Lane LOS	E	-	-	E	-	
HCM 95th %tile Q(veh)	5.9	-	-	5.8	-	

HCM 7th TWSC
3: Blessinger Rd & Landruff Ln

No Access on SH 44
2033 Total AM Peak Hour

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	65	0	5	5	5	157	5	91	5	40	48	36
Future Vol, veh/h	65	0	5	5	5	157	5	91	5	40	48	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	72	0	6	6	6	174	6	101	6	44	53	40

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	277	280	73	257	297	104	93	0	0	107	0	0
Stage 1	162	162	-	115	115	-	-	-	-	-	-	-
Stage 2	115	118	-	142	182	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	675	628	989	696	615	951	1501	-	-	1484	-	-
Stage 1	840	764	-	890	800	-	-	-	-	-	-	-
Stage 2	890	798	-	861	749	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	527	606	989	667	593	951	1501	-	-	1484	-	-
Mov Cap-2 Maneuver	527	606	-	667	593	-	-	-	-	-	-	-
Stage 1	813	740	-	886	797	-	-	-	-	-	-	-
Stage 2	719	795	-	829	725	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	12.7		9.88		0.37		2.42	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	88	-	-	545	922	535	-
HCM Lane V/C Ratio	0.004	-	-	0.143	0.201	0.03	-
HCM Control Delay (s/veh)	7.4	0	-	12.7	9.9	7.5	0
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.7	0.1	-

HCM 7th TWSC
4: Bent Ln & Landruff Ln

No Access on SH 44
2033 Total AM Peak Hour

Intersection												
Int Delay, s/veh	8.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	154	86	5	9	22	0	45	55	43	0	93	72
Future Vol, veh/h	154	86	5	9	22	0	45	55	43	0	93	72
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	171	96	6	10	24	0	50	61	48	0	103	80

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	317	352	143	336	368	85	183	0	0	109	0	0
Stage 1	143	143	-	185	185	-	-	-	-	-	-	-
Stage 2	173	209	-	151	183	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	636	573	904	618	561	974	1392	-	-	1482	-	-
Stage 1	859	778	-	817	747	-	-	-	-	-	-	-
Stage 2	829	729	-	851	748	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	585	551	904	491	539	974	1392	-	-	1482	-	-
Mov Cap-2 Maneuver	585	551	-	491	539	-	-	-	-	-	-	-
Stage 1	859	778	-	785	718	-	-	-	-	-	-	-
Stage 2	770	701	-	742	748	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v16.71		12.35	2.42	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	521	-	-	576 524	1482	-	-
HCM Lane V/C Ratio	0.036	-	-	0.472 0.066	-	-	-
HCM Control Delay (s/veh)	7.7	0	-	16.7 12.3	0	-	-
HCM Lane LOS	A	A	-	C B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.5 0.2	0	-	-

HCM 7th TWSC
6: Landruff Ln & Valdina Wy

No Access on SH 44
2033 Total AM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	37	136	2	4	3
Future Vol, veh/h	1	37	136	2	4	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	41	151	2	4	3
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	153	0	-	0	196	152
Stage 1	-	-	-	-	152	-
Stage 2	-	-	-	-	43	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1427	-	-	-	793	894
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	979	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1427	-	-	-	793	894
Mov Cap-2 Maneuver	-	-	-	-	793	-
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	979	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.2	0		9.36		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	47	-	-	-	833	
HCM Lane V/C Ratio	0.001	-	-	-	0.009	
HCM Control Delay (s/veh)	7.5	0	-	-	9.4	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	72	4	12	124	14	27
Future Vol, veh/h	72	4	12	124	14	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	80	4	13	138	16	30
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	84	0	247	82
Stage 1	-	-	-	-	82	-
Stage 2	-	-	-	-	164	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1512	-	742	977
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	865	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1512	-	735	977
Mov Cap-2 Maneuver	-	-	-	-	735	-
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	857	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.65		9.32	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	878	-	-	159	-	
HCM Lane V/C Ratio	0.052	-	-	0.009	-	
HCM Control Delay (s/veh)	9.3	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.2	-	-	0	-	

HCM 7th TWSC
8: Landruff Ln & Vicari Wy

No Access on SH 44
2033 Total AM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	98	135	1	5	1
Future Vol, veh/h	1	98	135	1	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	109	150	1	6	1
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	151	0	-	0	262	151
Stage 1	-	-	-	-	151	-
Stage 2	-	-	-	-	111	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1430	-	-	-	727	896
Stage 1	-	-	-	-	877	-
Stage 2	-	-	-	-	914	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1430	-	-	-	727	896
Mov Cap-2 Maneuver	-	-	-	-	727	-
Stage 1	-	-	-	-	877	-
Stage 2	-	-	-	-	914	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.08	0		9.84		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	18	-	-	-	750	
HCM Lane V/C Ratio	0.001	-	-	-	0.009	
HCM Control Delay (s/veh)	7.5	0	-	-	9.8	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 7th TWSC
9: Landruff Ln & Ragusa Ave

No Access on SH 44
2033 Total AM Peak Hour

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	91	117	44	53	20
Future Vol, veh/h	19	91	117	44	53	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	101	130	49	59	22
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	179	0	-	0	298	154
Stage 1	-	-	-	-	154	-
Stage 2	-	-	-	-	143	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1397	-	-	-	693	891
Stage 1	-	-	-	-	874	-
Stage 2	-	-	-	-	884	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1397	-	-	-	682	891
Mov Cap-2 Maneuver	-	-	-	-	682	-
Stage 1	-	-	-	-	860	-
Stage 2	-	-	-	-	884	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	1.32	0		10.55		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	311	-	-	-	729	
HCM Lane V/C Ratio	0.015	-	-	-	0.111	
HCM Control Delay (s/veh)	7.6	0	-	-	10.6	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.4	

HCM 7th TWSC
10: Blessinger Rd & Toscano St/Saddleman Ranch Ct

No Access on SH 44
2033 Total AM Peak Hour

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	0	0	0	0	7	0	314	0	4	134	23
Future Vol, veh/h	73	0	0	0	0	7	0	314	0	4	134	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	0	0	0	0	8	0	349	0	4	149	26
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	519	519	162	507	532	349	174	0	0	349	0	0
Stage 1	171	171	-	349	349	-	-	-	-	-	-	-
Stage 2	349	349	-	158	183	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	467	461	883	476	453	694	1402	-	-	1210	-	-
Stage 1	831	758	-	667	634	-	-	-	-	-	-	-
Stage 2	667	634	-	844	748	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	460	459	883	474	451	694	1402	-	-	1210	-	-
Mov Cap-2 Maneuver	460	459	-	474	451	-	-	-	-	-	-	-
Stage 1	828	754	-	667	634	-	-	-	-	-	-	-
Stage 2	660	634	-	841	745	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s/v14.49			10.24		0		0.2					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1402	-	-	460	694	43	-	-				
HCM Lane V/C Ratio	-	-	-	0.176	0.011	0.004	-	-				
HCM Control Delay (s/veh)	0	-	-	14.5	10.2	8	0	-				
HCM Lane LOS	A	-	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.6	0	0	-	-				

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	55	40	6	15	0
Future Vol, veh/h	0	55	40	6	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	61	44	7	17	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	51	0	-	0	109	48
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	61	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1555	-	-	-	888	1021
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	962	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1555	-	-	-	888	1021
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	962	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0	0		9.13		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1555	-	-	-	888	
HCM Lane V/C Ratio	-	-	-	-	0.019	
HCM Control Delay (s/veh)	0	-	-	-	9.1	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

HCM 7th Signalized Intersection Summary

1: Blessinger Rd & SH 44

No Access on SH 44

2033 Total PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	784	126	231	1095	215	176	36	139	182	19	97
Future Volume (veh/h)	92	784	126	231	1095	215	176	36	139	182	19	97
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	1604	1870	1870	1870
Adj Flow Rate, veh/h	99	843	135	248	1177	231	189	39	149	196	20	104
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	2	2	2	2	2	20	2	2	2
Cap, veh/h	228	1638	262	392	1698	331	309	90	345	253	70	362
Arrive On Green	0.04	0.53	0.53	0.08	0.57	0.57	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	3068	491	1781	2965	578	1267	340	1297	1195	262	1363
Grp Volume(v), veh/h	99	488	490	248	702	706	189	0	188	196	0	124
Grp Sat Flow(s),veh/h/ln	1781	1777	1782	1781	1777	1766	1267	0	1637	1195	0	1625
Q Serve(g_s), s	3.7	25.9	25.9	8.9	40.9	41.7	20.4	0.0	14.0	23.8	0.0	8.9
Cycle Q Clear(g_c), s	3.7	25.9	25.9	8.9	40.9	41.7	29.3	0.0	14.0	37.8	0.0	8.9
Prop In Lane	1.00		0.28	1.00		0.33	1.00		0.79	1.00		0.84
Lane Grp Cap(c), veh/h	228	949	951	392	1018	1012	309	0	435	253	0	432
V/C Ratio(X)	0.43	0.51	0.51	0.63	0.69	0.70	0.61	0.00	0.43	0.77	0.00	0.29
Avail Cap(c_a), veh/h	269	949	951	485	1018	1012	309	0	435	253	0	432
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.2	22.0	22.0	16.7	22.1	22.3	54.4	0.0	44.6	60.3	0.0	42.8
Incr Delay (d2), s/veh	1.3	2.0	2.0	1.8	3.8	4.0	3.5	0.0	0.7	13.9	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	10.6	10.6	3.4	16.6	16.9	6.9	0.0	5.8	8.2	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.5	24.0	24.0	18.5	26.0	26.3	57.9	0.0	45.3	74.2	0.0	43.1
LnGrp LOS	C	C	C	B	C	C	E		D	E		D
Approach Vol, veh/h	1077			1656			377			320		
Approach Delay, s/veh	23.7			25.0			51.6			62.1		
Approach LOS	C			C			D			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.6	90.0		45.0	17.4	84.3		45.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	84.0		39.0	19.0	74.0		39.0				
Max Q Clear Time (g_c+I1), s	5.7	43.7		39.8	10.9	27.9		31.3				
Green Ext Time (p_c), s	0.1	11.1		0.0	0.4	6.3		1.1				
Intersection Summary												
HCM 7th Control Delay, s/veh				31.0								
HCM 7th LOS				C								
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM2000 Intersection V/C
1: Blessinger Rd & SH 44

No Access on SH 44
2033 Total PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	784	126	231	1095	215	176	36	139	182	19	97
Future Volume (vph)	92	784	126	231	1095	215	176	36	139	182	19	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3466		1770	3452		1770	1440		1770	1628	
Flt Permitted	0.12	1.00		0.21	1.00		0.63	1.00		0.50	1.00	
Satd. Flow (perm)	223	3466		386	3452		1177	1440		937	1628	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	99	843	135	248	1177	231	189	39	149	196	20	104
RTOR Reduction (vph)	0	8	0	0	10	0	0	96	0	0	80	0
Lane Group Flow (vph)	99	970	0	248	1398	0	189	92	0	196	44	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	20%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	86.9	79.0		97.5	84.3		32.2	32.2		32.2	32.2	
Effective Green, g (s)	86.9	79.0		97.5	84.3		32.2	32.2		32.2	32.2	
Actuated g/C Ratio	0.61	0.55		0.68	0.59		0.23	0.23		0.23	0.23	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	221	1922		392	2043		266	325		211	368	
v/s Ratio Prot	0.02	0.28		c0.06	c0.40			0.06			0.03	
v/s Ratio Perm	0.25			0.37			0.16			c0.21		
v/c Ratio	0.45	0.50		0.63	0.68		0.71	0.28		0.93	0.12	
Uniform Delay, d1	15.7	19.6		12.2	19.9		50.8	45.6		54.0	43.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	1.0		3.3	1.9		8.6	0.5		42.0	0.1	
Delay (s)	17.1	20.6		15.5	21.8		59.4	46.0		96.0	44.0	
Level of Service	B	C		B	C		E	D		F	D	
Approach Delay (s/veh)		20.2			20.9			52.8			75.8	
Approach LOS		C			C			D			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			29.3			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			142.4			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			82.8%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th TWSC
2: Bent Ln & SH 44

No Access on SH 44
2033 Total PM Peak Hour

Intersection						
Int Delay, s/veh	2.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑		↑
Traffic Vol, veh/h	1014	106	275	1604	0	223
Future Vol, veh/h	1014	106	275	1604	0	223
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	8	2	2	2	3
Mvmt Flow	1079	113	293	1706	0	237
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1191	0	-	539
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.33
Pot Cap-1 Maneuver	-	-	582	-	0	484
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	582	-	-	484
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		2.53		19.38	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBL	WBT
Capacity (veh/h)	484		-	-	582	-
HCM Lane V/C Ratio	0.49		-	-	0.503	-
HCM Control Delay (s/veh)	19.4		-	-	17.3	-
HCM Lane LOS	C		-	-	C	-
HCM 95th %tile Q(veh)	2.7		-	-	2.8	-

HCM 7th TWSC
3: Blessinger Rd & Landruff Ln

No Access on SH 44
2033 Total PM Peak Hour

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	5	5	30	5	160	5	75	10	78	110	70
Future Vol, veh/h	45	5	5	30	5	160	5	75	10	78	110	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	6	6	33	6	178	6	83	11	87	122	78

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	432	440	161	398	473	89	200	0	0	94	0	0
Stage 1	334	334	-	100	100	-	-	-	-	-	-	-
Stage 2	97	106	-	298	373	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	534	511	884	562	489	969	1372	-	-	1500	-	-
Stage 1	679	643	-	906	812	-	-	-	-	-	-	-
Stage 2	909	808	-	710	618	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	401	475	884	514	455	969	1372	-	-	1500	-	-
Mov Cap-2 Maneuver	401	475	-	514	455	-	-	-	-	-	-	-
Stage 1	635	601	-	902	809	-	-	-	-	-	-	-
Stage 2	734	804	-	654	577	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v14.79			10.85		0.42		2.28	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	98	-	-	429	832	505	-
HCM Lane V/C Ratio	0.004	-	-	0.143	0.261	0.058	-
HCM Control Delay (s/veh)	7.6	0	-	14.8	10.8	7.5	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.5	1	0.2	-

HCM 7th TWSC
4: Bent Ln & Landruff Ln

No Access on SH 44
2033 Total PM Peak Hour

Intersection												
Int Delay, s/veh	8.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	165	60	4	27	55	0	32	58	19	0	126	128
Future Vol, veh/h	165	60	4	27	55	0	32	58	19	0	126	128
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	183	67	4	30	61	0	36	64	21	0	140	142
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	377	368	211	319	428	75	282	0	0	86	0	0
Stage 1	211	211	-	146	146	-	-	-	-	-	-	-
Stage 2	166	157	-	173	282	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	580	561	829	633	519	986	1280	-	-	1511	-	-
Stage 1	791	728	-	857	776	-	-	-	-	-	-	-
Stage 2	836	768	-	829	678	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	497	545	829	539	504	986	1280	-	-	1511	-	-
Mov Cap-2 Maneuver	497	545	-	539	504	-	-	-	-	-	-	-
Stage 1	791	728	-	832	753	-	-	-	-	-	-	-
Stage 2	746	746	-	749	678	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s/v18.77			13.49			2.32			0			
HCM LOS	C		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	504	-	-	512	515	1511	-	-				
HCM Lane V/C Ratio	0.028	-	-	0.497	0.177	-	-	-				
HCM Control Delay (s/veh)	7.9	0	-	18.8	13.5	0	-	-				
HCM Lane LOS	A	A	-	C	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	2.7	0.6	0	-	-				

HCM 7th TWSC
6: Landruff Ln & Valdina Wy

No Access on SH 44
2033 Total PM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	72	187	5	7	1
Future Vol, veh/h	3	72	187	5	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	80	208	6	8	1

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	213	0	0 297 211
Stage 1	-	-	- 211 -
Stage 2	-	-	- 87 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1357	-	- 694 830
Stage 1	-	-	- 825 -
Stage 2	-	-	- 937 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1357	-	- 692 830
Mov Cap-2 Maneuver	-	-	- 692 -
Stage 1	-	-	- 822 -
Stage 2	-	-	- 937 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.31	0	10.16
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	72	-	-	-	707
HCM Lane V/C Ratio	0.002	-	-	-	0.013
HCM Control Delay (s/veh)	7.7	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	67	12	41	185	7	24
Future Vol, veh/h	67	12	41	185	7	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	74	13	46	206	8	27
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	88	0	378	81
Stage 1	-	-	-	-	81	-
Stage 2	-	-	-	-	297	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1508	-	624	979
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	754	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1508	-	603	979
Mov Cap-2 Maneuver	-	-	-	-	603	-
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	728	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	1.35		9.37		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	858	-	-	327	-	
HCM Lane V/C Ratio	0.04	-	-	0.03	-	
HCM Control Delay (s/veh)	9.4	-	-	7.5	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	

HCM 7th TWSC
8: Landruff Ln & Vicari Wy

No Access on SH 44
2033 Total PM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	90	211	6	7	1
Future Vol, veh/h	1	90	211	6	7	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	100	234	7	8	1
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	241	0	-	0	340	238
Stage 1	-	-	-	-	238	-
Stage 2	-	-	-	-	102	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1325	-	-	-	656	801
Stage 1	-	-	-	-	802	-
Stage 2	-	-	-	-	922	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1325	-	-	-	655	801
Mov Cap-2 Maneuver	-	-	-	-	655	-
Stage 1	-	-	-	-	801	-
Stage 2	-	-	-	-	922	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.08	0		10.44		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	20	-	-	-	671	
HCM Lane V/C Ratio	0.001	-	-	-	0.013	
HCM Control Delay (s/veh)	7.7	0	-	-	10.4	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 7th TWSC
9: Landruff Ln & Ragusa Ave

No Access on SH 44
2033 Total PM Peak Hour

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	47	55	189	75	67	45
Future Vol, veh/h	47	55	189	75	67	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	61	210	83	74	50

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	293	0	0 417 252
Stage 1	-	-	- - 252 -
Stage 2	-	-	- - 166 -
Critical Hdwy	4.12	-	- - 6.42 6.22
Critical Hdwy Stg 1	-	-	- - 5.42 -
Critical Hdwy Stg 2	-	-	- - 5.42 -
Follow-up Hdwy	2.218	-	- - 3.518 3.318
Pot Cap-1 Maneuver	1268	-	- - 592 787
Stage 1	-	-	- - 790 -
Stage 2	-	-	- - 864 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1268	-	- - 567 787
Mov Cap-2 Maneuver	-	-	- - 567 -
Stage 1	-	-	- - 757 -
Stage 2	-	-	- - 864 -

Approach	EB	WB	SB
HCM Control Delay, s/v	3.67	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	829	-	-	-	639
HCM Lane V/C Ratio	0.041	-	-	-	0.195
HCM Control Delay (s/veh)	8	0	-	-	12
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

HCM 7th TWSC
10: Blessinger Rd & Toscano St/Saddleman Ranch Ct

No Access on SH 44
2033 Total PM Peak Hour

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	49	0	0	0	0	3	0	290	0	5	291	80
Future Vol, veh/h	49	0	0	0	0	3	0	290	0	5	291	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	0	0	0	0	3	0	322	0	6	323	89

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	701	701	368	657	746	322	412	0	0	322	0	0
Stage 1	379	379	-	322	322	-	-	-	-	-	-	-
Stage 2	322	322	-	334	423	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	353	363	678	378	342	719	1147	-	-	1238	-	-
Stage 1	643	615	-	690	651	-	-	-	-	-	-	-
Stage 2	690	651	-	679	587	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	350	361	678	376	340	719	1147	-	-	1238	-	-
Mov Cap-2 Maneuver	350	361	-	376	340	-	-	-	-	-	-	-
Stage 1	639	611	-	690	651	-	-	-	-	-	-	-
Stage 2	687	651	-	675	584	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v17.19		10.03	0	0.11
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1147	-	-	350 719	23	-	-
HCM Lane V/C Ratio	-	-	-	0.156 0.005 0.004	-	-	-
HCM Control Delay (s/veh)	0	-	-	17.2 10 7.9	0	-	-
HCM Lane LOS	A	-	-	C B A A	-	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5 0 0	-	-	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	45	60	20	10	0
Future Vol, veh/h	0	45	60	20	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	50	67	22	11	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	89	0	0 128 78
Stage 1	-	-	- 78 -
Stage 2	-	-	- 50 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1507	-	- 867 983
Stage 1	-	-	- 945 -
Stage 2	-	-	- 972 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1507	-	- 867 983
Mov Cap-2 Maneuver	-	-	- 867 -
Stage 1	-	-	- 945 -
Stage 2	-	-	- 972 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	9.21
HCM LOS			A

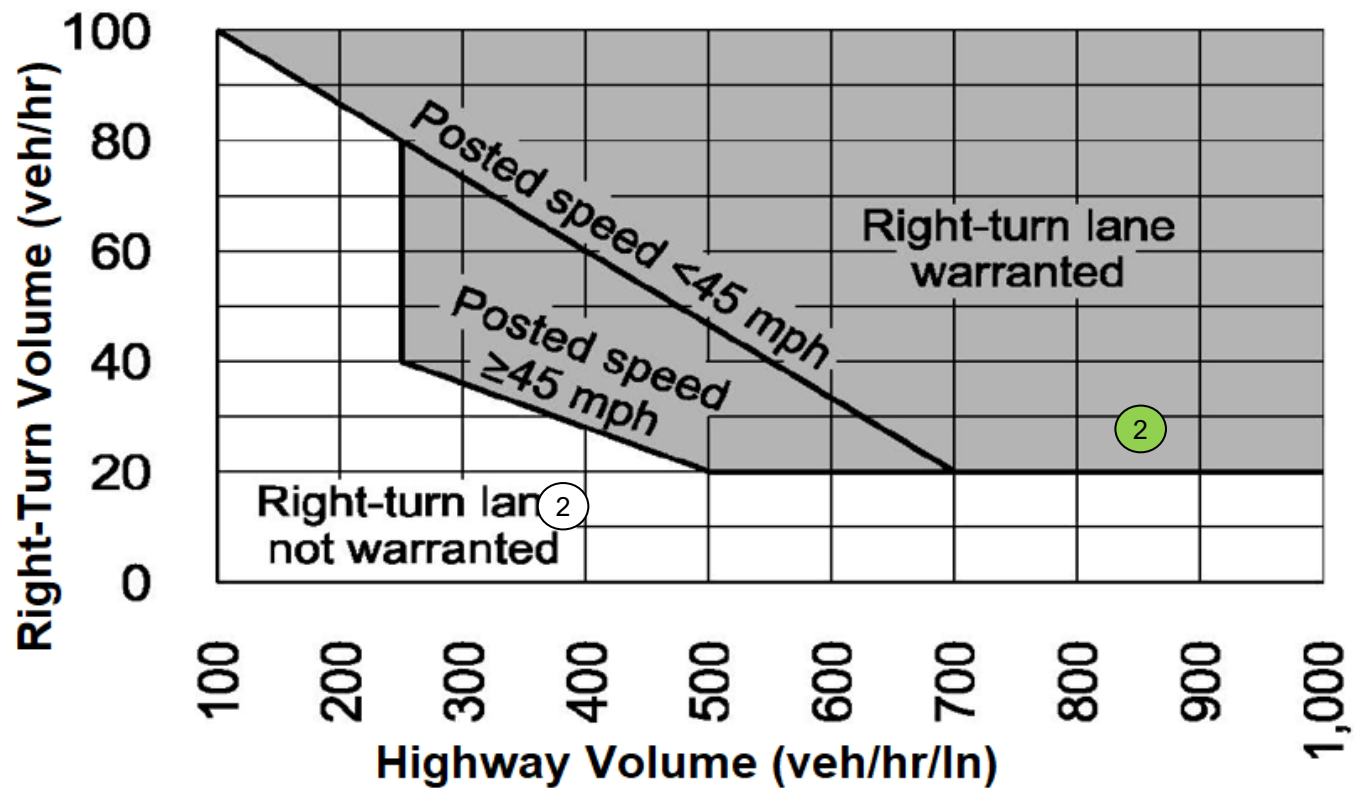
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1507	-	-	-	867
HCM Lane V/C Ratio	-	-	-	-	0.013
HCM Control Delay (s/veh)	0	-	-	-	9.2
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

APPENDIX I: Turn Lane Warrant Worksheets

**Toscano Estates & Sorano Estates
Star, Idaho**

**ITD Right-Turn Lane Analysis
2024 Existing Traffic**

Intersection	Approach	Speed Limit (mph)	Peak Hour	Right-Turn Volume (vph)	Major Road Volume (vphpl)	Meet Warrant?
① Blessinger Road & SH 44	EB	55	Existing right-turn lane			
② Blessinger Road & SH 44	WB	55	AM	14	384	No
			PM	27	853	Yes



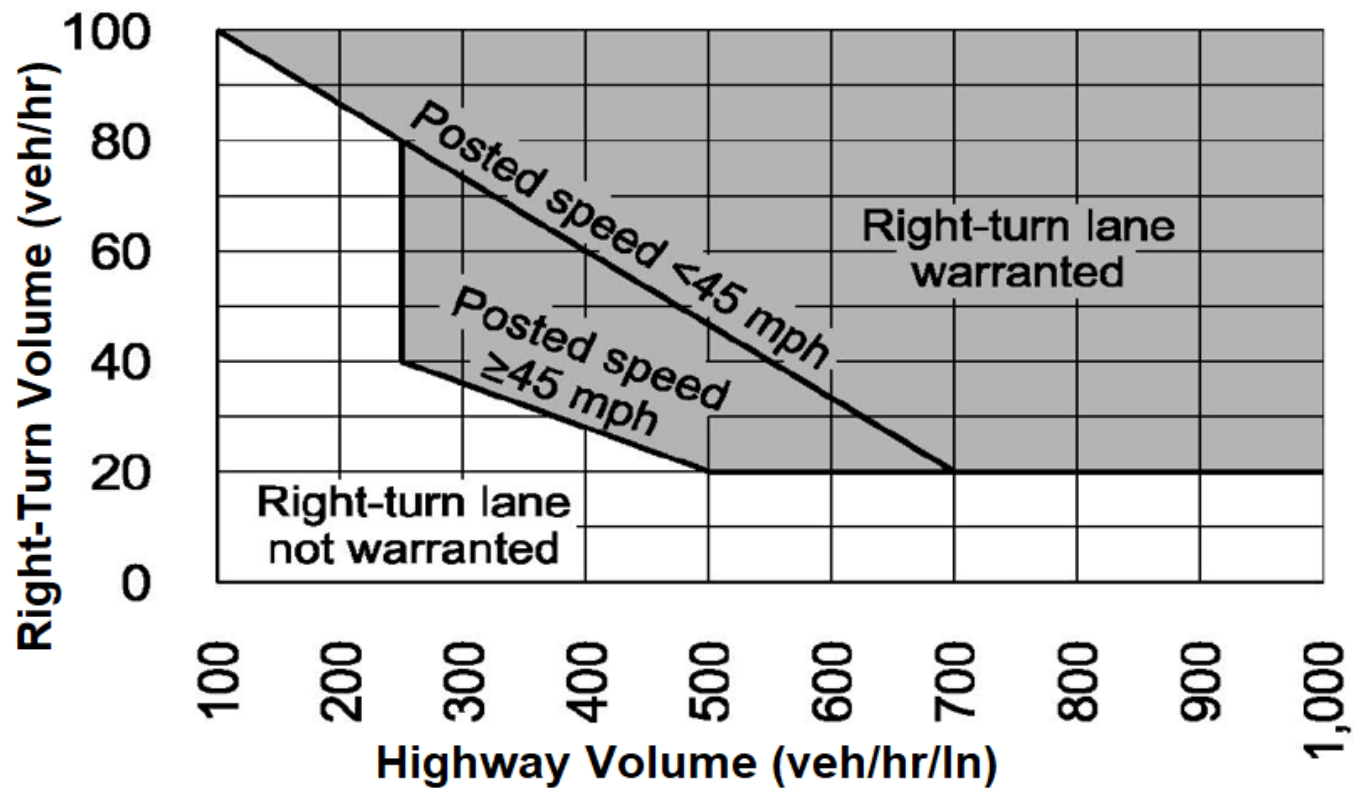
① AM Peak

① PM Peak

**Toscano Estates & Sorano Estates
Star, Idaho**

**ITD Right-Turn Lane Analysis
2028 Background Traffic**

	Intersection	Approach	Speed Limit (mph)	Peak Hour	Right-Turn Volume (vph)	Major Road Volume (vphpl)	Meet Warrant?
①	Blessinger Road & SH 44	EB	55				Existing right-turn lane
②	Blessinger Road & SH 44	WB	55				Warranted under 2024 existing traffic



① AM Peak

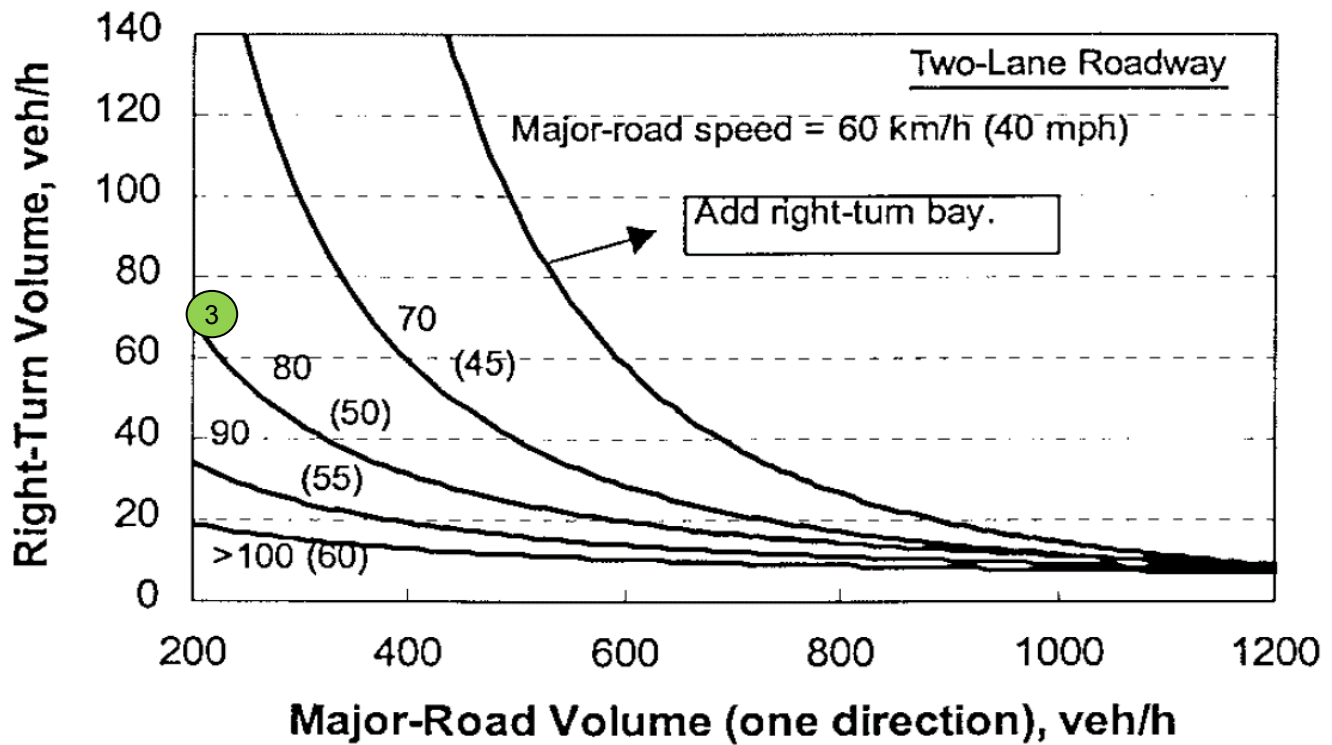
① PM Peak

**Toscano Estates & Sorano Estates
Star, Idaho**

**NCHRP 457 Right-Turn Lane Analysis
2028 Background Traffic**

	Intersection	Approach	Speed Limit [mph]	Peak Hour	Right-Turn Volume [vph]	Major Road Volume [vph]	Meet Warrant?
①	Blessinger Road & Landruff Lane	NB	35	AM	15	103	No*
				PM	10	82	No*
②	Blessinger Road & Landruff Lane	SB	35	AM	30	79	No*
				PM	50	184	No*
③	Bent Lane & Landruff Lane	SB	35	AM	31	117	No*
				PM	70	207	No

*Major approach volume < 200 vph or right-turn volume < 10 vph = Not Warranted



① AM Peak

① PM Peak

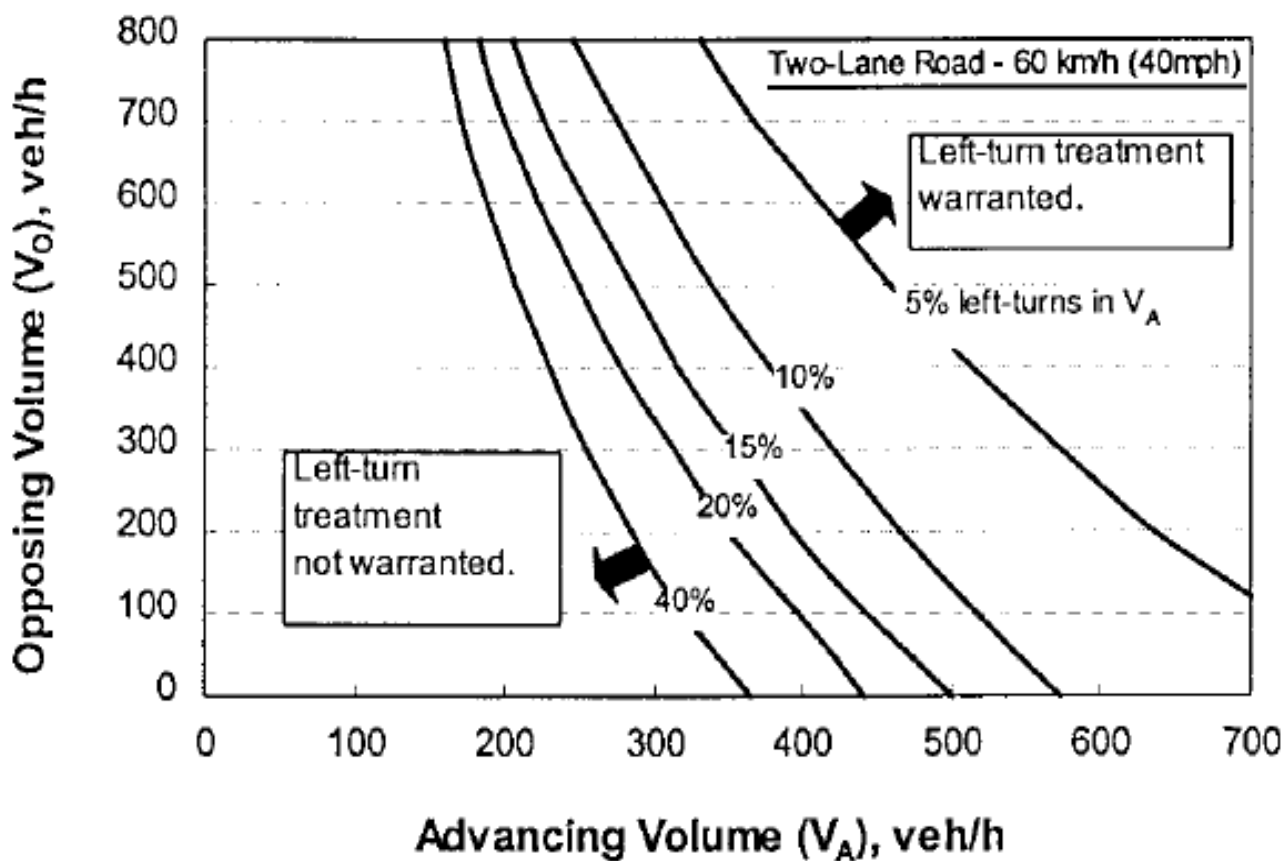
**Toscano Estates & Sorano Estates
Star, Idaho**

NCHRP 457 Left-Turn Lane Analysis for 40 mph or less Roadways

2028 Background Traffic

	Intersection	Approach	Speed Limit [mph]	Peak Hour	Advancing Volume [vph]	Opposing Volume [vph]	Left-Turn Volume (%)	Meet Warrant?
①	Landruff Drive & Blessinger Road	NB	35	AM	103	65	5%	No*
				PM	82	156	5%	No*
②	Landruff Drive & Blessinger Road	SB	35	AM	79	98	18%	No*
				PM	184	77	15%	No*
③	Landruff Drive & Bent Lane	NB	35	AM	127	117	2%	No*
				PM	97	207	3%	No*

*Advancing and Opposing Volume < 250 vph = Not Warranted



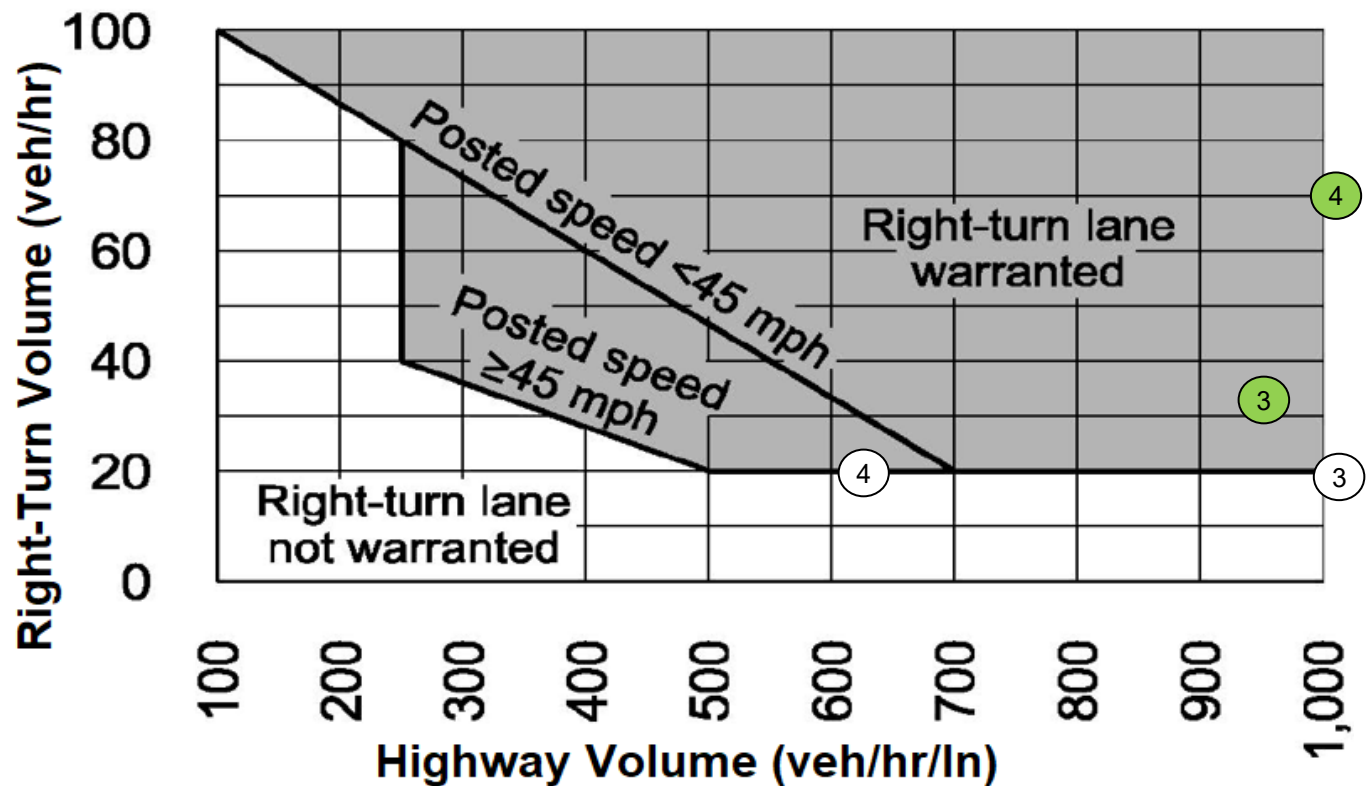
① AM Peak

① PM Peak

**Toscano Estates & Sorano Estates
Star, Idaho**

**ITD Right-Turn Lane Analysis
2028 Total Traffic**

Intersection	Approach	Speed Limit (mph)	Peak Hour	Right-Turn Volume (vph)	Major Road Volume (vphpl)	Meet Warrant?
① Blessinger Road & SH 44	EB	55	Existing right-turn lane			
② Blessinger Road & SH 44	WB	55	Warranted under 2024 existing traffic			
③ Sortino Ave & SH 44	EB	55	AM	19	1225	No
			PM	31	965	Yes
④ Sortino Ave & SH 44	WB	55	AM	20	629	No
			PM	70	1451	Yes



① AM Peak

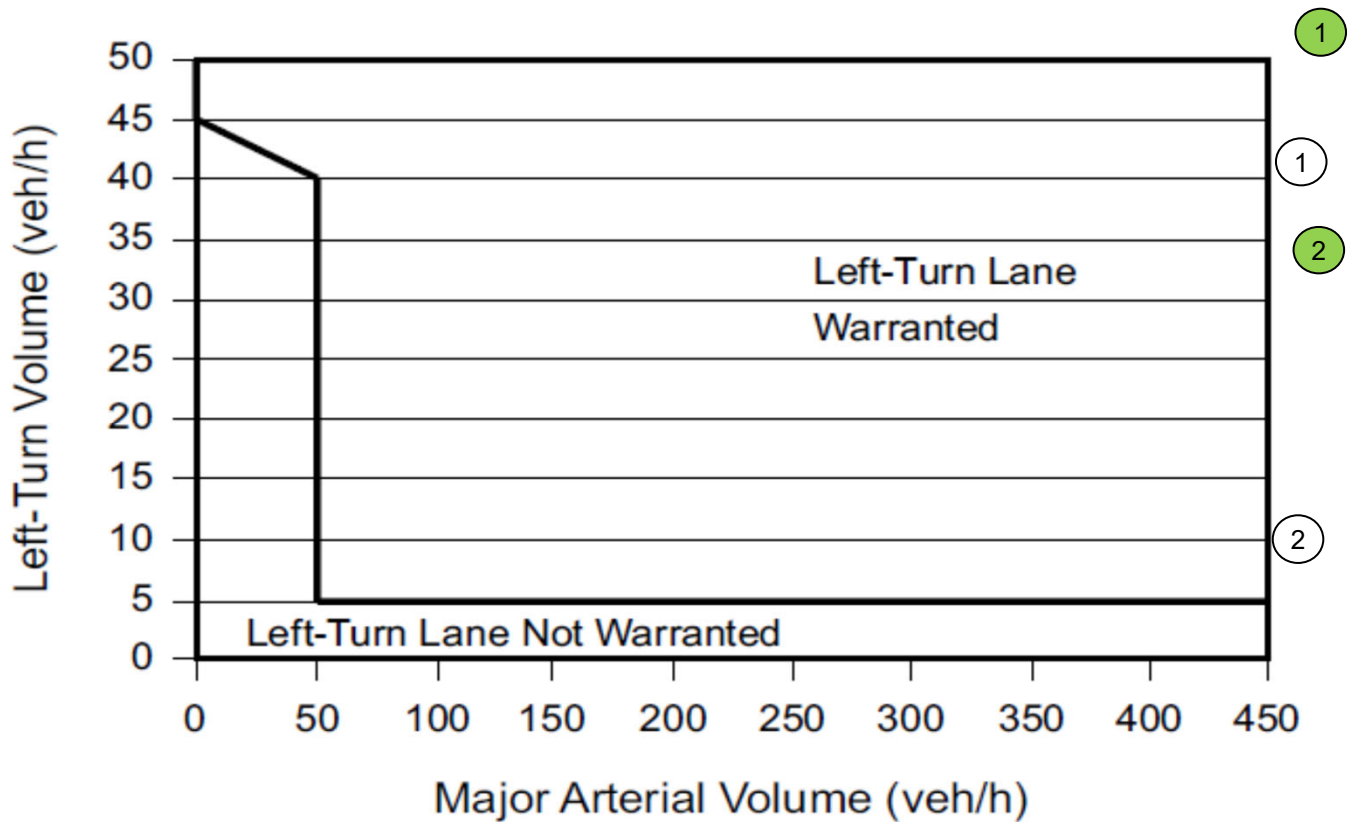
② PM Peak

**Toscano Estates & Sorano Estates
Star, Idaho**

AASHTO Left-turn Lane Guidelines for Two-Lane Urban Roadways

2028 Total Traffic

	Intersection	Approach	Speed Limit [mph]	Peak Hour	Left-Turn Volume [vph]	Major Highway Volume [vphpl]	Meet Warrant?
①	Sortino Ave & SH 44	WB	55	AM	42	927	Yes
				PM	64	1208	Yes
②	Sortino Ave & SH 44	EB	55	AM	10	927	Yes
				PM	34	1208	Yes



① AM Peak

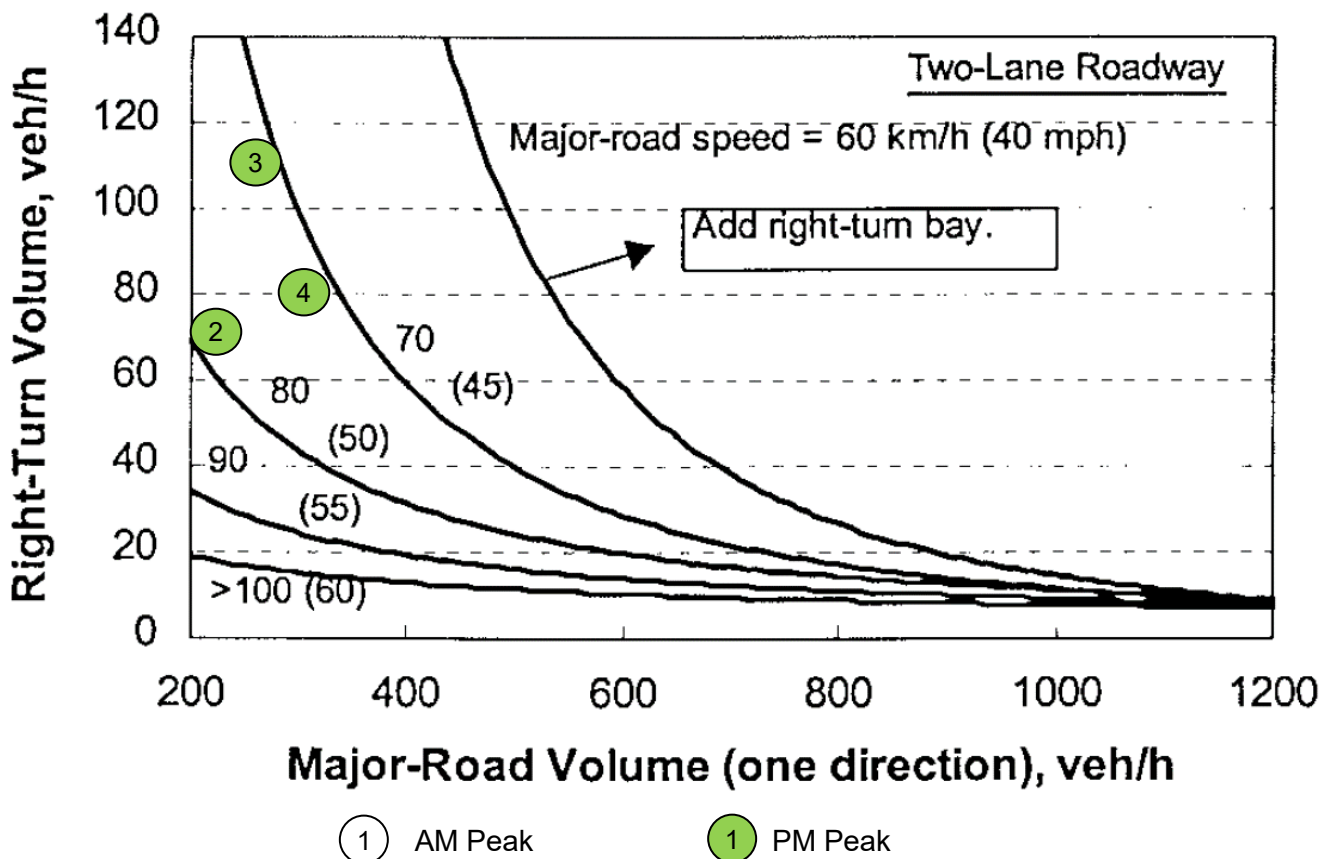
② PM Peak

**Toscano Estates & Sorano Estates
Star, Idaho**

**NCHRP 457 Right-Turn Lane Analysis
2028 Total Traffic**

	Intersection	Approach	Speed Limit [mph]	Peak Hour	Right-Turn Volume [vph]	Major Road Volume [vph]	Meet Warrant?
①	Blessinger Road & Landruff Lane	NB	35	AM	15	128	No*
				PM	10	82	No*
②	Blessinger Road & Landruff Lane	SB	35	AM	36	89	No*
				PM	70	220	No
③	Bent Lane & Landruff Lane	SB	35	AM	47	133	No*
				PM	115	256	No
④	Toscano Street & Blessinger Road	SB	35	AM	23	124	No*
				PM	80	312	No
⑤	Bellino Avenue & Landruff Lane	WB	35	AM	6	46	No*
				PM	20	80	No*
⑥	Valdina Wy & Landruff Lane	WB	35	AM	2	99	No*
				PM	5	140	No*
⑦	Siracusa Ave & Landruff Lane	EB	35	AM	4	30	No*
				PM	12	46	No*
⑧	Vicari Dr & Landruff Lane	WB	35	AM	1	97	No*
				PM	6	179	No*
⑨	Ragusa Ave & Landruff Lane	WB	35	AM	2	99	No*
				PM	11	177	No*

*Major approach volume < 200 vph or right-turn volume < 10 vph = Not Warranted

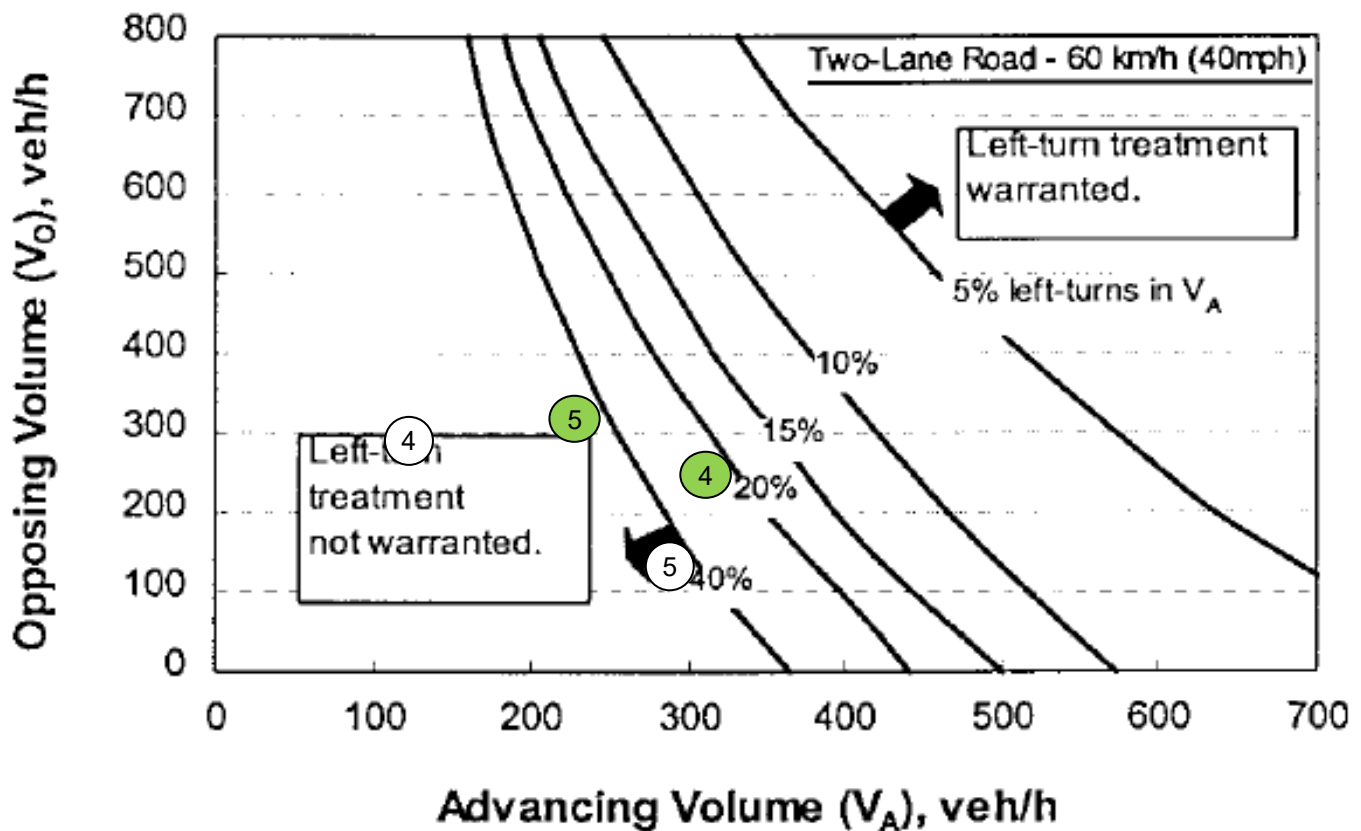


**Toscano Estates & Sorano Estates
Star, Idaho**

**NCHRP 457 Left-Turn Lane Analysis for 40 mph or less Roadways
2028 Total Traffic**

	Intersection	Approach	Speed Limit [mph]	Peak Hour	Advancing Volume [vph]	Opposing Volume [vph]	Left-Turn Volume (%)	Meet Warrant?
①	Landruff Drive & Blessinger Road	NB	35	AM	128	69	4%	No*
				PM	82	175	4%	No*
②	Landruff Drive & Blessinger Road	SB	35	AM	89	123	22%	No*
				PM	220	77	21%	No*
③	Landruff Drive & Bent Lane	NB	35	AM	127	133	27%	No*
				PM	95	256	24%	No*
④	Tuscano Street & Blessinger Road	SB	35	AM	124	290	2%	No
				PM	312	238	2%	No
⑤	Tuscano Street & Blessinger Road	NB	35	AM	290	121	0%	No
				PM	238	307	0%	No
⑥	Bellino Avenue & Landruff Lane	EB	35	AM	55	46	0%	No*
				PM	45	80	0%	No*

*Advancing and Opposing Volume < 250 vph = Not Warranted



① AM Peak

① PM Peak

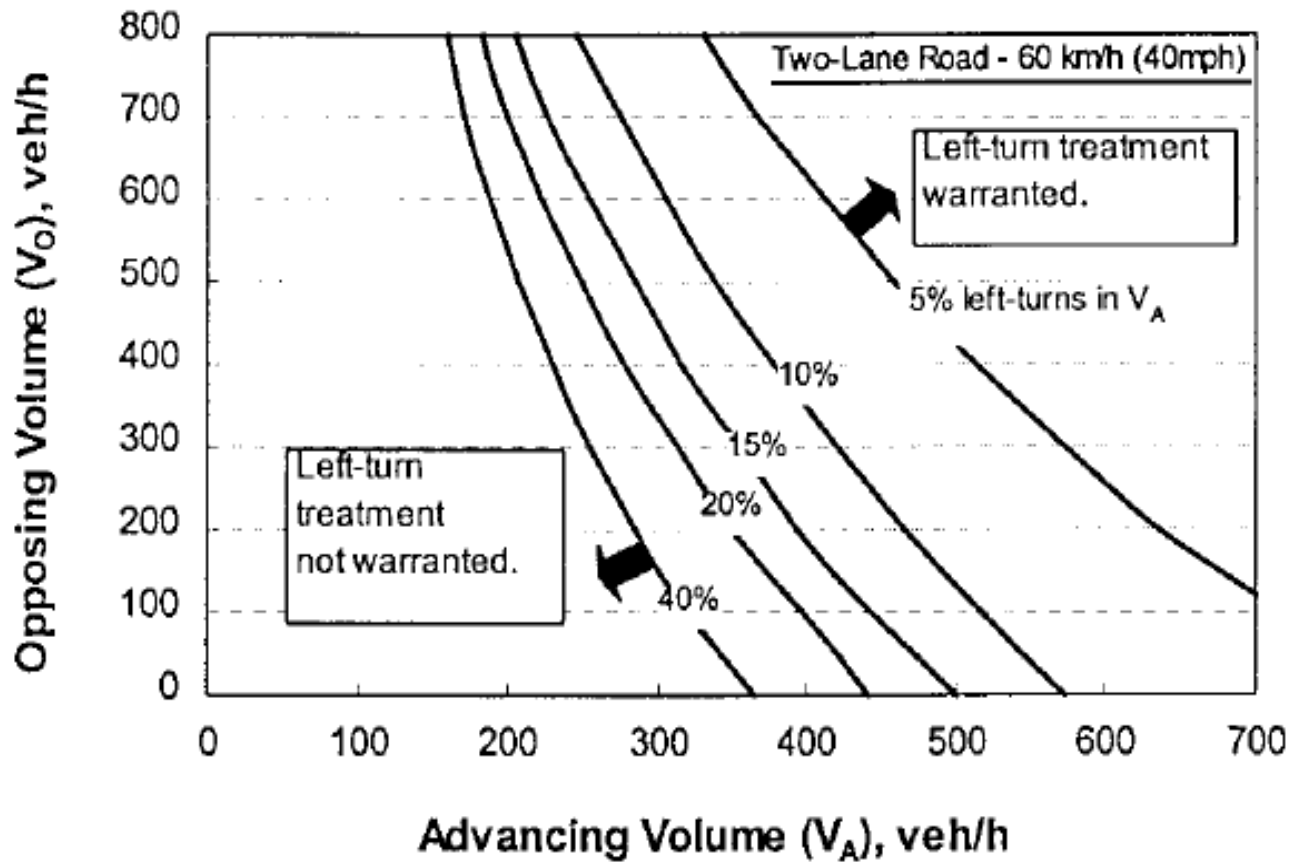
**Toscano Estates & Sorano Estates
Star, Idaho**

NCHRP 457 Left-Turn Lane Analysis for 40 mph or less Roadways

2028 Total Traffic

Intersection	Approach	Speed Limit [mph]	Peak Hour	Advancing Volume [vph]	Opposing Volume [vph]	Left-Turn Volume (%)	Meet Warrant?
⑦ Valdina Wy & Landruff Lane	EB	35	AM	27	99	4%	No*
			PM	42	140	7%	No*
⑧ Siracusa Ave & Landruff Lane	WB	35	AM	97	30	12%	No*
			PM	174	46	24%	No*
⑨ Vicari Dr & Landruff Lane	EB	35	AM	53	97	2%	No*
			PM	58	179	2%	No*
⑩ Ragusa Ave & Landruff Lane	EB	35	AM	65	99	2%	No*
			PM	69	177	22%	No

*Advancing and Opposing Volume < 250 vph = Not Warranted



① AM Peak

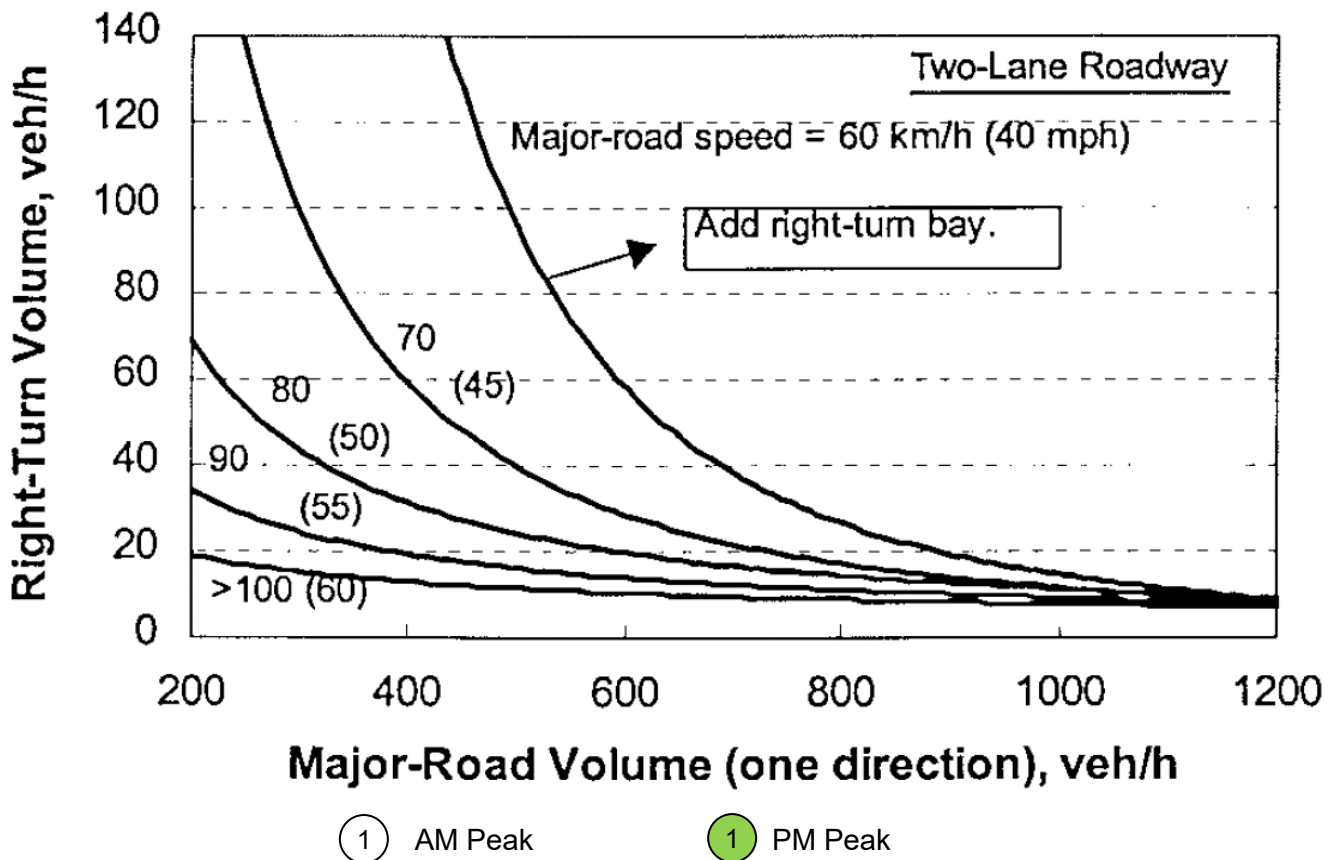
① PM Peak

**Toscano Estates & Sorano Estates
Star, Idaho**

**NCHRP 457 Right-Turn Lane Analysis
2033 Background Traffic**

	Intersection	Approach	Speed Limit [mph]	Peak Hour	Right-Turn Volume [vph]	Major Road Volume [vph]	Meet Warrant?
①	Blessinger Road & Landruff Lane	NB	35	AM	15	111	No*
				PM	10	90	No*
②	Blessinger Road & Landruff Lane	SB	35	AM	30	93	No*
				PM	50	190	No*
③	Bent Lane & Landruff Lane	SB	35	AM	17	110	No*
				PM	35	161	No*

*Major approach volume < 200 vph or right-turn volume < 10 vph = Not Warranted

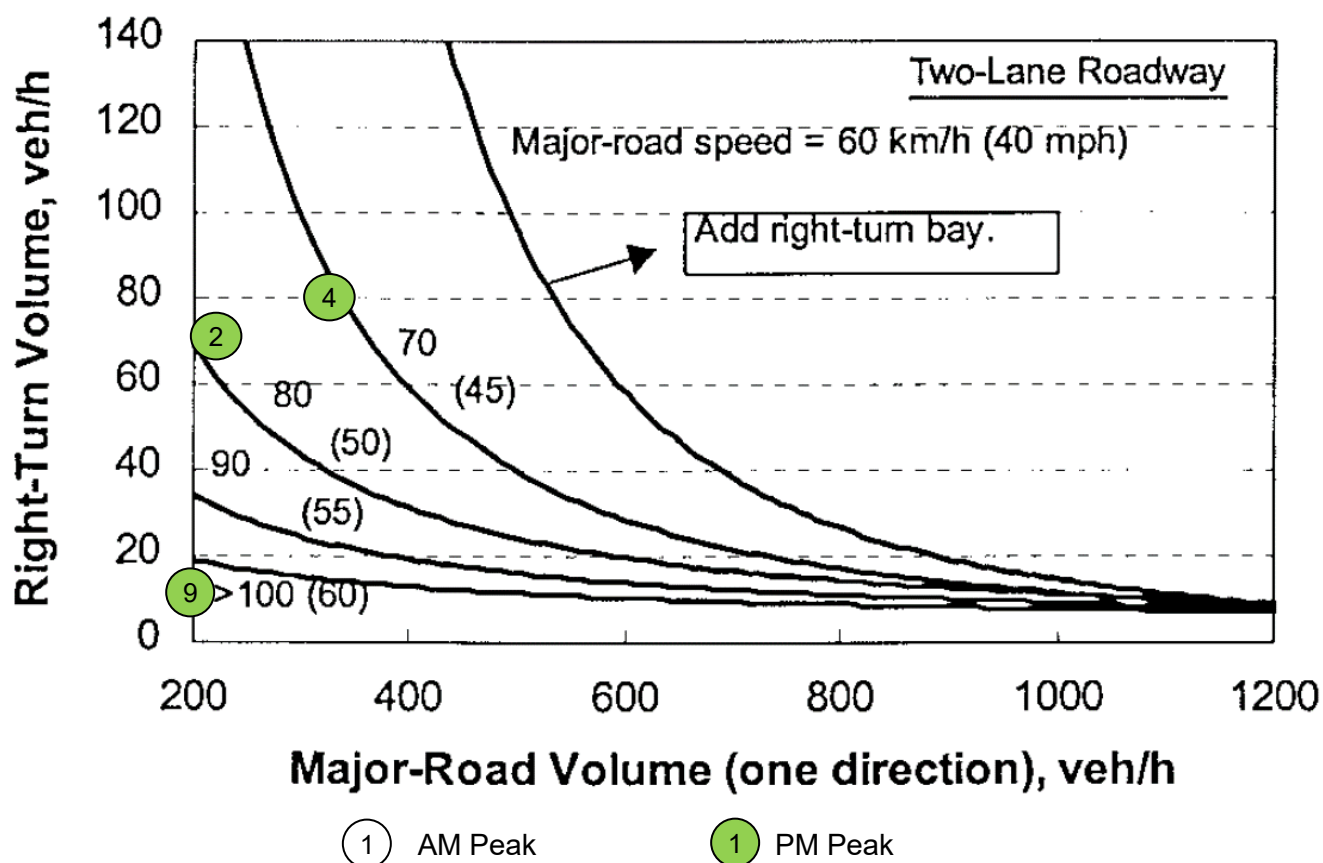


**Toscano Estates & Sorano Estates
Star, Idaho**

**NCHRP 457 Right-Turn Lane Analysis
2033 Total Traffic**

	Intersection	Approach	Speed Limit [mph]	Peak Hour	Right-Turn Volume [vph]	Major Road Volume [vph]	Meet Warrant?
①	Blessinger Road & Landruff Lane	NB	35	AM	15	111	No*
				PM	10	90	No*
②	Blessinger Road & Landruff Lane	SB	35	AM	36	105	No*
				PM	70	226	No
③	Bent Lane & Landruff Lane	SB	35	AM	27	120	No*
				PM	62	188	No*
④	Toscano Street & Blessinger Road	SB	35	AM	23	142	No*
				PM	80	344	No
⑤	Bellino Avenue & Landruff Lane	WB	35	AM	6	46	No*
				PM	20	80	No*
⑥	Valdina Wy & Landruff Lane	WB	35	AM	2	119	No*
				PM	5	163	No*
⑦	Siracusa Ave & Landruff Lane	EB	35	AM	4	57	No*
				PM	12	47	No*
⑧	Vicari Dr & Landruff Lane	WB	35	AM	1	117	No*
				PM	6	188	No*
⑨	Ragusa Ave & Landruff Lane	WB	35	AM	2	119	No*
				PM	11	200	No

*Major approach volume < 200 vph or right-turn volume < 10 vph = Not Warranted



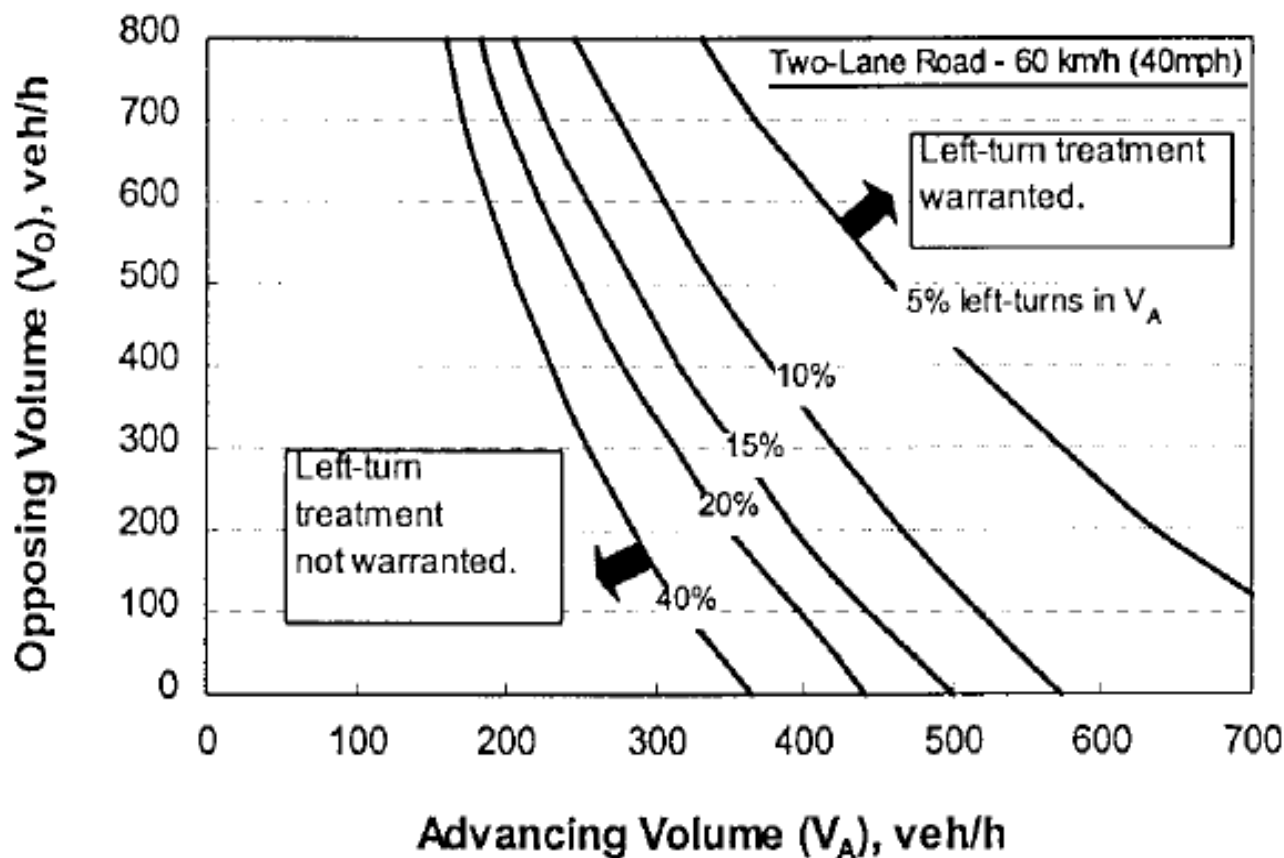
**Toscano Estates & Sorano Estates
Star, Idaho**

NCHRP 457 Left-Turn Lane Analysis for 40 mph or less Roadways

2033 Background Traffic

Intersection	Approach	Speed Limit [mph]	Peak Hour	Advancing Volume [vph]	Opposing Volume [vph]	Left-Turn Volume (%)	Meet Warrant?
① Landruff Drive & Blessinger Road	NB	35	AM	111	78	4%	No*
			PM	90	160	4%	No*
② Landruff Drive & Blessinger Road	SB	35	AM	93	106	16%	No*
			PM	190	85	16%	No*
③ Landruff Drive & Bent Lane	NB	35	AM	143	110	32%	No*
			PM	109	161	29%	No*
Landruff Drive & Blessinger Road	EB	35	AM	55	125	91%	No*
			PM	45	127	78%	No*

*Advancing and Opposing Volume < 250 vph = Not Warranted



① AM Peak

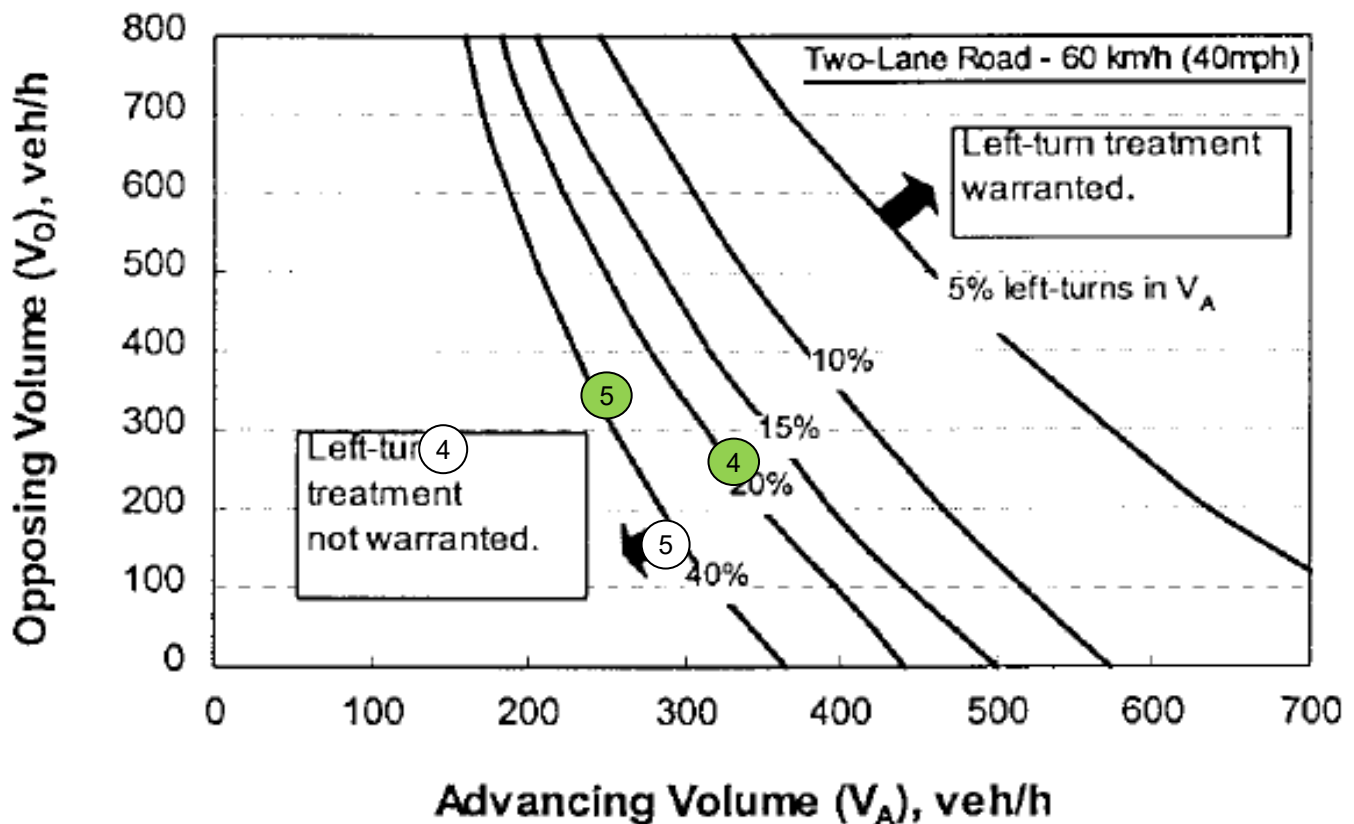
① PM Peak

**Toscano Estates & Sorano Estates
Star, Idaho**

**NCHRP 457 Left-Turn Lane Analysis for 40 mph or less Roadways
2033 Total Traffic**

	Intersection	Approach	Speed Limit [mph]	Peak Hour	Advancing Volume [vph]	Opposing Volume [vph]	Left-Turn Volume (%)	Meet Warrant?
①	Landruff Drive & Blessinger Road	NB	35	AM	111	84	4%	No*
				PM	90	180	4%	No*
②	Landruff Drive & Blessinger Road	SB	35	AM	105	106	20%	No*
				PM	226	85	20%	No*
③	Landruff Drive & Bent Lane	NB	35	AM	143	120	32%	No*
				PM	109	188	29%	No*
④	Tuscano Street & Blessinger Road	SB	35	AM	142	295	3%	No
				PM	344	261	1%	No
⑤	Tuscano Street & Blessinger Road	NB	35	AM	295	138	0%	No
				PM	261	339	0%	No
⑥	Bellino Avenue & Landruff Lane	EB	35	AM	55	46	0%	No*
				PM	45	80	0%	No*

*Advancing and Opposing Volume < 250 vph = Not Warranted



① AM Peak

① PM Peak

**Toscano Estates & Sorano Estates
Star, Idaho**

**NCHRP 457 Left-Turn Lane Analysis for 40 mph or less Roadways
2033 Total Traffic**

Intersection	Approach	Speed Limit [mph]	Peak Hour	Advancing Volume [vph]	Opposing Volume [vph]	Left-Turn Volume (%)	Meet Warrant?
⑦ Valdina Wy & Landruff Lane	EB	35	AM	29	119	3%	No*
			PM	43	163	7%	No*
⑧ Siracusa Ave & Landruff Lane	WB	35	AM	117	57	10%	No*
			PM	197	47	21%	No*
⑨ Vicari Dr & Landruff Lane	EB	35	AM	80	117	1%	No*
			PM	59	188	2%	No*
⑩ Ragusa Ave & Landruff Lane	EB	35	AM	92	119	1%	No*
			PM	70	200	21%	No*

*Advancing and Opposing Volume < 250 vph = Not Warranted

