

November 26, 2019

Mr. Bill Lo
Sunmeadows, LLC
27127 Calle Arroyo, Suite 1910
San Juan Capistrano, CA 92675

SUBJECT: ROQUET RANCH SPECIFIC PLAN FOCUSED TRAFFIC ASSESSMENT

Dear Mr. Bill Lo:

This letter summarizes the results of a focused traffic assessment prepared that evaluates the Cadena Creek Mobilehome Community traffic accessing Maryknoll Drive via an easement adjacent to Planning Area 9 (S. Graymoor Avenue). The Roquet Ranch Specific Plan Traffic Impact Analysis (November 2016) (referred to as the **2016 Traffic Study**) assumed there would be no access via the easement between the proposed Project and the adjacent existing Cadena Creek Mobilehome Community. The following intersections have been evaluated for the purposes of this focused traffic assessment (see Exhibit 1):

- S. Graymoor Avenue & W. Maryknoll Drive (#11)
- S. Graymoor Avenue & Pellissier Road (#12)
- S. Rosedale Avenue & W. Maryknoll Drive (#13)
- S. La Cadena Drive & W. Maryknoll Drive (Future Pellissier Road) (#21)
- La Cadena Drive S. & Driveway / I-215 Southbound On-Ramp (#22)

SUMMARY OF FINDINGS

The existing Cadena Creek Mobilehome Community currently takes access via the driveway that aligns with the I-215 Southbound On-Ramp on La Cadena Drive. There is an easement that is located along the S. Graymoor Avenue alignment. The near-term analysis findings and improvement needs for the aforementioned intersections are consistent with those identified in the 2016 Traffic Study and supplemental Roquet Ranch Specific Plan Focused Operations Evaluation (April 25, 2018) if the existing mobilehome community traffic could utilize the easement for access to Maryknoll Drive after a 10-year restriction.

OPERATIONS ANALYSIS

The existing mobilehome community traffic has been reallocated from their existing main entry on La Cadena Drive (that aligns with the I-215 Southbound On-Ramp) to Maryknoll Drive via S. Graymoor Avenue (easement). 50 percent of the existing mobilehome community traffic has conservatively been estimated to utilize the proposed easement starting in Year 2029 (after a 10-year restriction). The modifications have been made to the existing baseline volumes utilized in the 2016 Traffic Study and

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then adjusted to estimate Opening Year Cumulative (2029) (with easement) traffic conditions. In other words, the mobilehome community traffic was reallocated, 21.9% ambient growth applied to the modified existing baseline traffic, and traffic associated with cumulative projects and the proposed Project were added to estimate Opening Year Cumulative (2029) (with easement) traffic forecasts.

As shown on Table 1, the study area intersections are anticipated to operate at a similar level of service to those reported in the 2016 Traffic Study, which evaluated Opening Year Cumulative (2020) traffic conditions. The only deficient intersection is La Cadena Drive and Maryknoll Drive, which is also consistent with the 2016 Traffic Study. Analysis worksheets are included in Attachment A.

As shown on Table 2, the same improvements identified in the Roquet Ranch Specific Plan Focused Operations Evaluation for the intersection of La Cadena Drive and Maryknoll Drive are anticipated to result in acceptable peak hour operations for Opening Year Cumulative (2029) (with easement) traffic conditions (see Attachment B for worksheets). As such, there are no additional near-term traffic impacts or mitigation required from those previously disclosed in the 2016 Traffic Study or supplemental Roquet Ranch Specific Plan Focused Operations Evaluation.

If you have any questions, please contact me directly at (949) 336-5982.

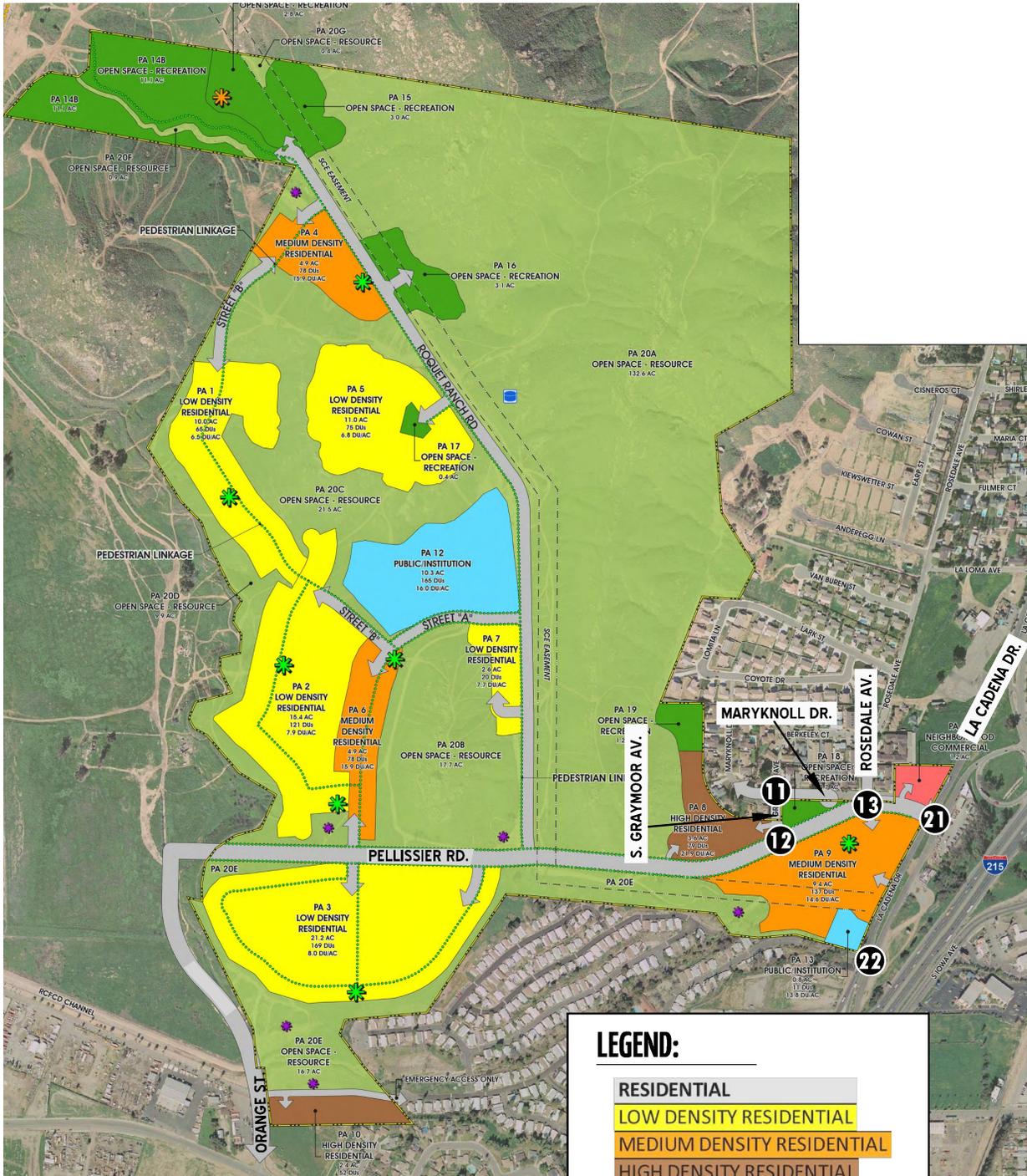
Respectfully submitted,

URBAN CROSSROADS, INC.



Charlene So, PE
Associate Principal

EXHIBIT 1: LOCATION MAP



LEGEND:

- RESIDENTIAL**
 - LOW DENSITY RESIDENTIAL
 - MEDIUM DENSITY RESIDENTIAL
 - HIGH DENSITY RESIDENTIAL
- NON-RESIDENTIAL**
 - NEIGHBORHOOD COMMERCIAL
 - PUBLIC/INSTITUTION
 - OPEN SPACE - RECREATION
 - OPEN SPACE - RESOURCE
 - CIRCULATION

Table 1

Intersection Analysis for Opening Year Cumulative Conditions

| # | Intersection | Traffic Control ² | 2020 With Project ³ | | | | 2029 With Project | | | |
|----|------------------------------------------------------|------------------------------|--------------------------------|------------------|------------------|----------|-------------------------------|------------------|------------------|----------|
| | | | Delay ¹ (secs.) | | Level of Service | | Delay ¹ (secs.) | | Level of Service | |
| | | | AM | PM | AM | PM | AM | PM | AM | PM |
| 11 | S. Graymoor Av. / W. Maryknoll Dr. | CSS | 8.8 | 8.7 | A | A | 9.4 | 9.1 | A | A |
| 12 | S. Graymoor Av. / Pellissier Rd. | CSS | 11.8 | 13.6 | B | B | 10.9 | 11.0 | B | B |
| 13 | S. Rosedale Av. / W. Maryknoll Dr. | CSS | 17.5 | 20.7 | C | C | 12.0 | 12.2 | B | B |
| 21 | S. La Cadena Dr. / W. Maryknoll Dr. | CSS | >100.0 | >100.0 | F | F | >100.0 | >100.0 | F | F |
| 22 | La Cadena Dr. S. / Pellissier Rd. / I-215 SB On-Ramp | AWS | 32.1 | 16.7 | D | C | 27.1 | 15.7 | D | C |

^{*} **BOLD** = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

¹ Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

² CSS = Cross-street Stop; AWS = All-Way Stop; **CSS** = Improvement

³ Analysis results as reported in the Roquet Ranch Specific Plan Traffic Impact Analysis, Urban Crossroads, Inc., November 30, 2016.

Table 2

Intersection Analysis for Opening Year Cumulative (2029) Conditions With Improvements

| # | Intersection | Traffic Control ³ | Intersection Approach Lanes ¹ | | | | | | | | | | | | Delay ² (secs.) | | Level of Service | |
|----|----------------------------------------------------------------------------|------------------------------|------------------------------------------|----------|---|------------|---|---|-----------|---|----------|-----------|---|---|-------------------------------|-----|------------------|----|
| | | | Northbound | | | Southbound | | | Eastbound | | | Westbound | | | AM | PM | AM | PM |
| | | | L | T | R | L | T | R | L | T | R | L | T | R | | | | |
| 21 | S. La Cadena Dr. / W. Maryknoll Dr. - Without Project - With Project | TS | No Improvements Necessary | | | | | | | | | | | | 10.6 | 9.1 | B | A |
| | | | <u>1</u> | <u>2</u> | 0 | <u>1</u> | 2 | 1 | <u>2</u> | 1 | <u>0</u> | 0 | 1 | 0 | | | | |

¹ When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; 1 = Improvement

² Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

³ TS = Traffic Signal; **TS** = Improvement

**ATTACHMENT A:
INTERSECTION ANALYSIS WORKSHEETS FOR
OPENING YEAR CUMULATIVE (2029) (WITH EASEMENT) WITH PROJECT CONDITIONS**

Intersection

Int Delay, s/veh 6.7

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations | ↔ | | | ↔ | ↔ | |
| Traffic Vol, veh/h | 0 | 7 | 57 | 0 | 5 | 0 |
| Future Vol, veh/h | 0 | 7 | 57 | 0 | 5 | 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 | 85 | 85 | 85 | 85 | 85 | 85 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 8 | 67 | 0 | 6 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 8 | 0 | 138 |
| Stage 1 | - | - | - | - | 4 |
| Stage 2 | - | - | - | - | 134 |
| 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 | - | - | 1612 | - | 855 |
| Stage 1 | - | - | - | - | 1019 |
| Stage 2 | - | - | - | - | 892 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1612 | - | 819 |
| Mov Cap-2 Maneuver | - | - | - | - | 819 |
| Stage 1 | - | - | - | - | 1019 |
| Stage 2 | - | - | - | - | 855 |

| Approach | EB | WB | NB |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0 | 7.3 | 9.4 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 819 | - | - | 1612 | - |
| HCM Lane V/C Ratio | 0.007 | - | - | 0.042 | - |
| HCM Control Delay (s) | 9.4 | - | - | 7.3 | 0 |
| HCM Lane LOS | A | - | - | A | A |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.8 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↕ | ↕ | | ↕ | |
| Traffic Vol, veh/h | 50 | 129 | 54 | 41 | 65 | 30 |
| Future Vol, veh/h | 50 | 129 | 54 | 41 | 65 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 54 | 140 | 59 | 45 | 71 | 33 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 104 | 0 | - | 0 | 330 82 |
| Stage 1 | - | - | - | - | 82 - |
| Stage 2 | - | - | - | - | 248 - |
| 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 | 1488 | - | - | - | 665 978 |
| Stage 1 | - | - | - | - | 941 - |
| Stage 2 | - | - | - | - | 793 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1488 | - | - | - | 639 978 |
| Mov Cap-2 Maneuver | - | - | - | - | 639 - |
| Stage 1 | - | - | - | - | 904 - |
| Stage 2 | - | - | - | - | 793 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|------|
| HCM Control Delay, s | 2.1 | 0 | 10.9 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1488 | - | - | - | 718 |
| HCM Lane V/C Ratio | 0.037 | - | - | - | 0.144 |
| HCM Control Delay (s) | 7.5 | 0 | - | - | 10.9 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.5 |

Intersection

Int Delay, s/veh 1.2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 1 | 200 | 0 | 0 | 97 | 8 | 0 | 0 | 0 | 33 | 0 | 1 |
| Future Vol, veh/h | 1 | 200 | 0 | 0 | 97 | 8 | 0 | 0 | 0 | 33 | 0 | 1 |
| 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 |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 267 | 0 | 0 | 129 | 11 | 0 | 0 | 0 | 44 | 0 | 1 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 |
|----------------------|--------|--------|--------|--------|
| Conflicting Flow All | 140 | 0 | 0 | 267 |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |
| Critical Hdwy | 4.12 | - | - | 4.12 |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 |
| Pot Cap-1 Maneuver | 1443 | - | - | 1297 |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |
| Platoon blocked, % | | - | - | - |
| Mov Cap-1 Maneuver | 1443 | - | - | 1297 |
| Mov Cap-2 Maneuver | - | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|----|----|----|
| HCM Control Delay, s | 0 | 0 | 0 | 12 |
| HCM LOS | | | A | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|------|-----|-----|-------|
| Capacity (veh/h) | - | 1443 | - | - | 1297 | - | - | 562 |
| HCM Lane V/C Ratio | - | 0.001 | - | - | - | - | - | 0.081 |
| HCM Control Delay (s) | | 0 | 7.5 | 0 | - | 0 | - | 12 |
| HCM Lane LOS | | A | A | A | - | A | - | B |
| HCM 95th %tile Q(veh) | - | 0 | - | - | 0 | - | - | 0.3 |

Intersection

Int Delay, s/veh 102.4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | ↗ | | ↕ | | | ↕ | | | ↕ | ↗ |
| Traffic Vol, veh/h | 261 | 1 | 108 | 8 | 0 | 2 | 49 | 106 | 0 | 14 | 769 | 171 |
| Future Vol, veh/h | 261 | 1 | 108 | 8 | 0 | 2 | 49 | 106 | 0 | 14 | 769 | 171 |
| 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 |
| Storage Length | - | - | 0 | - | - | - | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 307 | 1 | 127 | 9 | 0 | 2 | 58 | 125 | 0 | 16 | 905 | 201 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 1116 | 1178 | 453 | 726 | 1379 | 63 | 1106 | 0 | 0 | 125 | 0 | 0 |
| Stage 1 | 937 | 937 | - | 241 | 241 | - | - | - | - | - | - | - |
| Stage 2 | 179 | 241 | - | 485 | 1138 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 162 | 189 | 554 | 312 | 143 | 988 | 627 | - | - | 1459 | - | - |
| Stage 1 | ~ 285 | 342 | - | 741 | 705 | - | - | - | - | - | - | - |
| Stage 2 | 805 | 705 | - | 532 | 275 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | ~ 146 | 165 | 554 | 216 | 125 | 988 | 627 | - | - | 1459 | - | - |
| Mov Cap-2 Maneuver | ~ 146 | 165 | - | 216 | 125 | - | - | - | - | - | - | - |
| Stage 1 | ~ 257 | 332 | - | 668 | 635 | - | - | - | - | - | - | - |
| Stage 2 | 724 | 635 | - | 396 | 267 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|-------|------|-----|-----|
| HCM Control Delay, s | 409.5 | 19.7 | 3.8 | 0.2 |
| HCM LOS | F | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 627 | - | - | 146 | 554 | 256 | 1459 | - | - |
| HCM Lane V/C Ratio | 0.092 | - | - | 2.111 | 0.229 | 0.046 | 0.011 | - | - |
| HCM Control Delay (s) | 11.3 | 0.3 | - | 572.8 | 13.4 | 19.7 | 7.5 | 0.1 | - |
| HCM Lane LOS | B | A | - | F | B | C | A | A | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 24.9 | 0.9 | 0.1 | 0 | - | - |

Notes

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

| Intersection | |
|---------------------------|------|
| Intersection Delay, s/veh | 27.1 |
| Intersection LOS | D |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | | | | | ↕ | ↕ | | ↕ | ↕ | |
| Traffic Vol, veh/h | 46 | 10 | 15 | 0 | 0 | 0 | 5 | 88 | 1 | 432 | 418 | 33 |
| Future Vol, veh/h | 46 | 10 | 15 | 0 | 0 | 0 | 5 | 88 | 1 | 432 | 418 | 33 |
| Peak Hour Factor | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| Heavy Vehicles, % | 1 | 11 | 0 | 0 | 0 | 0 | 25 | 8 | 100 | 13 | 4 | 2 |
| Mvmt Flow | 57 | 12 | 19 | 0 | 0 | 0 | 6 | 109 | 1 | 533 | 516 | 41 |
| Number of Lanes | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 1 | 0 |

| Approach | EB | NB | SB |
|----------------------------|------|------|------|
| Opposing Approach | | SB | NB |
| Opposing Lanes | 0 | 2 | 3 |
| Conflicting Approach Left | SB | EB | |
| Conflicting Lanes Left | 2 | 1 | 0 |
| Conflicting Approach Right | NB | | EB |
| Conflicting Lanes Right | 3 | 0 | 1 |
| HCM Control Delay | 11.5 | 10.4 | 30.1 |
| HCM LOS | B | B | D |

| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|
| Vol Left, % | 100% | 0% | 0% | 65% | 100% | 0% |
| Vol Thru, % | 0% | 100% | 97% | 14% | 0% | 93% |
| Vol Right, % | 0% | 0% | 3% | 21% | 0% | 7% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 5 | 59 | 30 | 71 | 432 | 451 |
| LT Vol | 5 | 0 | 0 | 46 | 432 | 0 |
| Through Vol | 0 | 59 | 29 | 10 | 0 | 418 |
| RT Vol | 0 | 0 | 1 | 15 | 0 | 33 |
| Lane Flow Rate | 6 | 72 | 37 | 88 | 533 | 557 |
| Geometry Grp | 7 | 7 | 7 | 7 | 8 | 8 |
| Degree of Util (X) | 0.012 | 0.127 | 0.082 | 0.177 | 0.867 | 0.796 |
| Departure Headway (Hd) | 7.127 | 6.329 | 7.887 | 7.251 | 5.855 | 5.148 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 505 | 569 | 456 | 498 | 613 | 696 |
| Service Time | 4.833 | 4.035 | 5.593 | 4.954 | 3.644 | 2.936 |
| HCM Lane V/C Ratio | 0.012 | 0.127 | 0.081 | 0.177 | 0.869 | 0.8 |
| HCM Control Delay | 9.9 | 10 | 11.3 | 11.5 | 35.4 | 25.1 |
| HCM Lane LOS | A | A | B | B | E | D |
| HCM 95th-tile Q | 0 | 0.4 | 0.3 | 0.6 | 9.9 | 8 |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 6.5 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 9 | 40 | 0 | 11 | 0 |
| Future Vol, veh/h | 0 | 9 | 40 | 0 | 11 | 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 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 9 | 42 | 0 | 11 | 0 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 | Minor3 |
|----------------------|--------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 9 | 0 | 89 |
| Stage 1 | - | - | - | - | 5 |
| Stage 2 | - | - | - | - | 84 |
| 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 | - | - | 1611 | - | 912 |
| Stage 1 | - | - | - | - | 1018 |
| Stage 2 | - | - | - | - | 939 |
| Platoon blocked, % | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1611 | - | 888 |
| Mov Cap-2 Maneuver | - | - | - | - | 888 |
| Stage 1 | - | - | - | - | 1018 |
| Stage 2 | - | - | - | - | 915 |

| Approach | EB | WB | NB |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0 | 7.3 | 9.1 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 888 | - | - | 1611 | - |
| HCM Lane V/C Ratio | 0.013 | - | - | 0.026 | - |
| HCM Control Delay (s) | 9.1 | - | - | 7.3 | 0 |
| HCM Lane LOS | A | - | - | A | A |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | - |

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.2 | | | | | |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↶ | ↷ | | ↶ | ↷ |
| Traffic Vol, veh/h | 35 | 91 | 150 | 61 | 50 | 53 |
| Future Vol, veh/h | 35 | 91 | 150 | 61 | 50 | 53 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 38 | 99 | 163 | 66 | 54 | 58 |

| Major/Minor | Major1 | Major2 | Minor2 | | |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 229 | 0 | - | 0 | 371 196 |
| Stage 1 | - | - | - | - | 196 - |
| Stage 2 | - | - | - | - | 175 - |
| 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 | 1339 | - | - | - | 630 845 |
| Stage 1 | - | - | - | - | 837 - |
| Stage 2 | - | - | - | - | 855 - |
| Platoon blocked, % | | - | - | - | |
| Mov Cap-1 Maneuver | 1339 | - | - | - | 611 845 |
| Mov Cap-2 Maneuver | - | - | - | - | 611 - |
| Stage 1 | - | - | - | - | 812 - |
| Stage 2 | - | - | - | - | 855 - |

| Approach | EB | WB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 2.2 | 0 | 11 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h) | 1339 | - | - | - | 713 |
| HCM Lane V/C Ratio | 0.028 | - | - | - | 0.157 |
| HCM Control Delay (s) | 7.8 | 0 | - | - | 11 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.6 |

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 | 2 | 143 | 0 | 0 | 220 | 41 | 0 | 0 | 0 | 25 | 0 | 1 |
| Future Vol, veh/h | 2 | 143 | 0 | 0 | 220 | 41 | 0 | 0 | 0 | 25 | 0 | 1 |
| 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 |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2 | 164 | 0 | 0 | 253 | 47 | 0 | 0 | 0 | 29 | 0 | 1 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 |
|----------------------|--------|--------|--------|--------|
| Conflicting Flow All | 300 | 0 | 0 | 164 |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |
| Critical Hdwy | 4.12 | - | - | 4.12 |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 |
| Pot Cap-1 Maneuver | 1261 | - | - | 1414 |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |
| Platoon blocked, % | | - | - | - |
| Mov Cap-1 Maneuver | 1261 | - | - | 1414 |
| Mov Cap-2 Maneuver | - | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|-----|----|----|------|
| HCM Control Delay, s | 0.1 | 0 | 0 | 12.2 |
| HCM LOS | | | A | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|------|-----|-----|-------|
| Capacity (veh/h) | - | 1261 | - | - | 1414 | - | - | 528 |
| HCM Lane V/C Ratio | - | 0.002 | - | - | - | - | - | 0.057 |
| HCM Control Delay (s) | | 0 | 7.9 | 0 | 0 | - | - | 12.2 |
| HCM Lane LOS | | A | A | A | - | A | - | B |
| HCM 95th %tile Q(veh) | | - | 0 | - | - | 0 | - | 0.2 |

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 20 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | ↗ | | ↕ | | | ↕↗ | | | ↕↗ | ↗ |
| Traffic Vol, veh/h | 173 | 0 | 63 | 2 | 1 | 2 | 50 | 350 | 5 | 3 | 696 | 287 |
| Future Vol, veh/h | 173 | 0 | 63 | 2 | 1 | 2 | 50 | 350 | 5 | 3 | 696 | 287 |
| 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 |
| Storage Length | - | - | 0 | - | - | - | - | - | - | - | - | 0 |
| 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 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 188 | 0 | 68 | 2 | 1 | 2 | 54 | 380 | 5 | 3 | 757 | 312 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|------|--------|------|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | 1062 | 1256 | 379 | 876 | 1566 | 193 | 1069 | 0 | 0 | 385 | 0 | 0 |
| Stage 1 | 763 | 763 | - | 491 | 491 | - | - | - | - | - | - | - |
| Stage 2 | 299 | 493 | - | 385 | 1075 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 178 | 170 | 619 | 243 | 110 | 816 | 648 | - | - | 1170 | - | - |
| Stage 1 | 363 | 411 | - | 528 | 546 | - | - | - | - | - | - | - |
| Stage 2 | 685 | 545 | - | 610 | 294 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | ~ 161 | 151 | 619 | 198 | 98 | 816 | 648 | - | - | 1170 | - | - |
| Mov Cap-2 Maneuver | ~ 161 | 151 | - | 198 | 98 | - | - | - | - | - | - | - |
| Stage 1 | 325 | 408 | - | 472 | 488 | - | - | - | - | - | - | - |
| Stage 2 | 609 | 487 | - | 539 | 292 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|----------------------|-----|------|-----|----|
| HCM Control Delay, s | 135 | 21.8 | 1.8 | 0 |
| HCM LOS | F | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 648 | - | - | 161 | 619 | 220 | 1170 | - | - |
| HCM Lane V/C Ratio | 0.084 | - | - | 1.168 | 0.111 | 0.025 | 0.003 | - | - |
| HCM Control Delay (s) | 11.1 | 0.5 | - | 180 | 11.5 | 21.8 | 8.1 | 0 | - |
| HCM Lane LOS | B | A | - | F | B | C | A | A | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 10.3 | 0.4 | 0.1 | 0 | - | - |

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

| Intersection | |
|---------------------------|------|
| Intersection Delay, s/veh | 15.7 |
| Intersection LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | | | | | ↕ | ↕ | | ↕ | ↕ | |
| Traffic Vol, veh/h | 35 | 14 | 15 | 0 | 0 | 0 | 25 | 305 | 0 | 319 | 391 | 46 |
| Future Vol, veh/h | 35 | 14 | 15 | 0 | 0 | 0 | 25 | 305 | 0 | 319 | 391 | 46 |
| 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 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 5 | 0 | 10 | 1 | 5 |
| Mvmt Flow | 38 | 15 | 16 | 0 | 0 | 0 | 27 | 328 | 0 | 343 | 420 | 49 |
| Number of Lanes | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 1 | 0 |

| Approach | EB | NB | SB |
|----------------------------|------|-----|----|
| Opposing Approach | | SB | NB |
| Opposing Lanes | 0 | 2 | 3 |
| Conflicting Approach Left | SB | EB | |
| Conflicting Lanes Left | 2 | 1 | 0 |
| Conflicting Approach Right | NB | | EB |
| Conflicting Lanes Right | 3 | 0 | 1 |
| HCM Control Delay | 10.9 | 9.2 | 19 |
| HCM LOS | B | A | C |

| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|
| Vol Left, % | 100% | 0% | 0% | 55% | 100% | 0% |
| Vol Thru, % | 0% | 100% | 100% | 22% | 0% | 89% |
| Vol Right, % | 0% | 0% | 0% | 23% | 0% | 11% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 25 | 153 | 153 | 64 | 319 | 437 |
| LT Vol | 25 | 0 | 0 | 35 | 319 | 0 |
| Through Vol | 0 | 153 | 153 | 14 | 0 | 391 |
| RT Vol | 0 | 0 | 0 | 15 | 0 | 46 |
| Lane Flow Rate | 27 | 164 | 164 | 69 | 343 | 470 |
| Geometry Grp | 7 | 7 | 7 | 7 | 8 | 8 |
| Degree of Util (X) | 0.049 | 0.266 | 0.184 | 0.135 | 0.587 | 0.708 |
| Departure Headway (Hd) | 6.497 | 5.838 | 4.036 | 7.085 | 6.158 | 5.424 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 554 | 618 | 892 | 506 | 590 | 667 |
| Service Time | 4.206 | 3.547 | 1.745 | 4.819 | 3.873 | 3.142 |
| HCM Lane V/C Ratio | 0.049 | 0.265 | 0.184 | 0.136 | 0.581 | 0.705 |
| HCM Control Delay | 9.5 | 10.7 | 7.7 | 10.9 | 17.3 | 20.2 |
| HCM Lane LOS | A | B | A | B | C | C |
| HCM 95th-tile Q | 0.2 | 1.1 | 0.7 | 0.5 | 3.8 | 5.9 |

**ATTACHMENT B:
INTERSECTION ANALYSIS WORKSHEETS FOR
OPENING YEAR CUMULATIVE (2029) (WITH EASEMENT) WITH PROJECT CONDITIONS,
WITH IMPROVEMENTS**

Timings
 21: S. La Cadena Dr. & W. Maryknoll Dr./Driveway

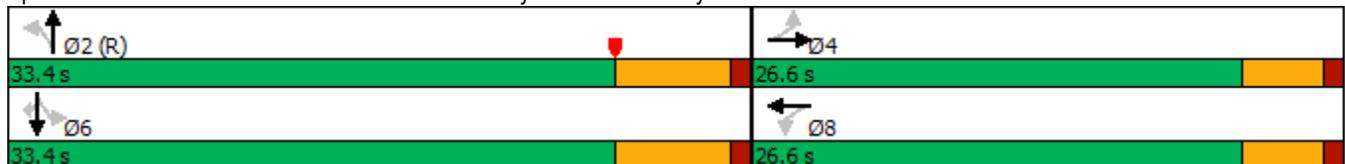


| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖↗ | ↗ | | ↖↗ | ↖ | ↖↗ | ↖ | ↖↗ | ↖ |
| Traffic Volume (vph) | 261 | 1 | 8 | 0 | 49 | 106 | 14 | 769 | 171 |
| Future Volume (vph) | 261 | 1 | 8 | 0 | 49 | 106 | 14 | 769 | 171 |
| Turn Type | Perm | NA | Perm | NA | Perm | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | | 2 | | 6 | |
| Permitted Phases | 4 | | 8 | | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 26.6 | 26.6 | 14.6 | 14.6 | 28.2 | 28.2 | 28.2 | 28.2 | 28.2 |
| Total Split (s) | 26.6 | 26.6 | 26.6 | 26.6 | 33.4 | 33.4 | 33.4 | 33.4 | 33.4 |
| Total Split (%) | 44.3% | 44.3% | 44.3% | 44.3% | 55.7% | 55.7% | 55.7% | 55.7% | 55.7% |
| Yellow Time (s) | 3.6 | 3.6 | 3.6 | 3.6 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.6 | 4.6 | | 4.6 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 |
| Lead/Lag | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | Max | Max | Max |
| Act Effct Green (s) | 14.2 | 14.2 | | 14.2 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |
| Actuated g/C Ratio | 0.24 | 0.24 | | 0.24 | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| v/c Ratio | 0.52 | 0.31 | | 0.03 | 0.19 | 0.06 | 0.02 | 0.44 | 0.18 |
| Control Delay | 22.4 | 9.9 | | 0.1 | 8.9 | 2.2 | 7.6 | 8.8 | 2.1 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 22.4 | 9.9 | | 0.1 | 8.9 | 2.2 | 7.6 | 8.8 | 2.1 |
| LOS | C | A | | A | A | A | A | A | A |
| Approach Delay | | 18.7 | | 0.1 | | 4.3 | | 7.6 | |
| Approach LOS | | B | | A | | A | | A | |

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.52
 Intersection Signal Delay: 10.0
 Intersection LOS: A
 Intersection Capacity Utilization 54.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 21: S. La Cadena Dr. & W. Maryknoll Dr./Driveway



| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | | |  | |  |  | |  |  |  |
| Traffic Volume (veh/h) | 261 | 1 | 108 | 8 | 0 | 2 | 49 | 106 | 0 | 14 | 769 | 171 |
| Future Volume (veh/h) | 261 | 1 | 108 | 8 | 0 | 2 | 49 | 106 | 0 | 14 | 769 | 171 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1765 | 1765 | 1800 | 1800 | 1765 | 1800 | 1765 | 1765 | 1800 | 1765 | 1765 | 1765 |
| Adj Flow Rate, veh/h | 307 | 1 | 127 | 9 | 0 | 2 | 58 | 125 | 0 | 16 | 905 | 201 |
| Adj No. of Lanes | 2 | 1 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 1 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 712 | 2 | 248 | 203 | 10 | 23 | 375 | 2306 | 0 | 861 | 2306 | 980 |
| Arrive On Green | 0.17 | 0.17 | 0.17 | 0.17 | 0.00 | 0.17 | 0.22 | 0.22 | 0.00 | 0.65 | 0.65 | 0.65 |
| Sat Flow, veh/h | 2649 | 12 | 1490 | 566 | 62 | 140 | 477 | 3529 | 0 | 1185 | 3529 | 1500 |
| Grp Volume(v), veh/h | 307 | 0 | 128 | 11 | 0 | 0 | 58 | 125 | 0 | 16 | 905 | 201 |
| Grp Sat Flow(s),veh/h/ln | 1325 | 0 | 1502 | 768 | 0 | 0 | 477 | 1765 | 0 | 1185 | 1765 | 1500 |
| Q Serve(g_s), s | 1.1 | 0.0 | 4.7 | 0.0 | 0.0 | 0.0 | 6.3 | 1.7 | 0.0 | 0.3 | 7.2 | 3.2 |
| Cycle Q Clear(g_c), s | 5.8 | 0.0 | 4.7 | 4.7 | 0.0 | 0.0 | 13.4 | 1.7 | 0.0 | 2.0 | 7.2 | 3.2 |
| Prop In Lane | 1.00 | | 0.99 | 0.82 | | 0.18 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 712 | 0 | 250 | 237 | 0 | 0 | 375 | 2306 | 0 | 861 | 2306 | 980 |
| V/C Ratio(X) | 0.43 | 0.00 | 0.51 | 0.05 | 0.00 | 0.00 | 0.15 | 0.05 | 0.00 | 0.02 | 0.39 | 0.21 |
| Avail Cap(c_a), veh/h | 1242 | 0 | 551 | 496 | 0 | 0 | 375 | 2306 | 0 | 861 | 2306 | 980 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.2 | 0.0 | 22.8 | 21.1 | 0.0 | 0.0 | 16.5 | 8.8 | 0.0 | 4.3 | 4.8 | 4.2 |
| Incr Delay (d2), s/veh | 0.4 | 0.0 | 1.6 | 0.1 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.5 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.4 | 0.0 | 2.0 | 0.2 | 0.0 | 0.0 | 0.9 | 0.8 | 0.0 | 0.1 | 3.6 | 1.4 |
| LnGrp Delay(d),s/veh | 23.6 | 0.0 | 24.4 | 21.2 | 0.0 | 0.0 | 17.4 | 8.9 | 0.0 | 4.3 | 5.3 | 4.6 |
| LnGrp LOS | C | | C | C | | | B | A | | A | A | A |
| Approach Vol, veh/h | | 435 | | | 11 | | | 183 | | | 1122 | |
| Approach Delay, s/veh | | 23.8 | | | 21.2 | | | 11.6 | | | 5.2 | |
| Approach LOS | | C | | | C | | | B | | | A | |
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 45.4 | | 14.6 | | 45.4 | | 14.6 | | | | |
| Change Period (Y+Rc), s | | 6.2 | | 4.6 | | 6.2 | | 4.6 | | | | |
| Max Green Setting (Gmax), s | | 27.2 | | 22.0 | | 27.2 | | 22.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 15.4 | | 7.8 | | 9.2 | | 6.7 | | | | |
| Green Ext Time (p_c), s | | 1.2 | | 1.7 | | 8.4 | | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2010 Ctrl Delay | | | 10.6 | | | | | | | | | |
| HCM 2010 LOS | | | B | | | | | | | | | |

Timings
 21: S. La Cadena Dr. & W. Maryknoll Dr./Driveway

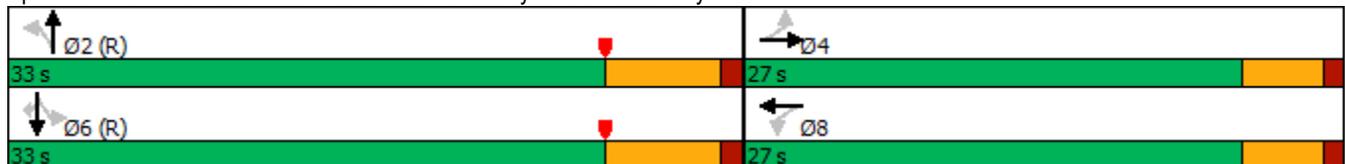


| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖↗ | ↗ | | ↖↗ | ↖ | ↖↗ | ↖ | ↖↗ | ↖ |
| Traffic Volume (vph) | 173 | 0 | 2 | 1 | 50 | 350 | 3 | 696 | 287 |
| Future Volume (vph) | 173 | 0 | 2 | 1 | 50 | 350 | 3 | 696 | 287 |
| Turn Type | Perm | NA | Perm | NA | Perm | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | | 2 | | 6 | |
| Permitted Phases | 4 | | 8 | | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 26.6 | 26.6 | 14.6 | 14.6 | 28.2 | 28.2 | 28.2 | 28.2 | 28.2 |
| Total Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 33.0 | 33.0 | 33.0 | 33.0 | 33.0 |
| Total Split (%) | 45.0% | 45.0% | 45.0% | 45.0% | 55.0% | 55.0% | 55.0% | 55.0% | 55.0% |
| Yellow Time (s) | 3.6 | 3.6 | 3.6 | 3.6 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.6 | 4.6 | | 4.6 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 |
| Lead/Lag | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 12.6 | 12.6 | | 12.6 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Actuated g/C Ratio | 0.21 | 0.21 | | 0.21 | 0.61 | 0.61 | 0.61 | 0.61 | 0.61 |
| v/c Ratio | 0.36 | 0.17 | | 0.01 | 0.14 | 0.18 | 0.01 | 0.35 | 0.26 |
| Control Delay | 21.1 | 2.1 | | 13.2 | 3.8 | 2.8 | 7.0 | 7.3 | 1.9 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 21.1 | 2.1 | | 13.2 | 3.8 | 2.8 | 7.0 | 7.3 | 1.9 |
| LOS | C | A | | B | A | A | A | A | A |
| Approach Delay | | 16.1 | | 13.2 | | 2.9 | | 5.7 | |
| Approach LOS | | B | | B | | A | | A | |

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.36
 Intersection Signal Delay: 6.5
 Intersection LOS: A
 Intersection Capacity Utilization 54.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 21: S. La Cadena Dr. & W. Maryknoll Dr./Driveway



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 173 | 0 | 63 | 2 | 1 | 2 | 50 | 350 | 5 | 3 | 696 | 287 |
| Future Volume (veh/h) | 173 | 0 | 63 | 2 | 1 | 2 | 50 | 350 | 5 | 3 | 696 | 287 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1765 | 1765 | 1800 | 1800 | 1765 | 1800 | 1765 | 1765 | 1800 | 1765 | 1765 | 1765 |
| Adj Flow Rate, veh/h | 188 | 0 | 68 | 2 | 1 | 2 | 54 | 380 | 5 | 3 | 757 | 312 |
| Adj No. of Lanes | 2 | 1 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 677 | 0 | 247 | 154 | 80 | 100 | 397 | 2278 | 30 | 649 | 2313 | 983 |
| Arrive On Green | 0.16 | 0.00 | 0.16 | 0.16 | 0.16 | 0.16 | 0.22 | 0.22 | 0.22 | 0.66 | 0.66 | 0.66 |
| Sat Flow, veh/h | 2647 | 0 | 1500 | 423 | 488 | 607 | 494 | 3476 | 46 | 935 | 3529 | 1500 |
| Grp Volume(v), veh/h | 188 | 0 | 68 | 5 | 0 | 0 | 54 | 193 | 192 | 3 | 757 | 312 |
| Grp Sat Flow(s),veh/h/ln | 1323 | 0 | 1500 | 1518 | 0 | 0 | 494 | 1765 | 1757 | 935 | 1765 | 1500 |
| Q Serve(g_s), s | 3.6 | 0.0 | 2.4 | 0.0 | 0.0 | 0.0 | 5.5 | 5.3 | 5.3 | 0.1 | 5.6 | 5.4 |
| Cycle Q Clear(g_c), s | 3.8 | 0.0 | 2.4 | 0.2 | 0.0 | 0.0 | 11.2 | 5.3 | 5.3 | 5.4 | 5.6 | 5.4 |
| Prop In Lane | 1.00 | | 1.00 | 0.40 | | 0.40 | 1.00 | | 0.03 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 677 | 0 | 247 | 334 | 0 | 0 | 397 | 1157 | 1151 | 649 | 2313 | 983 |
| V/C Ratio(X) | 0.28 | 0.00 | 0.28 | 0.01 | 0.00 | 0.00 | 0.14 | 0.17 | 0.17 | 0.00 | 0.33 | 0.32 |
| Avail Cap(c_a), veh/h | 1229 | 0 | 560 | 640 | 0 | 0 | 397 | 1157 | 1151 | 649 | 2313 | 983 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 0.96 | 0.96 | 0.96 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.5 | 0.0 | 21.9 | 21.0 | 0.0 | 0.0 | 14.9 | 10.2 | 10.2 | 5.7 | 4.5 | 4.5 |
| Incr Delay (d2), s/veh | 0.2 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | 0.7 | 0.3 | 0.3 | 0.0 | 0.4 | 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 | 1.4 | 0.0 | 1.0 | 0.1 | 0.0 | 0.0 | 0.8 | 2.7 | 2.7 | 0.0 | 2.9 | 2.4 |
| LnGrp Delay(d),s/veh | 22.7 | 0.0 | 22.5 | 21.0 | 0.0 | 0.0 | 15.5 | 10.5 | 10.5 | 5.7 | 4.9 | 5.3 |
| LnGrp LOS | C | | C | C | | | B | B | B | A | A | A |
| Approach Vol, veh/h | | 256 | | | 5 | | | 439 | | | 1072 | |
| Approach Delay, s/veh | | 22.7 | | | 21.0 | | | 11.1 | | | 5.0 | |
| Approach LOS | | C | | | C | | | B | | | A | |
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 45.5 | | 14.5 | | 45.5 | | 14.5 | | | | |
| Change Period (Y+Rc), s | | 6.2 | | 4.6 | | 6.2 | | 4.6 | | | | |
| Max Green Setting (Gmax), s | | 26.8 | | 22.4 | | 26.8 | | 22.4 | | | | |
| Max Q Clear Time (g_c+I1), s | | 13.2 | | 5.8 | | 7.6 | | 2.2 | | | | |
| Green Ext Time (p_c), s | | 2.9 | | 1.0 | | 7.9 | | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2010 Ctrl Delay | | | 9.1 | | | | | | | | | |
| HCM 2010 LOS | | | A | | | | | | | | | |