

## MEMORANDUM

To: Mr. Andrew Bertha  
Boulder Ridge Capital

Date: September 15, 2026

From: John Boarman, P.E.  
LLG

LLG Ref: 3-24-3988

Subject: **Fallbrook Self Storage Site Access Assessment**  
**San Diego County Project ID #PDS2025-STP-25-008**



Pasadena  
Irvine  
San Diego

Linscott, Law & Greenspan, Engineers (LLG) has prepared this technical memorandum outlining the results of a site access study for the Fallbrook Self Storage Project (“Project”). The Project site is located at 1305 E Mission Road, Fallbrook, CA 92028, within the Fallbrook Community Planning Area within unincorporated San Diego County.

The *County of San Diego Transportation Study Guidelines (TSG)*, January 2026 is a comprehensive manual for both CEQA VMT analysis and non-CEQA Local Mobility Analysis (LMA) and was used as the basis of the analysis presented herein.

### ***CEQA Transportation Analysis (Vehicle Miles Traveled (VMT))***

#### ***Vehicle Miles Traveled (VMT) Analysis***

CEQA requires VMT analysis for compliance with state policies to evaluate a project’s potential impacts related to VMT significance criteria. However, the *TSG* includes screening criteria to determine if a VMT Analysis is required.

### ***Non-CEQA Transportation Analysis***

#### ***Site Access Review***

Per the County *TSG*, a Site Access Review is required by the County of San Diego for all projects. A Site Access Review is conducted to confirm safe ingress and egress between the project site and the public transportation network. Site access driveways and/or the intersection(s) that provide access to County Public Roads are to be included in the Site Access Review.

#### ***Local Mobility Analysis (LMA)***

An LMA is required by the County General Plan to assess transportation effects and ensure orderly development, public safety, adequate infrastructure, and consistency with the General Plan. However, the *TSG* includes screening criteria to determine if an LMA is required.

## PROJECT LOCATION AND DESCRIPTION

The Project proposes developing a self-storage facility at 1305 E. Mission Road (APN: 105-410-018) in Fallbrook, CA. The subject property is zoned Limited Industrial (M52), which allows self-storage use, and falls under the General Plan designation of Limited Impact Industrial. The site area is +/- 5.37 acres (per San Diego County APN page). The site is unimproved, with scattered trees and other vegetation.



The Project will consist of nine one-story buildings and one two-story building, totaling up to 140,000 square feet (SF) of gross floor area (GFA). The Project proposes 19 parking spaces.

Vehicular access is provided along an existing access road within a north-south easement abutting the western property boundary. The Project proposes paving a private road within this access easement. A 24-foot-wide fire lane loops around the interior buildings of the site.

**Figure 1** shows a project area map. **Figure 2** contains the site plan which proposes 122,140 SF of GFA. A maximum of 140,000 SF of GFA was analyzed in this assessment to provide a conservative assessment of the Project.

## PROJECT TRIP GENERATION

The Project proposes to construct a maximum of 140,000 square feet (SF) of Self Storage/Mini-Warehouse use. Based on the proposed land use type, the rate for “Mini-Warehouse” found in the *Institute of Transportation Engineers (ITE) Trip Generation Manual*, 11<sup>th</sup> Edition, was used to calculate the trip generation for the proposed Project.

Project trip generation is summarized in **Table 1**. The Project is calculated to generate 203 ADT with 13 AM peak hour trips (8 in/ 5 out) and 21 PM peak hour trips (10 in/ 11 out).

## Trip Distribution and Trip Assignment

Trip distribution for the Project was based upon existing traffic patterns, land use characteristics of the Project, the roadway network, and the general location of other land uses to which Project trips would originate or terminate, such as retail, transit station, school, and employment opportunities. **Figure 3** depicts the Project trip distribution. **Figure 4** depicts the Project traffic volumes.

TABLE 1  
TRIP GENERATION

| Land Use                      | Size                       | Daily Trip Ends (ADTs) |        | AM Peak Hour      |                           |        |     |       | PM Peak Hour      |                           |        |     |       |
|-------------------------------|----------------------------|------------------------|--------|-------------------|---------------------------|--------|-----|-------|-------------------|---------------------------|--------|-----|-------|
|                               |                            | Rate <sup>a</sup>      | Volume | Rate <sup>a</sup> | In:Out Split <sup>a</sup> | Volume |     |       | Rate <sup>a</sup> | In:Out Split <sup>a</sup> | Volume |     |       |
|                               |                            |                        |        |                   |                           | In     | Out | Total |                   |                           | In     | Out | Total |
| Mini-Warehouse (Land Use 151) | 140 Gross KSF <sup>b</sup> | 1.45/KSF               | 203    | 0.1 /KSF          | 59:41                     | 8      | 5   | 13    | 0.15 /KSF         | 47:53                     | 10     | 11  | 21    |

**Footnotes:**

- a. Rates are based on the *Institute of Transportation Engineers (ITE) Trip Generation Manual*, 11th edition
- b. KSF = 1,000 square feet



## CEQA VEHICLE MILES TRAVELED (VMT) SCREENING

Vehicle miles traveled (VMT) is a measurement of miles traveled by vehicles within a specified region and for a specified period. VMT measures the efficiency of the transportation network. VMTs are calculated based on individual vehicle trips generated and their associated trip lengths. VMT accounts for two-way (round-trip) travel and is often estimated for a typical weekday to measure transportation impacts.

According to the *TSG*, a detailed transportation VMT analysis is required for all land development projects, except those that meet one of the screening criteria. A project that meets at least one of the screening criteria below would have less than significant VMT impact due to the project characteristics and/or location.

1. Projects Located in a VMT Efficient Area
2. Projects Located in a Transit Accessible Area
3. Locally Serving Retail/Service Projects
4. Locally Serving Public Facilities and Other Uses
5. Redevelopment Projects with Greater VMT Efficiency
6. Affordable Housing

### VMT Assessment

Based on the screening criteria, Criteria 1 – Projects Located in a VMT Efficient Area, is applicable to the Project and is detailed below.

**Criteria 1 – Projects Located in a VMT Efficient Area:** The proposed development would be evaluated as an Employment project per County guidelines. An Employment project would be screened out of the County's VMT analysis requirement if the Project is located in a VMT efficient area (85% or below the base year average household VMT/capita) based on the applicable location-based screening map produced by SANDAG.

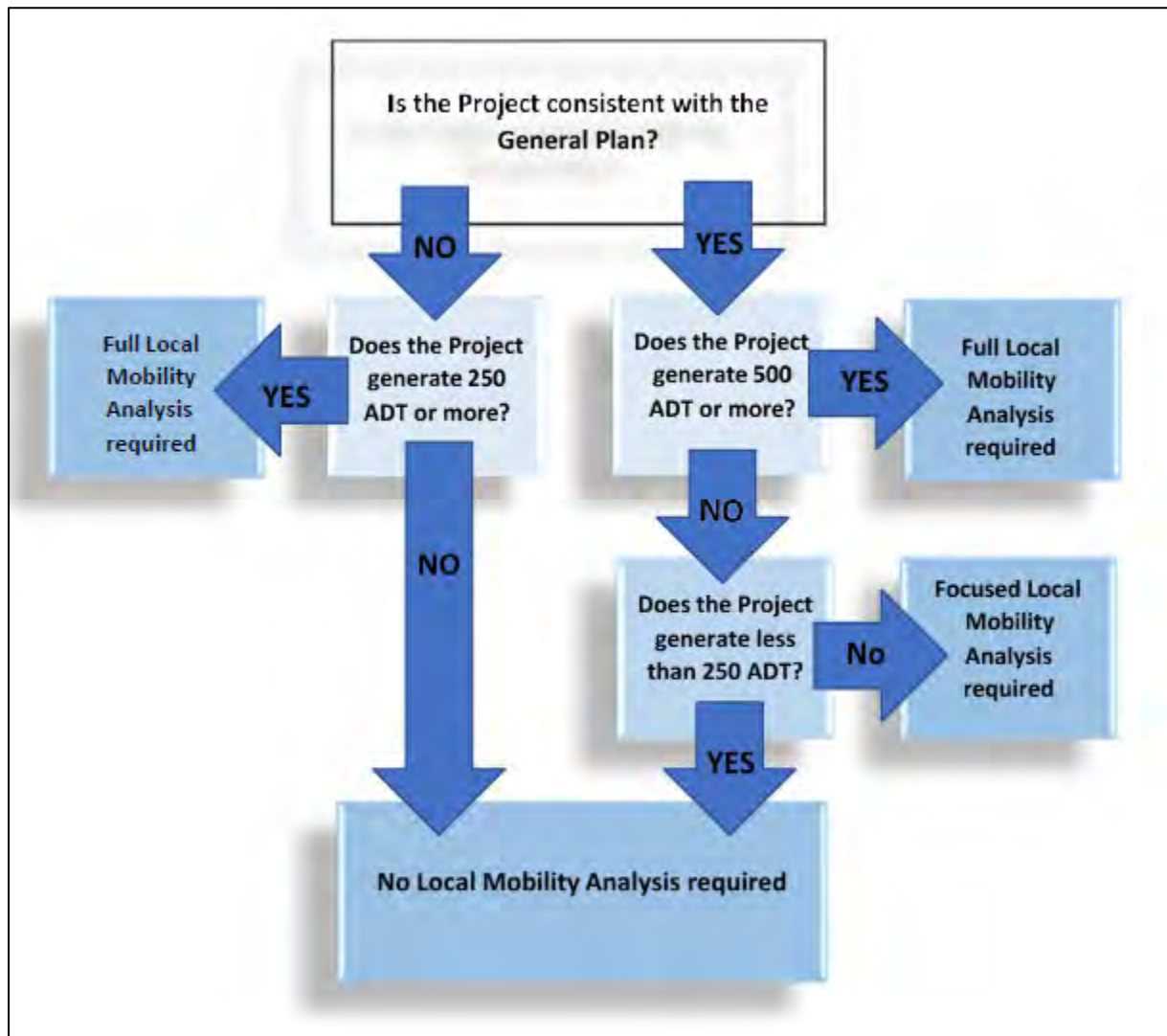
Based on the SANDAG Series 14 ABM 2+ (Base Year 2016) screening map for employment projects, the site is in census tract 189.04 and would be expected to generate 15.6 VMT per capita, which is 82.7% of the regional average VMT per capita (as shown in **Attachment A**). Using this data, the Project does screen out of the requirement to conduct a VMT analysis.

**Based on the above screening criteria evaluation, the Project is presumed to have less than significant VMT impact due to the Project's characteristics. Therefore, the Project is screened out and a detailed transportation VMT analysis is not required.**

## NON-CEQA LOCAL MOBILITY ANALYSIS (LMA) SCREENING

The LMA evaluates the effects of a proposed development project on traffic operations and safety for the roadway network in the proximate area of the project.

The *TSG* provides the following flow chart to determine if a Project is screened out from preparing a Local Mobility Analysis:



Source: *County of San Diego Transportation Study Guidelines (TSG)*, January 2026 - Figure 3

Based on the *TSG* requirements, the Project is screened out from the County's LMA requirement since the proposed land use, which is consistent with the General Plan, is calculated to generate less than 250 average daily unadjusted driveway vehicle trips, as shown in *Table 1*. **Therefore, no LMA is required.**

#### SITE ACCESS ASSESSMENT

Per the County *TSG*, a Site Access Review is required by the County of San Diego for all projects. A Site Access Review is conducted to confirm safe ingress and egress between the project site and the public transportation network. Site access driveways and/or the intersection(s) that provide access to County Public Roads are to be included in the Site Access Review.

Project access will be provided via an existing private roadway that intersects with E. Mission Road. The intersection is minor-street stop controlled. This site access assessment analyzes the E.



**Mission Road / Project Access Roadway** intersection under Existing and Existing + Project conditions.

LLG conducted AM peak hour (7-9 AM) and PM peak hour (4-6 PM) counts on Thursday, October 3, 2024, at the subject intersection to obtain existing volumes. These weekday counts were used in the analysis since weekday commute peak periods are what is analyzed based on the *TSG*. This driveway is very lightly utilized, with 1 AM peak hour trip (0 in/ 1 out) and 3 PM peak hour trips (1 in/ 2 out) observed. Project volumes were added to existing volumes to determine the Existing + Project traffic volumes. **Figure 5** shows the Existing, Project, and Existing + Project traffic volumes.

The E. Mission Rd & Project Access Roadway intersection was analyzed under AM and PM peak hour conditions. Average vehicle delay and LOS was determined based upon the procedures found in Chapters 20 and 21 of the HCM 7th Edition, with the assistance of the Synchro (version 12) computer software.

**Table 2** shows the results of the peak hour analysis for the subject driveway. Overall, the intersection is calculated to operate at LOS A under Existing conditions. Despite the very low number of vehicles using the driveway under Existing (without Project) conditions, the ‘worst-case’ northbound shared left/right-turn movement is calculated to operate at LOS F during the AM peak hour and LOS D during the PM peak hour under Existing (without Project) conditions.

With the addition of Project trips (including three trips during the AM peak hour and six trips during the PM peak hour to the northbound left turn movement, as shown on *Figure 5*) the worst-case northbound movement is calculated to operate at LOS F during the AM and LOS E during the PM peak hours, with the overall intersection calculated to continue to operate at LOS A. **Attachment B** includes the Synchro analysis worksheets.

Based on the *TSG*, a minor-street stop-controlled intersection would require improvement if one of the following criteria are met:

- The project causes the *average* (overall) intersection delay to be LOS E or F during the peak hour
- If the worst-case movement is currently operating at LOS E or F:
  - The project adds five (5) or more seconds to the overall intersection, AND
  - The project adds ten (10) or more trips to the worst-case movements or 50 or more trips to the overall intersection.
- The intersection meets the peak hour traffic signal warrants after the addition of project traffic per the California Manual on Uniform Traffic Control Devices (CA MUCTD–latest edition). An investigation of the need for a traffic control signal may also include an analysis of factors related to the existing operations and safety at a study intersection and the potential to improve these conditions. A warrant analysis is not required for right-turn in/right-turn out only intersections or driveways that are physically restricted by a raised center median.



The criteria listed above are not applicable to the Project, as shown in *Table 2*, and therefore improvements at the subject intersection are not required. The Project should install a stop sign at the northbound approach formalizing the stop control.

TABLE 2  
ACCESS OPERATIONS

| Intersection                              | Control Type      | Peak Hour | Approach   | Existing           |                  | Existing + Project |     | $\Delta^d$       | Project Trips Added <sup>e</sup> |
|-------------------------------------------|-------------------|-----------|------------|--------------------|------------------|--------------------|-----|------------------|----------------------------------|
|                                           |                   |           |            | Delay <sup>a</sup> | LOS <sup>b</sup> | Delay              | LOS |                  |                                  |
| 1. E. Mission Rd & Project Access Roadway | MSSC <sup>c</sup> | AM        | Northbound | 58.3               | F                | 58.3               | F   | 0.0 <sup>f</sup> | 3 Vehicles                       |
|                                           |                   |           | Overall    | 0.1                | A                | 0.8                | A   | 0.7              |                                  |
|                                           |                   | PM        | Northbound | 31.6               | D                | 48.1               | E   | 16.5             | 6 Vehicles                       |
|                                           |                   |           | Overall    | 0.2                | A                | 1.6                | A   | 1.4              |                                  |

**Footnotes:**

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. MSSC = Minor-Street Stop Controlled intersection. Worst-case level of service reported.
- d.  $\Delta$  denotes the increase in delay due to Project.
- e. Project trips added to the northbound left-turn movement.
- f. A Project-induced decrease in delay was calculated at this intersection with the addition of Project trips. Additional information is provided in *Attachment C*.



## GENERAL PLAN CONSISTENCY TRIP GENERATION COMPARISON

The subject property is zoned Limited Industrial (M52), which allows self-storage use, and falls under the General Plan designation of Limited Impact Industrial. The site area is +/- 5.37.

**Table 3** shows a comparison of the trips calculated to be generated by the 'Limited Impact Industrial' use (assumed as 'Industrial Park' for trip generation purposes) as compared to the currently proposed 'Mini-Warehouse' use. As shown, the currently proposed Project is calculated to generate a total of approximately 203 ADT and the General Plan land uses would generate approximately 483 ADT. Since the proposed Project is calculated to generate fewer trips than the General Plan land use, the Project is considered consistent with the General Plan from a trip generation perspective.

TABLE 3  
GENERAL PLAN CONSISTENCY  
TRIP GENERATION COMPARISON

| Land Use                         | Size                       | Daily Trip Ends (ADTs) |        | AM Peak Hour   |                    |        |     |       | PM Peak Hour      |                    |        |     |       |
|----------------------------------|----------------------------|------------------------|--------|----------------|--------------------|--------|-----|-------|-------------------|--------------------|--------|-----|-------|
|                                  |                            | Rate <sup>a</sup>      | Volume | % of ADT/ Rate | In:Out             | Volume |     |       | Rate <sup>a</sup> | In:Out             | Volume |     |       |
|                                  |                            |                        |        |                | Split <sup>a</sup> | In     | Out | Total |                   | Split <sup>a</sup> | In     | Out | Total |
| General Plan Zoning <sup>a</sup> |                            |                        |        |                |                    |        |     |       |                   |                    |        |     |       |
| Industrial Park                  | 5.37 Acres                 | 90/Acre                | 483    | 11%            | 90:10              | 48     | 5   | 53    | 12%               | 20:80              | 12     | 46  | 58    |
| Proposed Land Use <sup>b</sup>   |                            |                        |        |                |                    |        |     |       |                   |                    |        |     |       |
| Mini-Warehouse (Land Use 151)    | 140 Gross KSF <sup>c</sup> | 1.45/KSF               | 203    | 0.1 /KSF       | 59:41              | 8      | 5   | 13    | 0.15 /KSF         | 47:53              | 10     | 11  | 21    |
| Net Decrease                     |                            |                        | -280   |                |                    | -40    | 0   | -40   |                   |                    | -2     | -35 | -37   |

**Footnotes:**

- Trip generation rates from SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego
- Rates are based on the *Institute of Transportation Engineers (ITE) Trip Generation Manual*, 11th edition
- KSF = 1,000 square feet

## SUMMARY

### Trip Generation:

- The Project is calculated to generate 203 ADT with 13 AM peak hour trips (8 in/ 5 out) and 21 PM peak hour trips (10 in/ 11 out).

### CEQA VMT Analysis Screening:

- The Project does screen out of the requirement to conduct a VMT analysis.

### LMA Analysis Screening:

- Based on *TSG* requirements, the Project is screened out from the County's LMA requirement since the proposed land use, which is consistent with the County's General Plan is calculated to generate less than 250 ADT average daily unadjusted driveway vehicle trips, as shown in *Table 1*.

### Site Access Review:

- Access is proposed via an existing private roadway that intersects with E. Mission Road.

### Recommendations:

- Install a stop sign at the northbound approach formalizing the stop control.

### General Plan Consistency:

- The subject property is zoned Limited Industrial (M52), which allows self-storage use, and falls under the General Plan designation of Limited Impact Industrial. The proposed Project is calculated to generate fewer trips than the General Plan land use, and therefore the Project is considered consistent with the General Plan from a trip generation perspective.

### Figures:

Figure 1: Project Area Map

Figure 2: Site Plan

Figure 3: Project Traffic Distribution

Figure 4: Project Traffic Volumes

Figure 5: Existing + Project traffic volumes

### Attachments:

Attachment A: SANDAG Series 14 ABM 2+ (Base Year 2016) Screening Map

Attachment B: Synchro Analysis Worksheets

Attachment C: Explanation of Intersection Delay Decrease with the Addition of Project Traffic

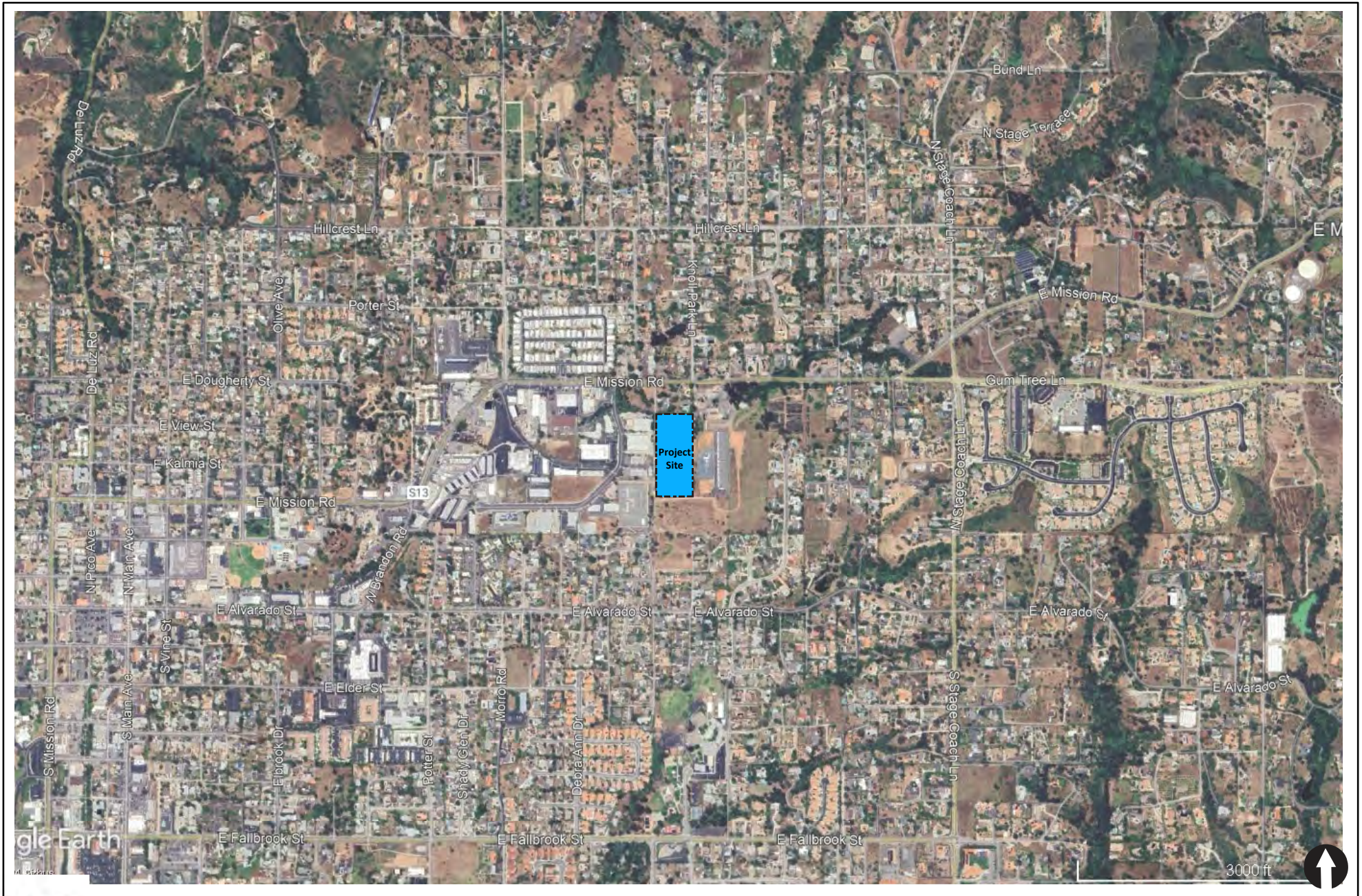


Figure 1

## Project Area Map

FALLBROOK SELF STORAGE

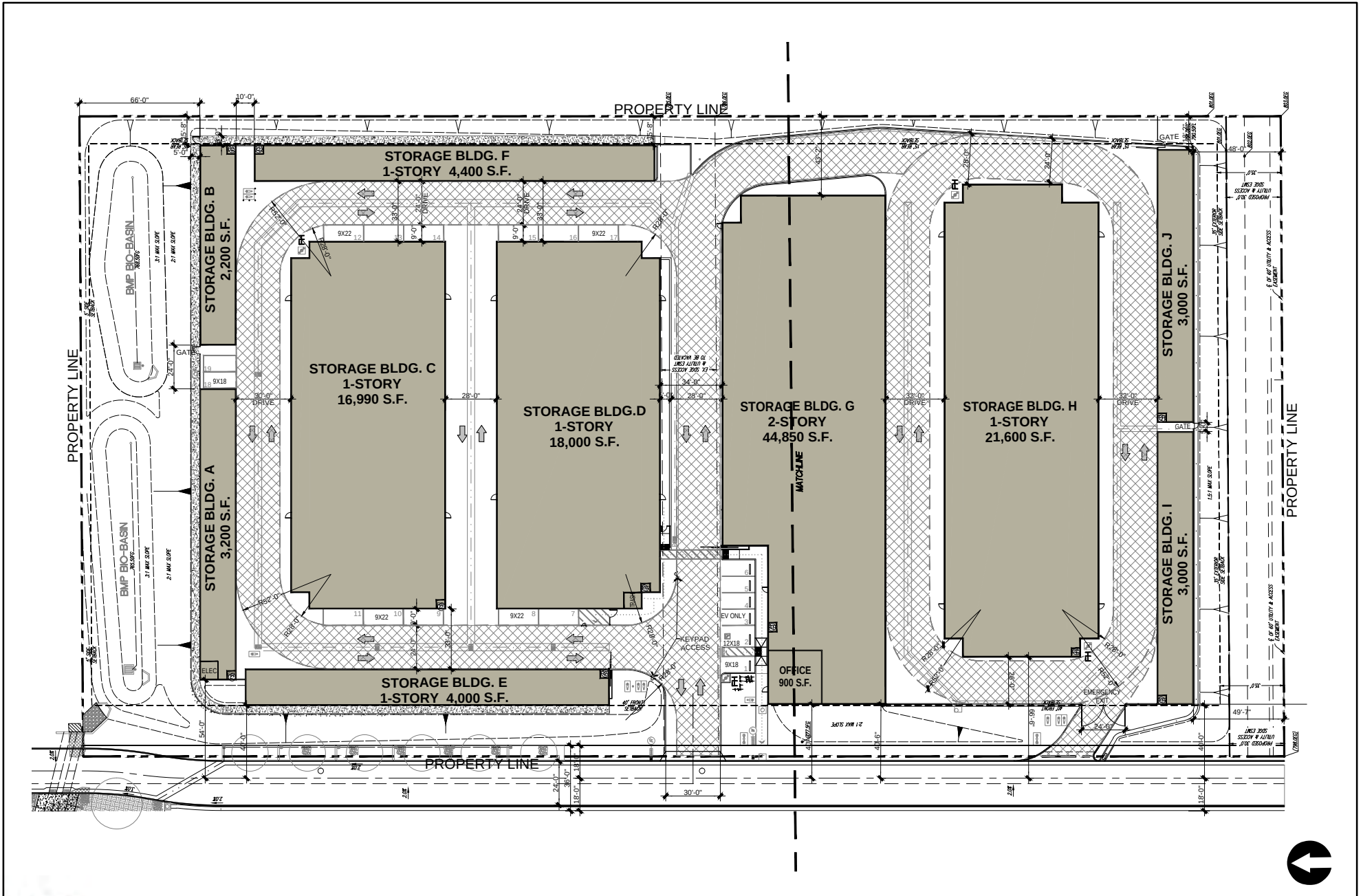
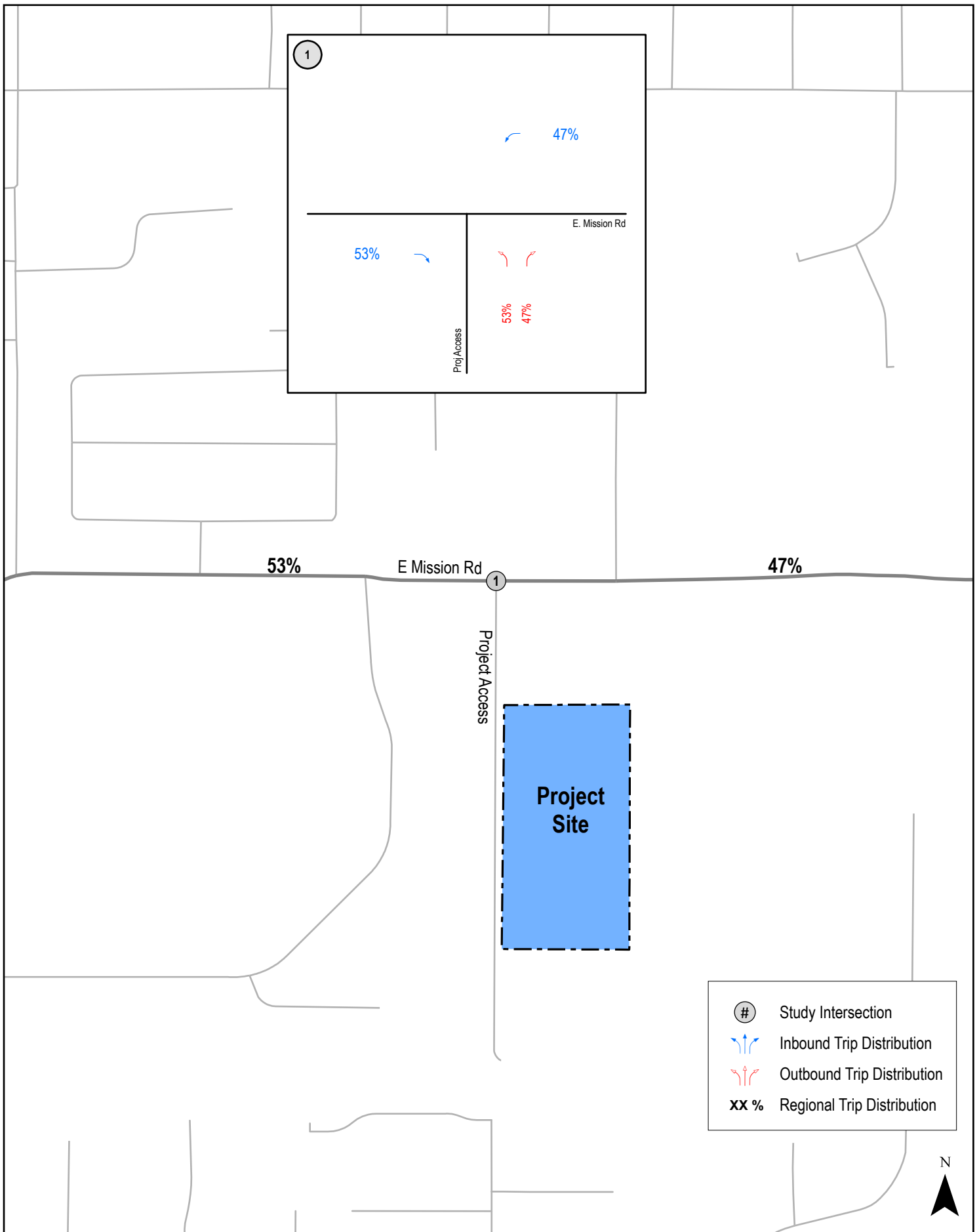


Figure 2  
Site Plan



#

Study Intersection

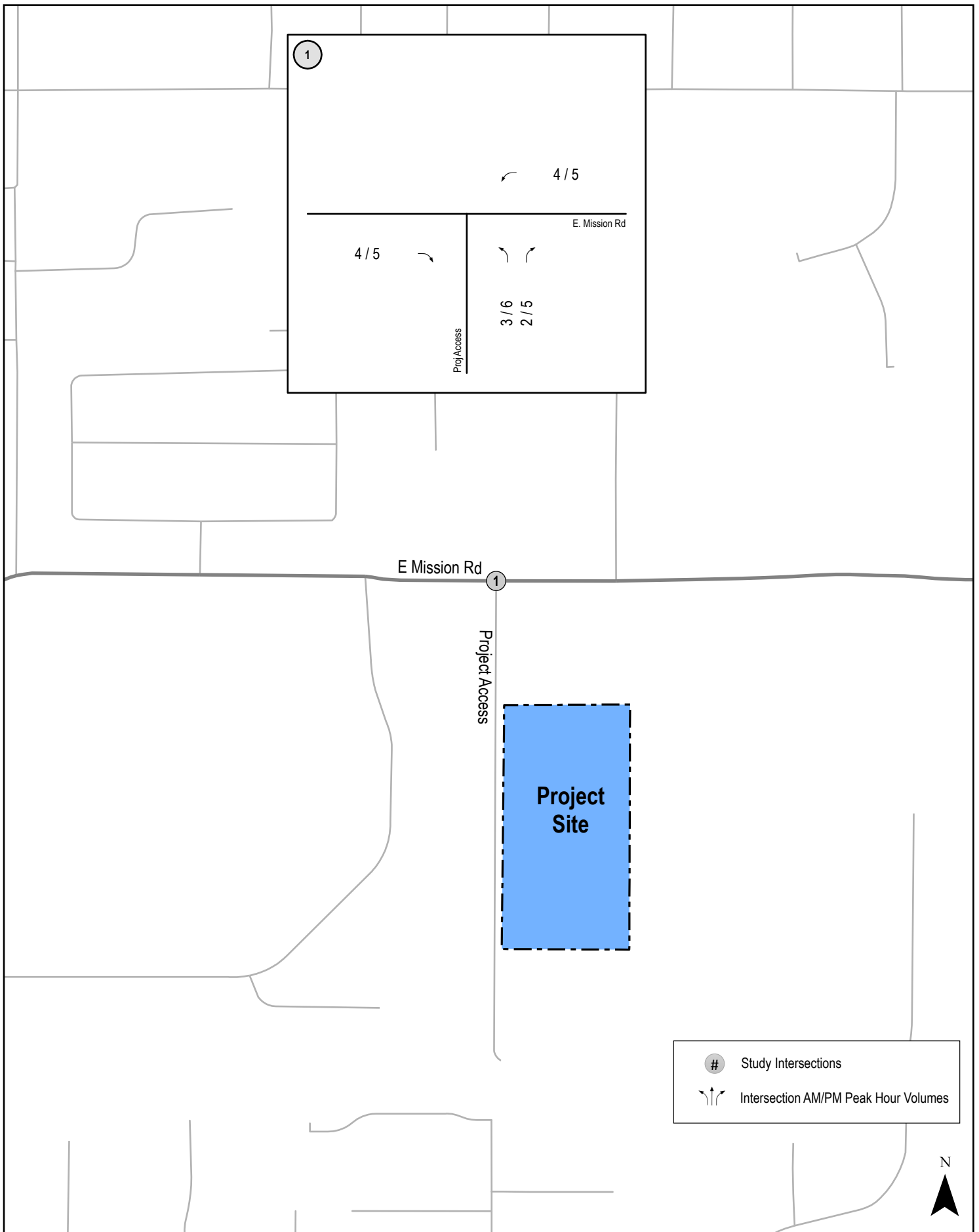
Inbound Trip Distribution

Outbound Trip Distribution

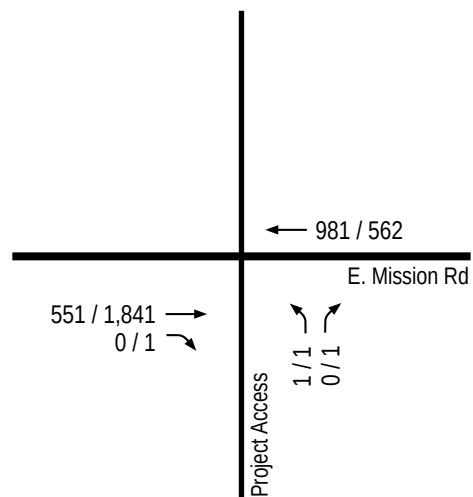
xx %

Regional Trip Distribution

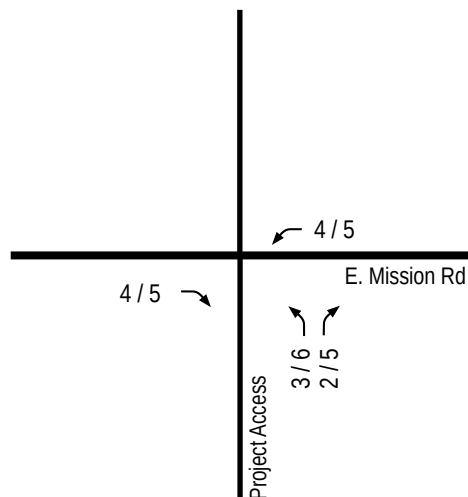




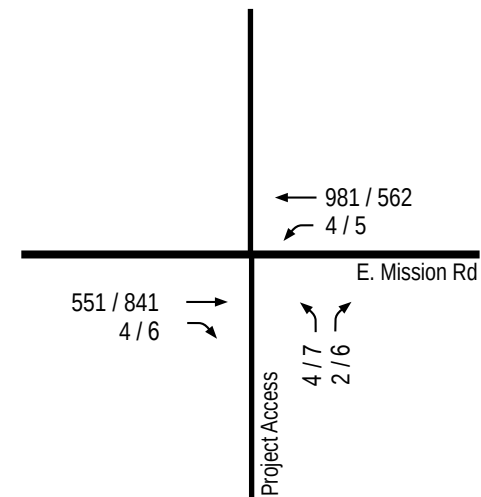
### Existing Traffic Volumes



### Project Traffic Volumes



### Existing + Project Traffic Volumes



AM / PM ↗  
↘ AM / PM Intersection  
Peak Hour Volumes



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Figure 5

## Pre & Post Project Site Access Traffic Volumes

FALLBROOK SELF STORAGE



ATTACHMENT A

SANDAG SERIES 14 ABM 2+  
(BASE YEAR 2016) SCREENING MAP

1305 E Mission Rd, Fallbrook, CA X

Show search results for 1305 E Missio...

Filter

San Diego Region SB743 VMT Maps

Forecast / ABM Version is

ABM2+ / 2021 RP

Residents/Employees is

Employees

Geography is

Census Tract

Year is

2016

## Map Legend / Disclaimer

### Map Legend

#### Percent of Mean

- More than 125% of Regional Mean
- 100% to 125% of Regional Mean
- 85% to 100% of Regional Mean
- 50% to 85% of Regional Mean
- Less than 50% of Regional Mean
- No Data
- Not Enough Data

### Current Data

2016 - ABM2+ / 2021 RP (Scenario ID 458)

Regional Mean = 18.9 VMT per Resident

Regional Mean = 18.9 VMT per Employee

2025 - ABM2+ / 2021 RP (Scenario ID 462)

Regional Mean = 17.7 VMT per Resident

Regional Mean = 17.0 VMT per Employee

2035 - ABM2+ / 2021 RP (Scenario ID 475)

Regional Mean = 16.6 VMT per Resident

Regional Mean = 15.3 VMT per Employee

2050 - ABM2+ / 2021 RP (Scenario ID 459)

Regional Mean = 16.0 VMT per Resident

Regional Mean = 14.3 VMT per Employee

### Archived Data

2016 - ABM2 / 2019 RTP (Scenario ID 434)

Regional Mean = 19.0 VMT per Resident

Regional Mean = 27.2 VMT per Employee

### Disclaimer

The maps provided by SANDAG are an interpretation of the Senate Bill 743 Technical Advisory guidelines published by the California Office of Planning and Research and are provided as a resource to the jurisdictions in the San Diego region to use as they see fit. Users of the data should exercise their professional judgment in reviewing, evaluating and analyzing VMT reduction estimate results from the tool. Each agency should consult with CEQA experts and legal counsel regarding their own CEQA practices and updates to local policies. Refer to full disclaimer and additional information relating to the use of the SB 743 VMT Map Web Application.

While the data have been tested for accuracy and are properly functioning, SANDAG disclaims any responsibility for the accuracy or correctness of the data.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OR MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE AND/OR ANY OTHER TYPE WHETHER

(2 of 2)

### 2016 VMT Per Employee by Census Tract

| Geography           | Census Tract |
|---------------------|--------------|
| Name                | 189.04       |
| Residents/Employees | Employees    |
| Persons             | 3,481        |
| VMT per Capita      | 15.6         |
| Percent of Mean     | 82.7%        |

Zoom to



ATTACHMENT B  
SYNCHRO ANALYSIS WORKSHEETS

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.1  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 0    | 551  | 0    | 0    | 981  | 0    | 1    | 0    | 0    | 0    | 0    | 0    |
| Future Vol, veh/h        | 0    | 551  | 0    | 0    | 981  | 0    | 1    | 0    | 0    | 0    | 0    | 0    |
| Conflicting Peds, #/hr   | 0    | 0    | 2    | 2    | 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         | 83   | 83   | 83   | 94   | 94   | 94   | 25   | 25   | 25   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 664  | 0    | 0    | 1044 | 0    | 4    | 0    | 0    | 0    | 0    | 0    |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |       |       | Minor2 |       |       |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|--------|-------|-------|
| Conflicting Flow All | 1044   | 0 | 0 | 666    | 0 | 0 | 1709   | 1709  | 666   | 1707   | 1709  | 1044  |
| Stage 1              | -      | - | - | -      | - | - | 666    | 666   | -     | 1044   | 1044  | -     |
| Stage 2              | -      | - | - | -      | - | - | 1044   | 1044  | -     | 664    | 666   | -     |
| 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   | 667    | - | - | 923    | - | - | 72     | 91    | 459   | 72     | 91    | 278   |
| Stage 1              | -      | - | - | -      | - | - | 449    | 457   | -     | 277    | 306   | -     |
| Stage 2              | -      | - | - | -      | - | - | 277    | 306   | -     | 450    | 457   | -     |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -     | -     | -      | -     | -     |
| Mov Cap-1 Maneuver   | 667    | - | - | 922    | - | - | 71     | 91    | 459   | 72     | 91    | 278   |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 71     | 91    | -     | 72     | 91    | -     |
| Stage 1              | -      | - | - | -      | - | - | 448    | 457   | -     | 277    | 306   | -     |
| Stage 2              | -      | - | - | -      | - | - | 277    | 306   | -     | 450    | 457   | -     |

| Approach               | EB | WB | NB    | SB |
|------------------------|----|----|-------|----|
| HCM Control Delay, s/v | 0  | 0  | 58.32 | 0  |
| HCM LOS                |    |    | F     | A  |

| Minor Lane/Major Mvmt     | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---------------------------|-------|-----|-----|-----|-----|-----|-----|-------|
| Capacity (veh/h)          | 71    | 667 | -   | -   | 922 | -   | -   | -     |
| HCM Lane V/C Ratio        | 0.056 | -   | -   | -   | -   | -   | -   | -     |
| HCM Control Delay (s/veh) | 58.3  | 0   | -   | -   | 0   | -   | -   | 0     |
| HCM Lane LOS              | F     | A   | -   | -   | A   | -   | -   | A     |
| HCM 95th %tile Q(veh)     | 0.2   | 0   | -   | -   | 0   | -   | -   | -     |

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.2  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 0    | 841  | 1    | 0    | 562  | 0    | 1    | 0    | 1    | 0    | 0    | 0    |
| Future Vol, veh/h        | 0    | 841  | 1    | 0    | 562  | 0    | 1    | 0    | 1    | 0    | 0    | 0    |
| 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   | 91   | 91   | 91   | 25   | 25   | 25   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 934  | 1    | 0    | 618  | 0    | 4    | 0    | 4    | 0    | 0    | 0    |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |       |       | Minor2 |       |       |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|--------|-------|-------|
| Conflicting Flow All | 618    | 0 | 0 | 936    | 0 | 0 | 1553   | 1553  | 935   | 1552   | 1553  | 618   |
| Stage 1              | -      | - | - | -      | - | - | 935    | 935   | -     | 618    | 618   | -     |
| Stage 2              | -      | - | - | -      | - | - | 618    | 618   | -     | 934    | 936   | -     |
| 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   | 962    | - | - | 732    | - | - | 92     | 113   | 322   | 92     | 113   | 490   |
| Stage 1              | -      | - | - | -      | - | - | 318    | 344   | -     | 477    | 481   | -     |
| Stage 2              | -      | - | - | -      | - | - | 477    | 481   | -     | 319    | 344   | -     |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -     | -     | -      | -     | -     |
| Mov Cap-1 Maneuver   | 962    | - | - | 732    | - | - | 92     | 113   | 322   | 91     | 113   | 490   |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 92     | 113   | -     | 91     | 113   | -     |
| Stage 1              | -      | - | - | -      | - | - | 318    | 344   | -     | 477    | 481   | -     |
| Stage 2              | -      | - | - | -      | - | - | 477    | 481   | -     | 315    | 344   | -     |

| Approach               | EB | WB | NB    | SB |
|------------------------|----|----|-------|----|
| HCM Control Delay, s/v | 0  | 0  | 31.58 | 0  |
| HCM LOS                |    |    | D     | A  |

| Minor Lane/Major Mvmt     | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---------------------------|-------|-----|-----|-----|-----|-----|-----|-------|
| Capacity (veh/h)          | 143   | 962 | -   | -   | 732 | -   | -   | -     |
| HCM Lane V/C Ratio        | 0.056 | -   | -   | -   | -   | -   | -   | -     |
| HCM Control Delay (s/veh) | 31.6  | 0   | -   | -   | 0   | -   | -   | 0     |
| HCM Lane LOS              | D     | A   | -   | -   | A   | -   | -   | A     |
| HCM 95th %tile Q(veh)     | 0.2   | 0   | -   | -   | 0   | -   | -   | -     |

| 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       | 0    | 551  | 4    | 4    | 981  | 0    | 4    | 0    | 2    | 0    | 0    | 0    |
| Future Vol, veh/h        | 0    | 551  | 4    | 4    | 981  | 0    | 4    | 0    | 2    | 0    | 0    | 0    |
| Conflicting Peds, #/hr   | 0    | 0    | 2    | 2    | 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         | 83   | 83   | 83   | 94   | 94   | 94   | 25   | 25   | 25   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 664  | 5    | 4    | 1044 | 0    | 16   | 0    | 8    | 0    | 0    | 0    |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |       |       | Minor2 |       |       |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|--------|-------|-------|
| Conflicting Flow All | 1044   | 0 | 0 | 671    | 0 | 0 | 1720   | 1720  | 668   | 1716   | 1723  | 1044  |
| Stage 1              | -      | - | - | -      | - | - | 668    | 668   | -     | 1052   | 1052  | -     |
| Stage 2              | -      | - | - | -      | - | - | 1052   | 1052  | -     | 664    | 671   | -     |
| 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   | 667    | - | - | 920    | - | - | 70     | 89    | 458   | 71     | 89    | 278   |
| Stage 1              | -      | - | - | -      | - | - | 447    | 456   | -     | 274    | 303   | -     |
| Stage 2              | -      | - | - | -      | - | - | 274    | 303   | -     | 450    | 455   | -     |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -     | -     | -      | -     | -     |
| Mov Cap-1 Maneuver   | 667    | - | - | 918    | - | - | 69     | 88    | 457   | 69     | 88    | 278   |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 69     | 88    | -     | 69     | 88    | -     |
| Stage 1              | -      | - | - | -      | - | - | 447    | 455   | -     | 271    | 300   | -     |
| Stage 2              | -      | - | - | -      | - | - | 271    | 300   | -     | 442    | 454   | -     |

| Approach               | EB | WB   | NB    | SB |
|------------------------|----|------|-------|----|
| HCM Control Delay, s/v | 0  | 0.04 | 54.02 | 0  |
| HCM LOS                |    |      | F     | A  |

| Minor Lane/Major Mvmt     | NBLn1 | EBL | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|---------------------------|-------|-----|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)          | 97    | 667 | -   | -   | 7     | -   | -   | -     |
| HCM Lane V/C Ratio        | 0.248 | -   | -   | -   | 0.005 | -   | -   | -     |
| HCM Control Delay (s/veh) | 54    | 0   | -   | -   | 8.9   | 0   | -   | 0     |
| HCM Lane LOS              | F     | A   | -   | -   | A     | A   | -   | A     |
| HCM 95th %tile Q(veh)     | 0.9   | 0   | -   | -   | 0     | -   | -   | -     |

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 1.6  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 0    | 841  | 6    | 5    | 562  | 0    | 7    | 0    | 6    | 0    | 0    | 0    |
| Future Vol, veh/h        | 0    | 841  | 6    | 5    | 562  | 0    | 7    | 0    | 6    | 0    | 0    | 0    |
| 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   | 91   | 91   | 91   | 25   | 25   | 25   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 934  | 7    | 5    | 618  | 0    | 28   | 0    | 24   | 0    | 0    | 0    |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |       |       | Minor2 |       |       |
|----------------------|--------|---|---|--------|---|---|--------|-------|-------|--------|-------|-------|
| Conflicting Flow All | 618    | 0 | 0 | 941    | 0 | 0 | 1566   | 1566  | 938   | 1563   | 1570  | 618   |
| Stage 1              | -      | - | - | -      | - | - | 938    | 938   | -     | 629    | 629   | -     |
| Stage 2              | -      | - | - | -      | - | - | 629    | 629   | -     | 934    | 941   | -     |
| 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   | 962    | - | - | 728    | - | - | 90     | 111   | 321   | 91     | 111   | 490   |
| Stage 1              | -      | - | - | -      | - | - | 317    | 343   | -     | 470    | 476   | -     |
| Stage 2              | -      | - | - | -      | - | - | 470    | 476   | -     | 319    | 342   | -     |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -     | -     | -      | -     | -     |
| Mov Cap-1 Maneuver   | 962    | - | - | 728    | - | - | 89     | 110   | 321   | 83     | 109   | 490   |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 89     | 110   | -     | 83     | 109   | -     |
| Stage 1              | -      | - | - | -      | - | - | 317    | 343   | -     | 465    | 470   | -     |
| Stage 2              | -      | - | - | -      | - | - | 465    | 470   | -     | 295    | 342   | -     |

| Approach               | EB | WB   | NB    | SB |
|------------------------|----|------|-------|----|
| HCM Control Delay, s/v | 0  | 0.09 | 48.08 | 0  |
| HCM LOS                |    |      | E     | A  |

| Minor Lane/Major Mvmt     | NBLn1 | EBL | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|---------------------------|-------|-----|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)          | 134   | 962 | -   | -   | 16    | -   | -   | -     |
| HCM Lane V/C Ratio        | 0.389 | -   | -   | -   | 0.008 | -   | -   | -     |
| HCM Control Delay (s/veh) | 48.1  | 0   | -   | -   | 10    | 0   | -   | 0     |
| HCM Lane LOS              | E     | A   | -   | -   | A     | A   | -   | A     |
| HCM 95th %tile Q(veh)     | 1.6   | 0   | -   | -   | 0     | -   | -   | -     |



ATTACHMENT C

EXPLANATION OF INTERSECTION DELAY  
DECREASE WITH THE ADDITION OF  
PROJECT TRAFFIC

***Explanation of Intersection Delay Decrease with the Addition of Project Traffic:***

For purposes of this report, a decrease in delay was not shown in the report tables. Where a project induced decrease occurred, the previous scenario's (without project) delay was shown. This reduces any confusion on behalf of the reviewer while still showing there is no significant change in delay due to the project.

Under the HCM unsignalized/signalized methodology, it is possible to have better LOS or a decrease in delay with the project (in comparison to base conditions without the project), because the delay reported for the entire intersection is a weighted average of the different traffic movements on each approach based upon volumes. Therefore, the project-generated traffic may have been added to those movements with very good LOS, so that this benefit is further exemplified in the weighted average reported for the entire intersection.

Typically when the delay improves when volume is added it is due to the effect of volumes being added to movements that previously had lower delays than the intersection average delay, and therefore by adding more volume to those movements the intersection average delay actually decreases.

