

HOLLISTER 6-PARCEL PREZONE TRAFFIC IMPACT ANALYSIS

HOLLISTER, CALIFORNIA

Administrative Draft Report

Prepared For

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1 INTRODUCTION

This traffic study analyzes the potential traffic impacts associated with the proposed development of six parcels located in Hollister, California. In total, 80 single-family homes are proposed for development on the six parcels, along with completion of currently discontinuous streets. The parcels are located between El Cerro Drive and Los Altos Drive, south Hillcrest Road. The location of the proposed development is shown on **Exhibit 1**. **Exhibit 2A** shows the location of the six study parcels with respect to the local road network.

Exhibits 2B, 2C and 2D show the proposed layout of the residential lots and the street network associated with the proposed developments. **Exhibit 2E** provides a graphic showing individual project layouts consolidated onto one map. The specific street network improvements are labeled on **Exhibit 2E** and are described below.

A – Upgrade El Cerro Drive to a standard street section south of Hillcrest Road and extend El Cerro Drive to connect to the existing segment of El Cerro Drive, north of Poppy Lane Circle.

B – Extend Sawtooth Drive to El Cerro Drive.

E – Extend Sawtooth Drive to connect to the Trinity Drive extension.

F – Extend Trinity Drive into the Brigantino development with a connection to Sawtooth Drive.

G – Extend Bonnie View Drive to the south and connect to El Cerro Drive (C) and existing Bonnie View Road (D).

1.1 Scope of Work

The project would add new trips to the road network. Due to the relatively good historical levels of service along the Hillcrest Road corridor, the low levels of congestion anticipated with a typical residential neighborhood, and because traffic operations are typically worst during the evening period, the focus of this analysis is on the daily and PM peak hour operations of the neighborhood streets. Weekday PM peak hour traffic conditions were analyzed at the following study intersections:

1. El Cerro Drive / Hillcrest Road
2. Clearwater Drive / Hillcrest Road
3. Bonnie View Drive / Sawtooth Drive
4. Clearwater Drive / Sawtooth Drive
5. Clearwater Drive / El Camino De Vida
6. Trinity Drive / El Camino De Vida
7. El Cerro Drive / Sawtooth Drive (new intersection)

Traffic operations for the following development scenarios were analyzed:

- Existing Conditions
- Existing Plus Project Conditions
- Background Conditions
- Background Plus Project Conditions
- Cumulative Without Project Conditions
- Cumulative Plus Project Conditions

The increase in daily traffic that would be anticipated on the following streets is also analyzed:

1. Sawtooth Drive, Clearwater Drive to Trinity Drive;
2. Trinity Drive, El Camino De Vida to Sawtooth Drive;
3. Sawtooth Drive, El Cerro Drive to Bonnie View Drive;
4. Bonnie View Drive, El Cerro Drive to Bonnie View Road;

The potential change in traffic on the following streets due to the completion of formerly discontinuous streets is analyzed:

1. El Cerro Road, north of Poppy Lane Drive;
2. Bonnie View Road, south of Bonnie View Drive

The potential operational effects of the possible extension of El Dorado Drive into the proposed Trinity Drive project are analyzed qualitatively.

Improvements recommended for existing traffic conditions as well as mitigations for impacts created by the proposed project are recommended where warranted.

1.2 Traffic Operation Evaluation Methodologies and Level of Service Standards

Intersection traffic operations were evaluated based on the level of service (LOS) concept. LOS is a qualitative description of an intersection's operation, ranging from LOS A to LOS F. Level of Service A represents free flow uncongested traffic conditions. Level of service F represents highly congested traffic conditions with unacceptable delay to vehicles at intersections. The intermediate levels of service represent incremental levels of congestion and delay between these two extremes. LOS descriptions for unsignalized intersections are included as **Appendix A**.

The City of Hollister has established a level of service (LOS) of "C" for the accepted minimum standard of operation for intersections. For this study, LOS C was considered the minimum acceptable level of service for overall intersection operations. The Synchro software program (Version 8.0) was utilized to calculate the LOS values for the study intersections, based on technical procedures documented in the *2010 Highway Capacity Manual*.

Caltrans peak-hour volume signal and channelization warrants were evaluated for the study intersections where appropriate.

1.3 Significance Criteria

All of the study intersections are unsignalized. For unsignalized intersections, the project would create a significant adverse impact on traffic conditions if the following criteria are met:

All-way stop

1. The average overall peak hour level of service at the intersection is LOS C or better without the project: The project traffic causes the peak hour level of service to degrade from an acceptable LOS C or better under no project conditions to an unacceptable LOS D or worse under project conditions.
2. The average overall peak hour level of service is already at an unacceptable LOS D or worse without the project: The addition of project traffic causes the average overall delay to increase five (5) or more seconds.

One-or two-way stop

1. The peak hour delay on the worst approach at a one- or two-way stop-controlled intersection is LOS C or better without the project: The peak hour delay on the worst approach at a one- or two-way stop-controlled intersection degrades from an acceptable LOS C or better under no project conditions to an unacceptable LOS D or worse under project conditions and the traffic volumes at the intersection under project conditions are high enough to satisfy the peak-hour volume traffic signal warrant adopted by Caltrans.
2. The peak hour delay on the worst approach at a one- or two-way stop-controlled intersection is already at an unacceptable LOS D or worse without the project: The traffic volumes at the intersection under project conditions are high enough to satisfy the peak-hour volume traffic signal warrant adopted by Caltrans, and the addition of project traffic causes the delay on the worst stop-controlled approach to increase beyond what it was without the project.

2 EXISTING CONDITIONS

This section of the report evaluates existing conditions and includes a description of the project setting.

2.1 Existing Road Network

Regional access to the project area is provided by Highways 25 and 156. Direct access to the project area is provided by Hillcrest Road.

Highway 25 is a major north-south highway through Monterey, San Benito, and Santa Clara Counties. Highway 25 provides primary access between San Benito and Santa Clara Counties via its connection to Highway 101 south of Gilroy. Highway 25 is also a major arterial through the City of Hollister. It also provides primary north-south access through San Benito County south of Hollister as Airline Highway.

Highway 156 is a major east-west highway connecting northern Monterey County and the Central Valley over two distinct segments. The easternmost segment extends from Highway 101 west of San Juan Bautista to Highway 152 north of Hollister, and is a major freight and commuter route.

Hillcrest Road is an east-west major collector that extends between Fairview Road and McCray Street. West of McCray Street, Hillcrest Road changes designation to South Street. From McCray Street to Memorial Drive, Hillcrest Road is a three-lane roadway segment (two eastbound lanes and one westbound lane). Between Memorial Drive and Fairview Road, Hillcrest Road is a two-lane roadway.

Fairview Road is an arterial traveling in the north-south direction. Fairview Road is located to the east of the City of Hollister.

El Cerro Drive, Clearwater Drive, Sawtooth Drive, Trinity Drive and El Camino De Vida are local residential streets.

2.2 Existing Conditions Traffic Volumes

To ascertain the existing weekday PM peak hour traffic conditions, weekday turning movement counts were collected at the study intersections. Traffic counts at the study intersections were conducted on Thursday, January 22, 2015 from 4:00 to 6:00 p.m. The existing weekday PM peak hour traffic volumes at the study intersections are shown on **Exhibit 3**.

2.3 Existing Conditions Intersection Operations

All of the study intersections operate at acceptable levels of service under Existing traffic conditions during the weekday PM peak hour. Weekday PM peak hour intersection levels of service are summarized in **Exhibit 4**. Level of service calculation worksheets are included as **Appendix B** through **Appendix G**.

According to City of Hollister LOS standards the study intersections operate acceptably under Existing Conditions and no improvements are currently recommended from a level of service standpoint.

3 EXISTING PLUS PROJECT CONDITIONS

This section of the report describes the analyses of the study road network under Existing Plus Project traffic conditions. The section includes the analysis of project trip generation, distribution and assignment.

3.1 Project Description

The proposed project involves the development of 80 residential homes on six parcels in the City of Hollister. Development of the project would complete several street segments that would provide new access and circulation opportunities for existing development in the vicinity of the project.

3.2 Project Trip Generation

The estimated trip generation for the project is shown on **Exhibit 5**. Based upon trip generation rates published by the Institute of Transportation Engineers, the project is estimated to generate 762 trips per day, with 61 trips generated during the AM peak hour and 80 trips generated during the PM peak hour.

3.3 Project Trip Distribution and Assignment

The project trip distribution was estimated based upon existing traffic patterns and the locations of complementary land uses. The project trip distribution is summarized in the following table:

To / From	Percentage
West via Hillcrest Road	55%
East via Hillcrest Road	15%
South via El Toro, Bonnie View & Clearwater	30%
Total	100%

The project PM peak hour trips were assigned to the local road network based on the preceding trip distribution percentages. The project PM peak hour trip assignment is shown on **Exhibit 6**.

3.4 Traffic Diversions

The roadway infrastructure developed by the project will complete currently discontinuous streets. This will provide existing traffic with alternative travel routes and traffic diversions are anticipated.

Potential traffic diversions were estimated based upon the PM peak hour traffic volumes shown on **Exhibit 3**. In addition, traffic volume data collected on Poppy Lane and Bonnie View Road using machine tube counters during the week of January 19, 2015 were also reviewed to assess the potential diversion from these streets with the connection of El Cerro Drive and Bonnie View Road to the road network to the north. The estimated traffic diversion during the PM peak hour upon completion of the project road network is shown on **Exhibit 7**.

3.5 Existing Plus Project Traffic Volumes

Trips generated by the project were combined with existing traffic volumes and the traffic diversions to obtain Existing Plus Project traffic volumes, which are shown on **Exhibit 8**.

3.6 Existing Plus Project Conditions Intersection Operations

All of the study intersections are projected to operate at acceptable levels of service under Existing Plus Project conditions. All intersections would operate at LOS A overall, as with existing conditions. Weekday PM peak hour intersection levels of service are summarized on **Exhibit 4**. Level of service calculation worksheets are included in **Appendix B** through **Appendix H**.

According to City of Hollister LOS standards the study intersections will operate acceptably under Existing Plus Project and no improvements are recommended from a level of service standpoint.

3.7 Daily Traffic Volumes

The increase in daily traffic volume was estimated at the locations where new street connections and extensions are to occur as shown on **Exhibit 2E**. **Exhibit 9** shows the daily traffic volumes at these locations. The traffic volume at the locations would consist of project generated trips and/or existing traffic that was diverted from other travel routes. The daily traffic volumes shown on **Exhibit 9** were estimated based upon the peak hour traffic volumes collected at the study intersections and daily traffic volume counts collected using machine tube counters on Bonnie View Road north of Sunnyslope Road and on Poppy Lane.

The highest increase in daily traffic volume is forecast at the existing northern terminus of Bonnie View Road (Location D) where a daily traffic volume of 316 vehicles is forecast after completion of the project. By comparison, the existing daily traffic volume on Bonnie View Road north of Sunnyslope Road is 383 vehicles per day based upon the traffic volume data collected during the week of January 19, 2015. Further, residential streets are considered to operate at LOS A when carrying up to 1,200 vehicles per day. No significant operational problems are anticipated to occur on the local residential streets because of the development of the proposed project.

The Brigantino lot layout could be modified to incorporate an extension of El Dorado Drive into the Brigantino development. (See **Exhibit 2D**.) This would provide Brigantino residents and as well as residents located west of Brigantino with the opportunity to connect to Los Altos Drive to access Hillcrest Drive. Because the predominant trips generated by the local neighborhood development is predominantly oriented to and from the west, the amount of diversion from west to east would be relatively minimal, but trips generated by the Brigantino development oriented to/from the east would likely divert to Los Altos Drive due to shorter travel distances.

The El Dorado extension would also allow residents in the El Dorado-Los Altos Drive neighborhood with the opportunity to access Hillcrest Road via Clearwater Drive rather than Los Altos Drive. In addition, some El Dorado-Los Altos Drive residents with destinations to the south would travel through the Brigantino development to access Clearwater Drive (via Trinity Drive or Sawtooth Drive). Due to the low density of development in the El Dorado-Los Altos Drive neighborhood, the volume of traffic that would be added to Trinity Drive and Sawtooth Drive would be relatively small and would not create significant operational impacts.

4 BACKGROUND CONDITIONS

This section of the report describes the analyses of the study road network under background traffic conditions. Background conditions models traffic conditions with traffic from approved but not yet constructed developments added to the study intersections.

4.1 Background Conditions Traffic Volumes

A listing of approved but not yet constructed or occupied projects within San Benito County and the City of Hollister are included in **Appendix I**. The list of approved projects was referenced from *Gonzales Property Residential Transportation Impact Analysis*, Hexagon Transportation Consultants, October 30, 2014.

Weekday PM peak hour traffic generated by approved projects were estimated and assigned to the local road network and combined with existing peak hour traffic volumes to obtain background condition PM peak hour traffic volumes, which are shown on **Exhibit 9**. The analysis of Background Conditions assumes full development of the approved projects.

4.2 Background Conditions Intersection Operations

Intersection levels of service for the Background Condition are summarized on **Exhibit 4**. Level of service calculation worksheets are included in **Appendix B** through **Appendix G**.

All study intersections will operate at LOS A overall under Background Conditions, which would be better than the LOS C standard for the City of Hollister.

5 BACKGROUND PLUS PROJECT CONDITIONS

This section of the report describes the analysis of the study road network under Background Plus Project traffic conditions. Background Plus Project conditions includes traffic from approved but not yet constructed developments and project traffic added to the existing traffic volumes at the study intersections.

5.1 Background Plus Project Conditions Traffic Volumes

The project trip assignment and the traffic diversions associated with the completed street network were combined with the Background peak hour volumes to obtain Background Plus Project Buildout conditions traffic volumes, which are shown in **Exhibits 10**.

5.2 Background Plus Project Conditions Intersection Operations

Intersection levels of service for the Background Plus Project Conditions are summarized on **Exhibit 4**. LOS calculation worksheets are included in **Appendix B** through **Appendix H**.

All study intersections are projected to operate at LOS A during the PM peak hour under Background Plus Project traffic conditions.

The northbound Clearwater Drive approach to Hillcrest Road is projected to operate at LOS F during the PM peak hour under Background Plus Project Conditions. Under Background Conditions, the northbound Clearwater Drive approach to Hillcrest Road would also operate at LOS F and the project would cause the delay on the approach to increase by 9.1 seconds. These conditions partially satisfy the impact significance criteria contained in Section 1.3 of this report. However, the volumes at the intersection would not be sufficiently high to meet the California MUTCD Peak Hour Volume traffic signal warrant criteria, which is required to meet the significance criteria. The signal warrant worksheet for the Clearwater Drive/Hillcrest Road intersection is included in **Appendix J**. Therefore, the project's impact to the intersection is not significant.

Based upon the analysis of Background and Background Plus Project Conditions, the project would not significantly impact the study intersections.

5.3 Daily Traffic Volumes

Development of the approved projects should not result in significant changes to the peak hour traffic volumes carried on the local residential streets in the study area. Therefore, the daily traffic volume estimates provided in the Existing Plus Project section of this report should also be valid for the analysis of Background Plus Project Conditions.

6 CUMULATIVE CONDITIONS

This section of the report describes the analyses of the study road network under Cumulative 2035 traffic conditions. The cumulative conditions analysis is based on the 2035 traffic volume forecasts from the San Benito County General Plan Draft PEIR.

Future growth at buildout of the City of Hollister General Plan was quantified at the two study intersection along Hillcrest Drive. For the remaining study intersections, as well as all of the study segments, little traffic growth is anticipated beyond the Background Plus Project traffic volumes at buildout of the City General Plan, primarily due to few vacant parcels in the immediate neighborhood. The Existing Plus Project and Background Plus Project analyses established that the intersections of the local residential streets will operate at LOS A during the PM peak hour for the Existing and Background analysis scenarios (Intersections 2 through 7). There is sufficient additional capacity at these intersections to serve additional traffic demand should volumes at these intersections increase as a result of buildout of the City General Plan. Therefore, the analysis of Cumulative Conditions was limited to the Hillcrest Road / El Cerro Drive and Hillcrest Road / Clearwater Drive intersections.

6.1 Cumulative Conditions Traffic Volumes

Cumulative growth in traffic volumes at the two Hillcrest Road study intersections was estimated based on the percent increases between the existing and 2035 General Plan forecast volumes in the San Benito County General Plan Draft PEIR. Cumulative conditions traffic volumes without the proposed project are shown on **Exhibit 11**.

6.2 Cumulative Conditions Intersection Operations

Intersection levels of service are summarized in **Exhibit 4**. LOS calculation worksheets are included in **Appendix B** and **Appendix C**.

The two Hillcrest Road study intersections are projected to operate at LOS A overall under Cumulative without project conditions.

7 CUMULATIVE PLUS PROJECT CONDITIONS

This section of the report describes the analysis of the study road network under Cumulative Plus Project Buildout traffic conditions.

7.1 Cumulative Plus Project Conditions Traffic Volumes

The trips generated by the proposed project including the traffic diversions were combined with the Cumulative peak hour volumes to obtain Cumulative Plus Project conditions traffic volumes, which are shown in **Exhibit 12**.

7.2 Cumulative Plus Project Conditions Intersection Operations

Intersection levels of service are summarized in **Exhibit 4**. LOS calculation worksheets are included in **Appendix B** and **Appendix C**.

The two Hillcrest Road intersections are projected to operate at LOS A overall under Cumulative With Project Conditions. As with the previous analysis scenarios, the northbound Clearwater Drive approach to Hillcrest Road is projected to operate at LOS F during the PM peak hour. It is recommended that the Hillcrest Road / Clearwater Drive intersection be monitored by the City as the city builds out and all-way stop control be considered for implemented if warranted by an engineering study.

8 CONCLUSIONS

This traffic impact analysis evaluated the potential impacts from the traffic that would be generated by the proposed 6-Parcel Prezone project on the surrounding road network.

Development of the project would not create significant traffic impacts to the intersections that were studied. In addition, no significant operational problems are anticipated to occur on the local residential streets because of the development of the proposed project.