The Avenues – City of Tracy, CA

Transportation Impact Analysis

February 27, 2017 | Draft Report

Prepared For:

City of Tracy
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Tracy, CA 95376

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Contents

Figures

Tables

EXECUTIVE SUMMARY

This report presents the results of the Transportation Impact Analysis (TIA) for the proposed Avenues Residential Development (Project) located in the City of Tracy, California. **Figure 1** shows the Project study area, the Project location, and study intersections. The Project site plan is shown in **Figure 2**.

PROJECT DESCRIPTION

This TIA presents the findings of the traffic analysis for the proposed construction of a maximum of 480 single-family dwelling units (Project), which will be located on approximately 94.8 acres bound by Valpico Road on the north and the Ellis Specific Plan on the south. Currently the land is undeveloped in the general area, except for the Ellis project, which is being developed immediately to the south. This TIA assumes development of 480 single-family residential units for analysis purposes. Development to the east and west of the Project is expected to occur later as the General Plan builds out. The City roadway network will then expand and include a new east-west Collector street (Street 7) through the Project site that would connect to Lammers Road and Corral Hollow Road. The north-south Collector street through the site (Summit Drive) will connect to Valpico Road and connect into the Ellis development in the south.

The site will ultimately have access through four roadways / intersections including:

- Street 7 to Lammers Road / Street 7 (Intersection #3) (Future Intersection)
- Summit Drive to Summit Drive / Valpico Road (Intersection #4) (Future Intersection)
- Street 7 to Corral Hollow Road / Street 7 (Intersection #6) (Future Intersection)
- Summit Drive into the Ellis development

The Project will make frontage improvements along Valpico Road and will construct Summit Drive roadway segments, Street 7 roadway segments, and an on-site street system within the Project site per the City of Tracy Citywide Roadway and Transportation Master Plan (TMP) requirements for lanes, right-of-way, and tentative map review.

ANALYSIS OVERVIEW

The potential traffic impacts associated with the proposed Project were evaluated for the weekday AM and PM peak hours for the following analysis scenarios:

- **Scenario 1: Existing (2016) Conditions**
  Based on current traffic counts collected in 2016 and existing roadway geometry and traffic control.
- **Scenario 2: Existing (2016) Plus Project Conditions**
  Based on current traffic counts and existing roadway geometry and traffic control plus the traffic generated by the Avenues Project.
- **Scenario 3: Background Conditions**
  Based on current traffic counts and adding approved project traffic volumes to the existing roadway geometry and traffic control. These projects include Ellis, Cordes Ranch, Tracy Hills, and Rocking Horse (Stringer).
- **Scenario 4: Background Plus Project Conditions**
  Based on current traffic counts and adding approved project traffic volumes to the existing roadway geometry and traffic control plus the traffic generated by the Avenues Project.

- **Scenario 5: Cumulative (2035) Conditions**
  Cumulative conditions land use assumptions in the City's Travel Demand Model were updated based on discussion with City staff and updated model results were used.
- **Scenario 6: Cumulative (2035) Plus Project Conditions**
  Cumulative Conditions plus traffic generated by the Avenues Project.

STUDY INTERSECTIONS AND ROADWAY SEGMENTS

Study intersections were selected in consultation with City of Tracy staff and are technically selected based on trip generation estimates and trip distribution, which was developed based on the City of Tracy Travel Demand Model, City of Tracy trip generation rates, and knowledge of the study area. The City's criteria for studying intersections is the addition of 5% or more project trips for cumulative conditions traffic, and any new roadways that would be constructed and not previously analyzed. Corral Hollow Road / Linne Road is an SJCOG CMP intersection. The following intersections and Project driveways were identified for analysis:

1. Lammers Road / Old Schulte Road
2. Lammers Road / Valpico Road
3. Lammers Road / Street 7 (Future Intersection)
4. Summit Drive / Valpico Road (Future Intersection)
5. Corral Hollow Road / Valpico Road
6. Corral Hollow Road / Street 7 (Future Intersection)
7. Corral Hollow Road / Linne Road (CMP)
8. Valpico Road / Tracy Boulevard

The Project will generate new vehicular trips that will increase traffic volumes on the nearby street network. Lammers Road and Corral Hollow Road study roadway segments are part of the SJCOG CMP network. To assess changes in traffic conditions associated with the Project, the following roadway segments were selected for evaluation in this study.

A. Lammers Road – Old Schulte Road to Valpico Road (CMP)
B. Lammers Road – Valpico Road to Street 7 (CMP)
C. Corral Hollow Road – Valpico Road to Street 7 (CMP)
D. Corral Hollow Road – Street 7 to Linne Road (CMP)
E. Valpico Road – Lammers Road to Summit Drive
F. Valpico Road – Summit Drive to Corral Hollow Road
G. Valpico Road – Corral Hollow Road to Cagney Way
H. Valpico Road – Cagney Way to Tracy Boulevard

ADDED TRIP ESTIMATES

The Project will generate 242 AM peak hour trips and 462 PM peak hour trips on average weekdays based on the 2012 City of Tracy Trip Generation Rates. The Project will be constructed on vacant farmland; therefore, no trip credits were applied in this analysis. The Project land use will be residential; therefore, no reductions were calculated. In addition, the City of Tracy trip generation rates do include alternative mode reductions for residential uses.

IMPACTS AND MITIGATIONS

The Project will pay SJCOG, County of San Joaquin, and City of Tracy Traffic Impact Fees. The fees will be used to fund planned improvements on the local and regional roadway network, and will mitigate incremental cumulative impacts not identified in the study.

Existing Conditions:

- Lammers Road / Old Schulte Road (Intersection #1) (AM & PM Peak)
    - The addition of Project traffic causes the intersection to deteriorate from LOS D and C during the AM and PM peak hour to LOS F in the AM peak hour and LOS E in the PM peak hour, respectively. The intersection would operate at an acceptable LOS A in the AM and PM peaks with the following improvements: Install a signal, add a separate northbound left turn pocket, add a separate right turn pocket, and add a separate eastbound left turn pocket. The City has recently approved the installation of this interim improvement at the intersection and the intersection would operate at an acceptable LOS A in the AM peak hour and LOS A in the PM peak.
- Corral Hollow Road / Valpico Road (Intersection #5) (AM & PM Peak)
    - The addition of Project traffic increases delay, causing the intersection to deteriorate further and continue to operate at LOS F in both the AM and PM peak hour. The City has recently approved the widening of Corral Hollow Road to four lanes from Parkside Drive to Linne Road, including the addition of turn lanes and signalization of the Corral Hollow / Valpico Road intersection. The improvements are identified in the City TMP. The project would pay the City Traffic Impact Fees. With these improvements, the intersection would operate at an acceptable LOS A in the AM and PM peak hours. The improved intersection geometry will be as follows: 1 NBL, 1 NBT, 1 NBT/R, 1 SBL, 2 SBT, 1 SBR, 1 WBL, 2 WBT, 1 WBR, 1 EBL, 1 EBT, 1 EBT/R.
- Corral Hollow Road / Linne Road (Intersection #7) (AM Peak)
    - The addition of Project traffic causes the intersection to deteriorate from LOS E and B during the AM and PM peak hours, respectively, to LOS F in the AM peak hour and LOS B in the PM peak hour. The intersection would operate at an acceptable LOS A in the AM and PM peaks with the following improvements: The City has recently, as part of the Tracy Hills Specific Plan, approved the installation of a signal at the intersection that will interconnect with the railroad crossing controller, in addition to improvements at the railroad crossing gates. This is a partial TMP improvement and will be partially funded by the City TIF. The project would pay the City Traffic Impact Fees. With these improvements, the intersection would operate at an acceptable LOS A in the AM Peak Hour and LOS A in the PM Peak Hour.

The project would improve Valpico Road along its frontage to TMP standards for the eastbound direction of travel and include transitions to join the existing alignment. This is a partial TMP improvement and the applicant may receive a credit for a portion of this improvement. The transitions are not included in the TMP or the City TIF, and the costs will be borne by the project applicant.

Background Conditions:

- Lammers Road / Old Schulte Road (Intersection #1) (PM Peak)
    - The addition of Project traffic causes the intersection to deteriorate from LOS A and D during the AM and PM peak hours to LOS B in the AM peak hour and LOS E in the PM peak hour. The intersection would operate at an acceptable LOS C and D with the following improvements: install an eastbound right turn overlap phase and retime the intersection to optimize cycle lengths and splits. The applicant shall improve the signal timing with issuance of the first building permit.
- Lammers Road / Valpico Road (Intersection #2) (AM & PM Peak)
    - The addition of Project traffic adds delay and causes the intersection to continue to deteriorate and operate at LOS F in both the AM and PM peak hours. The intersection would operate at an acceptable LOS C and D with the following improvements: Add a separate westbound right turn lane, a shared westbound left turn, and through lane. The westbound right turn phase will be overlapped with the southbound left turn phase. The applicant shall install this improvement with the issuance of the first building permit.
- Corral Hollow Road / Linne Road (Intersection #7) (AM and PM Peak)
    - The addition of Project traffic adds delay and causes the intersection to continue to deteriorate and operate at LOS F in both the AM and PM peak hours. The intersection would operate at an acceptable LOS C and D with the following improvements: Add a southbound through lane, add a northbound through lane, and add a separate westbound right turn lane. The applicant shall install these improvements at the issuance of the first building permit.
- Valpico Road / Tracy Boulevard (Intersection #8) (PM Peak)
    - The addition of Project traffic causes the intersection to deteriorate from LOS E in the PM peak hour to LOS F. The intersection would operate at an acceptable LOS D in the AM and PM peak hours with the following improvements: Optimize the signal cycle length, splits, and phasing. The applicant shall install this improvement at the issuance of the first building permit.
- Lammers Road:
    - Old Schulte Road to Street 7 – Expand from two lanes to four lanes. The widening of this segment to four lanes will complement and overlap with the intersection improvements for background conditions. The intersections govern the capacity in this urban setting and thus the segment can be expected to also operate acceptably. The deficient segments on Lammers Road indicated in Table 15 do not accurately reflect the roadway network operations. The model is a planning level tool to determine the general number of lanes required and ignores the intersection capacities. The project will pay a fair share towards widening the roadway. The widening is included in the City TIF.
- Corral Hollow Road:
    - Valpico Road to Linne Road – No addition of lanes is required as mitigation. The planned widening of this segment by the City to four lanes will complement and overlap with the

intersection improvements for background conditions. The intersections govern the capacity in this urban setting and thus the segment can be expected to also operate acceptably. The deficient segments on Corral Hollow Road indicated in Table 15 do not accurately reflect the roadway network operations. The model is a planning level tool to determine the general number of lanes required and ignores the intersection capacities.

- Valpico Road:
    - Lammers Road to Cagney Way – Expand from two lanes to four lanes. The widening of this segment to four lanes will complement and overlap with the intersection improvements for background conditions. The intersections govern the capacity in this urban setting and thus the segment can be expected to also operate acceptably. The deficient segments on Valpico Road indicated in Table 15 do not accurately reflect the roadway network operations. The model is a planning level tool to determine the general number of lane required and ignores the intersection capacities. The Project will be required to improve Valpico Road along its frontage to the first two lanes of the future four lane facility. This may include the eastbound direction of travel lanes, per the City TMP. The project would also accommodate the transitions between this frontage improvements and where the improved roadway joins the existing Valpico Road.

Cumulative Conditions:

The Project has no significant Cumulative Conditions impacts on the study roadway network. The project would pay the City TIF, which represents its fair share payment towards potential cumulative impacts for both intersections and roadway segments.

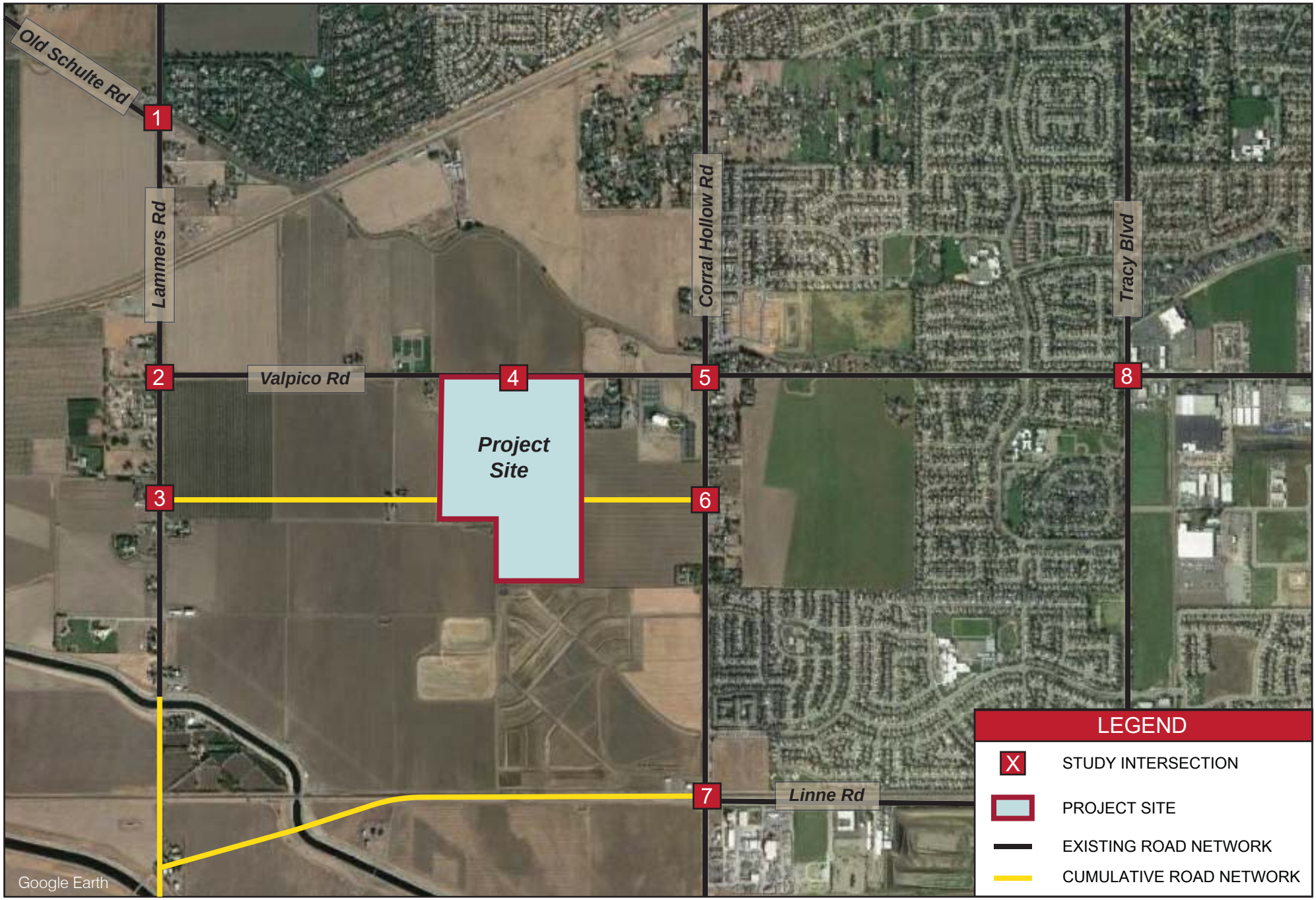

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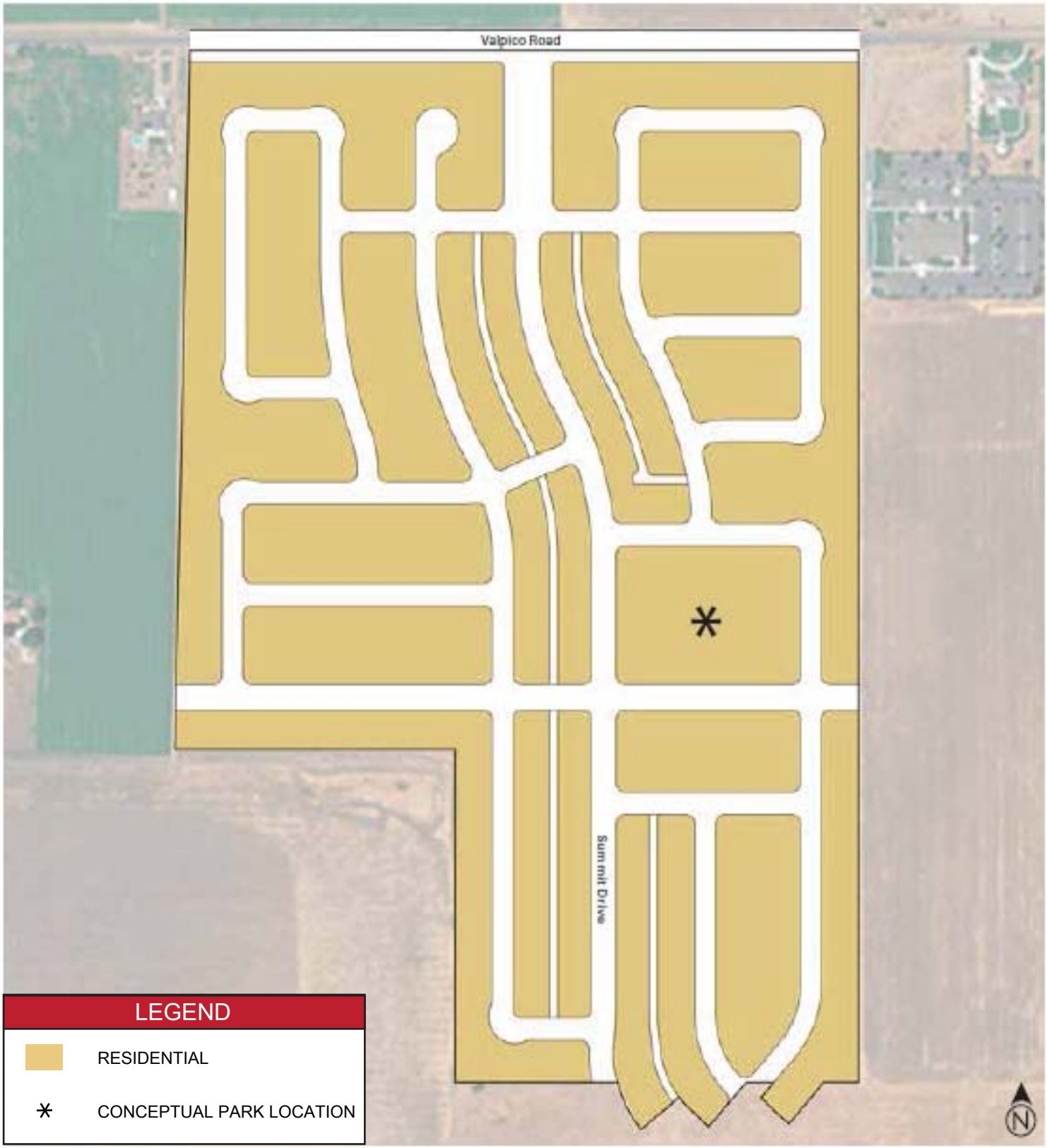
Figure 1

Project Location and Study Intersections



Source: First Carbon Solutions, 2016

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Figure 2

Project Site Plan

1. INTRODUCTION

The Avenues Specific Plan is a comprehensive land use plan for the development of approximately 94.8 acres in the City of Tracy, bound by Valpico Road on the north, the Ellis Specific Plan on the South, and undeveloped land to the east and west. As set forth in the City's General Plan, the Avenues current land use designation is Residential Low (in its entirety), permitting no more than 2.1-5.8 du/acre. The Avenues Specific Plan proposes a residential village with a mix of residential building types and recreational uses. No more than a maximum of 480 dwelling units would be provided, with a minimum of 380 units, for a total density of 4-5 dwelling units per gross acre. This TIA conservatively assumes development of 480 single family residential units for analysis purposes. The existing site is undeveloped farmland.

The site will ultimately have access through four roadways / intersections, including:

- Street 7 to Lammers Road / Street 7 (Intersection #3) (Future Intersection)
- Summit Drive to Summit Drive / Valpico Road (Intersection #4) (Future Intersection)
- Street 7 to Corral Hollow Road / Street 7 (Intersection #6) (Future Intersection)
- Summit Drive into the Ellis development

This study was prepared based on discussions with City of Tracy Staff and complies with traffic impact study guidelines and criteria set forth by the City of Tracy.

STUDY METHODOLOGY

DEVELOPMENT CONDITIONS

This transportation impact analysis was based on the following development conditions:

- **Scenario 1: Existing (2016) Conditions**
  Based on current traffic counts collected in 2016 and existing roadway geometry and traffic control.
- **Scenario 2: Existing (2016) Plus Project Conditions**
  Based on current traffic counts and existing roadway geometry and traffic control plus the traffic generated by the Avenues Project.
- **Scenario 3: Background Conditions**
  Based on current traffic counts and adding approved project traffic volumes to the existing roadway geometry and traffic control. These projects include Ellis, Cordes Ranch, Tracy Hills and Rocking Horse (Stringer).
- **Scenario 4: Background Plus Project Conditions**
  Based on current traffic counts and adding approved project traffic volumes to the existing roadway geometry and traffic control plus the traffic generated by the Avenues Project.
- **Scenario 5: Cumulative (2035) Conditions**
  Cumulative conditions land use assumptions in the City's updated Travel Demand Model were used.
- **Scenario 6: Cumulative (2035) Plus Project Conditions**
  Cumulative Conditions plus traffic generated by the Avenues Project.

OPERATING CONDITIONS AND CRITERIA FOR INTERSECTIONS

Analysis of potential environmental impacts at intersections is based on the concept of Level of Service (LOS). The LOS of an intersection is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and a facility that is operating at or near its functional capacity. LOS was determined using *Synchro 9* traffic analysis software, which employs *Highway Capacity Manual 2010 (HCM)* methodologies

HCM methodologies include procedures for analyzing side-street stop-controlled (SSSC), all-way stop-controlled (AWSC), and signalized intersections. The SSSC procedure defines LOS as a function of average control delay for each minor street approach movement. Conversely, the AWSC and signalized intersection procedures define LOS as a function of average control delay for the overall intersection. **Table 1** relates the operational characteristics associated with each LOS category for signalized and unsignalized intersections.

Table 1 – Intersection Level of Service Definitions

Level of Service	Description	Signalized (Avg. control delay per vehicle sec/veh.)	Unsignalized (Avg. control delay per vehicle sec/veh.)
A	Free flow with no delays. Users are virtually unaffected by others in the traffic stream	Equal or Less than 10	≤Equal or Less than 10
B	Stable traffic. Traffic flows smoothly with few delays.	10 to less than 20	10 to less than 15
C	Stable flow but the operation of individual users becomes affected by other vehicles. Modest delays.	20 to less than 35	15 to less than 25
D	Approaching unstable flow. Operation of individual users becomes significantly affected by other vehicles. Delays may be more than one cycle during peak hours.	35 to less than 55	25 to less than 35
E	Unstable flow with operating conditions at or near the capacity level. Long delays and vehicle queuing.	55 to less than 80	35 to less than 50
F	Forced or breakdown flow that causes reduced capacity. Stop and go traffic conditions. Excessive long delays and vehicle queuing.	Equal or more than 80	Equal or more than 50
Sources: Transportation Research Board, *Highway Capacity Manual 2010*, National Research Council.			

Project impacts are determined by comparing conditions without the Project to those with the Project. Significant impacts for intersections are created when traffic from the Project causes the LOS to fall below the maintaining agency's LOS threshold or causes deficient intersections to deteriorate further per the criteria indicated below.

San Joaquin Council of Governments

Per the 2016 SJCOG CMP, roadway and intersection LOS thresholds are LOS D.

The CMP system for analysis includes Lammers Road, Corral Hollow Road, and Linne Road roadway study segments; as well as Corral Hollow Road / Linne Road (Intersection #7).

City of Tracy

The City has established LOS D, where feasible, as the minimum acceptable LOS for roadways and overall intersection operations (for roadways a v/c ratio of .80-.89 = LOS D). However, there are certain locations where this standard does not apply. The following provides a list and description of exceptions to the LOS D standard:

- LOS E or lower shall be allowed on streets and at intersections within ¼ mile of any freeway, to discourage inter-regional traffic from using City streets.
- In the Downtown and Bowtie area of the City of Tracy, LOS E shall be allowed in order to create a pedestrian-friendly urban design character and densities necessary to support transit, bicycling, and walking.
- The City may allow individual locations to fall below the City's LOS D standard at intersections where construction of improvements is not feasible, prohibitively expensive, significantly impact adjacent properties or the environment, or have a significant adverse impact on the character of the community, including pedestrian mobility, crossing times, and comfort/convenience. Intersections may be permitted to fall below their adopted LOS standard on a temporary basis when the improvements necessary to preserve the LOS standard are in the process of construction or have been designed and funded but not yet constructed.

Significant Impact Criteria - Signalized Intersections

- Signalized intersections operating at an acceptable level (LOS D or better if located more than ¼ mile from a freeway) degrade to an unacceptable LOS E or F.
- Addition of project trips causes a delay increase of more than four seconds to an intersection already operating at an unacceptable level.

Significant Impact Criteria - Unsignalized Intersections

- Unsignalized intersections operating at LOS D or better degrade to an unacceptable LOS E or under (outside ¼ mile of a freeway), and LOS E or better degrade to an unacceptable LOS F (within ¼ mile of a freeway), and a traffic signal warrant is met.
- Addition of Project trips causes a volume increase of more than 10 percent at an intersection operating at an unacceptable level and meeting a signal warrant.

STUDY INTERSECTIONS INCLUDED IN ANALYSIS

The Project will generate new vehicular trips that will increase traffic volumes on the nearby street network. To assess changes in traffic conditions associated with the Project, the following intersections were selected based on City of Tracy criteria (Project Trips 5% or more of cumulative intersection volumes), knowledge of the area, engineering judgement, and consultation with City staff.

1. Lammers Road / Old Schulte Road
2. Lammers Road / Valpico Road
3. Lammers Road / Street 7 (Future Intersection)
4. Summit Drive / Valpico Road (Future Intersection)
5. Corral Hollow Road / Valpico Road
6. Corral Hollow Road / Street 7 (Future Intersection)
7. Corral Hollow Road / Linne Road
8. Valpico Road / Tracy Boulevard

All study intersections are illustrated in **Figure 1**.

STUDY ROADWAY SEGMENTS INCLUDED IN ANALYSIS

The Project will generate new vehicular trips that will increase traffic volumes on the nearby street network. To assess changes in traffic conditions associated with the Project, the following roadway segments were evaluated in this traffic study.

A. Lammers Road – Old Schulte Road to Valpico Road
B. Lammers Road – Valpico Road to Street 7
C. Corral Hollow Road – Valpico Road to Street 7
D. Corral Hollow Road – Street 7 to Linne Road
E. Valpico Road – Lammers Road to Summit Drive
F. Valpico Road – Summit Drive to Corral Hollow Road
G. Valpico Road – Corral Hollow Road to Cagney Way
H. Valpico Road – Cagney Way to Tracy Boulevard

REPORT ORGANIZATION

The analysis results are presented in the following chapters:

Chapter 2 describes the existing transportation system in the Project vicinity, as well as current operating conditions at study intersections and roadway segments.

Chapter 3 discusses the Project's trip generation characteristics, methodologies used to estimate Project traffic, and assignment of Project traffic to study intersections and roadway segments. Transportation system improvements provided by the Project are also presented.

Chapter 4 describes Existing Plus Project Conditions and LOS analysis.

Chapter 5 discusses Background Conditions and LOS analysis with and without the Project.

Chapter 6 discusses Cumulative Conditions and LOS analysis with and without the Project.

Chapter 7 presents the Project's potential effects on pedestrian, bicycle, and transit mobility.

Chapter 8 discusses on-site vehicle and bicycle parking, as well as site access and circulation.

Chapter 9 describes elements included in the City of Tracy General Plan, Sustainability Action Plan, and Roadway and Transportation Master Plan.

Chapter 10 presents the Vehicle Miles Traveled (VMT) in accordance with SB 743 guidance.

Chapter 11 presents the Transportation Impact Area fees and Project responsibilities based on net new daily trips.

Chapter 12 discusses the Congestion Management Program (CMP) and study roadway segments.

A technical appendix is also attached containing traffic count data and intersection LOS analysis output sheets.

2. EXISTING CONDITIONS

EXISTING ROADWAY NETWORK

Below is a description of the principal roadways within the study area:

Interstate 580

Interstate 580 provides the most direct regional access to the Project site via full access interchanges at Mountain House Parkway/Patterson Pass Road and Corral Hollow Road. I-580 also provides access west to the Bay Area (via the Altamont Pass), and connects to I-5 south of the City of Tracy. I-580 currently has four lanes (two lanes in each direction) along the segments adjacent to the City of Tracy with a posted speed limit of 70 miles per hour. In the future, a new interchange will be constructed at Lammers Road.

Interstate 205

Interstate 205 provides direct access to the central portion of the City of Tracy. It extends between I-580 and I-5 and runs east-west through the northern portion of the City of Tracy. Interchanges are provided at West Eleventh Street, Grant Line Road, Tracy Boulevard, and MacArthur Drive. I-205 consists of six lanes (three lanes in each direction) and a posted speed limit of 70 miles per hour east of the City of Tracy and 65 miles per hour through the City of Tracy and to the west. In the future, a new Lammers Road Extension interchange will be constructed at I-205 and the 11th Street interchange will be removed.

Lammers Road

Lammers Road is a major roadway originating one mile south of Valpico Road on the western boundary of the existing developed area of the City of Tracy. The City recently constructed a six-lane facility between the south end of John Kimball High School and 11th Street. The remainder of the street to the south is a two-lane undivided facility. The posted speed limit within the City is 45 miles per hour. Lammers Road is designated within the City of Tracy Roadway Master Plan (RMP) as an urban expressway and future freeway connection between I-205 and I-580. Lammers Road is not designated as a CMP route in the TMP.

Old Schulte Road

Old Schulte Road is a discontinuous roadway extending from Mountain House Parkway to Chrisman Road. For a short segment of the roadway (east of Mountain House Parkway and adjacent to the Safeway Warehouse Terminal), Schulte Road is a five-lane truck route. East of this segment, Schulte Road narrows to two travel lanes. Schulte Road terminates at the intersection with Lammers Road. The roadway commences again at Corral Hollow Road, approximately ¼ mile south of its westerly segment. From Lammers Road to Corral Hollow Road, it is a two-lane undivided roadway. East of Corral Hollow Road, the roadway has been widened to four travel lanes until MacArthur Drive. Between MacArthur Drive and Chrisman Road, Schulte Road is two lanes. Old Schulte Road is identified within the RMP as a major arterial. The posted speed limit on Old Schulte Road is 45 miles per hour and 55 miles per hour west of Lammers Road.

Valpico Road

Valpico Road is an approximately 4.5-mile continuous roadway extending from Lammers Road on the west side of the City to Chrisman Road on the east side of the City. The roadway is a two-lane undivided roadway from Lammers Road to Cagney Way, where it becomes a four-lane divided arterial up to Tracy Boulevard. The Valpico Road segment east of Tracy Boulevard is a two-lane undivided roadway and primarily provides access to residential neighborhoods, local farms in the west, and the Defense Distribution Depot in the east. The posted speed limit 35 miles per hour in the Project vicinity.

Corral Hollow Road

Corral Hollow Road is a north-south roadway that extends from Lammers Road in the north part of the City of Tracy to past the I-580 ramps in the south. Corral Hollow Road continues west past the I-580 ramps to the City of Livermore, eventually becoming Tesla Road. It is a two-lane, undivided roadway from Lammers Road to Naglee Road; a four-lane, divided roadway from Naglee Road to West Schulte Road; and a two-lane, undivided roadway from Schulte Road to the I-580 ramps. North of Valpico Road in the Project vicinity, Corral Hollow Road primarily provides access to residential uses with a 40 mph posted speed limit. South of Valpico Road, Corral Hollow Road primarily provides access to undeveloped farmland and some residential uses, with a 45 mph posted speed limit.

Tracy Boulevard

Tracy Boulevard is a north-south roadway continuing from Highway 4 north of the City to I-580 in the south. It is a route utilized by commuters and residents and provides access to farmland, commercial and residential uses, the Tracy Municipal Airport, Monte Vista Middle School, Highway 4, I-205, and I-580. It is a two-lane, undivided roadway from Highway 4 to I-205; a four-lane, divided roadway from I-205 to Vallerand Road; a four-lane undivided roadway with discontinuous two-way left-turn lanes from Vallerand Road to Sequoia Boulevard; a four-lane, divided roadway from Sequoia Boulevard to Linne Road; and a two-lane, undivided roadway from Linne Road to I-580. Tracy Boulevard has a posted speed limit of 40 mph in the Project vicinity.

EXISTING STUDY INTERSECTIONS

Lammers Road / Old Schulte Road

This is a three-legged, all-way stop controlled (AWSC) intersection. No marked pedestrian crosswalks exist at this intersection.

Lammers Road / Valpico Road

This is a three-legged, side-street stop controlled (SSSC) intersection. No marked pedestrian crosswalks exist at this intersection.

Corral Hollow Road / Valpico Road

This is a four-legged, SSSC intersection. No marked pedestrian crosswalks exist at this intersection.

Corral Hollow Road / Linne Road

This is a three-legged, SSSC intersection. No marked pedestrian crosswalks exist at this intersection.

Valpico Road / Tracy Boulevard

This is a four-legged, signal controlled intersection. Marked pedestrian crosswalks exist on all four legs.

Existing lane geometries and traffic control are illustrated in **Figure 3**.

EXISTING PEAK-HOUR TURNING MOVEMENT VOLUMES

Weekday intersection turning movement volumes for the five existing study intersections, not including the future Project driveways, were collected on November 17, 2016 (Thursday) and November 30, 2016 (Wednesday). These counts included vehicles, bicycles, and pedestrians. Volumes for intersections were collected during the AM and PM peak periods of 5:30-8:30 a.m. and 4:00-6:00 p.m., respectively. These traffic counts were taken when local schools were in session and the weather was fair. Existing peak hour turning movements are summarized in **Figure 4.** Intersection volume data sheets for all traffic counts are provided in the **Appendix**.

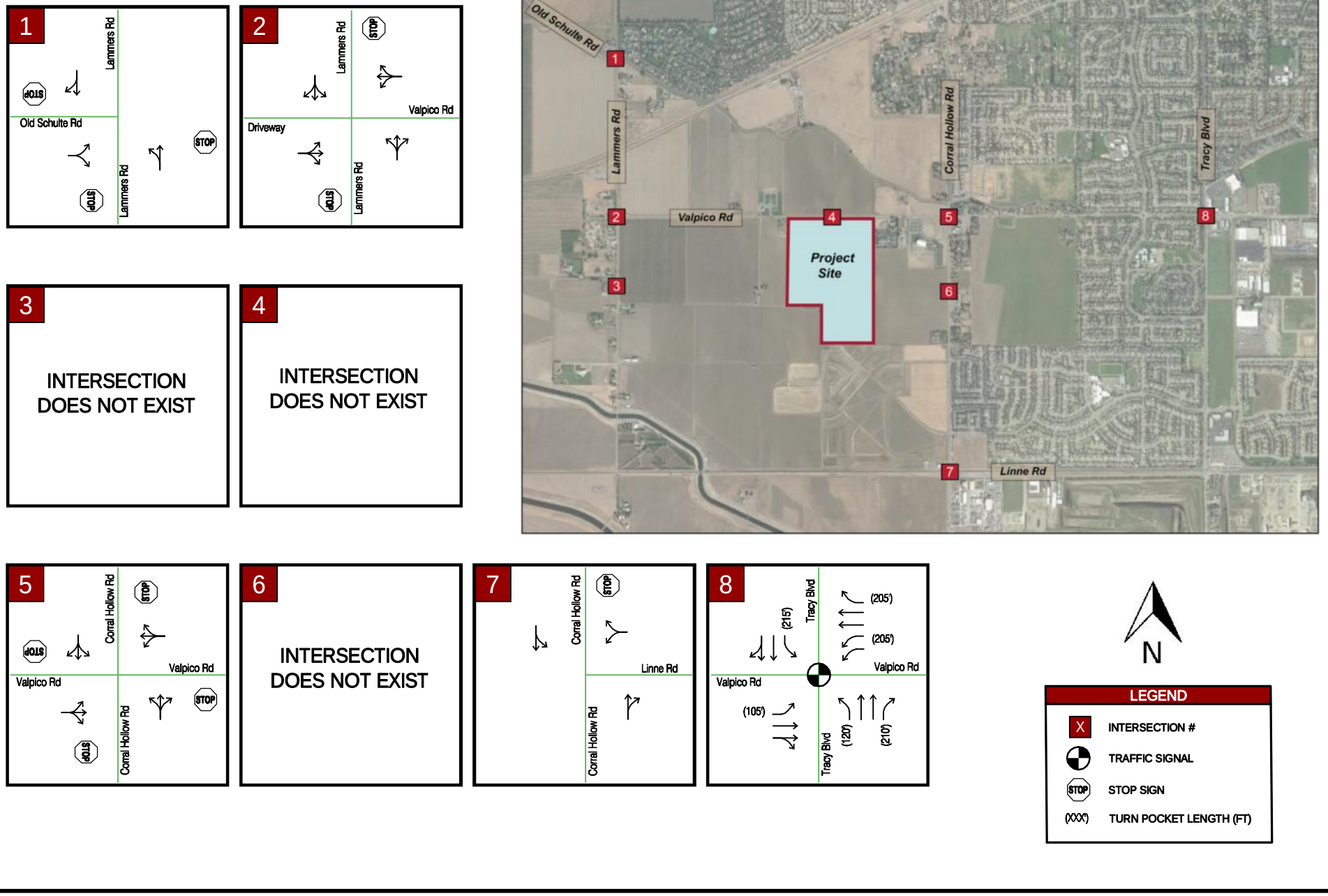

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Figure 3

Existing Conditions Lane Geometry and Traffic Control

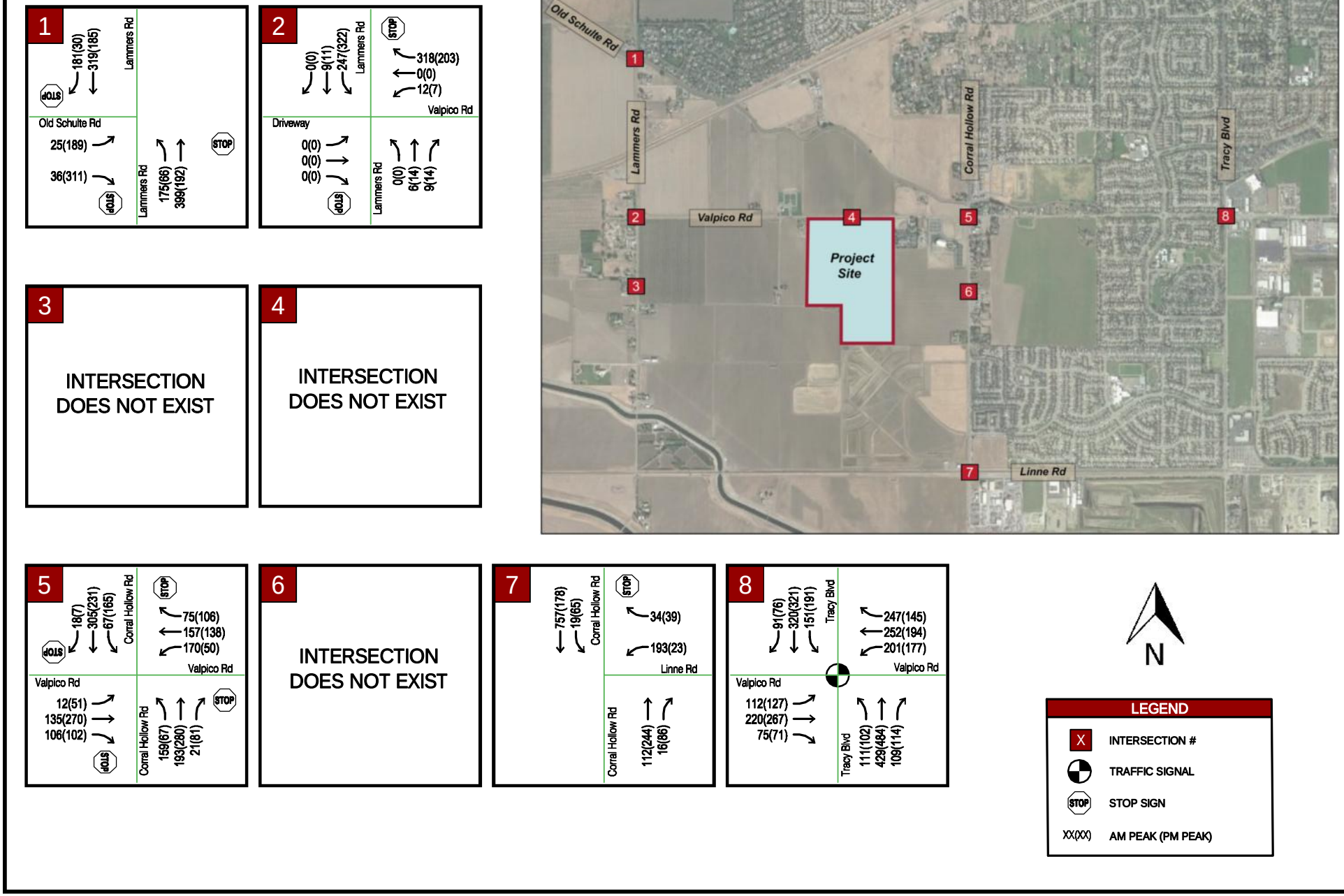

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Figure 4

Existing Conditions Peak Hour Turning Movement Volumes

EXISTING PEDESTRIAN AND BICYCLE FACILITIES

PEDESTRIANS

The roadway network in the Project vicinity is rural and within one-quarter of a mile of the Project, no sidewalks exist and there is no connectivity to the City's pedestrian network.

Existing pedestrian facilities closest to the Project site are approximately three-quarters of a mile east of Summit Drive / Valpico Road on north and south sides of Valpico Road and approximately one mile southeast of Summit Drive / Valpico Road on the east side of Corral Hollow Road at the intersection Corral Hollow Road / Peony Drive.

BICYCLES

The roadway network in the Project vicinity is rural and no bicycle facilities exist within one-quarter mile of the Project. There are significant gaps in the bicycle network in the Project vicinity and the Project has no connectivity to the City's bicycle network.

The rural nature of a majority of the immediate area's roadways generally require that bicycles share the roadways with motor vehicles. However, Class I, II, and III bikeway facilities that exist closest to the Project are discussed below:

Class I facilities are paved bicycle paths that are physically separated from the vehicular travel lane. A Class I path exists on Sycamore Parkway approximately one mile east of the Project. The path begins at Adams Park (just north of Linne Road, between Corral Hollow Road and Tracy Boulevard) and extends north onto Eleventh Street, Corral Hollow Road, and Lowell Avenue.

Class II facilities, which are striped bike lanes along the street, are generally found along the western portion of the existing urbanized area of the City. There are Class II bike lanes along portions of Corral Hollow Road, Tracy Boulevard, and Schulte Road. The closest bike lanes are located approximately one mile southeast of the Project (from Summit Drive / Valpico Road intersection) on the east side of Corral Hollow Road.

Class III bicycle facilities are bike routes denoted by signs that are shared with vehicles along the roadway. Class III bicycle facilities are located mainly in the Central Tracy area.

A map of the existing City of Tracy bicycle network can be found in the City of Tracy TMP (*Figure 4.13-8, Existing Bikeway Map)*.

EXISTING TRANSIT FACILITIES

The City's public transit system includes both bus and rail passenger components. The bus and rail system provides local and regional connectivity to residents of the City of Tracy. Since the Project vicinity is currently primarily undeveloped, no bus or rail services are currently provided.

LOCAL BUS SERVICE (TRACER)

TRACER is a bus service the City of Tracy offers to residents. It provides both Fixed Route and Paratransit services to major destinations throughout the City. It's hours of operation are Monday-Friday 7:00 a.m.-8:00 p.m. and Saturday 9:00 a.m.-7:00 p.m., and does not operate on Sundays or holidays.

The closest bus stops are served by Route D and are located at the intersection of Valpico Road / Sycamore Parkway, as well as Middlefield Drive / Peony Drive. Both stops are approximately one mile east of the Project. Route D is a commuter route, which provides service only on weekdays when school is in session. This route runs along 11th Street, Holly Drive, Tracy Boulevard, Corral Hollow Road, Sycamore Parkway, and Central Avenue. Major destinations served along these routes include the library, elementary, middle and high schools in the City of Tracy, and the Tracy Sports Complex. It operates two services during the AM peak hour and four in the afternoon.

The TRACER bus route map is shown in the **Appendix**.

SJRTD COUNTY HOPPER SERVICE

The SJRTD County Hopper is a deviated fixed-route bus service connecting Stockton, Tracy, and Lathrop. The Hopper replaces SJRTD Countywide General Public Dial-A-Ride (DAR), Rural Elderly & Disabled DAR, and County Area Transit (CAT) fixed-route services during Hopper service hours in the areas covered by the Hopper service.

In the Project vicinity, Route 90 runs along Grant Line Road and Route 97 runs along East Street within Tracy. Route 90 stops at Walmart on Grant Line Road, west of I-205 (approximately 4 miles north of the Project). Route 97 stops at the Tracy Transit Center (approximately 3 miles northeast of the Project), East Street / 10th Street (approximately 4.5 miles northeast of the Project), and Grant Line / East Street (approximately 5.25 miles northeast of the Project). The routes operate 5:25 a.m.-10:07 p.m. (Route 90) and 6:05 a.m.-7:01 p.m. (Route 97) on weekdays.

The SJRTD Hopper Service route map is shown in the **Appendix**.

SJRTD WEEKEND SERVICE

SJRTD weekend service in the Project vicinity provides fixed-route service via Route 797 to Tracy, Lathrop, Stockton, and Manteca. Route 797 runs along Grant Line Road and East Street, operates from 9:39 a.m.-4:49 p.m., and stops at the Walmart on Grant Line Road, west of I-205 (approximately 4 miles north of the Project).

The SJRTD Weekend Service route map is shown in the **Appendix**.

ALTAMONT CORRIDOR EXPRESS

The Altamont Corridor Express (ACE) is a passenger rail service connecting Stockton to San Jose. ACE operates on weekdays, excluding holidays. The ACE station in the City of Tracy is located along Tracy Boulevard near Linne Road, which is approximately 2.25 miles from the Project Area. The station is the second most popular station along the route for passenger boardings. Four westbound trains pass through the City of Tracy with approximately one-hour headways at 4:51 a.m., 6:06 a.m., 7:11 a.m., and 7:36 a.m., and four eastbound trains returning through the City of Tracy with approximately one-hour headways, at 5:11 p.m., 6:11 p.m., 7:11 p.m., and 8:14 p.m. Over a period of seven months (January 1 through July 30, 2014), on average, 553 passengers board ACE trains at the Tracy station each weekday.[1]

ACE does not charge a fee for parking at the Tracy Station, although ACE closely monitors and ensures that lots are occupied by ACE patrons only. The surface lot at the Tracy station can accommodate 491

[1] Computed from "Daily Summary Report – Altamont Corridor Express." Herzog Transit Services, Inc. 30 July 2014.

vehicles including handicapped stalls. During a field survey conducted in July 2014 the surface lot was 73.5% occupied, as can be seen in **Table 2**.

Table 2 – Parking Occupancy at ACE Tracy Station

Lot Type	Occupancy	Capacity	% Occupied
Surface lot, Tracy Boulevard	361	491	73.5%
Source: Kimley-Horn, 2014.			

PARK AND RIDE FACILITIES

Park and Ride facilities are areas where users of public transit or carpoolers may drive and park their vehicles, then use public transit or carpooling to commute. The vehicles are usually parked at the facility during the day and retrieved when the commuter returns. The Park and Ride facility closest to the Project is located approximately four miles north and is adjacent to I-205 at Naglee Road.

EXISTING LEVEL OF SERVICE AT STUDY INTERSECTIONS

Traffic operations were evaluated at the study intersections based on Existing Conditions lane geometry, traffic control, and peak hour traffic volumes. The following intersections operate at unacceptable LOS under Existing Conditions:

- Corral Hollow Road / Valpico Road (Intersection #5) (AM & PM Peak)
- Corral Hollow Road / Linne Road (Intersection #7) (AM Peak)

The traffic count data along Corral Hollow Road indicates that existing volumes have increased by more than 100% since 2013/14, when previous counts were conducted. This increase is occurring despite the fact that not much new housing has been developed since then. The increase in traffic volumes can be attributed in part to increased economic activity, however, the new traffic is primarily due to rerouted traffic from I-205 to I-580 along Corral Hollow Road as the result of congestion and the occurrence of incidents. Mountain House Parkway is also experiencing heavy congestion due to rerouting of traffic from I-205. Additional traffic counts were collected as part of this study and the diversion was found to be even higher by an additional 30-40%. The cut-through traffic occurs on a case by case basis, but seriously disrupts traffic operations in the City. It also affects the City's ability to efficiently plan roadway improvements and, even more critically, fund expansion of the roadway facilities.

Analysis results are presented in **Table 3** and Synchro output sheets are provided in the **Appendix**.

Table 3 – Existing Conditions Intersection Level of Service

#	Intersection	Agency	Control Type	Existing Conditions					
				AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS
1	Lammers Rd / Old Schulte Rd	Tracy	AWSC	Overall	34.0	D	Overall	20.1	C
2	Lammers Rd / Valpico Rd	Tracy	SSSC	Overall	9.7	A	Overall	8.3	A
				WB	11.8	B	WB	10.2	B
3	Lammers Rd / Street 7	Tracy	Does Not Exist						
4	Summit Dr / Valpico Rd	Tracy	Does Not Exist						
5	Corral Hollow Rd / Valpico Rd	Tracy	AWSC	Overall	**71.7**	**F**	Overall	**84.6**	**F**
6	Corral Hollow Rd / Street 7	Tracy	Does Not Exist						
7	Corral Hollow Rd / Linne Rd	Tracy	SSSC	Overall	8.9	A	Overall	2.1	A
				WB	**43.6**	**E**	WB	12.7	B
8	Valpico Rd / Tracy Blvd	Tracy	Signal	Overall	25.2	C	Overall	26.8	C

Notes:

1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

Source: Kimley Horn and Associates, 2017.

EXISTING ROADWAY SEGMENT LEVEL OF SERVICE

Traffic operations were evaluated at the study roadway segments under Existing Conditions. Analysis results are presented in **Table 4**. As shown in **Table 4**, all study roadway segments function at an acceptable level of service per City requirements.

Table 4 – Existing Conditions Roadway Segment Level of Service

Street	Segment	Direction	Capacity	Existing			
				Volume		V/C	
				AM	PM	AM	PM
Lammers Rd	Old Schulte Rd to Valpico Rd	NB	891	449	238	0.50	0.27
		SB	891	306	415	0.34	0.47
	Valpico Rd to Street 7	NB	891	15	28	0.02	0.03
		SB	891	21	18	0.02	0.02
Corral Hollow Rd	Valpico Rd to Street 7	NB	891	373	428	0.42	0.48
		SB	891	581	383	0.65	0.43
	Street 7 Rd to Linne Rd	NB	891	260	356	0.29	0.40
		SB	891	679	313	0.76	0.35
Valpico Rd	Lammers Rd to Summit Dr	WB	742	330	210	0.44	0.28
		EB	742	256	336	0.35	0.45
	Summit Dr to Corral Hollow Rd	WB	742	332	211	0.45	0.28
		EB	742	255	380	0.34	0.51
	Corral Hollow Rd to Cagney Way	WB	742	402	294	0.54	0.40
		EB	742	223	516	0.30	0.70
	Cagney Way to Tracy Blvd	WB	1485	454	372	0.31	0.25
		EB	1485	407	465	0.27	0.31

Notes: Volumes derived from Existing intersection counts. Capacities derived from the City of Tracy 2035 Travel Demand Model.
V/C ratios are correlated with LOS as follows: <0.60 = LOS A; 0.60 - 0.69 = LOS B; 0.70 - 0.79 = LOS C; 0.80 - 0.89 = LOS D; **0.90 - 0.99 = LOS E; ≥1.00 = LOS F.**

3. PROPOSED PROJECT

PROJECT TRANSPORTATION SYSTEM CHANGES

As part of the Project, Americans with Disabilities Act (ADA) compliant sidewalk will be constructed along the north Project frontage (Valpico Road) and within the entire Project site.

The Project will construct the segment of Summit Drive located within the Project site, which will be a two-lane collector roadway extending from Valpico Road (north of the Project) to the future Ellis site (south of the Project). The Project will also construct the segment of Street 7 within the Project site, which will be a two-lane collector roadway extending from the west Project site boundary to the east Project site boundary. Summit Drive / Valpico Road (Intersection #4) will be the one newly constructed intersection and will be side-street stop controlled (SSSC).

Project improvements are illustrated in the site plan shown in **Figure 2**.

TRIP GENERATION ESTIMATES

Trip generation for the Project was calculated using the Trip Generation Rates developed for the City of Tracy travel demand model as cited in the City of Tracy Transportation Master Plan (November 2012). Trip generation for the Project was also calculated using the rates from the Institute of Transportation Engineers publication *Trip Generation 9th Edition*[2], which is a standard reference used by jurisdictions throughout the county for the estimation of trip generation. Since the City of Tracy specifies its own rates, ITE rates are supplied for comparison purposes only. A trip is defined in *Trip Generation* as a single or one-directional vehicle movement with either the origin or destination at the project site. In other words, a trip can be either "to" or "from" the site. In addition, a single customer visit to a site is counted as two trips (i.e., one to and one from the site).

For purposes of determining the worst-case impacts of traffic on the surrounding street network, the trips generated by a proposed development are estimated between the hours of 7:00-9:00 a.m. and 4:00-6:00 p.m. on weekdays. Trip generation calculations prepared are based on the number of residential dwelling units. Additionally, since the property is single-use residential, no internal capture, linked trip, or pass-by trip reductions were applied. **Table 5** shows trips generated by the proposed development based on both previously discussed standards. As illustrated in **Table 5**, total Project trips generated during the AM Peak using the City's rates are lower than total Project trips generated using ITE's rates (264 vs. 360). During the PM Peak, total Project trips generated using the City's rates are higher than total Project trips generated using ITE's rates (504 vs. 480). Based on the City of Tracy rates, the Project will generate 264 net new trips in the AM peak hour and 504 net new trips in the PM peak hour. The PM peak hour trip generation indicates the highest travel demand and is sufficient for analysis purposes.

[2] *Trip Generation, 9th Edition*, Institute of Transportation Engineers, 2012.

Table 5 – Project Trip Generation

Land Uses	Project Size	AM PEAK HOUR				PM PEAK HOUR			
		Total Peak Hour	IN	/	OUT	Total Peak Hour	IN	/	OUT
Trip Generation Rates[1]									
Project Use									
Low/Mid Density Residential & Residential Real Estate		0.55	25%	/	75%	1.05	63%	/	37%
Trips Generated									
Project Use									
Low/Mid Density Residential & Residential Real Estate	480 DUs	264	66	/	198	504	318	/	186
Total Project Trips		**264**	**66**	**/**	**198**	**504**	**318**	**/**	**186**
Total Project Trips Per ITE		*360*	*90*	*/*	*270*	*480*	*302*	*/*	*178*
Comparison		*(96)*	*(24)*	*/*	*(72)*	*24*	*16*	*/*	*8*

Notes:

1. Trip Generation Rates developed for the City of Tracy travel demand model as cited in the City of Tracy Transportation Master Plan (November, 2012) were used in this study.
2. Trip Generation using ITE rates provided for comparison purposes only.

Source: Kimley-Horn and Associates, Inc., 2017

TRIP DISTRIBUTION AND ASSIGNMENT

Due to the nature of the proposed development, most residents living at the proposed site are expected to travel predominantly to the north, where they will have access to the nearest retail land uses, schools, downtown, regional roadway (I-205), and major arterials (11th Street, Tracy Boulevard, and Grant Line Road).

Significant improvements to the City's transportation system are identified in the TMP to be completed by 2035. Therefore, separate trip distribution and assignments were calculated for Existing/Background and Cumulative conditions. The City of Tracy Travel Demand Model and knowledge of the study area were used to determine the trip distribution and Project trip assignment.

Major destinations and access for Project trips are located north, south, east, and west of the site. They include:

- North of the Project – Retail, businesses, and schools in the north/northeast part of the City. East-west arterials including 11th Street, Grant Line Road, and New Schulte Road. Freeway access via Interstate 205 on/off ramps.

- South of the Project – Future Ellis Project retail and mixed use area. Freeway access via Interstate 580 on/off ramps.

- East of the Project – Retail, businesses, and schools in the east part of the City. North-south arterials including Corral Hollow Road, Tracy Boulevard, and McArthur Drive. Freeway access to Interstate 5 on/off ramps via 11th Street.

- West of the Project – Warehouse distribution centers (Cordes Ranch) in the west part of the City. Freeway access to Interstate 580 on/off ramps via Mountain House Parkway and I-205.

Distribution assumptions for each study scenario are discussed in the following sections.

EXISTING/BACKGROUND PLUS PROJECT CONDITIONS

One Project driveway (Summit Drive / Valpico Road) will be constructed for Existing and Background Conditions. Therefore, 100% of Project trips will enter and exit the Project site via this driveway. No traffic was assumed to connect to and from Ellis in the south. From the Project driveway, trips will be distributed throughout the roadway network with a total of approximately 83% (AM Peak) and 80% (PM Peak) traveling to/from the north via Lammers Road, Corral Hollow Road, Tracy Boulevard, and Central Avenue. Approximately 10% (AM Peak) and 14% (PM Peak) will disperse to the west (west of Lammers Road), and 6% (AM Peak) and 7% (PM Peak) will travel to the east (east of Tracy Boulevard) via Linne Road and Valpico Road. Roughly 11% (AM Peak) and 13% (PM Peak) will travel to/from the south via Corral Hollow Road. The distribution estimates for Existing & Background Conditions are illustrated in **Figure 5**.

Figure 7 shows the Existing and Background Conditions Project trip assignment for AM and PM peak hour periods at study intersections.

CUMULATIVE (2035) PLUS PROJECT CONDITIONS

All Project trips are assumed to access and distribute throughout the transportation network via the Summit Drive / Valpico Road, Lammers Road / Street 7, and Corral Hollow Road / Street 7 intersections. The Project has one additional entry/access point via south Summit Drive, which connects to the approved Ellis site. This study conservatively assumes that all Project trips will access the Project via the three study intersections. The City 2035 Cumulative Conditions do not include any development on the Project site and the analysis was conducted by adding the Avenues Specific Plan traffic to the 2035 Cumulative traffic. No Avenues SP traffic was assumed to travel south, however, the City travel demand model anticipates that traffic from Ellis would use Summit drive to gain access to Valpico Road. Trip distribution to the three primary Project access points is shown in **Table 6**.

Table 6 – Project Driveway Access Distribution

#	Intersection	AM Peak	PM Peak
3	Lammers Rd / Street 7	19%	20%
4	Summit Drive / Valpico Rd	64%	62%
6	Corral Hollow Rd / Street 7	17%	18%
Total		***100%***	***100%***

In the Project vicinity, trips will be distributed throughout the roadway network with a total of approximately 74% (AM Peak) and 69% (PM Peak) traveling to/from the north via Lammers Road, Corral Hollow Road, Tracy Boulevard, and Central Avenue. Of the trips that travel north from the Project, approximately 1% (AM Peak) and 3% (PM Peak) will disperse west on Old Schulte Road from Lammers Road. Approximately 9% (AM Peak) and 11% (PM Peak) will disperse to the west on Valpico Road (west of Lammers Road) and 6% (AM Peak) and 7% (PM Peak) will travel to the east (east of Tracy Boulevard) via Linne Road and Valpico Road. Roughly 11% (AM Peak) and 13% (PM Peak) will travel to/from the south via Lammers Road and Corral Hollow Road. The distribution estimates for Cumulative Conditions are illustrated in **Figure 6**.

Figure 7 shows the Project trip assignment for Cumulative Conditions AM and PM peak hour periods at study intersections.

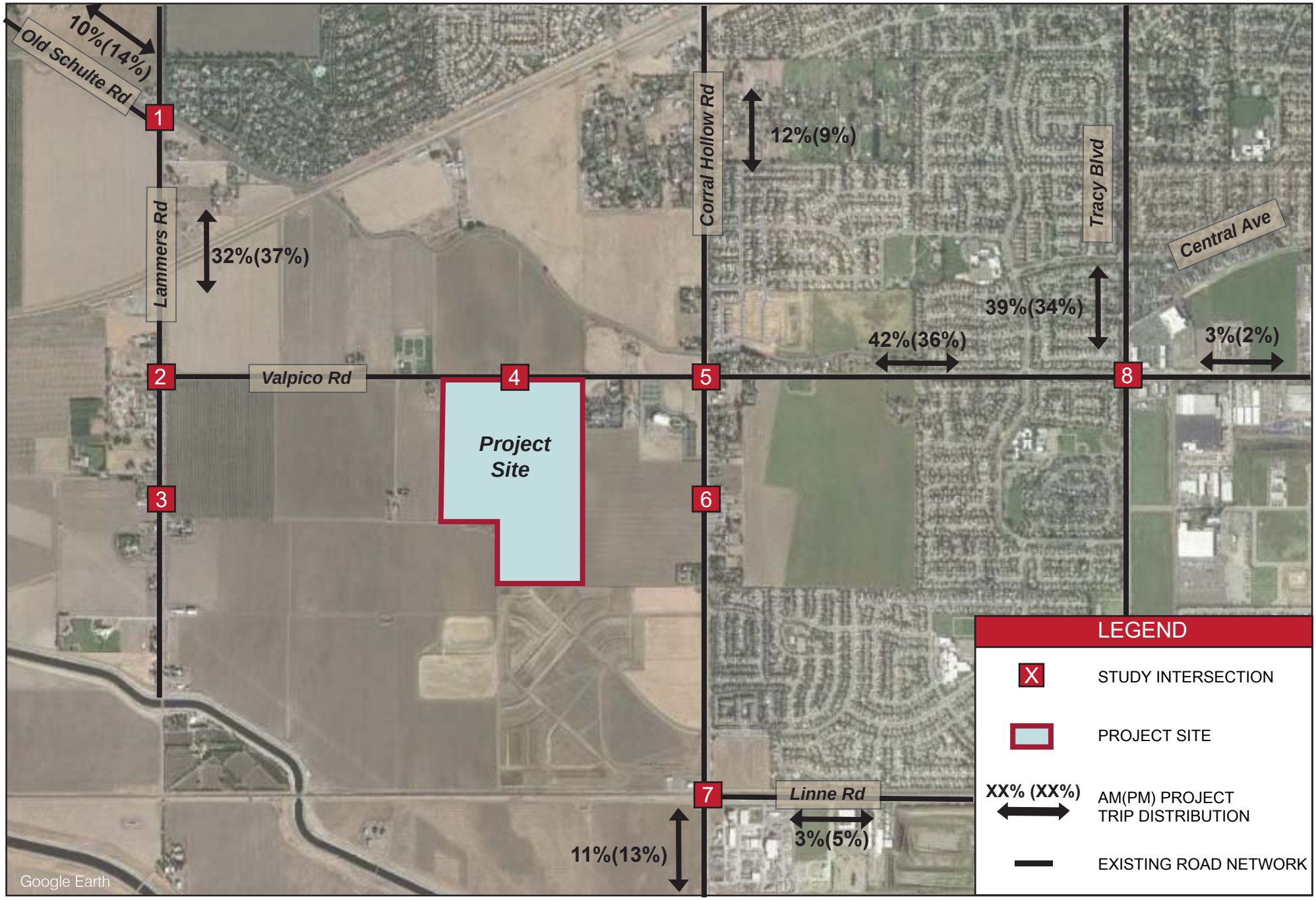

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Figure 5

Project Trip Distribution - Existing & Background

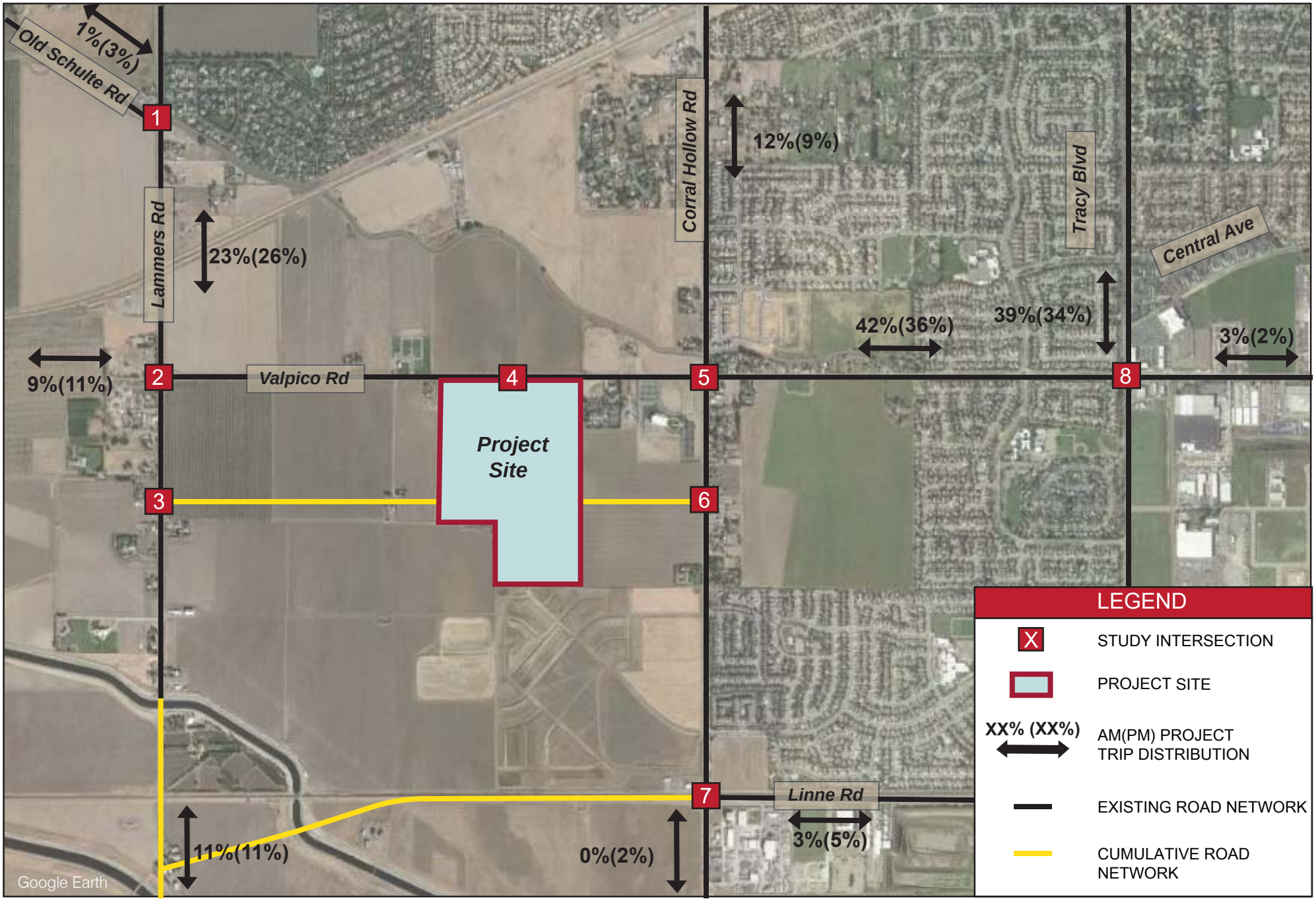

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Figure 6

Project Trip Distribution - Cumulative

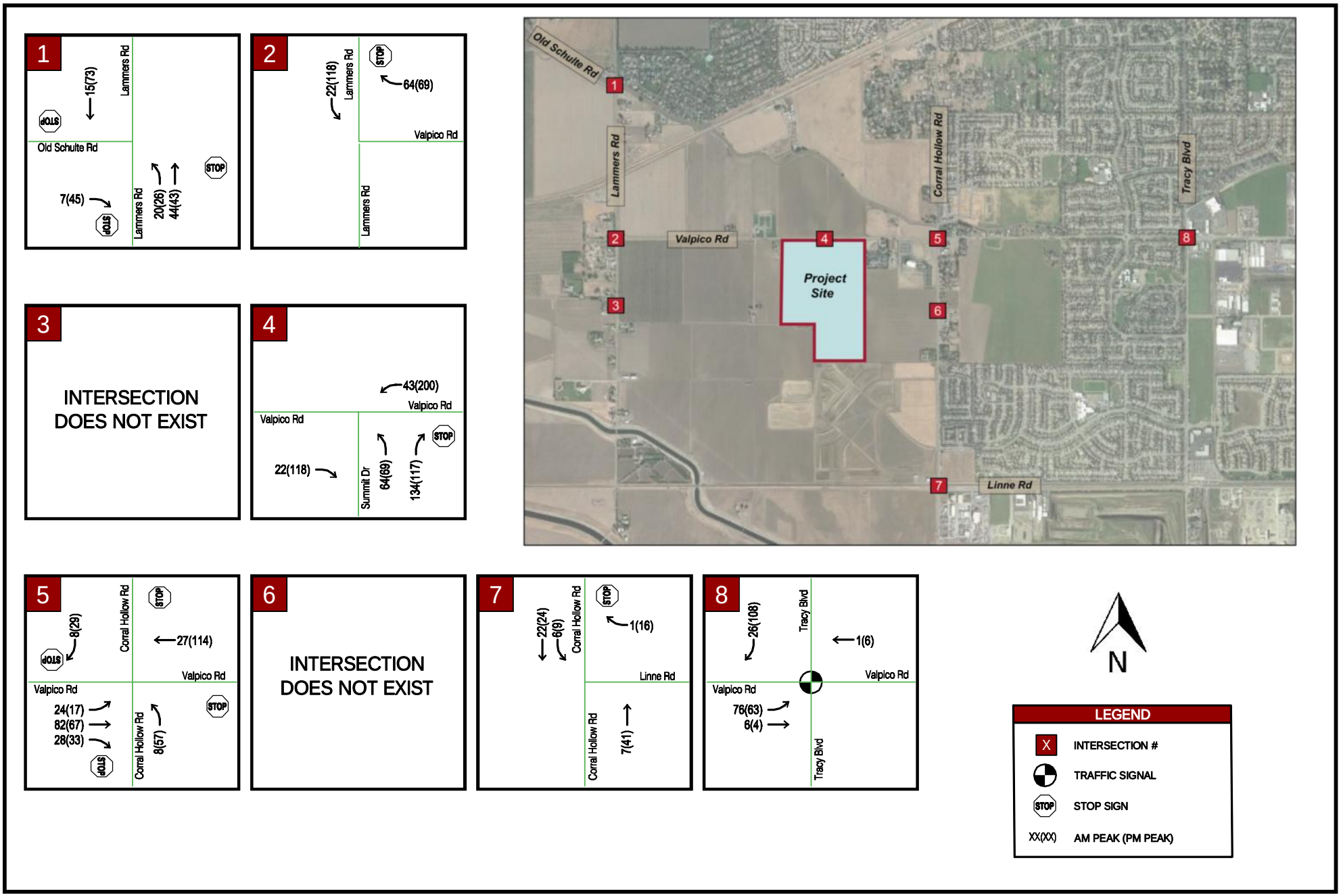

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Figure 7

Project Trip Assignment: Existing and Background Peak Hour Conditions

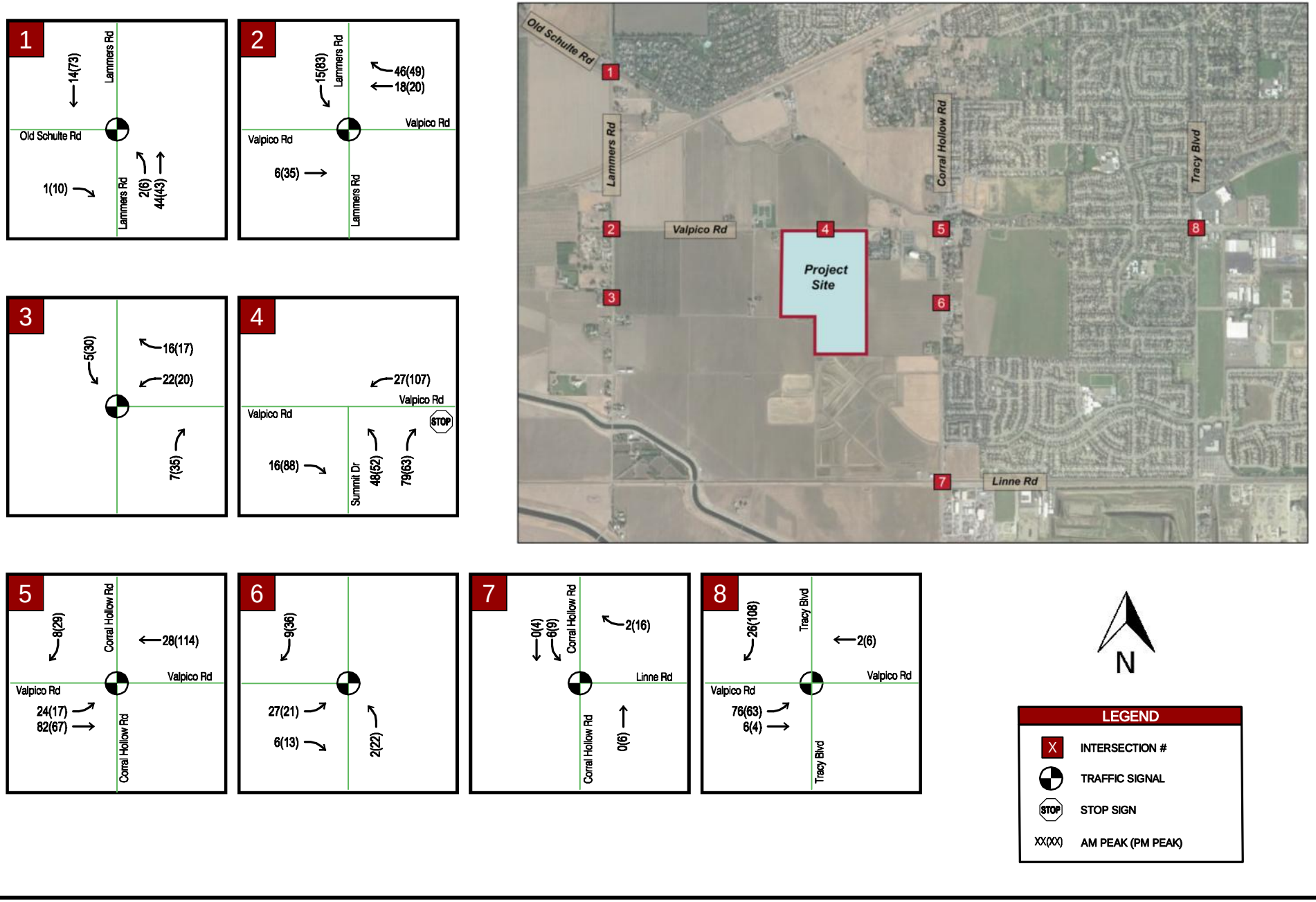

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Figure 8

Project Trip Assignment: Cumulative Peak Hour Conditions

4. EXISTING PLUS PROJECT CONDITIONS

Traffic operations were evaluated at the study intersections under Existing Plus Project Conditions. **Figure 9** shows the Existing Plus Project lane geometry and traffic control and **Figure 10** shows the Existing Plus Project peak hour traffic volumes.

EXISTING PLUS PROJECT INTERSECTION SEGMENT LEVEL OF SERVICE

The following intersections operate at unacceptable LOS under Existing Plus Project Conditions:

- Lammers Road / Old Schulte Road (Intersection #1) (AM & PM Peak)
- Corral Hollow Road / Valpico Road (Intersection #5) (AM & PM Peak)
- Corral Hollow Road / Linne Road (Intersection #7) (AM Peak)

Results of the analysis are presented in **Table 7** and Synchro output sheets are provided in the **Appendix**. The following intersections operate at unacceptable LOS under Existing Plus Project Conditions:

- Lammers Road / Old Schulte Road (Intersection #1) (AM & PM Peak)
    - The addition of Project traffic causes the intersection to deteriorate from LOS D in the AM peak hour and LOS C in the PM peak hour to LOS F in the AM peak hour and LOS E in the PM peak hour. The intersection would operate at an acceptable LOS A in the AM and PM peaks with the following improvements: Install a signal, add a separate northbound left turn pocket, add a separate right turn pocket, and add a separate eastbound left turn pocket. The City has recently approved the installation of this interim improvement at the intersection and the intersection would operate at an acceptable LOS A in the AM peak hour and LOS A in the PM peak.
- Corral Hollow Road / Valpico Road (Intersection #5) (AM & PM Peak)
    - The addition of Project traffic adds delay and causes the intersection to continue to deteriorate and operate at LOS F in both the AM and PM peak hours. The City has recently approved the widening of Corral Hollow Road to four lanes from Parkside Drive to Linne Road, including the addition of turn lanes and signalization of the Corral Hollow / Valpico Road intersection. The improvements are identified in the City TMP. The project would pay the City Traffic Impact Fees. With these improvements, the intersection would operate at an acceptable LOS A in the AM and in the PM peak hour. The improved intersection geometry will be as follows: 1 NBL, 1 NBT, 1 NBT/R, 1 SBL, 2 SBT, 1 SBR, 1 WBL, 2 WBT, 1 WBR, 1 EBL, 1 EBT, 1 EBT/R. The project would pay the City Traffic Impact Fees.
- Corral Hollow Road / Linne Road (Intersection #7) (AM Peak)
    - The addition of Project traffic causes the intersection to deteriorate from LOS E and B during the AM and PM peak hour, respectively, to LOS F in the AM peak hour and LOS B in the PM peak hours. The intersection would operate at an acceptable LOS A in the AM and PM Peaks with the following improvements: The City has recently, as part of the Tracy Hills Specific Plan, approved the installation of a signal at the intersection that will interconnect with the railroad crossing controller, in addition to improvements at the railroad crossing gates. This is a partial TMP improvement and will be partially funded by the City TIF. The project would pay the City Traffic Impact Fees. With these improvements, the

intersection would operate at an acceptable LOS A in the AM Peak Hour and LOS A in the PM Peak Hour.

Table 9 shows LOS for improved intersections and Synchro output sheets are provided in the **Appendix**.

Table 7 – Existing Plus Project Conditions Intersection Level of Service

#	Intersection	Agency	Control Type	Existing Conditions						Existing Plus Project Conditions					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS
1	Lammers Rd / Old Schulte Rd	Tracy	AWSC	Overall	34.0	D	Overall	20.1	C	Overall	**52.9**	**F**	Overall	**36.7**	**E**
2	Lammers Rd / Valpico Rd	Tracy	SSSC	Overall	9.7	A	Overall	8.3	A	Overall	10.6	B	Overall	9.1	A
				WB	11.8	B	WB	10.2	B	WB	13.0	B	WB	11.4	B
3	Lammers Rd / Street 7	Tracy	Does Not Exist												
4	Summit Dr / Valpico Rd	Tracy	Signal	Does Not Exist						Overall	3.4	A	Overall	5.6	A
										NB	13.0	B	NB	21.8	C
5	Corral Hollow Rd / Valpico Rd	Tracy	AWSC	Overall	**71.7**	**F**	Overall	**84.6**	**F**	Overall	**127.3**	**F**	Overall	**182.9**	**F**
6	Corral Hollow Rd / Street 7	Tracy	Does Not Exist												
7	Corral Hollow Rd / Linne Rd	Tracy	SSSC	Overall	8.9	A	Overall	2.1	A	Overall	10.2	A	Overall	2.2	A
				WB	**43.6**	**E**	WB	12.7	B	WB	**51.4**	**F**	WB	12.9	B
8	Valpico Rd / Tracy Blvd	Tracy	Signal	Overall	25.2	C	Overall	26.8	C	Overall	31.8	C	Overall	34.5	C

Notes:

1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

Source: Kimley Horn and Associates, 2017.

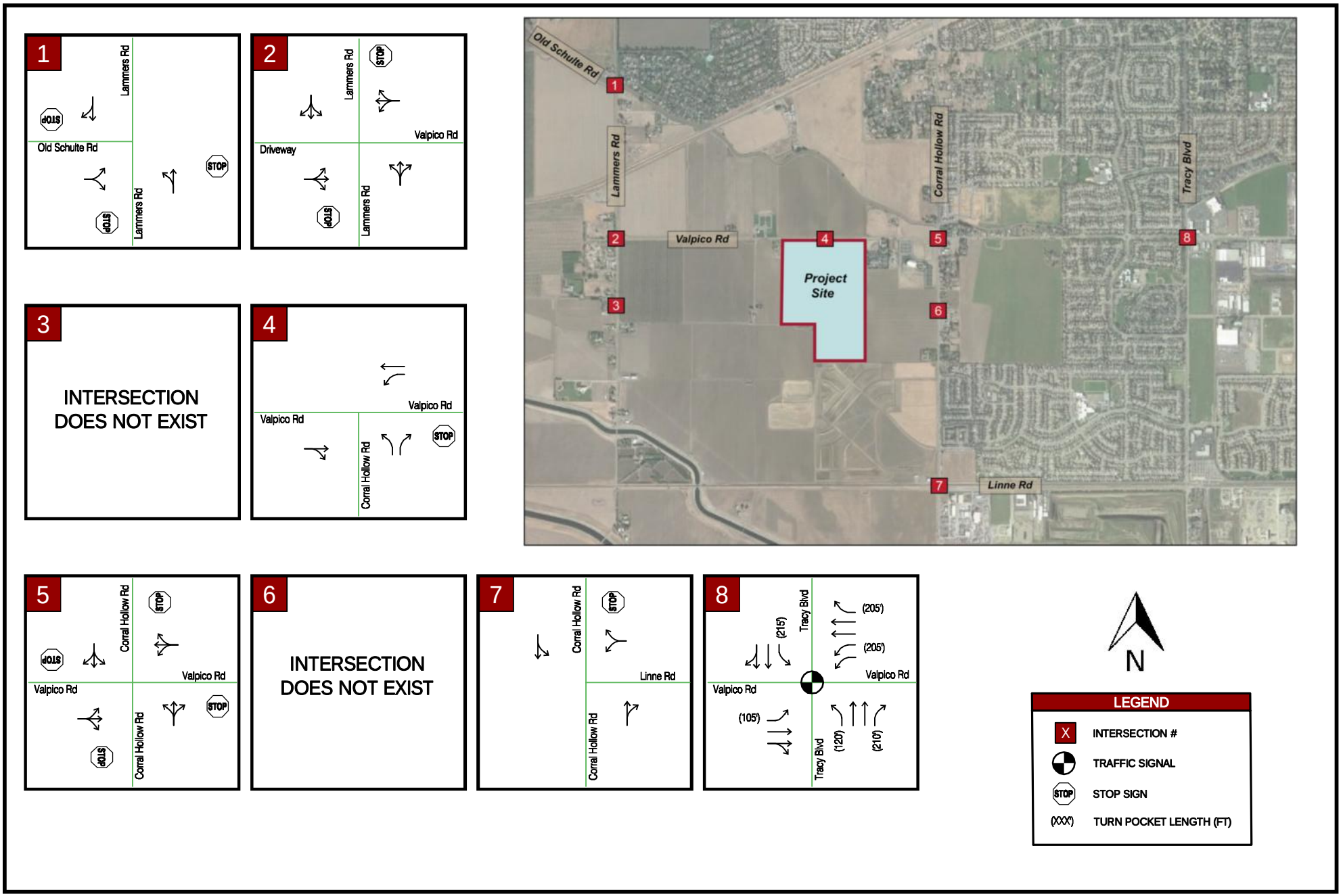

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Figure 9

Existing Plus Project Conditions Lane Geometry and Traffic Control

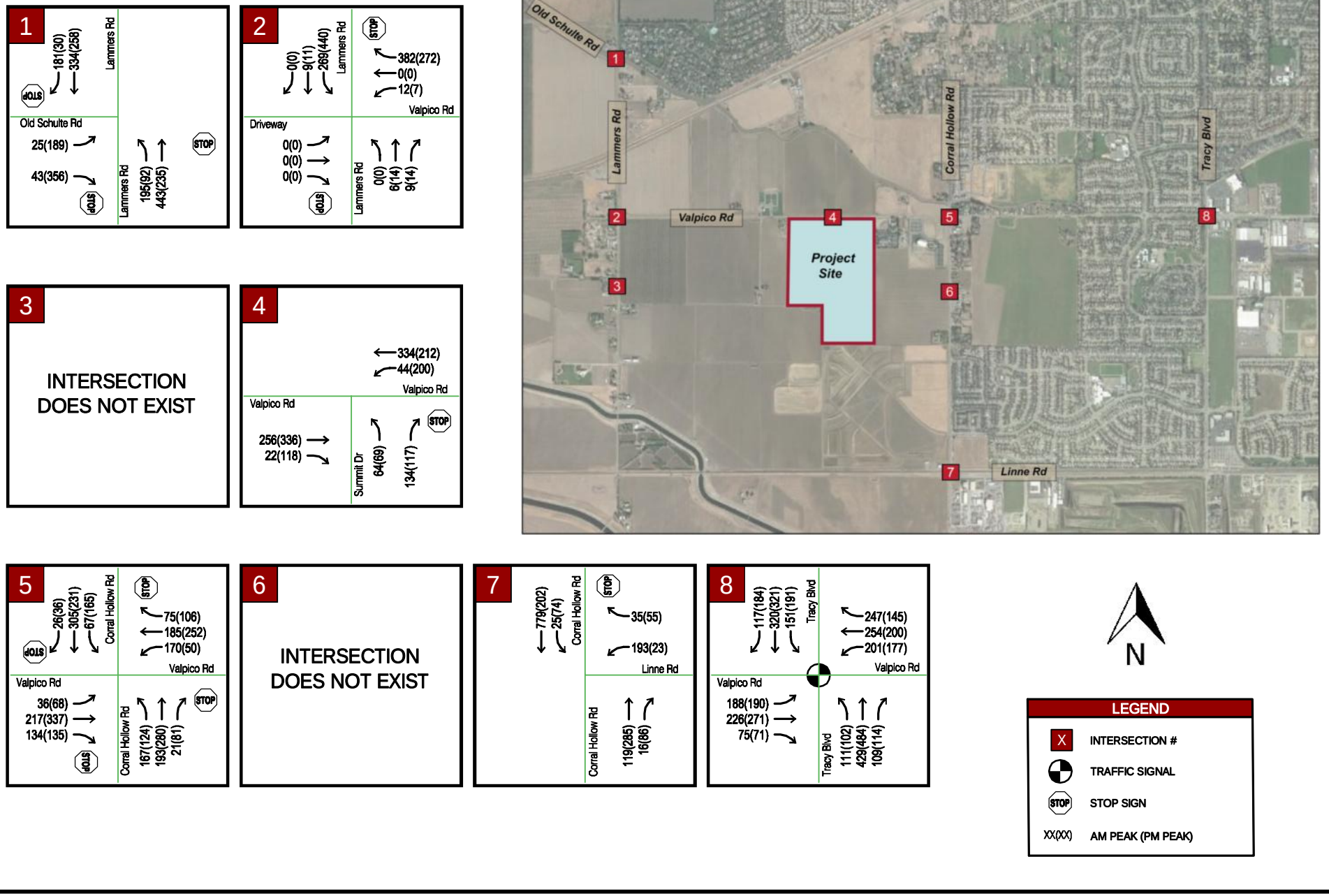

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Figure 10

Existing Plus Project Conditions Peak Hour Turning Movement Volumes

EXISTING PLUS PROJECT ROADWAY SEGMENT LEVEL OF SERVICE

Traffic operations were evaluated at the study roadway segments under Existing Plus Project traffic conditions. Results of the analysis are presented in **Table 8**. As shown in **Table 8**, all study roadway segments function at an acceptable LOS per City requirements:

Table 8 – Existing Plus Project Conditions Roadway Segment Level of Service

Street	Segment	Direction	Capacity	Existing				Existing Plus Project			
				Volume		V/C		Volume		V/C	
				AM	PM	AM	PM	AM	PM	AM	PM
Lammers Rd	Old Schulte Rd to Valpico Rd	NB	891	449	238	0.50	0.27	513	307	0.58	0.34
		SB	891	306	415	0.34	0.47	328	533	0.37	0.60
	Valpico Rd to Street 7	NB	891	15	28	0.02	0.03	15	28	0.02	0.03
		SB	891	21	18	0.02	0.02	21	18	0.02	0.02
Corral Hollow Rd	Valpico Rd to Street 7	NB	891	373	428	0.42	0.48	381	485	0.43	0.54
		SB	891	581	383	0.65	0.43	609	416	0.68	0.47
	Street 7 to Linne Rd	NB	891	260	356	0.29	0.40	268	413	0.30	0.46
		SB	891	679	313	0.76	0.35	707	346	0.79	0.39
Valpico Rd	Lammers Rd to Summit Dr	WB	742	330	210	0.44	0.28	394	279	0.53	0.38
		EB	742	256	336	0.35	0.45	278	454	0.37	0.61
	Summit Dr to Corral Hollow Rd	WB	742	332	211	0.45	0.28	376	411	0.51	0.55
		EB	742	255	380	0.34	0.51	389	497	0.52	0.67
	Corral Hollow Rd to Cagney Way	WB	742	402	294	0.54	0.40	430	408	0.58	0.55
		EB	742	223	516	0.30	0.70	305	583	0.41	0.79
	Cagney Way to Tracy Blvd	WB	1485	454	372	0.31	0.25	482	486	0.32	0.33
		EB	1485	407	465	0.27	0.31	489	532	0.33	0.36

Notes: Volumes derived from existing intersection counts and Project trip assignment. Capacities derived from the City of Tracy 2035 Travel Demand Model.
V/C ratios are correlated with LOS as follows: <0.60 = LOS A; 0.60 - 0.69 = LOS B; 0.70 - 0.79 = LOS C; 0.80 - 0.89 = LOS D; **0.90 - 0.99 = LOS E; ≥1.00 = LOS F.**

Table 9 – Mitigated Existing Plus Project Conditions Intersection Level of Service

#	Intersection	Agency	Existing Plus Project Conditions						Mitigated Existing Plus Project Conditions					
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
			Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS
1	Lammers Rd / Old Schulte Rd	Tracy	Overall	**52.9**	**F**	Overall	**36.7**	**E**	Overall	3.5	A	Overall	8.0	A
5	Corral Hollow Rd / Valpico Rd	Tracy	Overall	**127.3**	**F**	Overall	**182.9**	**F**	Overall	8.4	A	Overall	7.2	A
7	Corral Hollow Rd / Linne Rd	Tracy	Overall	10.2	A	Overall	2.2	A	Overall	7.9	A	Overall	4.5	A
			WB	**51.4**	**F**	WB	12.9	B						

Notes:

1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

Source: Kimley Horn and Associates, 2017.

5. BACKGROUND CONDITIONS

Background Conditions describes when the Project would open its doors to the public. These conditions were evaluated by assuming that approved, but not yet constructed, projects would add traffic to the road network in the near term. Roadway improvements identified and scheduled to be implemented as the approved projects are constructed were also included in this analysis.

Kimley-Horn coordinated with County staff to determine the projects in the Project vicinity that were approved at the Notice of Preparation (NOP). Four approved projects were identified to be included in Background Conditions:

- Rocking Horse (Stringer) - *residential*
- Ellis - *residential/mixed use*
- Cordes Ranch Phase 1 – *high-cube/warehousing*
- Tracy Hills Phase 1A - *residential*

BACKGROUND TRAFFIC VOLUME AND IMPROVEMENTS

VOLUME DEVELOPMENT

Background volumes were developed by reviewing the transportation impact analysis (TIA) studies for each approved project discussed above and identifying where approved project trips would travel. For the Avenues Project study roadway segments and intersections where approved project trips would travel, the trips were added to Existing Conditions volumes shown in **Figure 4** and **Table 4**.

Background volumes developed as discussed above are shown in **Figure 12** and **Table 11**.

ROADWAY/INTERSECTION IMPROVEMENTS

TIAs for approved projects were reviewed and improvements to be implemented by each project were evaluated to determine if they were applicable to the Avenues Project study intersections and/or roadway segments. Where applicable, approved project roadway and/or intersection improvements were incorporated into the Background and Background Plus Project Conditions analysis illustrated in the following sections.

Roadway and/or intersection improvements are summarized by approved project in the following sections below. **Figure 11** and **Figure 13** illustrate the intersection geometry and traffic control assumed in the Background and Background Plus Project analysis.

Ellis

Corral Hollow Road / Valpico Road (Intersection #5) Signalize the intersection and add a southbound left turn lane. The City has approved implementation of a project that would improve the intersection to its TMP geometry, which will be implemented by the time the various approved projects are built out.

Corral Hollow Road / Linne Road (Intersection #7) Install a signal at the intersection for project conditions.

Lammers Road / Old Schulte Road (Intersection #1) Signalize the intersection.

Cordes Ranch

Lammers Road / Old Schulte Road (Intersection #1) An interim improvement has been identified at the intersection of Lammers Road and Old Schulte Road. It The improvement is funded.

Lammers Road / Valpico Road (Intersection #2) Cordes Ranch will install a signal and a southbound left turn lane at the intersection of Lammers Road and Valpico Road.

Tracy Hills

Corral Hollow Road / Valpico Road (Intersection #5) The City is planning to implement widening of Corral Hollow Road and the intersection. The project is funded.

Corral Hollow Road / Linne Road (Intersection #7) Tracy Hills Phase 1A will install a signal at the intersection. For Tracy Hills buildout, the following improvements have been approved: add one northbound channelized right turn lane and add one southbound left turn.

BACKGROUND INTERSECTION LEVEL OF SERVICE

Background Conditions were evaluated at the study intersections based on lane geometry and traffic control illustrated in **Figure 11** and peak hour volumes presented in **Figure 12**. All study intersections operate at an acceptable LOS, except for the following:

- Lammers Road / Valpico Road (Intersection #2) (AM & PM Peak)
- Corral Hollow Road / Linne Road (Intersection #7) (AM & PM Peak)
- Valpico Road / Tracy Boulevard (Intersection #8) (PM Peak)

Results of the analysis are presented in **Table 10** and Synchro output sheets are provided in the **Appendix**.

Table 10 – Background Conditions Intersection Level of Service

#	Intersection	Agency	Control Type	Background Conditions					
				AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS
1	Lammers Rd / Old Schulte Rd[5]	Tracy	Signal	Overall	9.8	A	Overall	43.5	D
2	Lammers Rd / Valpico Rd	Tracy	Signal	Overall	**127.4**	**F**	Overall	**82.9**	**F**
3	Lammers Rd / Street 7	Tracy	Does Not Exist						
4	Summit Dr / Valpico Rd	Tracy	Does Not Exist						
5	Corral Hollow Rd / Valpico Rd	Tracy	Signal	Overall	11.3	B	Overall	12.0	B
6	Corral Hollow Rd / Street 7	Tracy	Does Not Exist						
7	Corral Hollow Rd / Linne Rd	Tracy	Signal	Overall	**99.3**	**F**	Overall	**126.0**	**F**
8	Valpico Rd / Tracy Blvd	Tracy	Signal	Overall	31.5	C	Overall	**55.0**	**E**

Notes:

1. Analysis performed using HCM 2010 methodologies.
2. Delay indicated in seconds/vehicle.
3. Overall level of service (LOS) standard is D.
*4. Intersections that fall below City standard are highlighted and shown in **bold**.*
5. Implementation of Approved Projects assumes optimization of signal timing.

Source: Kimley Horn and Associates, 2017.

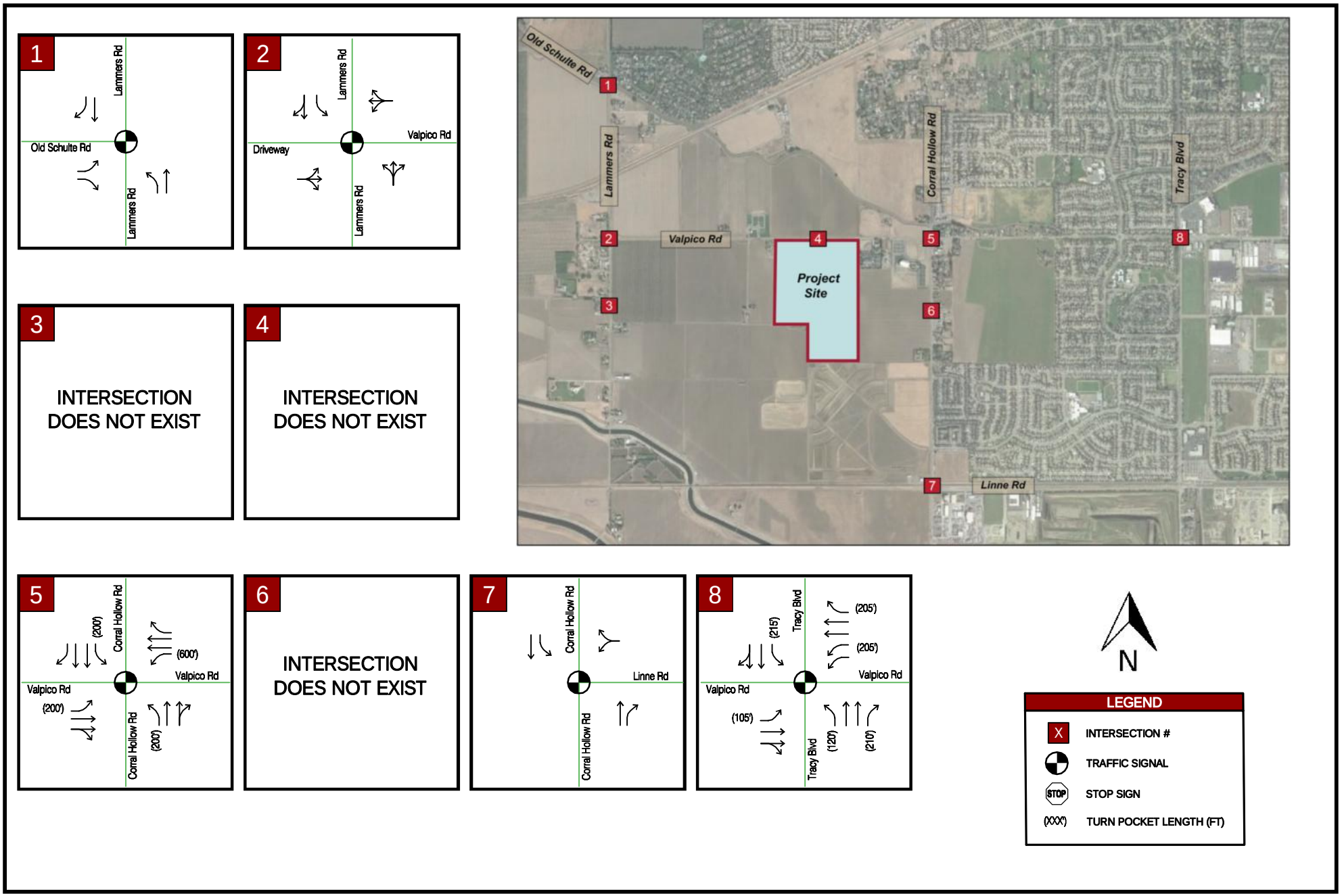

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Figure 11

Background Conditions Lane Geometry and Traffic Control

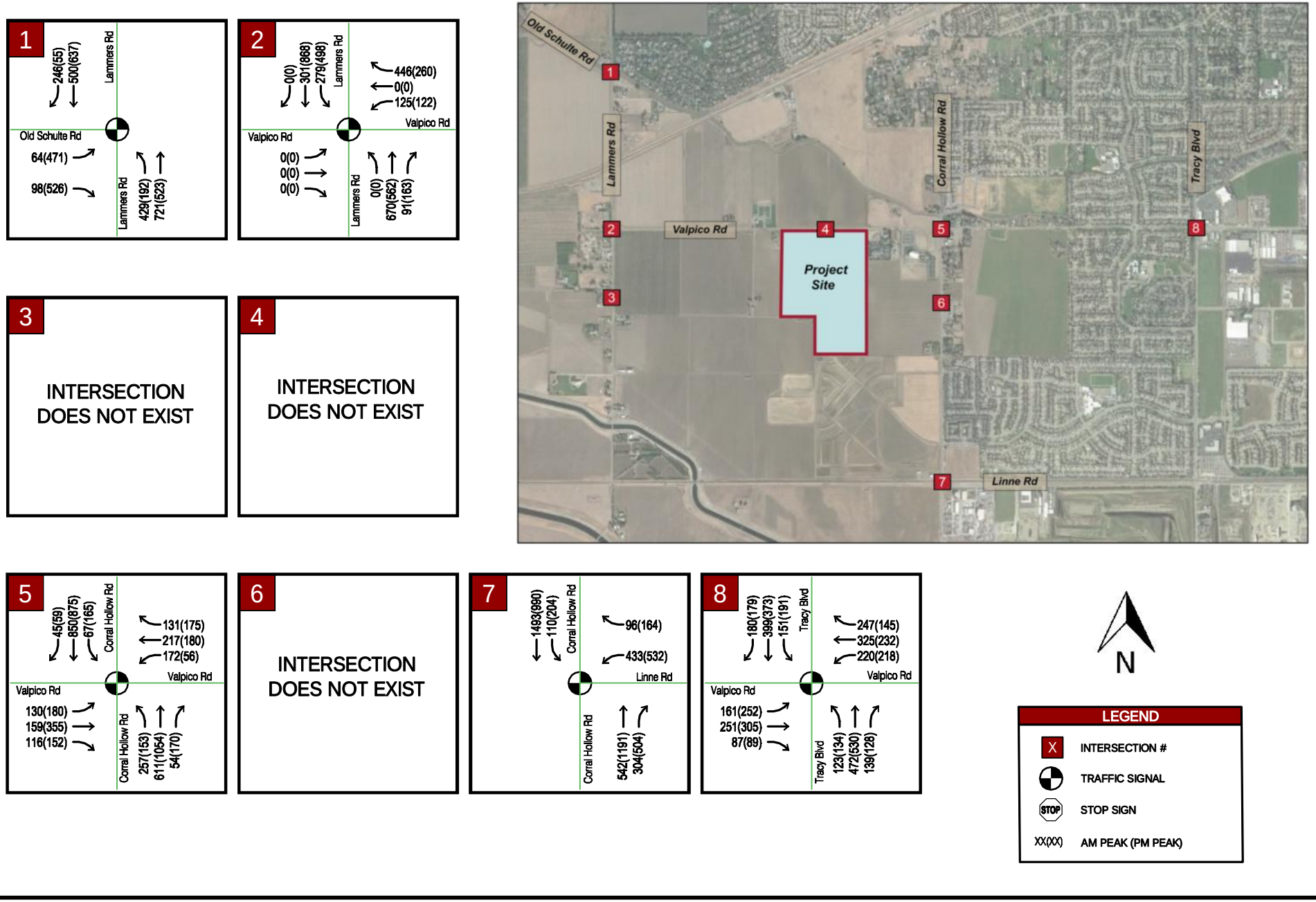

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Figure 12

Background Conditions Peak Hour Turning Movement Volumes

BACKGROUND ROADWAY SEGMENT LEVEL OF SERVICE

Traffic operations were evaluated at the study roadway segments under Background Conditions. Results of the analysis are presented in **Table 11**. As shown in **Table 11**, the following study roadway segments function at unacceptable level of service per City requirements:

- Northbound Lammers Road - Old Schulte Road to Valpico Road (AM Peak)
- Southbound Lammers Road - Old Schulte Road to Valpico Road (PM Peak)
- Southbound Lammers Road – Valpico Road to Street 7 (PM Peak)
- Northbound Corral Hollow Road - Valpico Road to Street 7 (PM Peak)
- Northbound Corral Hollow Road - Street 7 to Linne Road (PM Peak)
- Southbound Corral Hollow Road - Street 7 to Linne Road (AM Peak)
- Eastbound Valpico Road – Summit Drive to Corral Hollow Road (PM Peak)
- Eastbound Valpico Road – Corral Hollow Road to Cagney Way (PM Peak)

Table 11 – Background Conditions Roadway Segment Level of Service

Street	Segment	Direction	Capacity	*Background*			
				Volume		*V/C*	
				AM	PM	AM	PM
Lammers Rd	Old Schulte Rd to Valpico Rd	NB	891	1133	769	**1.27**	0.86
		SB	891	589	1265	0.66	**1.42**
	Valpico Rd to Street 7	NB	891	634	609	0.71	0.68
		SB	891	373	806	0.42	**0.90**
Corral Hollow Rd	Valpico Rd to Street 7	NB	1485	922	1377	0.62	**0.93**
		SB	1485	1209	1158	0.81	0.78
	Street 7 to Linne Rd	NB	1485	780	1366	0.53	**0.92**
		SB	1485	1442	1213	**0.97**	0.82
Valpico Rd	Lammers Rd to Summit Dr	WB	742	571	382	0.77	0.51
		EB	742	370	661	0.50	0.89
	Summit Dr to Corral Hollow Rd	WB	742	551	407	0.74	0.55
		EB	742	392	683	0.53	**0.92**
	Corral Hollow Rd to Cagney Way	WB	742	520	411	0.70	0.55
		EB	742	280	690	0.38	**0.93**
	Cagney Way to Tracy Blvd	WB	1485	628	545	0.42	0.37
		EB	1485	499	646	0.34	0.44

Notes: Volumes derived from Background intersection volumes. Capacities derived from the City of Tracy 2035 Travel Demand Model. V/C ratios are correlated with LOS as follows: <0.60 = LOS A; 0.60 - 0.69 = LOS B; 0.70 - 0.79 = LOS C; 0.80 - 0.89 = LOS D; **0.90 - 0.99 = LOS E; ≥1.00 = LOS F.**

BACKGROUND PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Traffic operations were evaluated at the study intersections based on Background Plus Project Conditions. Background Plus Project lane geometry and traffic control is shown in **Figure 13** and Background Plus Project peak hour traffic volumes are shown in **Figure 14**.

The following intersections operate at unacceptable LOS under Background Plus Project Conditions:

- Lammers Road / Old Schulte Road (Intersection #1) (PM Peak)
    - The addition of Project traffic causes the intersection to deteriorate from LOS A and D during the AM and PM peak hours, respectively, to LOS B in the AM peak hour and LOS E in the PM peak hour. The intersection would operate at an acceptable LOS C and D with the following improvemenst: install an eastbound right turn overlap phase and retime the intersection to optimize cycle lengths and splits. The applicant shall improve the signal timing with issuance of the first building permit.
- Lammers Road / Valpico Road (Intersection #2) (AM & PM Peak)
    - The addition of Project traffic adds delay and causes the intersection to continue to deteriorate and operate at LOS F in both the AM and PM peak hours. The intersection would operate at an acceptable LOS C and D with the following improvements: Add a separate westbound right turn lane, and a shared westbound left turn and through lane The westbound right turn phase will be overlapped with the southbound left turn phase. The applicant shall install this improvement with the issuance of the first building permit.
- Corral Hollow Road / Linne Road (Intersection #7) (AM and PM Peak)
    - The addition of Project traffic adds delay and causes the intersection to continue to deteriorate and operate at LOS F in both the AM and PM peak hours. The intersection would operate at an acceptable LOS C and D with the following improvements: Add a southbound through lane, add a northbound through lane, and add a separate westbound right turn lane. The applicant shall install these improvements at the issuance of the first building permit.
- Valpico Road / Tracy Boulevard (Intersection #8) (PM Peak)
    - The addition of Project traffic causes the intersection to deteriorate from LOS E in the PM peak hour to LOS F. The intersection would operate at an acceptable LOS D in the AM and PM peak hours with the following improvements: Optimize the signal cycle length, splits, and phasing. The applicant shall install this improvement at the issuance of the first building permit.

Results of the analysis are presented in **Table 12** and Synchro output sheets are provided in the **Appendix**.

Table 12 – Background Plus Project Conditions Intersection Level of Service

#	Intersection	Agency	Control Type	Background Conditions						Background Plus Project Conditions					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS
1	Lammers Rd / Old Schulte Rd[5]	Tracy	Signal	Overall	9.8	A	Overall	43.5	D	Overall	11.7	B	Overall	**78.7**	**E**
2	Lammers Rd / Valpico Rd	Tracy	Signal	Overall	**127.4**	**F**	Overall	**82.9**	**F**	Overall	**179.3**	**F**	Overall	**132.8**	**F**
3	Lammers Rd / Street 7	Tracy	Does Not Exist												
4	Summit Dr / Valpico Rd	Tracy	SSSC	Does Not Exist						Overall	3.6	A	Overall	5.6	A
										NB	18.1	C	NB	28.7	D
5	Corral Hollow Rd / Valpico Rd	Tracy	Signal	Overall	11.3	B	Overall	12.0	B	Overall	13.7	B	Overall	13.7	B
6	Corral Hollow Rd / Street 7	Tracy	Does Not Exist												
7	Corral Hollow Rd / Linne Rd	Tracy	Signal	Overall	**99.3**	**F**	Overall	**126.0**	**F**	Overall	**126.6**	**F**	Overall	**139.9**	**F**
8	Valpico Rd / Tracy Blvd	Tracy	Signal	Overall	31.5	C	Overall	**55.0**	**E**	Overall	46.4	D	Overall	**80.6**	**F**

Notes:

1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

5. Implementation of Approved Projects assumes optimization of signal timing.

Source: Kimley Horn and Associates, 2017.

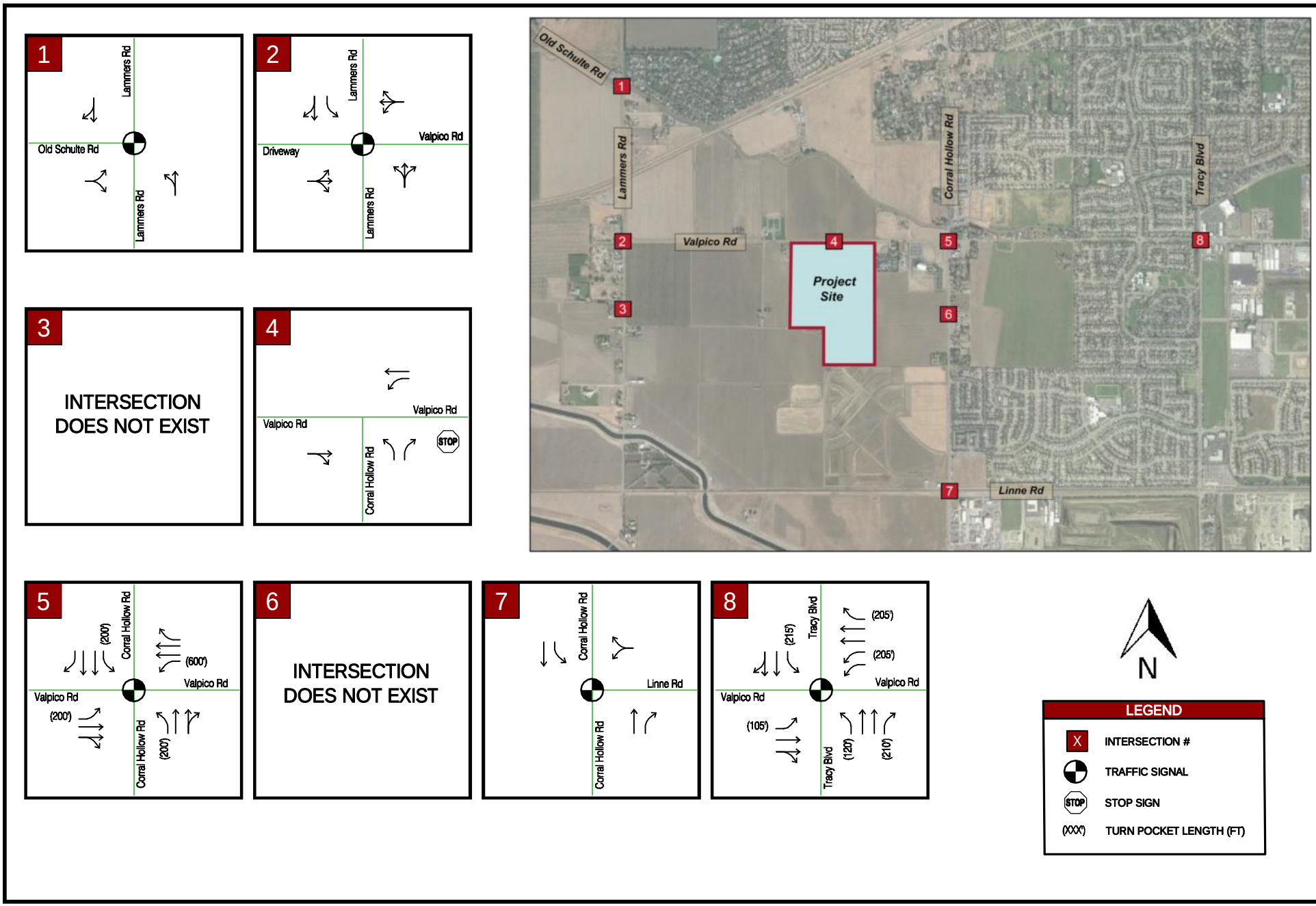

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Figure 13

Background Plus Project Conditions Lane Geometry and Traffic Control

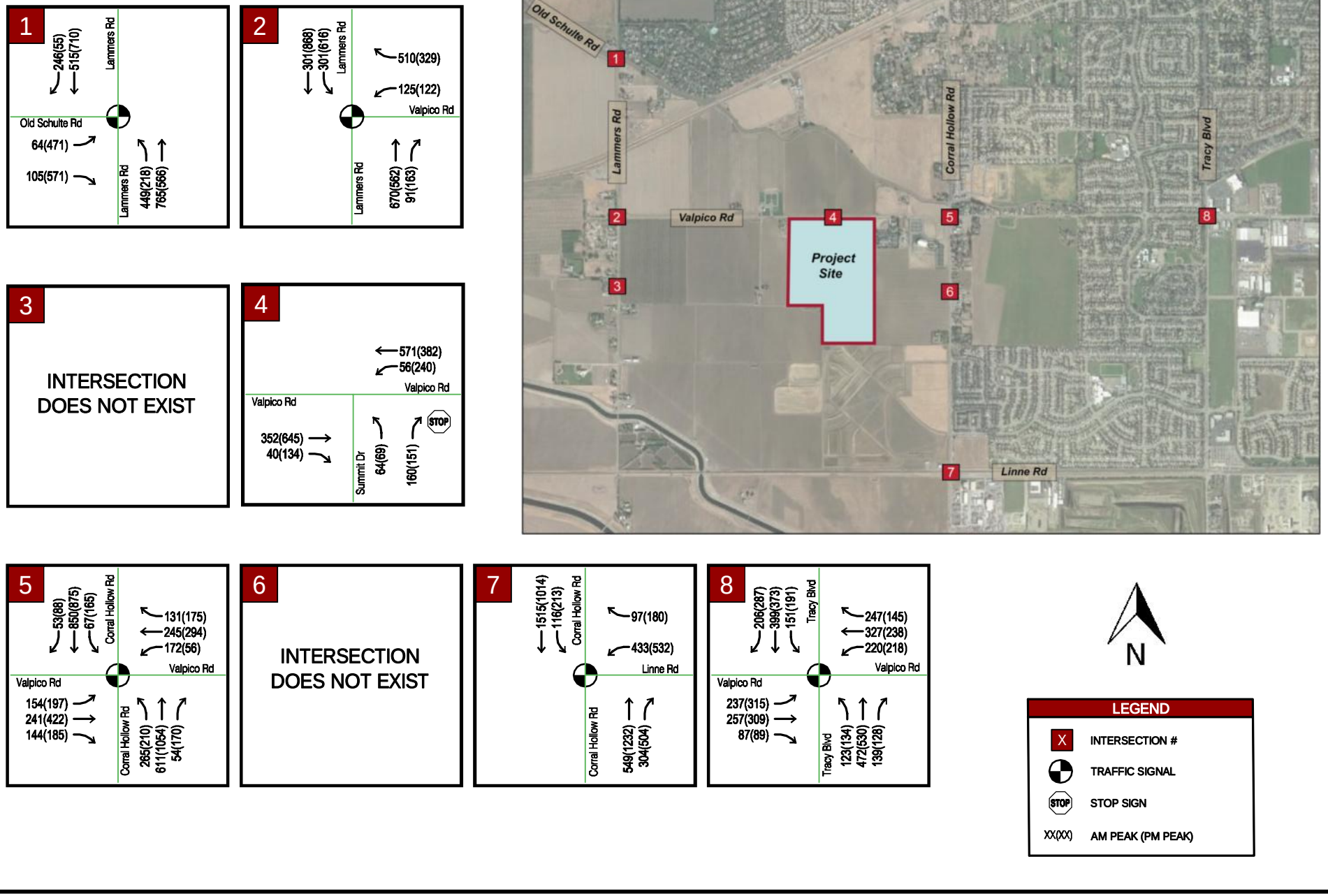

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Figure 14

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Background Plus Project Conditions Peak Hour Turning Movement Volumes

BACKGROUND PLUS PROJECT ROADWAY SEGMENT LEVEL OF SERVICE

Traffic operations were evaluated at the study roadway segments under Background Plus Project traffic conditions. Results of the analysis are presented in **Table 13**. As shown in **Table 13**, the following study roadway segments function at an unacceptable level of service per City requirements:

- Northbound Lammers Road - Old Schulte Road to Valpico Road (AM & PM Peak)
- Southbound Lammers Road - Old Schulte Road to Valpico Road (PM Peak)
- Southbound Lammers Road – Valpico Road to Street 7 (PM Peak)
- Northbound Corral Hollow Road - Valpico Road to Street 7 (PM Peak)
- Northbound Corral Hollow Road - Street 7 to Linne Road (PM Peak)
- Southbound Corral Hollow Road - Street 7 to Linne Road (AM Peak)
- Eastbound Valpico Road – Lammers Road to Summit Drive (PM Peak)
- Eastbound Valpico Road – Summit Drive to Corral Hollow Road (PM Peak)
- Eastbound Valpico Road – Corral Hollow Road to Cagney Way (PM Peak)

It should be noted that the broader road network, as analyzed in the TMP is not implemented for Background conditions and as such existing roads would reflect higher volumes than when the city grid road network is installed.

Improvements for all the deficient road segments are as follows:

- **Lammers Road:** Old Schulte Road to Street 7 – Expand from two lanes to four lanes. The widening of this segment to four lanes will complement and overlap with the intersection improvements for background conditions. The intersections govern the capacity in this urban setting and thus the segment can be expected to also operate acceptably. The deficient segments on Lammers Road indicated in Table 15 does not accurately reflect the roadway network operations. The model is a planning level tool to determine the general number of lane required and ignores the intersection capacities. The project will pay a fair shar towards widening the roadway. The widening is included in the City TIF.

- **Corral Hollow Road:** Valpico Road to Linne Road – No addition of lanes is required as mitigation. The widening of this segment by the City to four lanes will complement and overlap with the intersection improvements for background conditions. The intersections govern the capacity in this urban setting and thus the segment can be expected to also operate acceptably. The deficient segments on Corral Hollow Road indicated in Table 15 do not accurately reflect the roadway network operations. The model is a planning level tool to determine the general number of lane required and ignores the intersection capacities.

- **Valpico Road:** Lammers Road to Cagney Way – Expand from two lanes to four lanes. The widening of this segment to four lanes will complement and overlap with the intersection improvements for background conditions. The intersections govern the capacity in this urban setting and thus the segment can be expected to also operate acceptably. The deficient segments on Valpico Road indicated in Table 15 do not accurately reflect the roadway network operations. The model is a planning level tool to determine the general number of lanes required

and ignores the intersection capacities. The Project will be required to improve Valpico Road along its frontage to the first two lanes of the future four lane facility. This may include the eastbound direction of travel lanes, per the City TMP. The project would also accommodate the transitions between this frontage improvements and where the roadway joins the existing Valpico Road.

Mitigated v/c ratios are shown in **Table 15.**

Table 13 – Background Plus Project Conditions Roadway Segment Level of Service

Street	Segment	Direction	Capacity	Background				Background Plus Project			
				Volume		V/C		Volume		V/C	
				AM	PM	AM	PM	AM	PM	AM	PM
Lammers Rd	Old Schulte Rd to Valpico Rd	NB	891	1133	769	**1.27**	0.86	1197	838	**1.34**	**0.94**
		SB	891	589	1265	0.66	**1.42**	611	1383	0.69	**1.55**
	Valpico Rd to Street 7	NB	891	634	609	0.71	0.68	634	609	0.71	0.68
		SB	891	373	806	0.42	**0.90**	373	806	0.42	**0.90**
Corral Hollow Rd	Valpico Rd to Street 7	NB	1485	922	1377	0.62	**0.93**	930	1434	0.63	**0.97**
		SB	1485	1209	1158	0.81	0.78	1237	1191	0.83	0.80
	Street 7 to Linne Rd	NB	1485	780	1366	0.53	**0.92**	788	1423	0.53	**0.96**
		SB	1485	1442	1213	**0.97**	0.82	1470	1246	**0.99**	0.84
Valpico Rd	Lammers Rd to Summit Dr	WB	742	571	382	0.77	0.51	635	451	0.86	0.61
		EB	742	370	661	0.50	0.89	392	779	0.53	**1.05**
	Summit Dr to Corral Hollow Rd	WB	742	551	407	0.74	0.55	595	607	0.80	0.82
		EB	742	392	683	0.53	**0.92**	526	800	0.71	**1.08**
	Corral Hollow Rd to Cagney Way	WB	742	520	411	0.70	0.55	548	525	0.74	0.71
		EB	742	280	690	0.38	**0.93**	362	757	0.49	**1.02**
	Cagney Way to Tracy Blvd	WB	1485	628	545	0.42	0.37	656	659	0.44	0.44
		EB	1485	499	646	0.34	0.44	581	713	0.39	0.48

Notes: Volumes derived from Background intersection volumes and Project trip assignment. Capacities derived from the City of Tracy 2035 Travel Demand Model.
V/C ratios are correlated with LOS as follows: <0.60 = LOS A; 0.60 - 0.69 = LOS B; 0.70 - 0.79 = LOS C; 0.80 - 0.89 = LOS D; **0.90 - 0.99 = LOS E; ≥1.00 = LOS F.**

Table 14 – Mitigated Background Plus Project Conditions Intersection Level of Service

#	Intersection	Agency	Control Type	Background Plus Project Conditions						Mitigated Background Plus Project Conditions					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS
1	Lammers Rd / Old Schulte Rd[5]	Tracy	Signal	Overall	11.7	B	Overall	**78.7**	**E**	Overall	22.1	C	Overall	47.6	D
2	Lammers Rd / Valpico Rd	Tracy	Signal	Overall	**179.3**	**F**	Overall	**132.8**	**F**	Overall	34.8	C	Overall	43.4	D
7	Corral Hollow Rd / Linne Rd	Tracy	Signal	Overall	**126.6**	**F**	Overall	**139.9**	**F**	Overall	14.9	B	Overall	41.9	D
8	Valpico Rd / Tracy Blvd	Tracy	Signal	Overall	46.4	D	Overall	**80.6**	**F**	Overall	46.4	D	Overall	40.1	D

Notes:

1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

5. Implementation of Approved Projects assumes optimization of signal timing.

Source: Kimley Horn and Associates, 2017.

Table 15 – Mitigated Background Plus Project Conditions Roadway Segment Level of Service

Street	Segment	Direction	Background Plus Project					Mitigated Background Plus Project				
				Volume		V/C			Volume		V/C	
			Capacity	AM	PM	AM	PM	Capacity	AM	PM	AM	PM
Lammers Rd	Old Schulte Rd to Valpico Rd	NB	891	1197	838	**1.34**	**0.94**	1485	1197	838	0.81	0.56
		SB	891	611	1383	0.69	**1.55**	1485	611	1383	0.41	**0.93**
Corral Hollow Rd	Valpico Rd to Street 7	NB	1485	930	1434	0.63	**0.97**	1485	634	609	0.43	0.41
		SB	1485	1237	1191	0.83	0.80	1485	373	806	0.25	0.54
	Street 7 to Linne Rd	NB	1485	788	1423	0.53	**0.96**	1485	930	1434	0.63	**0.97**
		SB	1485	1470	1246	**0.99**	0.84	1485	1237	1191	0.83	0.80
Valpico Rd	Lammers Rd to Summit Dr	WB	742	635	451	0.86	0.61	1485	788	1423	0.53	**0.96**
		EB	742	392	779	0.53	**1.05**	1485	1470	1246	**0.99**	0.84
	Summit Dr to Corral Hollow Rd	WB	742	595	607	0.80	0.82	1485	635	451	0.43	0.30
		EB	742	526	800	0.71	**1.08**	1485	392	779	0.26	0.52
	Corral Hollow Rd to Cagney Way	WB	742	548	525	0.74	0.71	1485	595	607	0.40	0.41
		EB	742	362	757	0.49	**1.02**	1485	526	800	0.35	0.54

Notes: Volumes derived from Background intersection volumes and Project trip assignment. Capacities derived from the City of Tracy 2035 Travel Demand Model.
V/C ratios are correlated with LOS as follows: <0.60 = LOS A; 0.60 - 0.69 = LOS B; 0.70 - 0.79 = LOS C; 0.80 - 0.89 = LOS D; **0.90 - 0.99 = LOS E; ≥1.00 = LOS F.**

6. CUMULATIVE CONDITIONS

Cumulative Conditions describes the conditions anticipated in 2035. The Tracy TMP, Tracy Travel Demand Model, and approved projects identified in previous sections were evaluated to determine Cumulative volumes and roadway network.

CUMULATIVE TRAFFIC VOLUME AND IMPROVEMENTS

VOLUME DEVELOPMENT

Cumulative volumes were developed by Furnessing Tracy TDM Baseline (2009) and Horizon Year (2035) data, as well as existing traffic counts. Roadway and intersection improvements were identified using the Tracy TMP and approved project TIAs. Volumes were also taken from Tracy Hills and adjusted to reflect increased current volumes. Cumulative Conditions volumes are shown in **Figure 16** and **Table 17**.

ROADWAY/INTERSECTION IMPROVEMENTS

The Tracy TMP was evaluated to determine applicable roadway and/or intersection improvements planned by the City of Tracy. TIAs for approved projects were also reviewed and improvements to be implemented by each project in Cumulative Conditions were evaluated to determine if they were applicable to the Avenues Project study intersections and/or roadway segments. Where applicable, approved project and/or roadway/intersection improvements were incorporated into the Cumulative and Cumulative Plus Project Conditions analysis illustrated in the following sections.

Roadway and/or intersection improvements are summarized by the TMP and approved projects in the following sections below. **Figure 15** and **Figure 17** illustrate the intersection geometry and traffic control assumed in the Cumulative and Cumulative Plus Project analysis, respectively.

Tracy TMP

Lammers Road: Old Schulte to Street 7 – Widen to six-lane road.

Corral Hollow Road: Valpico Road to Linne Road – Widen to four-lane road.

Valpico Road: Lammers Road to Tracy Boulevard – Widen to four-lane road.

TMP Intersections – All intersections included in the TMP will also be improved in Cumulative Conditions. Additional intersections could be included in updates on the TMP and the developers would pay proportional fair share payments. For Cumulative Conditions analysis for the Avenues Project, the following intersections are included in the TMP:

- Lammers Road / Old Schulte Road (Intersection #1)
- Lammers Road / Valpico Road (Intersection #2)
- Corral Hollow Road / Valpico Road (Intersection #6)
- Corral Hollow Road / Linne Road (Intersection #7)
- Tracy Boulevard / Valpico Road (Intersection #8)

Roadways not included in the TMP analysis

Study intersections #3 and #6 were identified but not analyzed in the TMP TIF. Additionally, Summit Drive and Street 7 roadway segments are included in the TMP. Therefore, the following intersection geometry and control are necessary to accommodate Cumulative Conditions volumes:

- **Lammers Road / Street 7 (Intersection #3)** – Signalize intersection and construct TMP geometry (i.e. add three NBT lanes and NBR turn pocket; add three SBT lanes and one SBL turn pocket; add WBL/R lane). The Project is not anticipated to divert traffic onto Summit Drive up to 2035 conditions. Land uses to the east and west of Avenues will only build out after 2035 per the current land use forecasts.
- **Corral Hollow Road / Street 7 (Intersection #6)** – Signalize Intersection and construct TMP geometry (i.e. add one NBL turn pocket and one NBT lane; add one SBT lane and one SBR turn pocket; and add one EBL/R lane). The Project is not anticipated to divert traffic onto Summit Drive up to 2035 conditions. Land uses to the east and west of Avenues will only build out after 2035 per the current land use forecasts.

Study intersection #4 is not in the TMP. It provides direct access to Avenues and some Ellis Traffic.

- **Summit Drive / Valpico Road (Intersection #4)** – Signalize Intersection and construct TMP geometry (i.e. add one NBL turn lane and one NBR turn pocket; add one EBT lane and one EBR turn pocket; and add one WBL turn pocket and one WBT lane).

CUMULATIVE INTERSECTION LEVEL OF SERVICE

Traffic operations were evaluated at the study intersections based on Cumulative lane geometry and traffic control as shown in **Figure 15** and Cumulative peak hour traffic volumes as shown in **Figure 16**.

The following intersections operate at unacceptable LOS under Cumulative Conditions:

- Lammers Road / Valpico Road (Intersection #2) (AM & PM Peak)
- Corral Hollow Road / Linne Road (Intersection #7) (PM Peak)

Results of the analysis are presented in **Table 16** and Synchro output sheets are provided in the **Appendix**.

Table 16 – Cumulative Conditions Intersection Level of Service

#	Intersection	Agency	Control Type	Cumulative Conditions					
				AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS
1	Lammers Rd / Old Schulte Rd	Tracy	Signal	Overall	14.1	B	Overall	21.3	C
2	Lammers Rd / Valpico Rd	Tracy	Signal	Overall	**123.9**	**F**	Overall	**110.0**	**F**
3	Lammers Rd / Street 7	Tracy	Signal	Overall	1.5	A	Overall	7.4	A
4	Summit Dr / Valpico Rd	Tracy	SSSC	Overall	0.3	A	Overall	0.5	A
				NB	9.7	A	NB	11.9	B
5	Corral Hollow Rd / Valpico Rd	Tracy	Signal	Overall	21.0	C	Overall	47.5	D

6	Corral Hollow Rd / Street 7	Tracy	Signal	Overall	2.8	A	Overall	6.7	A
7	Corral Hollow Rd / Linne Rd	Tracy	Signal	Overall	20.4	C	Overall	43.1	D
8	Valpico Rd / Tracy Blvd	Tracy	Signal	Overall	33.8	C	Overall	50.6	D

Notes:

1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

Source: Kimley Horn and Associates, 2017.

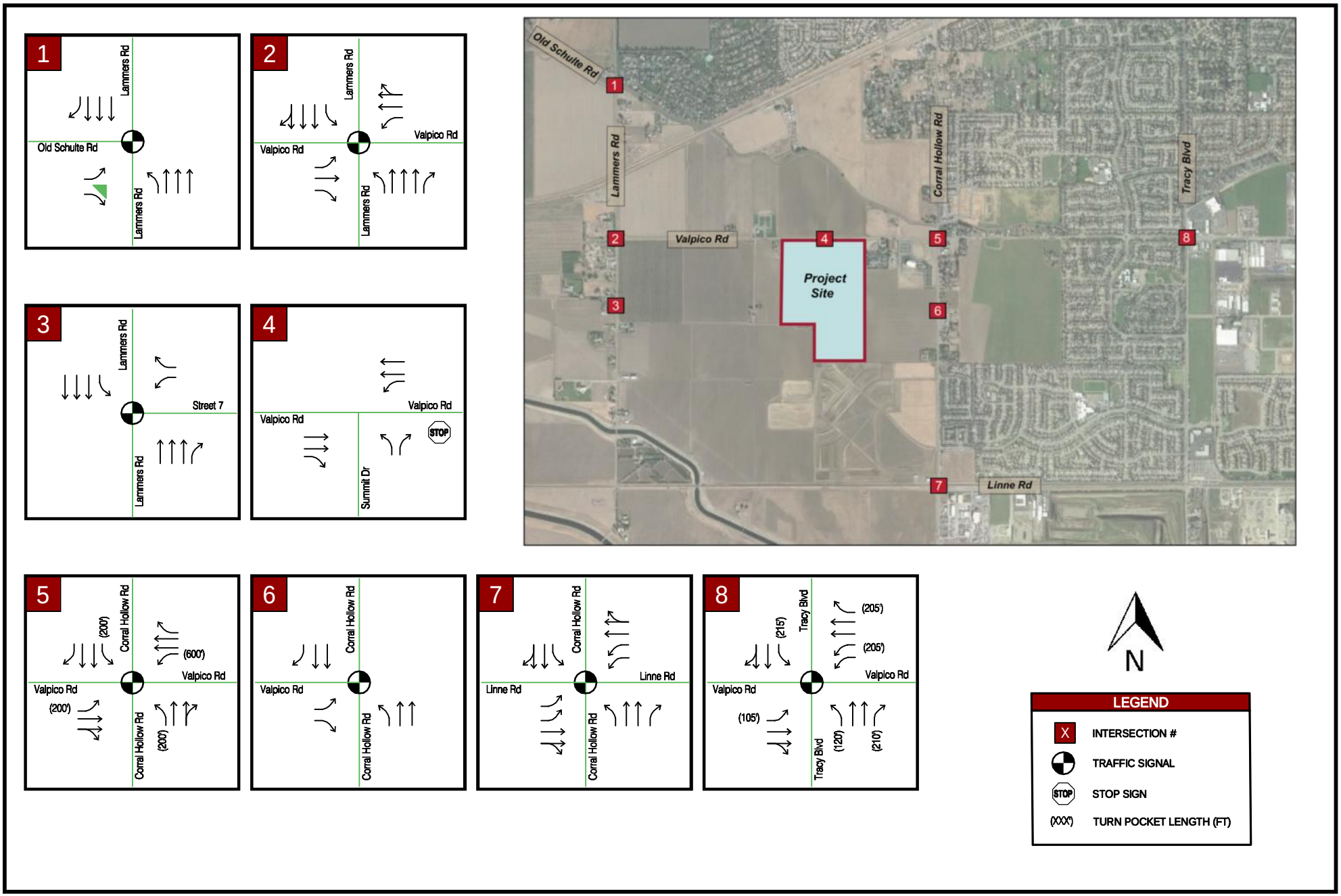

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Figure 15

Cumulative Conditions Lane Geometry and Traffic Control

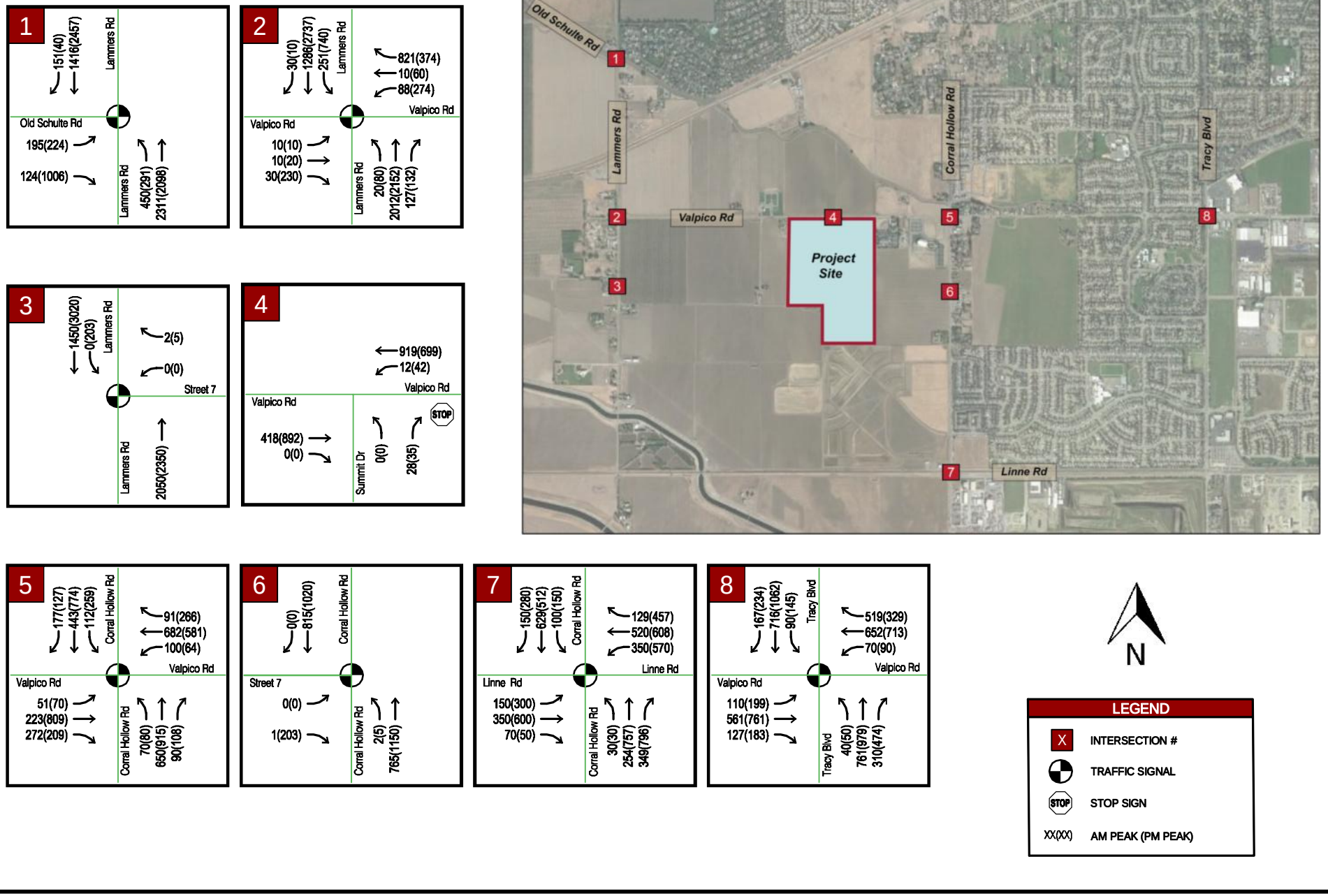

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Figure 16

Cumulative Conditions Peak Hour Turning Movement Volumes

CUMULATIVE ROADWAY SEGMENT LEVEL OF SERVICE

Traffic operations were evaluated at the study roadway segments under Cumulative Conditions. Results of the analysis are presented in **Table 17**. As shown in **Table 17**, the following study roadway segments function at an unacceptable LOS per City requirements:

- Northbound Lammers Road - Old Schulte Road to Valpico Road (AM & PM Peak)
- Southbound Lammers Road - Old Schulte Road to Valpico Road (PM Peak)
- Northbound Lammers Road - Street 7 to Linne Road (PM Peak)

Table 17 – Cumulative Conditions Roadway Segment Level of Service

Street	Segment	Direction	Capacity	*Cumulative*			
				Volume		*V/C*	
				AM	PM	AM	PM
Lammers Rd	Old Schulte Rd to Valpico Rd	NB	2673	2802	2463	**1.05**	**0.92**
		SB	2673	1554	3475	0.58	**1.30**
	Valpico Rd to Street 7	NB	2673	2106	2360	0.79	0.88
		SB	2673	1427	3232	0.53	**1.21**
Corral Hollow Rd	Valpico Rd to Street 7	NB	1485	788	1127	0.53	0.76
		SB	1485	815	1034	0.55	0.70
	Street 7 to Linne Rd	NB	1485	650	1335	0.44	**0.90**
		SB	1485	848	1083	0.57	0.73
Valpico Rd	Lammers Rd to Summit Dr	WB	1485	919	704	0.62	0.47
		EB	1485	403	892	0.27	0.60
	Summit Dr to Corral Hollow Rd	WB	1485	930	765	0.63	0.51
		EB	1485	496	1008	0.33	0.68
	Corral Hollow Rd to Cagney Way	WB	1485	873	911	0.59	0.61
		EB	1485	425	1176	0.29	0.79
	Cagney Way to Tracy Blvd	WB	1485	859	997	0.58	0.67
		EB	1485	798	1143	0.54	0.77

Notes: Volumes derived from Cumulative intersection volumes. Capacities derived from the City of Tracy 2035 Travel Demand Model. V/C ratios are correlated with LOS as follows: <0.60 = LOS A; 0.60 - 0.69 = LOS B; 0.70 - 0.79 = LOS C; 0.80 - 0.89 = LOS D; **0.90 - 0.99 = LOS E; ≥1.00 = LOS F.**

CUMULATIVE PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Traffic operations were evaluated at the study intersections based on Cumulative Plus Project Conditions. Cumulative Plus Project lane geometry and traffic control is shown in **Figure 17** and Cumulative peak hour traffic volumes are shown in **Figure 18**.

Results of the analysis are presented in **Table 18** and Synchro output sheets are provided in the **Appendix**. The following intersections operate at unacceptable LOS under Cumulative Plus Project Conditions:

- Lammers Road / Valpico Road (Intersection #2) (AM & PM Peak)
    - The addition of Project traffic adds delay and causes the intersection to continue to operate at deficient LOS F. The intersection would operate at acceptable LOS C and LOS D with the following improvements: Install a channelized westbound right turn pocket, a second southbound left turn pocket, and an eastbound right turn overlap phase. These improvements are in addition to the TMP improvements. The Project causes a significant impact and should fund these improvements.
- Summit Drive / Valpico Road (Intersection #4) (PM Peak)

  The addition of Project traffic causes the intersection LOS to deteriorate from LOS B in the northbound approach to LOS E in the PM peak hour. The intersection would operate at an acceptable LOS of A in the AM and PM peak hours with the installation of a signal. The signal should be installed when Valpico Road is widened to four lanes. The signal is not included in the TMP and shall be funded by The Avenues Project.
- Valpico Road / Tracy Boulevard (Intersection #8) (PM Peak)
    - The addition of Project traffic causes the intersection LOS to deteriorate from LOS D to LOS E in the PM peak hour. The intersection would operate at an acceptable LOS of A in the AM and PM peak hours with the following improvement: Providing overlap signal phasing for the exclusive right turns at the intersections. This is not a TMP improvement and shall be funded by The Avenues Project at the issuance of the final building permit for the project.

Table 20 shows LOS results for improved intersections and Synchro output sheets are provided in the **Appendix**.

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Table 18 – Cumulative Plus Project Conditions Intersection Level of Service

#	Intersection	Agency	Control Type	Cumulative Conditions						Cumulative Plus Project Conditions					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS
1	Lammers Rd / Old Schulte Rd	Tracy	Signal	Overall	14.1	B	Overall	21.3	C	Overall	14.2	B	Overall	25.4	C
2	Lammers Rd / Valpico Rd	Tracy	Signal	Overall	**123.9**	**F**	Overall	**110.0**	**F**	Overall	**139.9**	**F**	Overall	**121.4**	**F**
3	Lammers Rd / Street 7	Tracy	Signal	Overall	1.5	A	Overall	7.4	A	Overall	3.4	A	Overall	19.7	B
4	Summit Dr / Valpico Rd	Tracy	SSSC	Overall	0.3	A	Overall	0.5	A	Overall	1.6	A	Overall	4.0	A
				NB	9.7	A	NB	11.9	B	NB	14.2	B	NB	**42.6**	**E**
5	Corral Hollow Rd / Valpico Rd	Tracy	Signal	Overall	21.0	C	Overall	47.5	D	Overall	21.8	C	Overall	53.6	D
6	Corral Hollow Rd / Street 7	Tracy	Signal	Overall	2.8	A	Overall	6.7	A	Overall	3.6	A	Overall	12.9	B
7	Corral Hollow Rd / Linne Rd	Tracy	Signal	Overall	20.4	C	Overall	43.1	D	Overall	20.5	C	Overall	44.7	D
8	Valpico Rd / Tracy Blvd	Tracy	Signal	Overall	33.8	C	Overall	50.6	D	Overall	39.4	D	Overall	**66.7**	**E**

Notes:

1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

Source: Kimley Horn and Associates, 2017.

CUMULATIVE PLUS PROJECT ROADWAY SEGMENT LEVEL OF SERVICE

Traffic operations were evaluated at the study roadway segments under Cumulative Plus Project traffic conditions. Results of the analysis are presented in **Table 19**. As shown in **Table 19**, the following study roadway segments function at an unacceptable level of service per City requirements:

- Northbound Lammers Road - Old Schulte Road to Valpico Road (AM & PM Peak)
- Southbound Lammers Road - Old Schulte Road to Valpico Road (PM Peak)
- Southbound Lammers Road - Valpico Road to Street 7 (PM Peak)
- Northbound Corral Hollow Road - Street 7 to Linne Road (PM Peak)

For cumulative conditions, when the full road network is built out, the intersections would govern capacity on the City urban street network, and not the segments. All the intersections analyzed would operate at or better than the City LOS standards and, as such, the segments can be expected to also operate at acceptable conditions. The project will pay the City TIF as its fair share contribution towards the potential incremental cumulative roadway impacts.

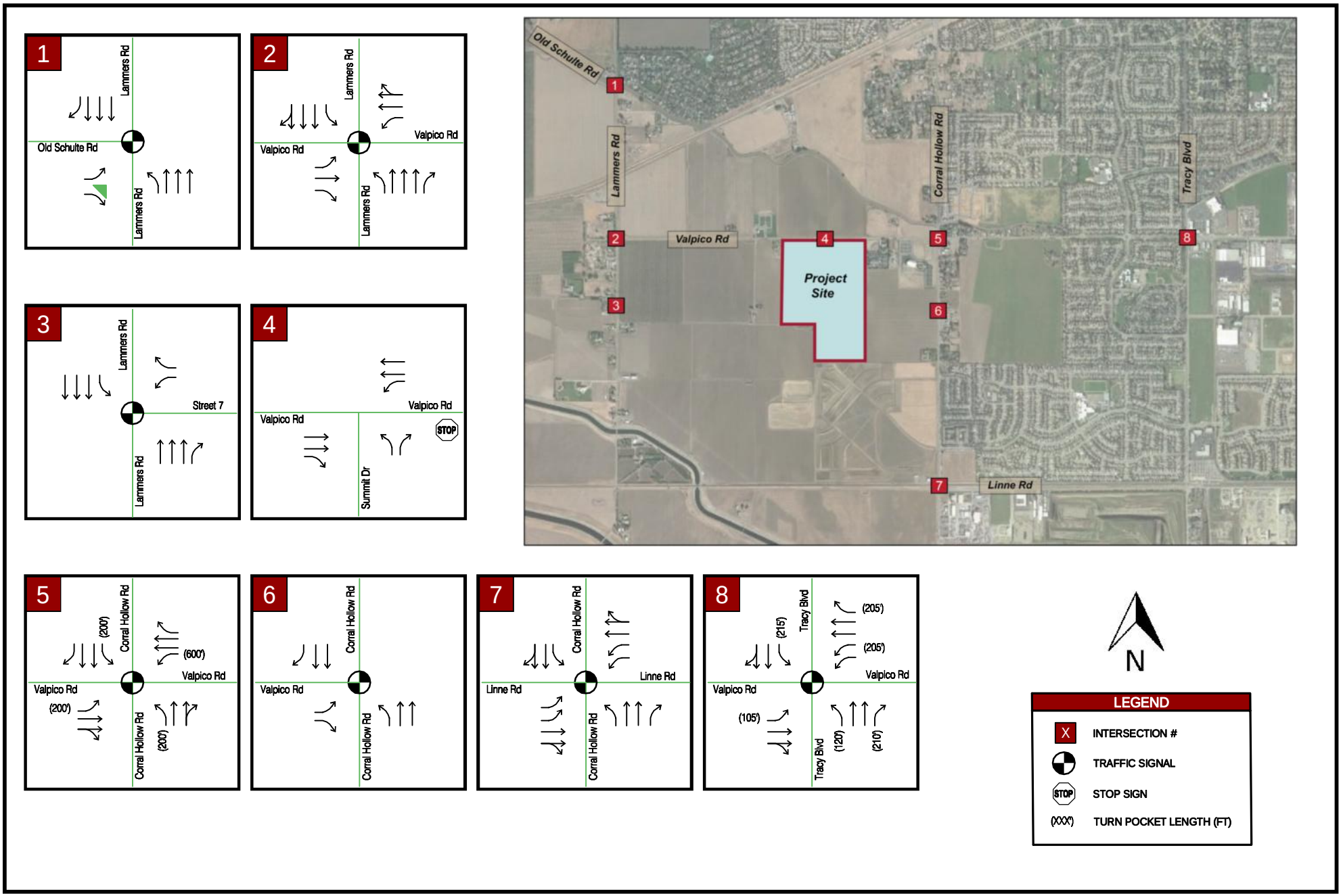

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Figure 17

Cumulative Plus Project Conditions Lane Geometry and Traffic Control

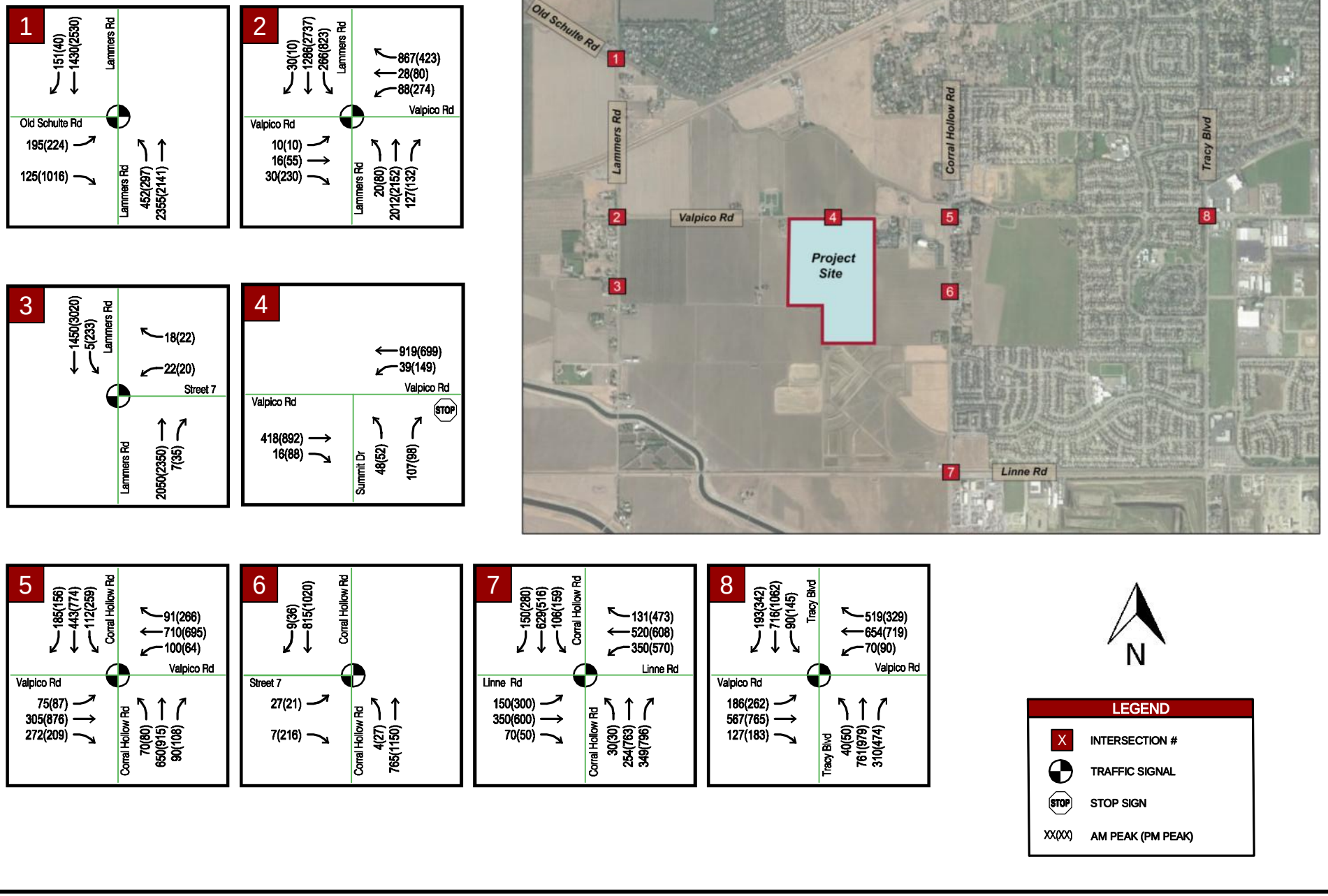

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Figure 18

Cumulative Plus Project Conditions Peak Hour Turning Movement Volumes

Table 19 – Cumulative Plus Project Conditions Roadway Segment Level of Service

Street	Segment	Direction	Capacity	Cumulative				Cumulative Plus Project			
				Volume		V/C		Volume		V/C	
				AM	PM	AM	PM	AM	PM	AM	PM
Lammers Rd	Old Schulte Rd to Valpico Rd	NB	2673	2802	2463	**1.05**	**0.92**	2848	2512	**1.07**	**0.94**
		SB	2673	1554	3475	0.58	**1.30**	1569	3558	0.59	**1.33**
	Valpico Rd to Street 7	NB	2673	2106	2360	0.79	0.88	2114	2368	0.79	0.89
		SB	2673	1427	3232	0.53	**1.21**	1430	3247	0.53	**1.21**
Corral Hollow Rd	Valpico Rd to Street 7	NB	1485	788	1127	0.53	0.76	801	1137	0.54	0.77
		SB	1485	815	1034	0.55	0.70	820	1052	0.55	0.71
	Street 7 to Linne Rd	NB	1485	650	1335	0.44	**0.90**	652	1357	0.44	**0.91**
		SB	1485	848	1083	0.57	0.73	854	1096	0.57	0.74
Valpico Rd	Lammers Rd to Summit Dr	WB	1485	919	704	0.62	0.47	975	764	0.66	0.51
		EB	1485	403	892	0.27	0.60	422	995	0.28	0.67
	Summit Dr to Corral Hollow Rd	WB	1485	930	765	0.63	0.51	962	890	0.65	0.60
		EB	1485	496	1008	0.33	0.68	589	1081	0.40	0.73
	Corral Hollow Rd to Cagney Way	WB	1485	873	911	0.59	0.61	901	1025	0.61	0.69
		EB	1485	425	1176	0.29	0.79	507	1243	0.34	0.84
	Cagney Way to Tracy Blvd	WB	1485	859	997	0.58	0.67	887	1111	0.60	0.75
		EB	1485	798	1143	0.54	0.77	880	1210	0.59	0.81

Notes: Volumes derived from Cumulative intersection volumes and Project trip assignment. Capacities derived from the City of Tracy 2035 Travel Demand Model.
V/C ratios are correlated with LOS as follows: <0.60 = LOS A; 0.60 - 0.69 = LOS B; 0.70 - 0.79 = LOS C; 0.80 - 0.89 = LOS D; **0.90 - 0.99 = LOS E; ≥1.00 = LOS F.**

Table 20 – Mitigated Cumulative Plus Project Conditions Intersection Level of Service

#	Intersection	Agency	Cumulative Plus Project Conditions						Mitigated Cumulative Plus Project Conditions					
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
			Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS
2	Lammers Rd / Valpico Rd	Tracy	Overall	**139.9**	**F**	Overall	**121.4**	**F**	Overall	28.1	C	Overall	54.3	D
4	Summit Dr / Valpico Rd	Tracy	Overall	1.6	A	Overall	4.0	A	Overall	4.6	A	Overall	4.2	A
			NB	14.2	B	NB	**42.6**	**E**						
8	Valpico Rd / Tracy Blvd	Tracy	Overall	39.4	D	Overall	**66.7**	**E**	Overall	41.5	D	Overall	53.7	D

Notes:

1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

Source: Kimley Horn and Associates, 2017.

7. POTENTIAL EFFECTS ON PEDESTRIAN, BICYCLE, AND TRANSIT MOBILITY

Pedestrian and bicycle facilities do not currently exist in the Project vicinity. The Project will provide sidewalks on all on-site streets and along the south side of Valpico Road (Project frontage) as shown in **Figure 2**. Bike lanes will be provided along the south side of Valpico Road (Project frontage) and along Summit Drive and Street 7 within the Project site.

Transit stops do not currently exist in the Project vicinity (walking distance), therefore, the Project will not cause any adverse effects. Future transit stops and routes are identified in the TMP and provide mode choice opportunities to project residents once implemented.

8. VEHICLE PARKING, ACCESS, AND CIRCULATION

VEHICLE PARKING

Each residential unit will provide two enclosed parking spaces as specified in the City of Tracy Municipal Code (10.08.3480). Street 7 will be a major collector with a median; on-street parking will not be permitted and driveways to homes will not be provided. Summit Drive will permit on-street parking with a three-foot buffer, but will not provide driveway access to homes. All other internal Project roadways will provide non-buffered on-street parking. The park will accommodate angled parking su serve visitors on its frontages.

VEHICLE ACCESS AND CIRCULATION

The Project will have access to the City of Tracy roadway network via Summit Drive / Valpico Road (in the north) once Project is constructed. In the future, once Ellis is constructed and the City's TMP is implemented, the Project will access the City's roadway network via Summit Drive / Valpico Road (north), Lammers Road / Street 7 (west), Corral Hollow Road / Street 7 (east), and Summit Drive / Corral Hollow Road (southeast, through Ellis).

Summit Drive will be a two-lane collector and its cross-section will match Ellis. Street 7 will be a major collector with a median and left-turn lanes onto Project side streets. Bulbouts will be constructed as illustrated in **Figure 2** and will extend 10 feet from the median curb. The bulbouts will slow traffic down and shorten pedestrian crossing distance at the intersections. Left-turn pockets will be required at the Summit Drive / Street 7 intersection.

All residential units will have driveway access from internal Project roadways except for homes along Summit Drive and Street 7. Alleys will be constructed behind homes located on Summit Drive and Street 7 to provide driveway access.

SUMMIT DRIVE

Summit Drive will be constructed by the Project, extending from north to south Project boundaries. The roadway will connect to Valpico Road at the north Project boundary and to the Ellis site in the south. Only the portion of the future roadway within the Project boundaries will be constructed by the Project. The Ellis project will construct the remaining portion of Summit Drive, which will connect to Corral Hollow Road.

STREET 7

Street 7 will be constructed by the Project and will extend from east to west Project boundaries. It will be a major collector with a median. On-street parking will not be permitted and driveways to homes will not be provided. The roadway will connect to Lammers Road in the east and Corral Hollow Road in the west. Only the portion of the future roadway within the Project boundaries will be constructed by the Project. Future projects will construct the remaining portion of Street 7.

9. CITY OF TRACY PLANS

GENERAL PLAN

The General Plan Circulation Element identifies the location and extent of existing and planned circulation and transportation facilities, consistent with the existing and planned land uses described in the Land Use Element. Relevant objectives and policies related to roadways and circulation are listed below.

Objective CIR-1.1: Implement a hierarchical street system in which each street serves a specific, primary function and is sensitive to the context of the land uses served.

P1. The City should develop context-based street designs that allow for variations based on the expected function and location of the facility, and the surrounding land use context. These context-sensitive designs should have the following aims:

- Create aesthetically attractive streetscapes.
- Enhance multi-modal transportation by increasing mobility and improving safety for autos, trucks, transit, pedestrians and bicyclists.

P2. The City shall preserve rights-of-way needed for future roadway and freeway interchange improvements through dedication or acquisition as adjacent properties develop or redevelop.

P3. The City shall continue to apply traffic mitigation fee programs to fund transportation infrastructure, based on a fair share of facility use.

Objective CIR-1.2: Provide a high level of street connectivity.

P1. The City shall ensure that the street system results in a high level of connectivity, especially between residences and common local destinations, such as schools, Village Centers, retail areas and parks. The standard for roadway (vehicular) connectivity is defined as appropriate spacing of arterials and collectors and local roads as detailed above in Section B of this Element “Roadway Classifications and Standards.”

P2. The City shall implement a connected street pattern with multiple route options for vehicles, bikes and pedestrians.

P3. New development shall be designed to provide vehicular, bicycle and pedestrian connections with adjacent developments.

P4. The City should develop residential street alignments and designs that provide connectivity while discouraging high speed cut-through traffic.

P5. New development shall be designed with a grid or modified grid pattern to facilitate traffic flows and to provide multiple connections to arterial streets.

Objective CIR-1.3 Adopt and enforce LOS standards that provide a high level of mobility and accessibility, for all modes, for residents and workers.

P1. To the extent feasible, the City shall strive for LOS D on all streets and intersections, with the LOS standard for each facility to be defined in the Transportation Master Plan in accordance with the

opportunities and constraints identified through the traffic projections and analysis performed for that Plan. The following exceptions to the LOS D standard may be allowed:

- LOS E or lower shall be allowed on streets and at intersections within one-quarter (1/4) mile of any freeway. This lower standard is intended to discourage inter-regional traffic from using Tracy streets.
- LOS E or lower shall be allowed in the Downtown and Bowtie area of Tracy, in order to create a pedestrian-friendly urban design character and densities necessary to support transit, bicycling and walking.

P2. The City may allow individual locations to fall below the City's LOS standards in instances where the construction of physical improvements would be infeasible, prohibitively expensive, significantly impact adjacent properties or the environment, or have a significant adverse effect on the character of the community, including pedestrian mobility, crossing times, and comfort/convenience.

P6. For project-specific development approvals, the LOS at major street intersections shall be determined based on the direct estimation of peak-hour conditions and should reflect the average condition prevailing throughout the peak hour of a typical weekday for all traffic using the intersection.

P7. Traffic studies for new developments within the City may be prepared if necessary and appropriate to determine the impacts of the projects traffic on the transportation system.

Objective CIR-1.5 Protect residential areas from through traffic and high travel speeds by facilitating free flow of traffic on major streets.

P1. Use of local residential streets by non-local and commercial traffic shall be discouraged. The City may consider techniques such as route signs and route maps. This policy should not restrict the ability of local vehicle and non-motorized transportation to utilize residential collectors as an effort to encourage higher levels of roadway connectivity.

P2. The City shall coordinate the timing of traffic signals on arterials to facilitate traffic movement.

Objective CIR-1.6 Maximize traffic safety for automobile, transit, bicycle users, and pedestrians.

P1. The City shall design streets using context-sensitive design principles that enhance safety for all modes of travel.

P2. New development shall implement traffic calming measures where necessary so long as connectivity is not diminished.

Objective CIR-1.7 Minimize traffic-related impacts such as noise and emissions on adjacent land uses.

P1. Appropriate buffering and screening mechanisms shall be incorporated in development projects to limit the impacts associated with traffic. These buffering and screening mechanisms may include setbacks, landscaping, berms, sound walls or other methods as appropriate.

P2. Soundwalls shall only be used next to major arterials, and other high-speed, high-volume facilities in accordance with the policies in the Community Character Element.

Objective CIR-1.8 Minimize transportation-related energy use and impacts on the environment.

P1. Transportation projects shall avoid disrupting sensitive environmental resources.

P2. When possible, road construction and repair project shall use sustainable materials.

P3. The City shall encourage the use of non-motorized transportation and low-emission vehicles.

Objective CIR-2.1 Support regional planning and implementation efforts to improve interregional highways and interregional travel efficiency.

P1. The City shall continue to cooperate with regional and State agencies, including Caltrans and San Joaquin Council of Governments (SJCOG) to study, plan and fund improvements to the regional transportation system. These regional transportation improvements may include freeway widening, the construction of regional roadways, regional passenger rail expansions, additions to the existing commuter bus system and provision of the park-and-ride lots near facilities heavily used by commuters.

P2. The City should ensure that land needed for park-and-ride facilities is conserved in new development areas.

P3. The City shall work with other local jurisdictions, SJCOG, and Caltrans, to identify and develop alternative routes to allow locally generated traffic to bypass congestion on I-205 and I-580 without impacting City streets.

P4. The City shall work with the City of Lathrop and San Joaquin County to preserve a right-of-way along the existing alignment of Middle Road / Arbor Avenue north of I-205 (a.k.a. Golden Valley Parkway) for the future construction of a regional parallel to I-205. This process should determine appropriate funding mechanisms and the design of an interchange with I-205 at Chrisman Road.

Objective CIR-2.2 Discourage inter-regional travel from diverting from freeways onto Tracy streets.

P1. The City shall consider techniques, such as freeway ramp metering or traffic signal timing changes, to discourage the diversion of inter-regional travel from the freeways onto Tracy streets.

Objective CIR-3.1 Achieve a comprehensive system of citywide bikeways and pedestrian facilities.

P1. The City shall incorporate appropriate bicycle and pedestrian facilities on all roadways constructed by the City, Class I to the extent feasible.

P2. To the extent possible, the city shall separate vehicular from bicycle and pedestrian traffic on higher-speed and higher-volume roadways through the use of off-street bicycle and pedestrian facilities.

P3. The City may separate bicycle from pedestrian users on high usage bicycle and pedestrian paths

P4. The City's bicycle and pedestrian system shall have a high level of connectivity, especially between residences and common local destinations, such as schools, shopping, and parks. A higher level of bicycle and pedestrian connectivity is defined as a shorter or similar distance to common destinations for bicycles and pedestrians compared to distances for vehicles.

P5. The City shall establish a ½-mile walkability standard for residents to access goods, services, and recreational facilities.

P6. New development shall include pedestrian and bicycle facilities internal to the development and that connect to city-wide facilities, such as parks, schools and recreational corridors, as well as adjacent development and other services.

P7. New development sites for commercial, employment, educational, recreational, and park and ride land uses shall provide bicycle parking and/or storage facilities.

Objective CIR-4.1 Promote public transit as an alternative to the automobile.

P1. The City shall promote efficient and affordable public transportation that serves all users.

P2. The City shall continue to partner with SJCOG, SJRTD, and Caltrans in efforts to locate park-and-ride lots and other transit-related facilities in the City of Tracy.

P3. The City shall continue to operate the Tracer fixed-route and paratransit transit service and expand service to new residential and non-residential areas if funding for additional service is available and is warranted by ridership demand.

P4. The City shall seek funding from regional and State and federal agencies to fund additional transit service expansions and improvements.

P5. The City shall require development to provide for transit and transit-related increased modal opportunities, such as adequate street widths and curb radii, bus turnouts, bus shelters, park-and-ride lots and multi-modal transit centers through the development and environmental review processes, if appropriate.

P6. The City shall encourage efforts for additional regional transit service, including expansion of the existing commuter bus service, and new commuter rail serve from Tracy to other areas in the region.

Objective CIR-421

P1. The City shall complete the Multi Modal Transit Center at Central Avenue and 6th Street.

P2. The City shall preserve the necessary rights-of-way by continuing the implementation of current arterial street standards and ensuring the preservation of existing rail corridors to facilitate the development of an expanded transit program in the future.

P3. The City shall encourage the expansion of transit services through consultation and cooperation with the Bay Area Rapid Transit District (BART), San Joaquin Regional Rail Commission, San Joaquin Regional Transit District, the Altamont Commuter Express (ACE), on services that expand the mobility and accessibility of transporting people, goods and services in and through Tracy and the region.

P4. The City shall develop a fully integrated multi-modal transportation system that takes into account access to employment, education, shops, medical services and that facilitates participation in social and recreational opportunities.

P5. The City shall provide efficient, effective, and coordinated transit system that maximizes use of regional, state, and federal funds.

P6. The City shall pursue economical, long term solutions to transportation problems by encouraging community designs which encourage transit use and walking, bicycling, and other non-motorized forms of transportation.

SUSTAINABILITY ACTION PLAN

The City's Sustainability Action Plan (SAP) responds to recent state legislation on climate change and greenhouse gas reduction, and integration of transportation and land use planning. The SAP includes policies and programs designed to reduce greenhouse gas emissions generated by a range of activities, including transportation. The transportation targets include:

- Target #5a: 20 percent increase in the percentage of non-City employees who participate in travel demand management programs from 2006 baseline levels
- Target #5b: 20 percent increase in the percentage of City employees who participate in travel demand management programs from 2006 baseline levels
- Target #6a: 20 percent reduction in the community vehicle miles travelled (VMT) per capita from current (2006) levels
- Target #6b: 20 percent reduction in the municipal VMT from 2006 baseline levels

The SAP presents 21 sustainability measures within the Transportation and Land Use category which have quantifiable effects, based on available research, on greenhouse gas production – mostly through VMT reduction – including the following measures:

- Measure T-2: Reduced parking requirements.
- Measure T-3: Support for bicycling.
- Measure T-4: Support for transit.
- Measure T-5: Smart growth, urban design, and planning.
- Measure T-13: Reduce commute trips.
- Measure T-14: Parking cash-out for employees.
- Measure T-16: Transit passes for residents and employees of new developments.

ROADWAY AND TRANSPORTATION MASTER PLAN

The purpose of the TMP is to implement the transportation policies of the General Plan. The TMP identifies roadway improvements required at the citywide level to support the long-range buildout of the City. Roadway improvements identified include, but are not limited to, alignments, cross-sections, roadway and intersection design, and access controls for expressways, arterials, collectors, and industrial streets. In addition, the TMP allocates widths for bike lanes, sidewalks, landscaped setbacks, and median widths. As development takes place, project-specific traffic analyses are utilized to determine the degree of roadway improvements required, as TMP roadway improvements are generally a subset of the ultimate roadway network required to support the buildout of the General Plan.

TRUCK TRAFFIC

TRACY TRUCK ROUTES

The Project will not add any truck traffic, except during construction, onto the City road network.

All freeway interchanges, by nature, serve as truck route access locations to the City of Tracy road network. From the interchanges and freeways, regional routes continue throughout the City road network. In the vicinity of the Project, trucks can access the road network from the interchange at Interstate-580 onto Corral Hollow Road. From Corral Hollow Road, the truck route follows Linne Road eastwards.

Section 3.08.290 of the City's Municipal Code establishes truck routes throughout the City and places restrictions on vehicles with a gross vehicle weight of five tons or more, licensed commercially as a truck in the state of origin, and used for carrying goods for pickup and delivery. Vehicles meeting this requirement shall drive only on truck route designated streets except when necessary for egress and ingress by direct route to and from restricted streets for the purpose of loading or unloading.

Currently there are three types of truck routes within the City of Tracy: "Through Truck Routes," "Local Truck Routes" and "STAA truck routes." These routes are indicated throughout the City with the appropriate signage specific to each route type per requirements in the Manual on Uniform Traffic Control Devices (MUTCD).

Through truck routes are defined as a route that allows any vehicle entering the City of Tracy from any point outside the City and destined for any other point located outside the City to proceed entirely through without unloading or loading freight within the City of Tracy. Existing through truck routes within the City of Tracy include:

- Byron Road (west City limits to Lammers Road)

Local truck routes are defined as a route that may not be used by any truck to move from any point outside of the City of Tracy continuously to any other point located outside the City of Tracy without unloading or loading within the City of Tracy. All local truck traffic trips must use the shortest local truck traffic route between connecting or through truck traffic routes and the origin and destination within the City. Existing local truck routes within the City of Tracy include

- Lammers Road (Eleventh Street to 0.5 miles south of Eleventh Street) City portion

Surface Transportation Assistance Act (STAA) truck routes are assigned by Caltrans and/or the City. Intended for oversized trucks, these routes require special geometric design considerations and pavement design. The Surface Transportation Assistance Act (STAA) of 1982 authorized the establishment of a national network of highways designated for use by large trucks. On these highways, Federal width and length limits apply. The STAA allows large trucks to operate on the Interstate and certain primary routes called collectively the National Network (NN). These trucks, referred to as STAA trucks, are longer than California legal trucks. As a result, STAA trucks have a larger turning radius than most local roads can accommodate. The law allows for "reasonable access" to and from the NN for terminals, deliveries, truck stops, repairs, and other reasons. The NN is recommended for through truck traffic (e.g. traffic that is passing through the area), and trucks are allowed to operate on truck-restricted roads if they have no other means of access to their destination.

Through the City of Tracy, I-205 is a STAA route. I-580 to the south of the City limits is also a designated STAA route. Both routes are designated as National Network STAA routes.

The City also approved the Cordes Ranch Specific Plan EIR, subsequent to the TMP adoption, and additional truck routes have been designated, which include the existing Old Schulte Road and the existing Mountain House Parkway. The City of Tracy TMP designates truck routes as indicated in Figure 2 of the TMP: City of Tracy Existing Truck Routes. The routes shown on the figure are consistent with those specified in Section 3.08.310 of the Tracy Municipal Code.

10. VEHICLE MILES TRAVELED (VMT) ASSESSMENT

As recommended in the California Office of Planning Research (OPR), CalEEMod - an environmental analysis tool - was used to determine vehicle miles traveled (VMT) for the Project. The output of CalEEMod is annual VMT which is then converted to Daily VMT. Demographic data for City of Tracy residents has an average household occupancy of 3.40 persons per household, which was used to estimate the per capita VMT for the Project. The OPR thresholds are not required yet, but this analysis compares how the projects' VMT per capita compares to the City and County VMT per capita. This analysis also compares the City General Plan SAP VMT reductions.

OPR's recommended threshold for residential projects is as follows:

A project exceeding both existing City household VMT per capita minus 15 percent, and Existing regional household VMT per capita minus 15%, may indicate a significant transportation impact.

The City SAP indicates the following goals for VMT reductions from the 2006 baseline: A 20 percent reduction in the community vehicle miles travelled (VMT) per capita from 2006 levels and a 20 percent reduction in the municipal VMT from 2006 baseline levels.

The recommended thresholds of significance were determined from the most recently available version of the Caltrans Statewide Travel Demand Model (CSTDM), which provides VMT and home-based VMT for all of California in the year 2010 and 2040. The VMT in 2010 is the same as what was observed in the City SAP in 2006 (Appendix C, T-1).

To determine Existing (2016) vehicle miles traveled, vehicle miles traveled was interpolated between the base model year 2010 and the cumulative year 2040. **Table 21** shows the Existing Household VMT per capita from CalEEMod and the CSTDM. The project exceeds the recommended VMT thresholds identified by OPR.

Table 21 – Existing Household VMT per Capita

Agency	HBVMT per capita	Source
The Avenues	23.17	CalEEMod
City of Tracy	21.11	CSTDM
San Joaquin County	13.46	CSTDM

Table 22 indicates that if OPR's recommended guidelines were in effect, a potential significant transportation impact would result. The guidelines are yet in draft form and have not, to date, been adopted. In the absence of an adopted threshold, the significance criteria is not applicable to this proposed project.

Table 22 – SB 743 Recommended VMT Threshold Determination

Agency	HBVMT per capita threshold	Exceed SB 743 Threshold
City of Tracy	17.94	Yes
San Joaquin County	11.44	Yes

Table 23 indicates that the project does not meet the City SAP VMT reduction goal.

Table 23 – SAP Recommended VMT Threshold Determination with 2010 Base Year

Agency	VMT Increase or Decrease	Does the Project Exceed the SAP 20% reduction Threshold?
City of Tracy	+9.7%	No
San Joaquin County	+72.1%	No

11. TRAFFIC IMPACT FEES

CITY OF TRACY CITY WIDE TRAFFIC IMPACT FEE (TIF) PROGRAM AND FINANCE AND IMPLEMENTATION PLANS (FIP)

The adopted City of Tracy Traffic Impact Fee Program (TIF) (November 2013) presents probable cost estimates for the proposed Horizon Year (2035) roadway network improvements as presented in the TMP. It includes the following facilities:

- Overpasses/Underpasses/Bridges/Culverts
- Intersections
- Roadway Segments
- Intelligent Transportation Systems
- Railroad Crossings

The TMP projects would be funded through the TIF by future developments and future grants as growth occurs in the City through General Plan Buildout. The TIF would be updated as the City General Plan is updated or major changes occur to the funding program, i.e. grant funding becomes available. If the City has not collected enough of the Citywide traffic impact fees to fund an improvement at the time an impact is caused, the Project Applicant would be required to fund the required improvement upfront and enter into a reimbursement agreement with the City for their portion of fair share payments that are attributed to other cumulative traffic growth. Improvements triggered by implementation of the proposed Project but not included in the TIF would be funded by the Project Applicant.

SAN JOAQUIN COG REGIONAL TRANSPORTATION IMPACT FEE (RTIF)

The City is a member agency of the San Joaquin Council of Governments (SJCOG), a joint powers agency consisting of the County of San Joaquin and the seven cities in San Joaquin County. Acting in concert, the member agencies of SJCOG developed the regional transportation impact fee (RTIF) Program whereby the shortfall in funds needed to expand the capacity of the Regional Transportation Network could be made up in part by a RTIF Program Fee on future residential and non-residential development. The RTIF Program Fee would augment other funding sources and help ensure that needed improvements to the Regional Transportation Network are completed.

SAN JOAQUIN COUNTY TRAFFIC FEE PROGRAM

San Joaquin County has adopted a traffic mitigation fee program to collect fees to finance transportation facilities needed to accommodate new development within unincorporated San Joaquin County. The program includes a fee schedule for projects that occur in the unincorporated areas around Tracy. The following is the County traffic impact mitigation fee schedule, in dwelling unit equivalents (DUE) and by use type:

- Single Family (DUE) - $1,044.30

11. CMP ROADWAY NETWORK

SAN JOAQUIN COUNTY REGIONAL CONGESTION MANAGEMENT PROGRAM 2016

The San Joaquin County Regional Congestion Management Program (RCMP) is state-mandated and is a mechanism employing growth management techniques, including traffic level of service requirements, development mitigation programs, transportation systems management, and capital improvement programming, for the purpose of controlling and/or reducing the cumulative regional impacts of development. Caltrans utilizes the SJCOG LOS standards on the freeway segments within San Joaquin County. The following provisions of the CMP are relevant to the Project:

- The CMP system includes Lammers Road for current conditions. The LOS thresholds for intersections are set at “D”.
- A proposed development would have a significant impact to the network if any RCMP roadway currently operating at LOS D or better under No Project conditions operates at LOS E or F under project-added conditions.

The CMP requires a deficiency plan if a roadway segment LOS falls below LOS “D” after calculating required exemptions for a particular project. A deficiency plan identifies mitigations to alleviate a roadway segment of its deficiency through capital improvements or implementation of system-wide improvements to benefit circulation quality. The two primary purposes of a deficiency plan are to ensure a jurisdiction would not be found noncompliant with the RCMP by exceeding its LOS standard and secondly, to increase the funding priority of any improvement identified through the deficiency planning process.

SAN JOAQUIN COG CAPITAL IMPROVEMENT PROGRAM

The SJCOG RCMP details the Capital Improvement Program (CIP) which is the action plan for the RCMP. The CIP and provides a framework for the funding and implementation of projects that maintain or improve the transportation performance standards of the RCMP. SJCOG is required to adopt a seven-year CIP every odd numbered year, which is intended to maintain or mitigate transportation impacts to the region in addition to conforming to transportation-related vehicle emission air quality mitigation measures. All projects in the Regional Transportation Improvement Program (RTIP) must first be listed in the CIP (this applies to most state-funded projects).

APPENDIX

EXISTING CONDITIONS TRAFFIC COUNTS

EXISTING CONDITIONS SYNCHRO OUTPUT SHEETS

EXISTING PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS

BACKGROUND CONDITIONS SYNCHRO OUTPUT SHEETS

BACKGROUND PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS

CUMULATIVE CONDITIONS SYNCHRO OUTPUT SHEETS

CUMULATIVE PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS

MITIGATED EXISTING PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS

MITIGATED BACKGROUND PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS

MITIGATED CUMULATIVE PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS