





Crows Landing Road Corridor Study City of Modesto 2015

Acknowledgements

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Introduction

Purpose of the Crows Landing Road Corridor Study

This study is primarily funded by Caltrans, through an Environmental Justice planning grant the City of Modesto received in 2012. The Crows Landing Road corridor study will establish a plan for a safe, efficient, and vibrant multi-modal transportation facility serving the southern portion of Modesto and nearby unincorporated Stanislaus County. Through the corridor study process, existing deficiencies will be documented, corresponding improvements will be identified, and an implementation program will be established. The corridor study

- Identifies and documents issues, problems and deficiencies to be resolved;
- Develops options to resolve issues and improve multi-modal mobility and safety; and
- Conduct in-depth public involvement process to achieve these goals.

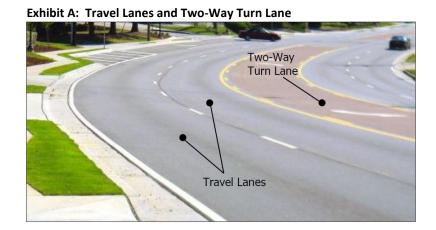
Improvements, or solutions to problems, will be identified as short-term, relatively low-cost actions; mid-term changes; and, long-term, relatively high-cost improvements. Where and when an improvement is actually implemented will not be that simple in practice for various reasons. Funding availability and jurisdictional issues will have the greatest impact on when and where improvements are installed. Modesto expects that full implementation of the adopted plan will occur incrementally over the course of many years.

Elements of an Urban Thoroughfare

The corridor study is relatively technical. To facilitate understanding this study, major elements of urban thoroughfares are described and illustrated below. These terms and concepts are critical to understanding and discussing the future Crows Landing Road. Definitions are derived primarily from "Designing Walkable Urban Thoroughfares: A Context Sensitive Approach," a Recommended Practice of the Institute of Transportation Engineers (2010).

Travel Lanes: These are the marked lanes used by passenger vehicles, trucks, and sometimes bicycles (**Exhibit A**). They can vary in width from 10 to 14 feet or more, separated by striping. On roads used by transit buses, the lane nearest the curb or outside edge of the roadway is usually no less than 11 feet wide to accommodate the width of the transit bus. Typically, traffic moves faster in wider lanes and slower in narrower lanes. Wider lanes and higher traffic speeds can create barriers to pedestrians.

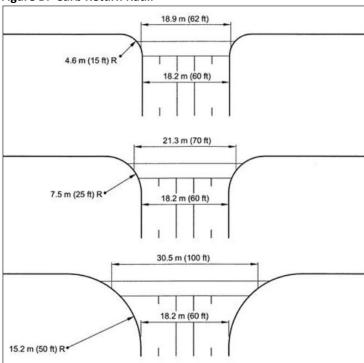
Two-Way Turn Lane: This lane allows left-turning movements from the center of the roadway for traffic moving in both directions (**Exhibit A**). According to state law, a motorist may travel no more than 100 feet in a two-way turn lane, which is intended only for turning movements, and not for driving distances. A two-way turn lane can vary in width from 12 to 16 feet, separated from travel lanes by broken yellow striping.



Target/Design/Operating Speeds: The target speed is the desirable speed at which motor vehicles should be operated on a roadway. Design speed should be no more than 5 miles per hour higher than target speed. Operating speed is the observed travel speed under free-flow conditions.

Curb Return Radius: Curb returns are the curved portion of the corner created by the intersection of two streets. Exhibit B illustrates the effects of 15-foot, 25-foot, and 50-foot curb return radii on a 60-foot-wide traveled roadway. Larger curb return radii allow turning movements of large trucks and buses. The radius of a curb return also determines in part the speed at which a vehicle can turn from one street to the other, particularly right turning movements. Larger curb return radii facilitate higher speed turns and also increase the length of pedestrian crosswalks.

Figure B: Curb Return Radii



Sidewalk: The paved area alongside a road set aside for the exclusive use of pedestrians. It may be adjacent to the travel lanes or to a bicycle lane or may be separated from lanes by street trees and other objects, such as benches. Sidewalks are often four or five feet wide in residential areas and eight to 15 feet wide or more in commercial areas.

Bike Lane: A bike lane is the area set aside for the use of bicycle riders in order to improve safety and visibility. Bike lanes located on streets are typically four to seven feet wide and may be separated from travel lanes with striping or a marked buffer zone. Bicycle riders are expected to use the roadway, whether or not a bicycle lane exists. **Exhibit C** shows a bike lane without a buffer.

Exhibit C: Bike Lane



Raised Median: A raised median is a barrier four to eight inches high that is typically used to separate traffic moving in opposite directions. A raised median can provide a relatively safe place for pedestrians to wait for traffic to clear before continuing to cross the street. Traffic signs may also be placed on raised medians, improving their visibility to motorists. Raised medians may be landscaped.

Crosswalk: A location where pedestrians may legally cross travel lanes. Crosswalks may be marked or unmarked. A marked crosswalk is striped to improve the visibility of pedestrians to approaching traffic. Unmarked crosswalks are described by the imaginary right-angled extension of a sidewalk across a roadway and is also a legal place for pedestrians to cross. The crossing pedestrian is less visible to traffic in an unmarked crosswalk than in a marked crosswalk.

Crossing Distance/Crossing Time: Crossing distance is the distance for a pedestrian to cross a street, measured from curb to curb, including bike lanes and travel lanes. Crossing time, measured in seconds, is the time needed for a pedestrian to cross a street from curb to curb. Crossing times vary for different people, depending upon age and physical condition, but are typically considered to be 3.5 feet per second, which is the speed used to estimate crossing times in the figures below. Shorter crossing distances and crossing times are generally safer for pedestrians. Crossing time may be reduced with the addition of raised medians in the roadway that are large enough to comfortably accommodate a waiting pedestrian. Reducing the curb return radius, as shown on Figure B, can reduce pedestrian crossing distance and crossing time. Curb extensions may also be used for this purpose under some circumstances.

Chapter 1: Existing Conditions

History and Development Pattern

The Crows Landing Road corridor may be defined in many ways. Strictly speaking, it is the public right of way that constitutes Crows Landing Road, including the traveled roadway used primarily by cars, trucks, and bicycles and the curb, gutter, and sidewalk outside of the traveled roadway, used primarily by pedestrians and providing pedestrian and vehicular access to businesses that front on Crows Landing Road. This area includes a great deal of infrastructure in addition to the asphalt and concrete, such as storm drain inlets, water, sewer, and gas transmission lines, and the electrical distribution service.

A broader definition of the Crows Landing Road corridor includes the properties adjacent to and taking direct access from Crows Landing Road. A still-broader definition includes properties heavily influenced by travel and economic activity on Crows Landing Road, which may extend 500 or 1,000 feet from the edges of Crows Landing Road. This study is concerned primarily with the Crows Landing Road right of way and adjoining properties.

An unnamed 66-foot-wide road that would eventually be named Crows Landing Road, is visible on early 20th century Stanislaus County plats south of Modesto's Sphere of Influence. This road does not appear to have been connected with downtown Modesto until the Lion Bridge was built in 1916. The Lion Bridge forms a section of 7th Street where it crosses the Tuolumne River; Crows Landing Road intersects 7th Street about 430 feet south of the southern bridge embankment. Once the bridge was in place, residential development associated with proximity to downtown Modesto began. Most of the residential development in Modesto's Sphere of Influence occurred in the mid-20th century. Commercial development lagged behind residential development, with most commercial development occurring after 1960.

Today, Crows Landing Road and the land on both sides of it lie within Modesto's Sphere of Influence from S. 7th Street to Whitmore Avenue. The road itself and adjoining properties form a patchwork of jurisdictional boundaries. **Figure 1** illustrates areas both within and outside city limits at this time.

Six annexations between 1952 and 2012 have brought portions of Crows Landing Road into the Modesto city limits. Relatively recent changes to the Stanislaus Local Agency Formation Commission's annexation policies require that annexations of land include the entire roadway right of way, rather than simply extending to the roadway centerline. For this reason, Modesto has some additional control over roadway allocation and right of way decisions than it did in the past. **Figure 2** illustrates annexations to Modesto along Crows Landing Road and the year in which each annexation occurred. Nevertheless, Modesto has only an advisory role in areas that are not inside city limits.

Modesto requires that physical infrastructure be planned and financed or developed to city standards prior to annexation for public safety and liability reasons. The city's policies regarding annexation and a general lack of funding for infrastructure in developed area have slowed the pace of annexations in developed County areas within Modesto's Sphere of Influence. Funding to build infrastructure in developed areas can be provided by the property owners themselves or by Community Development Block Grants, however redevelopment bonds are no longer an available funding source. Nevertheless, Modesto expects the area around Crows Landing Road from S. 7th Street to Whitmore Avenue will eventually be completely inside city limits and is undertaking this study in anticipation.

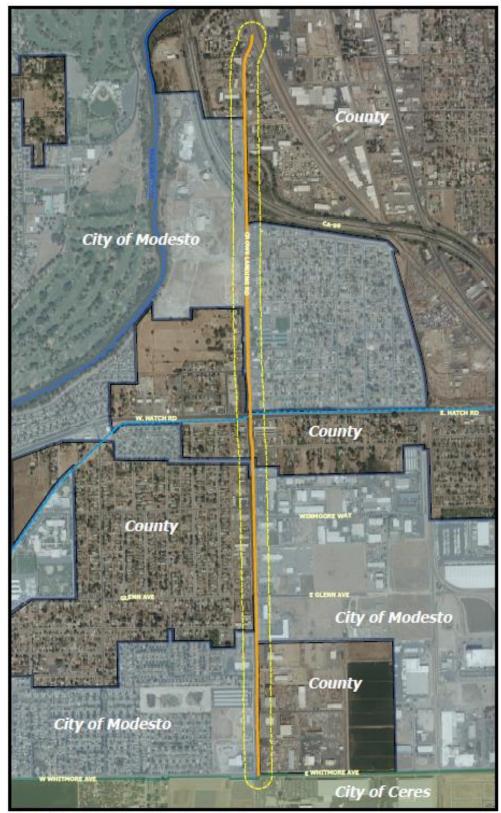
Land Use and Physical Conditions

The properties adjoining Crows Landing Road are almost exclusively developed with commercial buildings, although automobile-related industrial uses, mobile home parks, and a small single-family residential area are common between State Route 99 and S. 7th Street. South of State Route 99, there is a good deal of variety among the goods and services offered, although there is a large concentration of businesses selling cars, tires, and automobile services. Automobile-related services are more common the nearer the property is to State Route 99. Other commercial uses along Crows Landing Road encompass most commercial development expected in an urban area: grocery and convenience stores, restaurants and bakeries, a motel, and clothing and furniture stores. South of Glenn Avenue there are some industrial businesses, such as a delivery service, truck and heavy equipment rentals, and farm machinery sales. Modesto's existing general plan designations are shown on **Figure 3**. Existing land uses are shown on **Figure 5**.

Mobility-Travel Conditions

Modesto's General Plan currently designates Crows Landing Road as a six-lane principal arterial, which has either 114 feet of right of way without bike lanes or 127 feet of right of way with bike lanes, as specified in the General Plan (Policy V.B.2.c). As it is currently planned, Crows Landing Road will have a Class II bicycle facility, also referred to as a bike lane. Widening Crows Landing Road and developing it to the City's standard specifications is preliminarily estimated to cost approximately \$11.8 million in current dollars. This includes widening and resurfacing; restriping to include bike lanes; reconstructing curb, gutter, and sidewalk; adding signal loop detectors; relocating utilities; and undergrounding a portion of the Turlock Irrigation District canal; and purchasing some right of way.

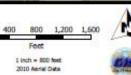
The principal arterial designation has implications for intersection designs. Modesto's Standard Specifications call for intersection widening beyond the standard 127-foot principal-arterial-with-bike-lane cross section and includes dedicated right-turn lanes and large-radius turns from the principal arterial to the intersecting roadway. Hatch Road and Whitmore Avenue are designated minor arterials; all other intersecting roadways are either collectors or local streets. Design details 382, 383, and 384 are included as **Figures 6a**, **6b**, and **6c** to illustrate how intersections along Crows Landing Road are currently envisioned.



Crows Landing Road Corridor Study

Figure 1: Jurisdictional Boundaries

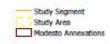




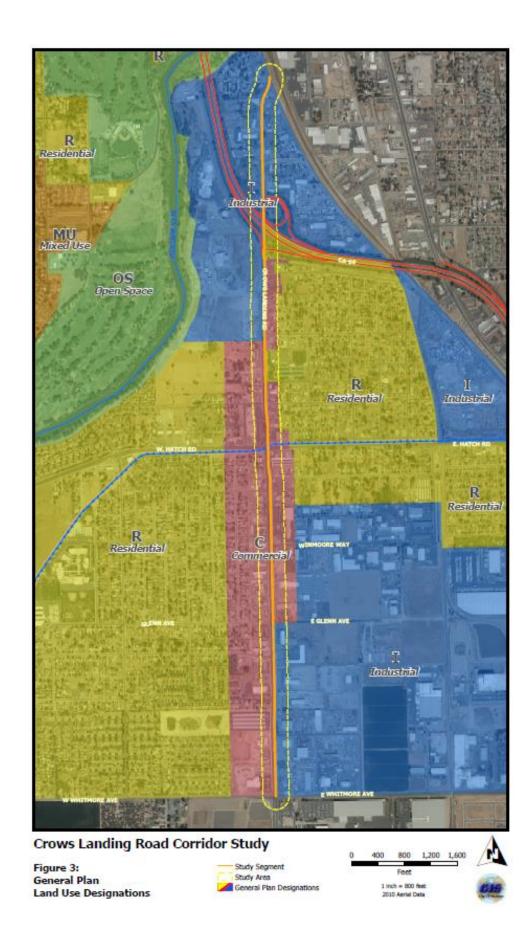


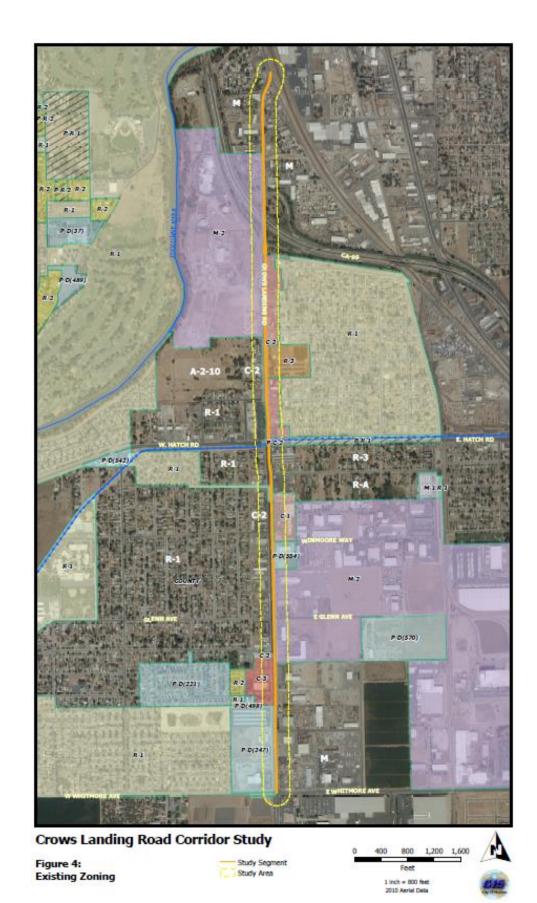
Crows Landing Road Corridor Study

Figure 2: Annexations to Modesto











Crows Landing Road Corridor Study

Figure 5: Existing Uses



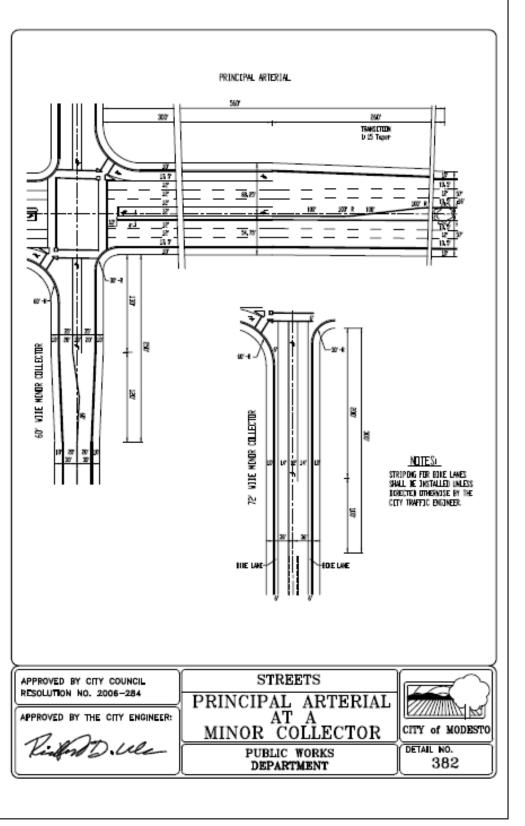


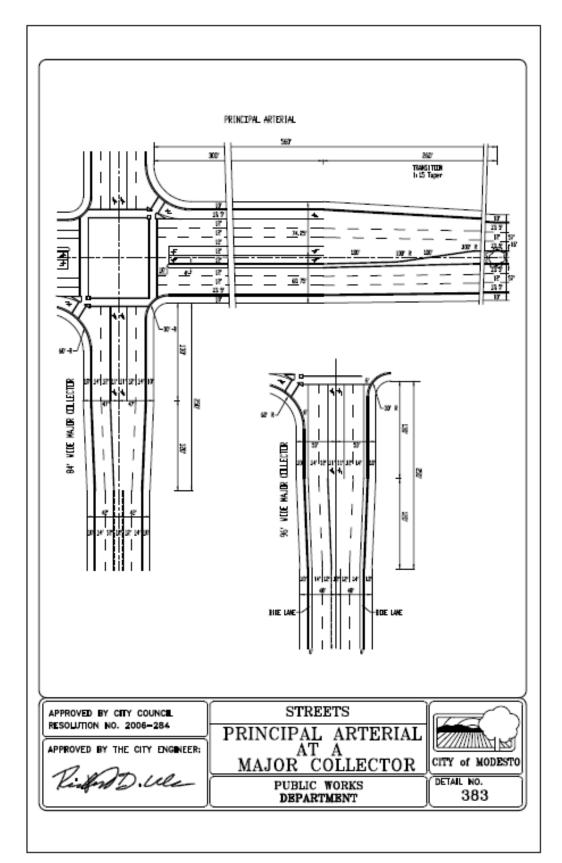




Crows Landing Road Corridor Study

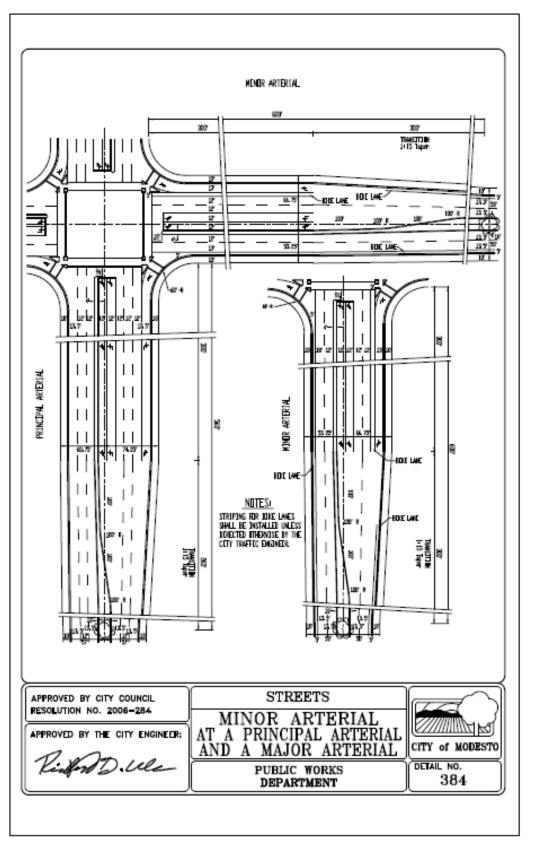
Figure 6a: Standard Specification Design Detail 382





Crows Landing Road Corridor Study

Figure 6b: Standard Specification Design Detail 383



Crows Landing Road Corridor Study

Figure 6c: Standard Specification Design Detail 384 The portion of Crows Landing Road north of State Route 99 is highly variable in width, ranging from 60 to about 90 feet. Most of Crows Landing Road south of State Route 99 is 100 feet wide. One small segment is 105 feet wide and some short segments are less than 100 feet wide. In order to construct Crows Landing Road to principal arterial standards, very significant road widening and right-of-way acquisition will be required. **Figure 7** shows the current and future right-of-way width along the corridor.

North of State Route 99, existing right of way is utilized to provide about 32 feet of county-maintained pavement, striped for two approximately 16-foot-wide lanes, and an unpaved shoulder. There is no curb, gutter, or sidewalk and there are no street trees or bicycle facilities. On-street parking is allowed, but is limited to 2 hours. The speed limit on this section is 35 miles per hour.

South of State Route 99, the mostly 100 feet of right of way is used to provide curb, gutter, and sidewalk, two travel lanes in each direction, a center two-way turn lane or occasional 4-foot-wide raised median (north and south of Hatch Road and in the vicinity of Butte Avenue and Winmoore Way, and a small section of Class II bicycle lane between School Avenue and Pecos Avenue). Left-turn and right-turn pockets are installed at several intersections. Onstreet parking conditions range from prohibited to 2-hour parking or parking from 8:00 p.m. to 8:00 a.m., to unrestricted, depending upon the segment. The two-way-turn-lane ranges from 14 to 17 feet wide. The travel lane nearest the two-way-turn-lane is about 12 feet wide, and the outside travel lane ranges from 16-1/2 to 21 feet wide, including parking. Some sections of sidewalk along Crows Landing Road are missing and the property owned by the Southwest Hide Company in the 1100 block on the west side of Crows Landing Road near State Route 99 also has no sidewalk. Crows Landing Road has no bicycle facilities. Where they exist, sidewalks are 4 to 10 feet wide and are often interrupted or obstructed with utility poles, other infrastructure, mailboxes, and business advertisements. The walkways on either side of the State Route 99 overcrossing are 3-1/2 to 4 feet wide. Street trees are installed between the sidewalk and curb in some locations along Crows Landing Road, however, there are few trees. Figure 8 shows the locations of street trees and where sidewalks are missing. The speed limit is 35 miles per hour north of Hatch Road and 40 miles per hour south of Hatch Road.

Bus Transit Service Modesto Area Express (MAX) operates two bus routes that serve Crows Landing Road, the 29 and 42, both of which provide 30-minute service from between 6:00 a.m. and 8:00 p.m. Monday through Saturday and hourly service Sunday between about 8:30 a.m. and 6:30 p.m. Route 29 provides service to and from the Downtown Transportation Center and Ceres via 9th Street and Crows Landing Road, as far south as Hatch Road and service east of Crows Landing Road. Route 42 provides service between the Downtown Transportation Center and Community Service Agency/County Safety Center south of Whitmore Avenue at Hackett Road, and service east and west of Crows Landing Road.

From north to south, MAX bus stops are located:

Route 29

- o 200 feet north of Blankenburg Avenue, east side
- o 100 feet north of School Avenue, east side

Route 42

- o 75 feet north of Crater Avenue (with shelter), west side
- o 100 feet south of Hatch Road, west side
- o 50 feet south of Amador Avenue, west side
- o 400 feet south of Butte Avenue (with shelter), west side
- o 275 feet south of Glenn Avenue, west side
- o 125 feet south of Algen Avenue, west side
- o 75 feet north of Whitmore Avenue, west side

Traffic Volumes and Speeds

Modesto periodically counts traffic along major travel corridors. The most common count is Average Daily Traffic (ADT), which counts the number of motor vehicles passing a particular point. Modesto has official traffic counts adopted by City Council for 2013, 2009, and 2007. In 2013, the ADT for Crows Landing Road south of State Route 99 was 30,456 and north of State Route 99 was 30,663 and north of State Route 99 was 12,827. In 2007, ADT was 30,663 south of State Route 99.

In order to get a more complete picture of travel along Crows Landing Road, hourly traffic counts were also performed at two locations on Crows Landing Road in June, 2014. One site was just north of Hatch Road and the other site was just north of Whitmore Avenue. Travel is generally considered to be most critical during the morning and evening commute times when roads often carry the greatest amount of traffic in a two-hour period, typically given as 7:00 a.m. to 9:00 a.m. ("morning peak") and 4:00 p.m. to 6:00 p.m. ("evening peak"). With this in mind, the busiest single hour does not necessarily occur during the two, two-hour peak periods. For purposes of characterizing traffic flows, the higher of the two morning peaks was selected and entered on approach/departure diagrams. Field work added further detail, separately accounting for truck traffic. Traffic data are included in **Appendix A**.

Finally, speed data were collected in the field following the morning peak travel period in order to establish a baseline for typical motor vehicle travel behavior on Crows Landing Road. Three locations were selected at which vehicle speeds were measured: Blankenburg Avenue, north of State Route 99; Pueblo Avenue and Zeff Road, between State Route 99 and Hatch Road; and Imperial Avenue and 2000 Crows Landing Road, between Hatch Road and Whitmore Avenue. Each data set included 100 vehicles, making it difficult to make general statements about travel behavior, however, average speed was always higher than the posted speed limit. Speed data sheets are included in **Appendix A**.





Crows Landing Road Corridor Study

Figure 7a: **Existing and Future** Right of Way (7th St to Hatch Rd)

Study Segment (ROW varies 60-100 ft.) Study Area
Future Right of Way (127 feet)

200 300 400 1 inch = 200 feat 2010 Aerial Data





Crows Landing Road Corridor Study

Figure 7b: Existing and Future Right of Way (Hatch Rd to Whitmore Ave)

Study Segment (ROW varies 60-100 ft.) Study Area Future Right of Way (127 feet)

100 200 300 400 1 Inch = 200 feet 2010 Aeriel Date





Figure 8a: Sidewalks, Raised Medians and Street Trees (7th St to Hatch Rd)





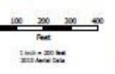






Figure 8b: Sidewalks, Raised Medians and Street Trees (Hatch Rd to Whitmore Ave)



1 kmh = 200 feet 2010 herel Date

- Raised Medians

- Street Trees

Collisions

Collision data are available from the Modesto Police Department from 2004 and the middle of 2013. During this period, there were 198 reported collisions, including 141 non-injury automobile collisions (70.7%), 54 with injuries, and four fatalities. All of the four fatalities were pedestrians. A total of five bicycle-involved collisions was reported, four of which (80%) resulted in injuries. **Figure 9** displays the locations of collisions along Crows Landing Road, the severity of the collision, and the type of collision (motor vehicle only, bicycle-involved) during this reporting period.

Collisions have occurred at virtually every intersection along Crows Landing Road during the reporting period. However, collisions are more common at intersections south of Hatch Road to Whitmore Avenue than from Hatch Road north to 7th Street. **Table 1** summarizes collisions shown on **Figure 9** and ranks intersections from most to least collisions.

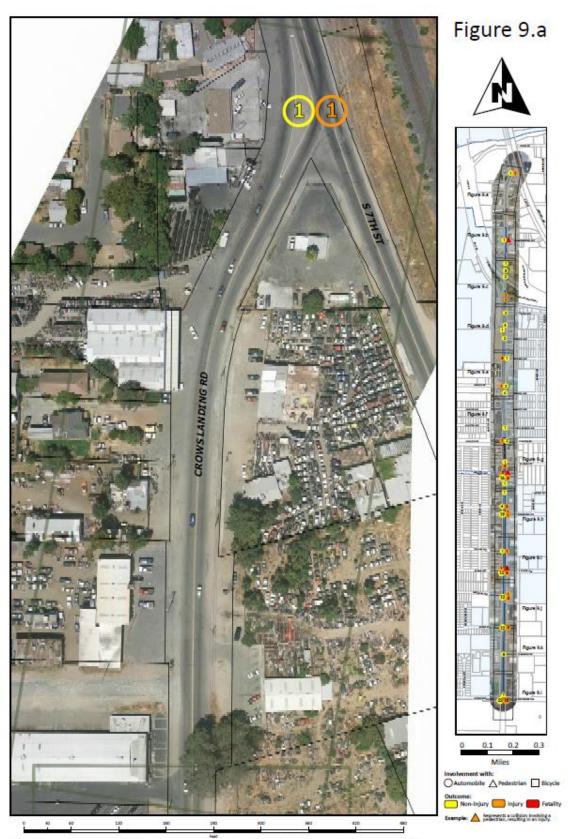
Table 1: Collisions Along Crows Landing Road, 2004 - 2013											
Intersection	Reported	Motor Vehicle Only			Bicycle-Involved			Pedestrian-Involved			
	Collisions	Non-	Injury	Fatality	Non-	Injury	Fatality	Non-	Injury	Fatality	
		Injury			Injury			Injury			
Whitmore Avenue	38	22	15	0	0	0	0	1	0	0	
Amador Avenue	29	16	5	0	0	4	0	0	3	1	
Winmoore Way	21	19	1	0	0	0	0	0	1	0	
Glenn Avenue	19	12	4	0	0	0	0	0	1	2	
Imperial Avenue	18	12	5	0	0	0	0	0	1	0	
Algen Avenue	15	13	2	0	0	0	0	0	0	0	
Flamingo Drive	8	8	0	0	0	0	0	0	0	0	
Butte Avenue	6	4	2	0	0	0	0	0	0	0	
School Avenue	6	6	0	0	0	0	0	0	0	0	
El Paso Avenue	5	1	4	0	0	0	0	0	0	0	
Zeff Road	5	4	0	0	1	0	0	0	0	0	
Hatch Road	3	2	1	0	0	0	0	0	0	0	
Kendee Road	3	2	1	0	0	0	0	0	0	0	
7 th Street	2	1	1	0	0	0	0	0	0	0	
Blankenburg Avenue	2	1	0	0	0	0	0	0	0	1	
Colusa Avenue	2	1	1	0	0	0	0	0	0	0	
Pecos Avenue	2	2	0	0	0	0	0	0	0	0	
Pueblo Avenue	2	2	0	0	0	0	0	0	0	0	
Olivero Road	1	1	0	0	0	0	0	0	0	0	
Rio Grande Avenue	1	1	0	0	0	0	0	0	0	0	
Crater/Barozzi Aves	0	0	0	0	0	0	0	0	0	0	
Ramps and midblock	10	8	2	0	0	0	0	0	0	0	

Utilities

Water There are no water lines in Crows Landing Road north of Zeff Road. At Zeff Road, two lines enter the public right of way, an 18-inch and a 12-inch distribution line. A third, 10-inch line enters the road at El Paso Avenue. Two or three water lines provide service to properties along Crows Landing Road and tie into laterals serving properties in the vicinity of Crows Landing Road down to Whitmore Avenue.

Sewer A single 8- to 10-inch sewer line lies in Crows Landing Road between Pecos Avenue and Hatch Road. A separate 10-inch line runs from Winmoore Way to E. Glenn Avenue. A trunk line provides service along the final stretch of Crows Landing Road from Imperial Avenue to Whitmore Avenue. Sewer laterals connect to the lines in Crows Landing Road at roadway intersections that lie within the city limits.

Storm Drainage North of Hatch Road, there is little storm drainage infrastructure installed in Crows Landing Road. One storm water conduit lies in Crows Landing Road between Pecos Avenue and Zeff Road and there are a few drainage inlets elsewhere. South of Hatch Road, there is a storm drainage conduit in the Crows Landing Road right of way from Olivero Road to Whitmore Avenue.

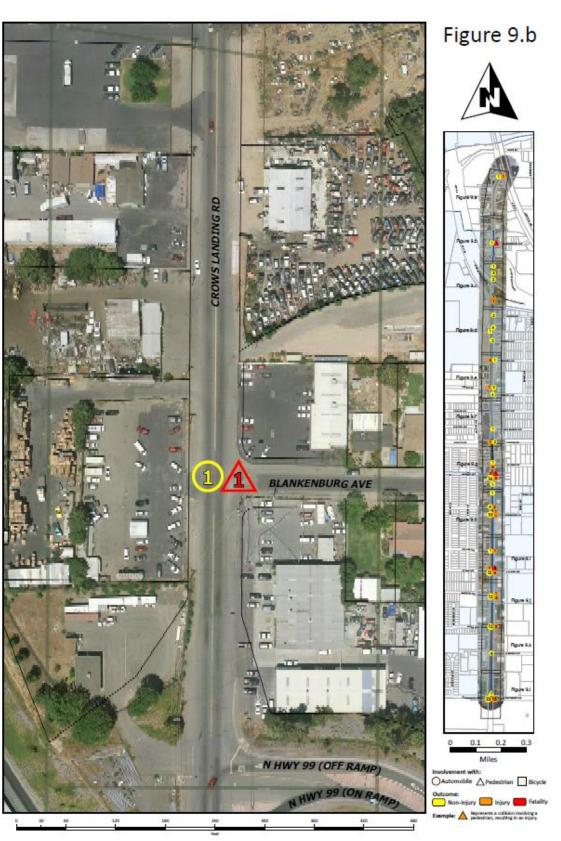


Collisions Reported along Crows Landing Road, July 2004 to June 2013

2013 Aerial Imagery

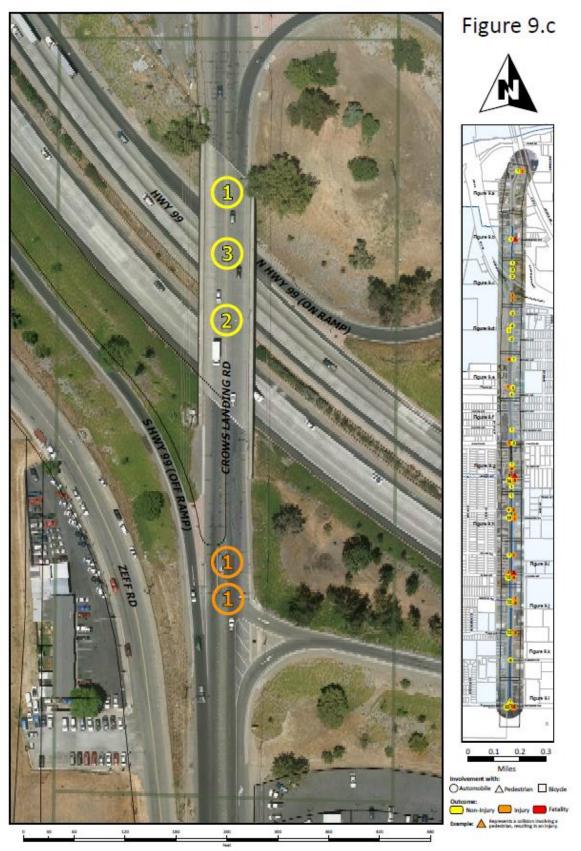
Stantislaus County Assessor Parcel Boundaries

1000-ft Image Slides

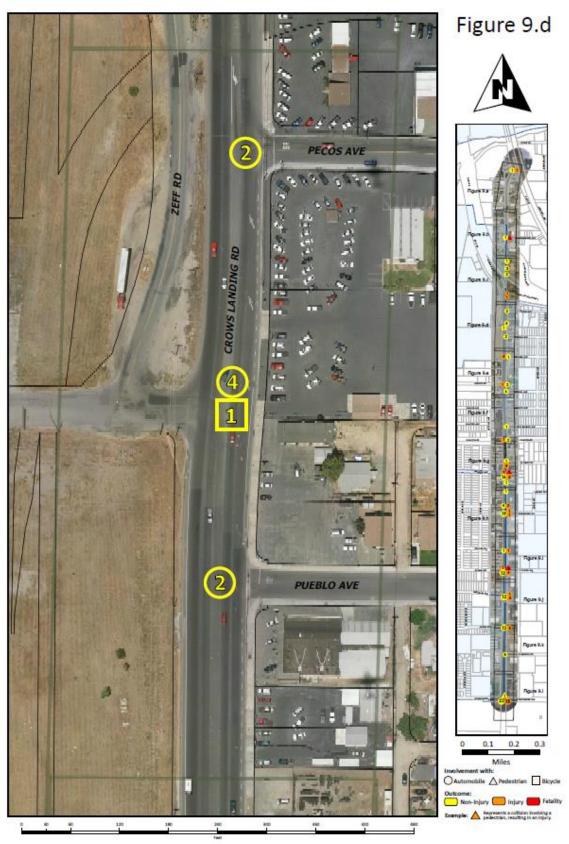


Collisions Reported along Crows Landing Road, July 2004 to June 2013

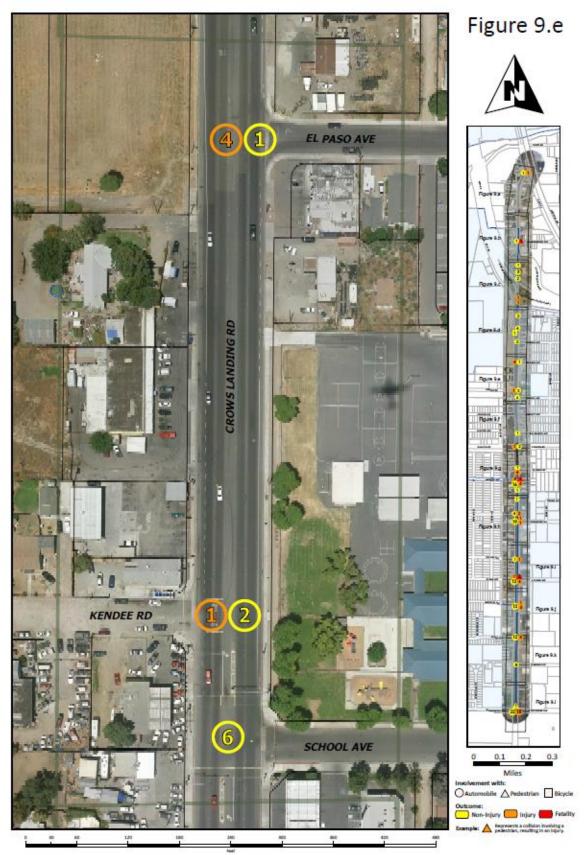
2013 Aerial Imagery • Stanislaus County Assessor Parcel Boundaries • 1000-ft Image Sides



Collisions Reported along Crows Landing Road, July 2004 to June 2013

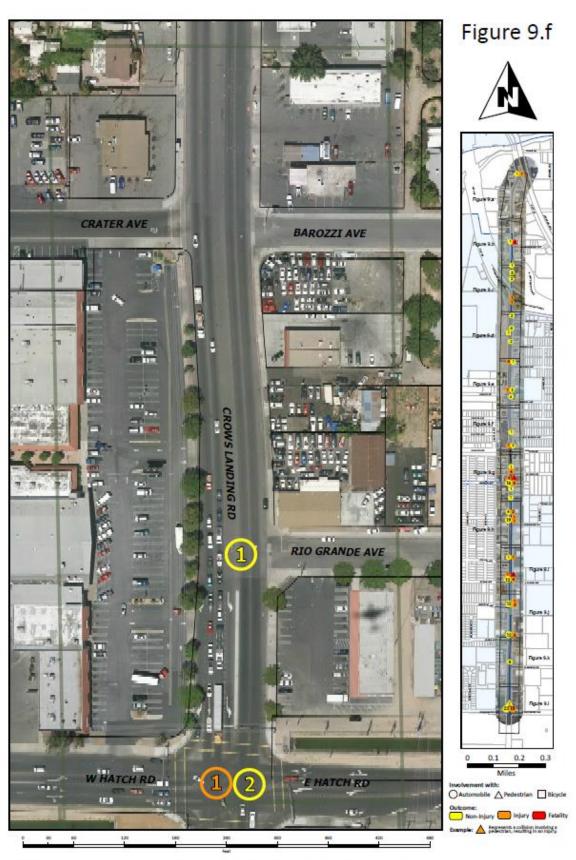


Collisions Reported along Crows Landing Road, July 2004 to June 2013

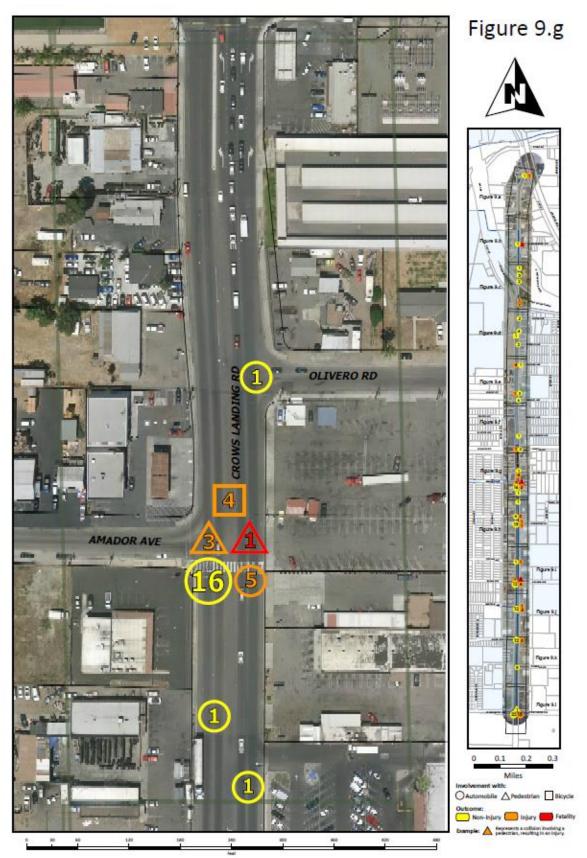


Collisions Reported along Crows Landing Road, July 2004 to June 2013

2013 Aerial Imagery • Stanislaus County Assessor Percel Boundaries • 1000-fit Image Sides

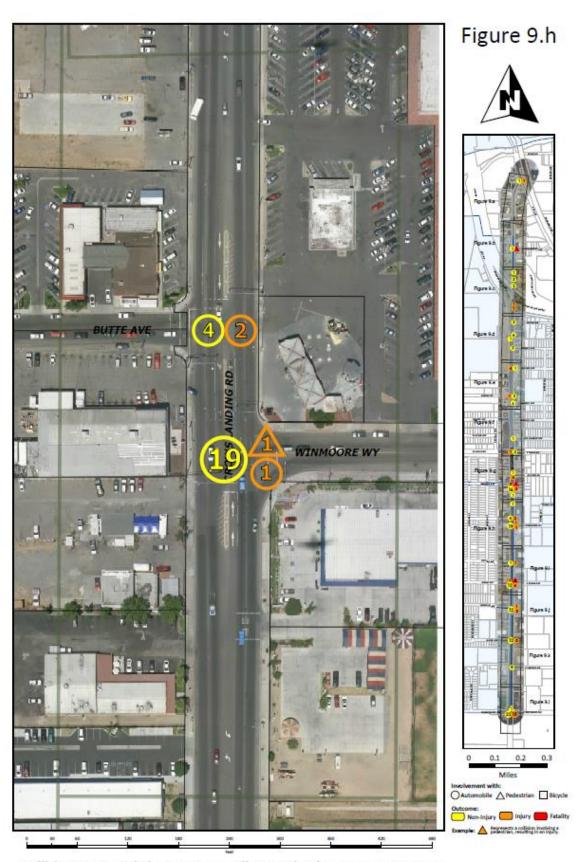


Collisions Reported along Crows Landing Road, July 2004 to June 2013
2013 Aerial Imagery • Stanislaus County Assessor Percel Boundaries • 1000-ft Image Sides



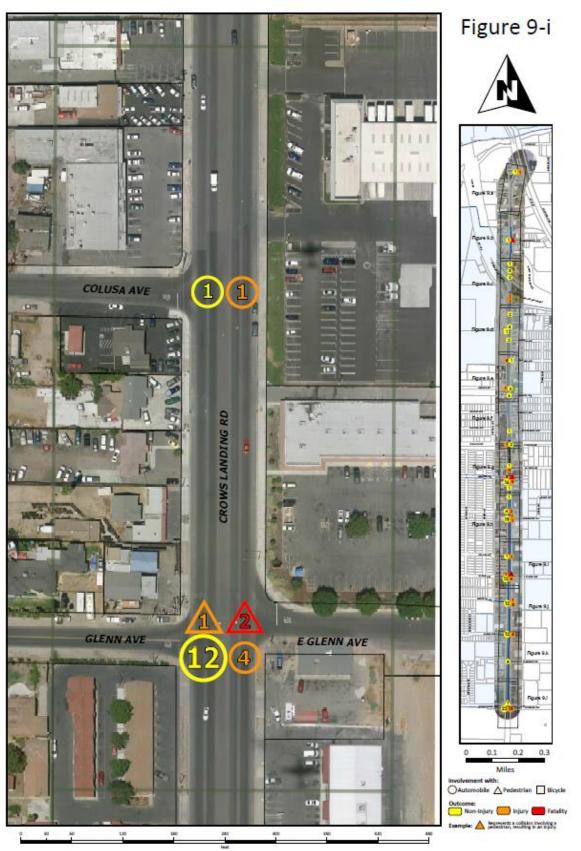
Collisions Reported along Crows Landing Road, July 2004 to June 2013

2013 Aerial Imagery • Stanislaus County Assessor Parcel Boundaries • 1000-fit Image Slides



Collisions Reported along Crows Landing Road, July 2004 to June 2013

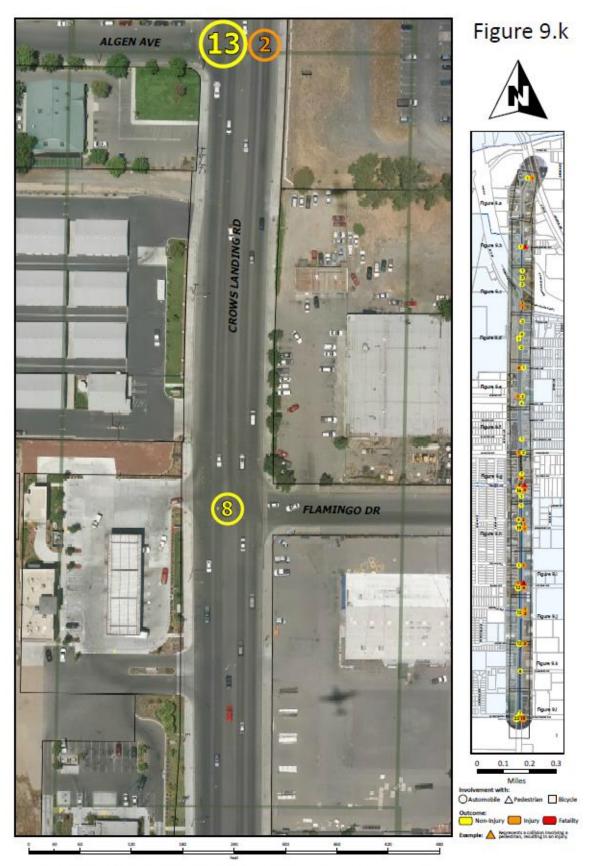
2013 Aerial Imagery • Stanislaus County Assessor Purcel Boundaries • 1000-ft Image Sides



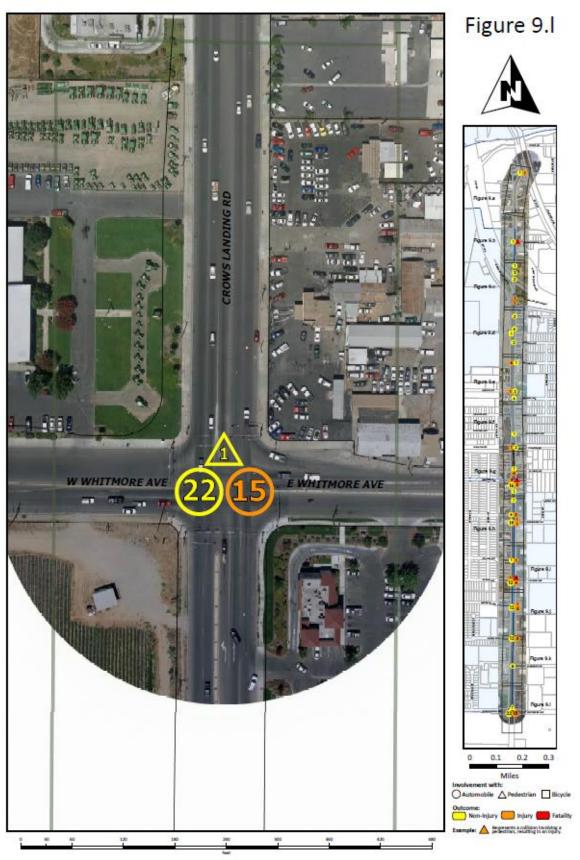
Collisions Reported along Crows Landing Road, July 2004 to June 2013
2013 Aerial Imagery • Stanislaus County Assessor Parcel Boundaries • 1000-ft Image Slides



Collisions Reported along Crows Landing Road, July 2004 to June 2013



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2013 Aerial Imagery • Stanislaus County Assessor Parcel Boundaries • 1000-ft Image Sides



Collisions Reported along Crows Landing Road, July 2004 to June 2013
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Crows Landing Road Corridor Study

Figure 10: Freeway Interchanges







Historic Buildings and Landmarks

There are no National Historic Register properties along Crows Landing Road or in the surrounding area and there are no designated landmarks in the study area. The California Environmental Quality Act (CEQA) recognizes that changes to a resource or to its context may result in a significant impact on the quality or importance of the historic resource. To determine whether a building is a historic resource, the following issues should be considered

- (1) whether the resource is listed in or determined to be eligible for the California Register of Historic Resources;
- (2) a determination of whether the resource is associated with important events or people or represents and important time period

Tuolumne River Regional Park

The south of the Tuolumne River is largely adjacent or very near to Tuolumne River Regional Park (TRRP). When complete, TRRP is expected to encompass the Tuolumne River floodplain and extend from Carpenter Road on the west to Mitchell Road on the east. Some portions of the park are usable today, such as the Legion Park unit in the Airport Neighborhood.

The portion of the city south of the Tuolumne River, as well as the Sphere of Influence areas south of the river, have relatively few parks. With the exception of the Fairview Village Specific Plan to the west, these areas were built before Modesto established standards for development that include substantial park acreage. For this reason, the Crows Landing Road corridor area relies heavily on Tuolumne River Regional Park as a recreational amenity. Tuolumne River Regional Park is designed to take advantage of the floodplain. In the Modesto area, the floodplain typically lies on the north side of the river. The bluff on the south side of the river limits access to the river and to the park.

The Gateway Unit of TRRP lies near the north end of Crows Landing Road and is accessible by crossing the 7th Street Bridge, then traveling east. The main entrance is planned to be at 10th Street and S. Morton Boulevard. At this time, riverbank restoration at the Gateway Unit of TRRP has been completed and many of the elevated walkways have been constructed. A fishing pier is expected to be built soon. Completion of the park and its amenities is expected to occur in 10 to 15 years, depending on the availability of grant funding.

Recent Changes

Shackelford Annexation In June 2012, Modesto completed the annexation of the Shackelford area. This is an area comprising about 140 acres, generally bounded by Crows Landing Road on the west, State Route 99 on the north, the Union Pacific Railroad right of way on the east, and Hatch Road on the south.

West Landing Annexation In late 2012, the adjacent City of Ceres annexed to the city 960 acres that lie along Modesto's southerly General Plan/Sphere of Influence boundary. The intersection of Crows Landing Road and Whitmore Avenue, which borders the newly-annexed territory, is 1.6 miles from the Crows Landing Road interchange with State Route 99 and 1.8 miles from the Whitmore Avenue interchange with State Route 99.

Full development of West Landing could result in up to 3,635 new single- and multi-family dwellings, 884,200 square feet of retail space, 383,910 square feet of office space, and 802,100 square feet of light industrial/business park space. There may also be 16 acres of land used for two elementary schools and 47 acres used for public parks. The most significant north-south roadway through the West Landing area is Crows Landing Road.

There is a potential for a very significant increase in automobile traffic on Crows Landing Road as the Ceres annexation area begins to develop. The capacity of the Service Road interchange is expected to increase substantially as the new Wal-Mart develops, providing a second high-capacity interchange for motorists in addition to the recently enlarged and realigned Whitmore Avenue interchange. However, there are four interchanges with State Route 99 within easy reach of the new area, three of which are in Ceres, providing new residents with four possible entrances to State Route 99. These interchanges include Crows Landing Road, Whitmore Avenue, and Service Road, which are shown on **Figure 10**.

<u>Issues Summary</u>

When it was first built, apparently in the early 20th century, Crows Landing Road seems to have been intended to provide access from farmland south of Modesto to downtown Modesto. The construction of the Lion Bridge in 1916 provided roadway access to downtown, which was home to interregional passenger and freight rail service near the site of the existing Transportation Center. Gradually, the area along Crows Landing Road nearest the bridge was developed with houses. As Modesto grew, traffic on Crows Landing Road grew, too, and in the 1960s, State Route 99 was built through Modesto, crossing Crows Landing Road. During that same period, commercial and industrial businesses were located along and near Crows Landing Road. Some industries located in the area for access to the Union Pacific Railroad spur lines. Over the years, parts of Crows Landing Road were widened to facilitate traffic flows, however, Crows Landing Road remains at the center of existing neighborhoods.

Today's Crows Landing Road continues to serve a large residential population, as well as commercial properties and industrial users. There is substantial commercial truck traffic mixed with private vehicles, bicycles, and pedestrians. Modesto performed traffic counts in 2013. For a more detailed analysis, directional counts and truck counts (2014) were also taken at the Hatch Road and Whitmore Avenue intersections. Collisions are more common south of Hatch Road with hot spots appear at Whitmore Avenue (injury vehicle collisions), Glenn Avenue (pedestrian fatalities, injury and non-injury vehicle collisions), and Amador Avenue (pedestrian fatality and injuries, bicycle injury collisions, injury and non-injury vehicle collisions). Collisions are less common north of Hatch Road, but trouble spots exist at Blankenburg Avenue (pedestrian fatality), School Avenue (non-injury vehicle collisions), and generally at driveway and ramps throughout the corridor (injury and non-injury vehicle collisions).

The overarching goals of this project are to improve safety, function, and aesthetics along Crows Landing Road for all users in order to support and enhance economic activity and a vibrant neighborhood. Issues addressed as part of this study include:

- o Difficult, unprotected pedestrian crossings; crossing distances too great
- High traffic speeds and volumes
- Street signage and markings are difficult to see, particularly at night
- Balancing truck and automobile traffic with pedestrian and bicycle needs
- Lack of bike infrastructure
- Improving appearance of the public right of way with landscaping
- Improving roadway surface
- o Sidewalks are narrow, discontinuous, absent in some places, and are often obstructed
- Some traffic signals are too close together, resulting in obstructed intersections
- Left turns from intersecting streets are often difficult or unprotected
- Development pattern is not pedestrian friendly (many driveways across sidewalk, parking lots in front of buildings)