Chapter 1 Project Purpose and Need

1.1 Introduction

1.1.1 Scope of this Environmental Assessment/Environmental Impact Report

This document contains environmental analyses pertaining to the Route 101 high occupancy vehicle (HOV) widening project from SR-12 to north of the Steele Lane interchange in Santa Rosa, California. This document satisfies requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The Federal Highway Administration (FHWA) is the lead agency for NEPA and the California Department of Transportation (Caltrans) is the lead agency for CEQA.

This Environmental Assessment/Environmental Impact Report (EA/EIR) is an informational document that: 1) informs the public agency decision-makers and the public of the environmental effects of the proposed project; and 2) identifies potential mitigation measures to minimize any adverse impacts.

Both a Notice of Intent (NOI) and a Notice of Preparation (NOP) to prepare a joint Environmental Impact Statement/Environmental Impact Report (EIS/R) were released in October 2000. Ensuing environmental studies did not identify any significant impacts, so FHWA determined that an Environmental Assessment, rather than EIS, would be an appropriate environmental document for the project, and in May 2003 FHWA issued a Notice of Withdrawal for the earlier NOI.

Caltrans released the draft EA/EIR on July 21, 2003, and held a public meeting on August 7, 2003 to give the public an opportunity to review and comment on the document and the proposed soundwalls. The public comment period closed on September 3, 2003. A total of 24 people or agencies commented on the document. Caltrans' responses to comments are located in Appendix L of this document.. The commenters included one Federal Agency, two State Agencies, and 21 organizations or individuals. This Final EA/EIR takes into account comments received on the Draft EA/EIR. Text that is newly added to the Final EA/EIR is marked with a vertical line on the outside margin of the page.

1.1.2 Project Location

Caltrans proposes to upgrade existing Route 101 within the City of Santa Rosa to include an HOV lane from SR-12 to immediately north of Steele Lane, a distance of 4.3 km (2.7 mi). The general project vicinity is shown on Figure 1-1, while the project

location and limits are depicted on Figure 1-2. To the south, the project begins at the southernmost Route 101 on and off-ramps to SR-12. To the north, the project ends immediately north of the Steele Lane Interchange. The project area is part of the regional Route 101 corridor that links San Francisco with Northern California and the Pacific Northwest.

Residential uses are concentrated at the southern and central portions of the project area, while commercial/industrial uses are generally located in the downtown area between 3rd Street and 8th Street on the south and adjacent to Steele Lane in the north. Burbank Elementary School is located on the east side of Route 101 and north of SR-12. Santa Rosa High School and the Santa Rosa Junior College are located south of Elliot Avenue, off of Mendocino Avenue.

1.2 Purpose Of and Need For the Proposed Project

1.2.1 Purpose

The purpose of the proposed project is three-fold:

Reduce Congestion on Route 101 in Santa Rosa.

Route 101 is the primary north/south traffic corridor in Sonoma County as well as one of the few primary north/south roads within Santa Rosa. The increase in traffic volumes on Route 101 within the City over recent years has increased congestion and extended the duration of the peak traffic period within and through Santa Rosa. Congestion is commonplace during non-peak traffic periods, such as weekends, and vehicle breakdowns and accidents further exacerbate congestion.

Maintain and Improve Transportation Linkages in Santa Rosa.

Through three resolutions adopted by the City Council (see Appendix E), Santa Rosa requested the proposed 6th Street undercrossing of Route 101 and bicycle/pedestrian enhancements at 3rd Street and College Avenue be incorporated into the proposed project. When Route 101 was initially constructed through the City, many local streets were split by the freeway. Reconnecting 6th Street under Route 101 and improving the bicycle/pedestrian facilities at 3rd Street and College Avenue would improve east/west travel within the downtown area.

SONOMA 101 WIDENING

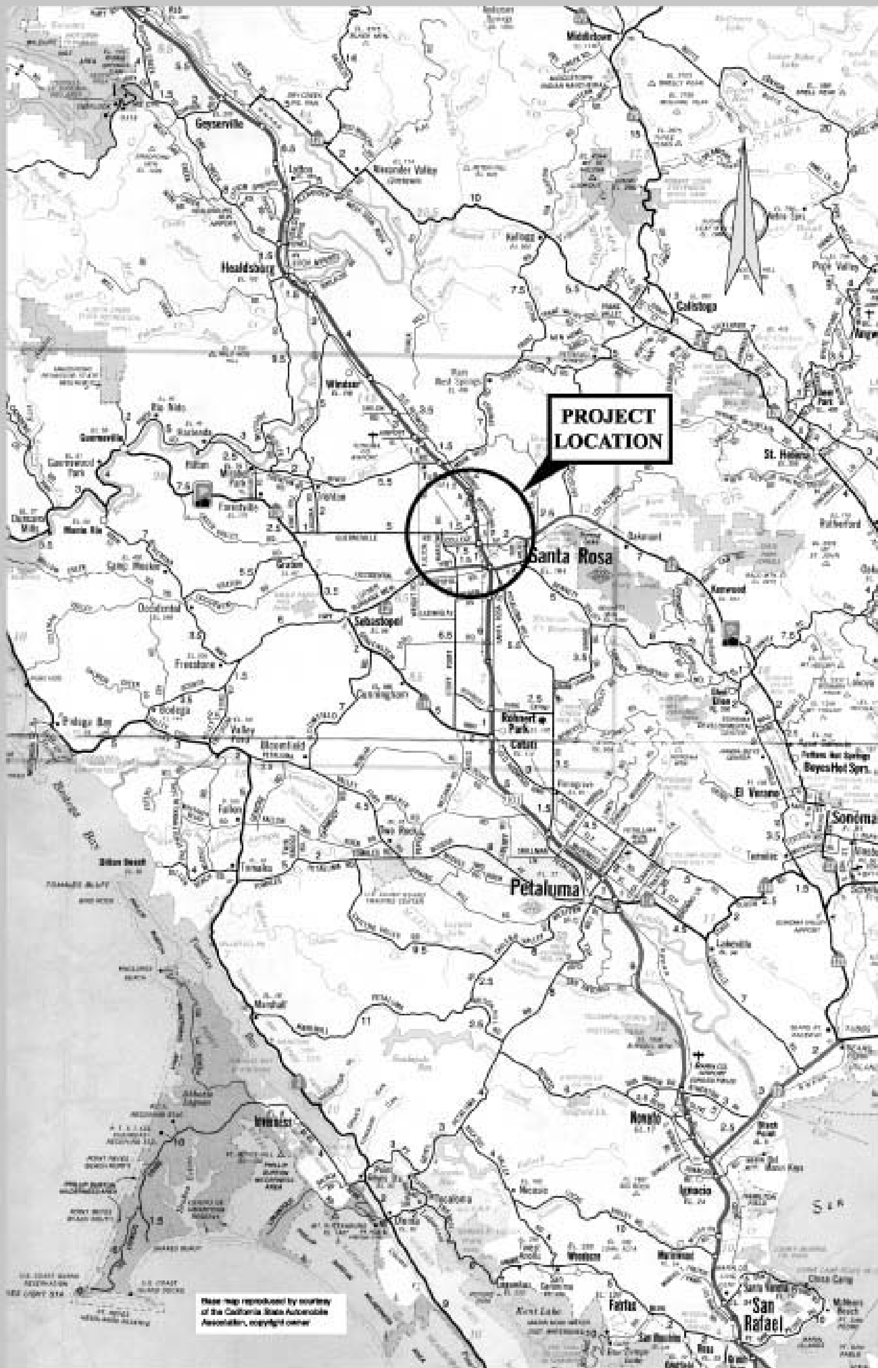


Figure 1-1: Project Vicinity

Caltrans

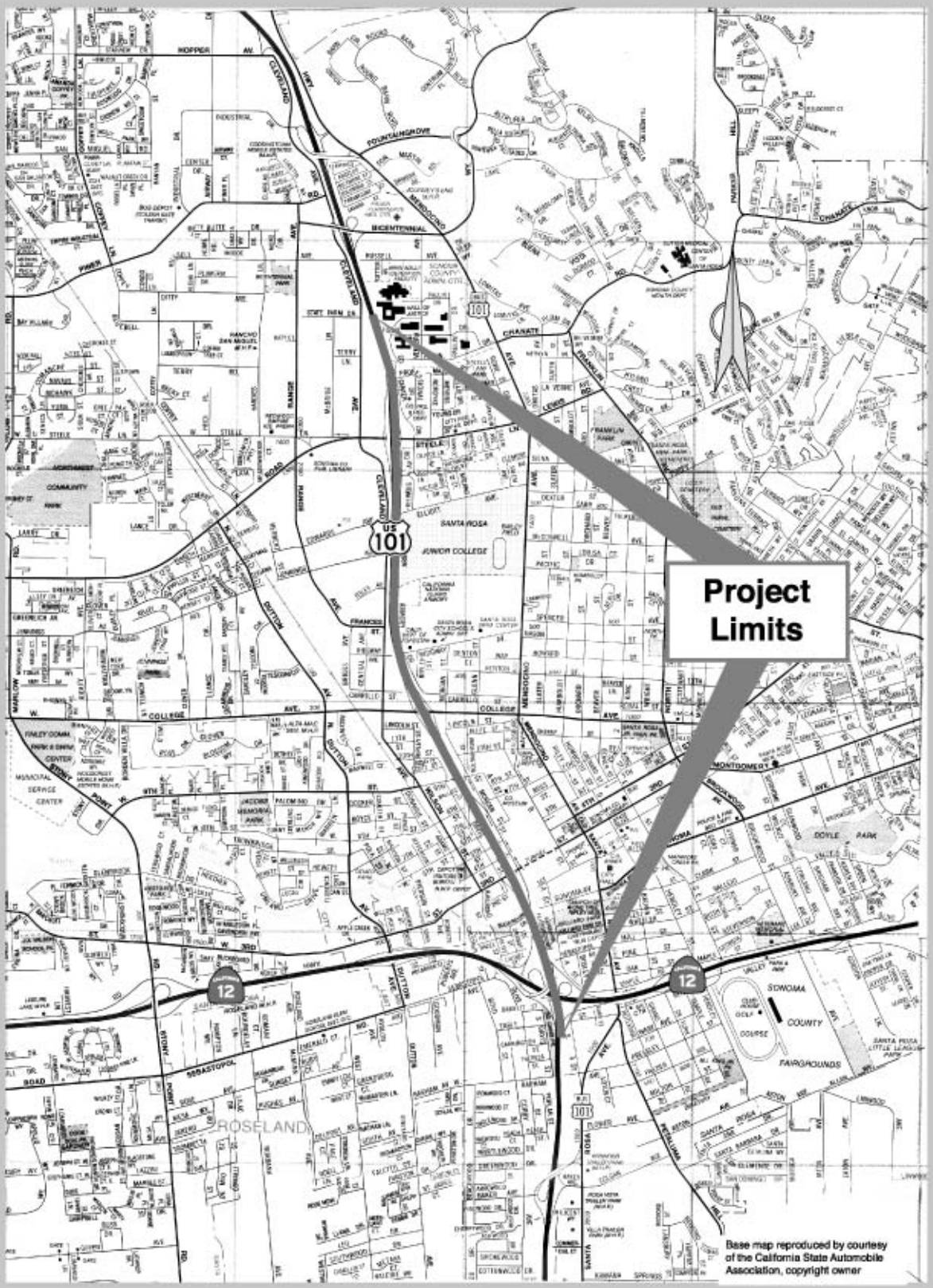


Figure 1-2: Project Location

SR -12 is an east/west State highway that connects with Route 101 in downtown Santa Rosa, on the southern end of the proposed project. Over the next 10 years, traffic demand at this very busy interchange is anticipated to increase, adding further to the congestion and delay that is already experienced. Improving the transportation link between SR-12 and Route 101 and maintaining existing access points to downtown Santa Rosa is a vital component of preserving efficient traffic movement in this part of Santa Rosa.

Improve Safety of Route 101 Corridor in Santa Rosa.

Due the increasing number of vehicles traveling on Route 101 and through the busy College Avenue and Steele Lane interchange areas, accident rates have risen. Many of the accidents have been attributed to inadequate vehicle storage lengths at the on and off-ramps to Route 101 as well as vehicles blocking the through lanes of College Avenue and Steele Lane. The proposed project should reduce the overall accident rates along Route 101 and at the interchange areas because of the proposed improvements.

1.2.2 Need

Caltrans developed the proposed project in response to the following needs: reducing Route 101 congestion, maintaining and improving transportation linkages in Santa Rosa, and improving safety of the Route 101 corridor in Santa Rosa.

Needs Associated With Reducing Route 101 Congestion and Providing High Occupancy Vehicle Lanes on Route 101 in Santa Rosa.

Efficient movement of people, goods, and services, is being hindered by recurrent congestion. When a freeway is being used to transport people, in contrast to transporting goods, efficiency increases when the number of people per vehicle increases. Field measurements obtained during the 1999 Congestion Monitoring Studies provide a snapshot of current congestion. In the area of the project, the monitoring studies observed that northbound traffic congestion typically occurs between 6:30 a.m. and 9:30 a.m. and between 2:30 p.m. and 7:00 p.m., while southbound traffic congestion generally develops between 6:00 a.m. and 9:30 a.m. and between 3:00 p.m. and 6:30 p.m. Numerous congestion areas regularly develop and often shift along the freeway. (Caltrans 2001a).

Southbound Route 101 Locations of Congestion, A.M. Peak Period:

- Between the Shiloh Road interchange and the River Road on-ramp.
- From the Bicentennial Way interchange to the Steele Lane on-ramp.
- The area of the SR-12 interchange.

Southbound Route 101 Locations of Congestion, P.M. Peak Period

- Between the Bicentennial Way interchange and the SR-12 on-ramp.
- The area of the Wilfred Avenue interchange.

Northbound Route 101 Locations of Congestion, A.M. Peak Period:

- Between the SR-116 and Rohnert Park Expressway on-ramps.
- Between the Santa Rosa Avenue interchange and the Baker Avenue on-ramp.
- Between the SR-12 interchange and the College Avenue on-ramp.

Northbound Route 101 Locations of Congestion, P.M. Peak Period

- Between the Santa Rosa Avenue interchange and the Baker Avenue on-ramp.
- In the vicinities of the College Avenue and Mendocino Avenue interchanges.

In 1999, observed delays to southbound traffic between Route 116 West in Cotati and River Road in Fulton were about 7.0 minutes during the AM peak period and about 9.0 minutes during the PM peak period. For northbound traffic, a delay of about 9.0 minutes was measured in the AM peak period and about 12 minutes during the PM peak period (Figure 1-3).

Caltrans estimated traffic delays in the study area for two future years: 2010 and 2030. Estimated delays as well as the associated areas of congestion for Year 2010 are shown in Figure 1-4, and for Year 2030 in Figure 1-5.

Table 1-1 shows calculated future year travel delays in 2010 on northbound and southbound Route 101 for the No-Build scenario in 2010. The delays are those which would theoretically result from bottlenecks identified between SR-116 in Cotati and River Road in Fulton. Separate calculations are shown for vehicles in the HOV lanes and for vehicles in the "Mixed Flow Lanes" (lanes used by a mixture of cars, trucks, and buses). The model calculations assume that completion of additional Route 101 projects have resulted in continuous HOV lanes between the Rohnert Park Expressway and the interchange with SR-12. The Year 2010 No-Build roadway network also reflects the existing conditions, plus completion of all projects currently under construction and local projects that are listed in the 2001 Regional Transportation Plan (RTP) with committed funding status and projects listed in the 2001 Transportation Improvement Program (TIP). Below is the list of these projects (Caltrans 2003a).

- Rohnert Park Expressway interchange modification
- Stony Point Road widening
- Farmers Lane interchange modification/reconstruction
- Route 101 HOV gap closure project in from Corte Madera to San Rafael in Marin County
- Wilfred Avenue interchange modification and Route 101 HOV widening from Rohnert Park Expressway north to Wilfred Avenue

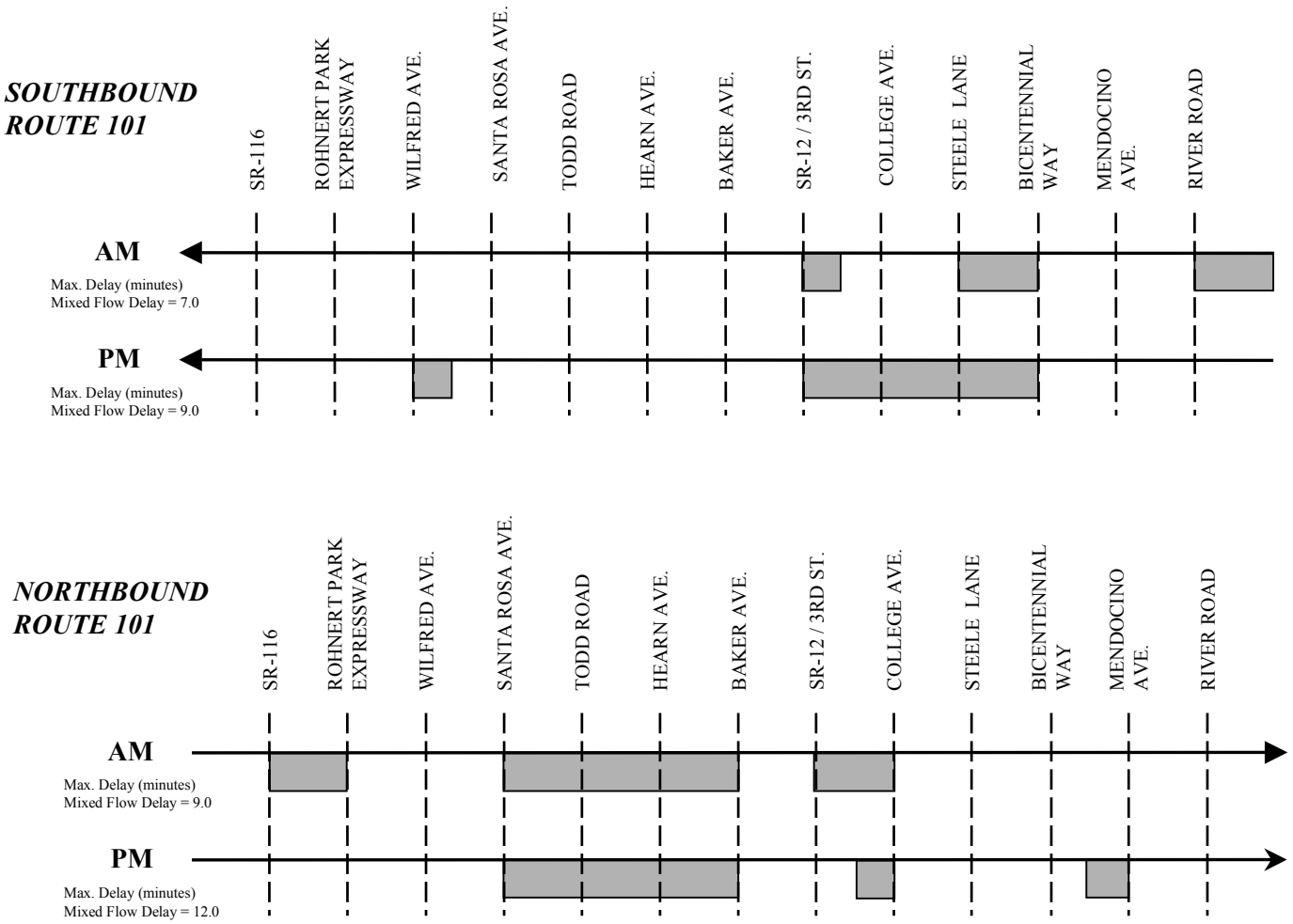
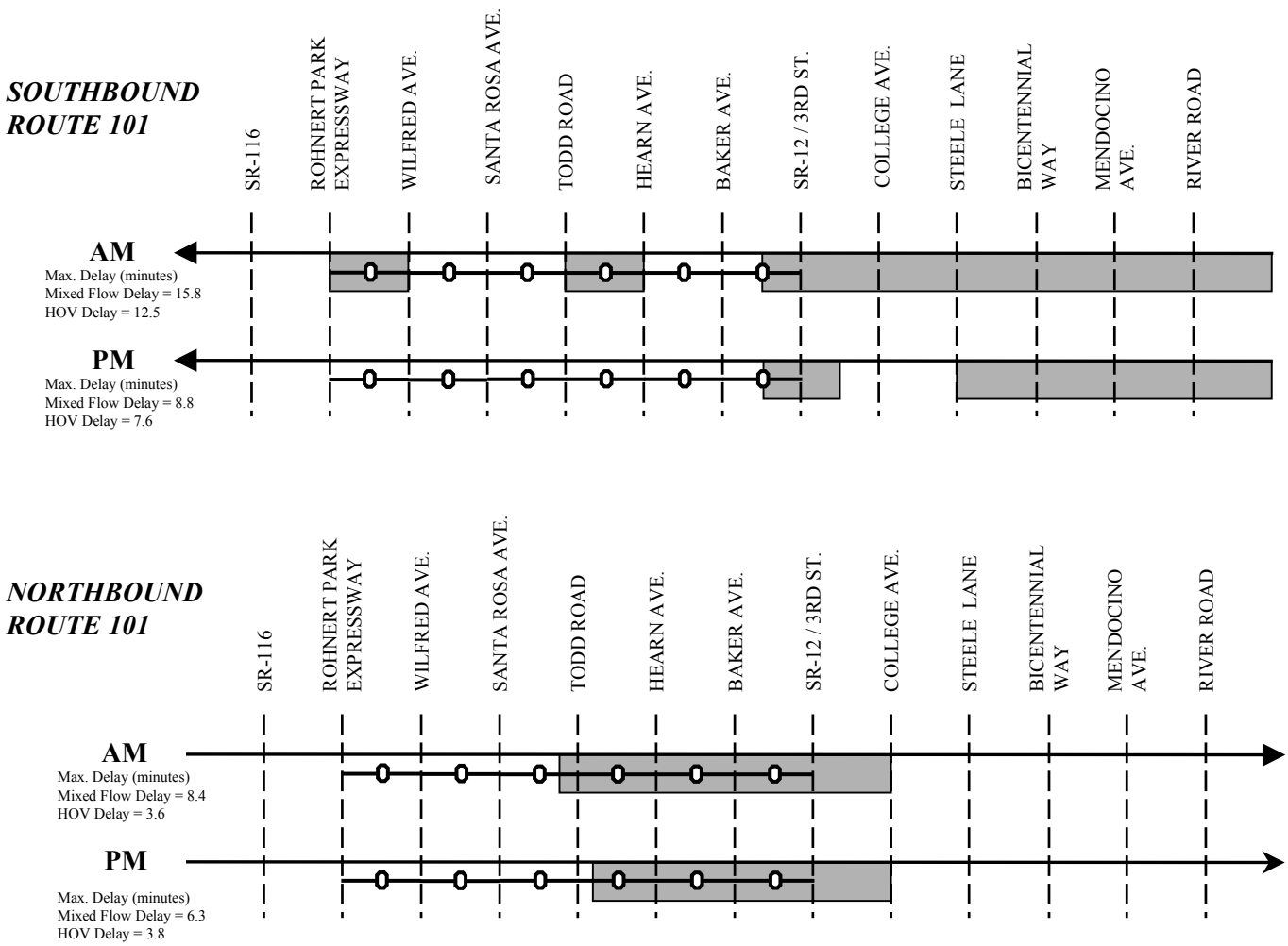


Figure 1-3
1999 Existing Scenario
Route 101 Observed Congestion

Drawing not to Scale

LEGEND
Congestion Area*

* For congestion observations, congestion is defined as a condition where the average speed drops below 35 mph for 15 minutes or more.



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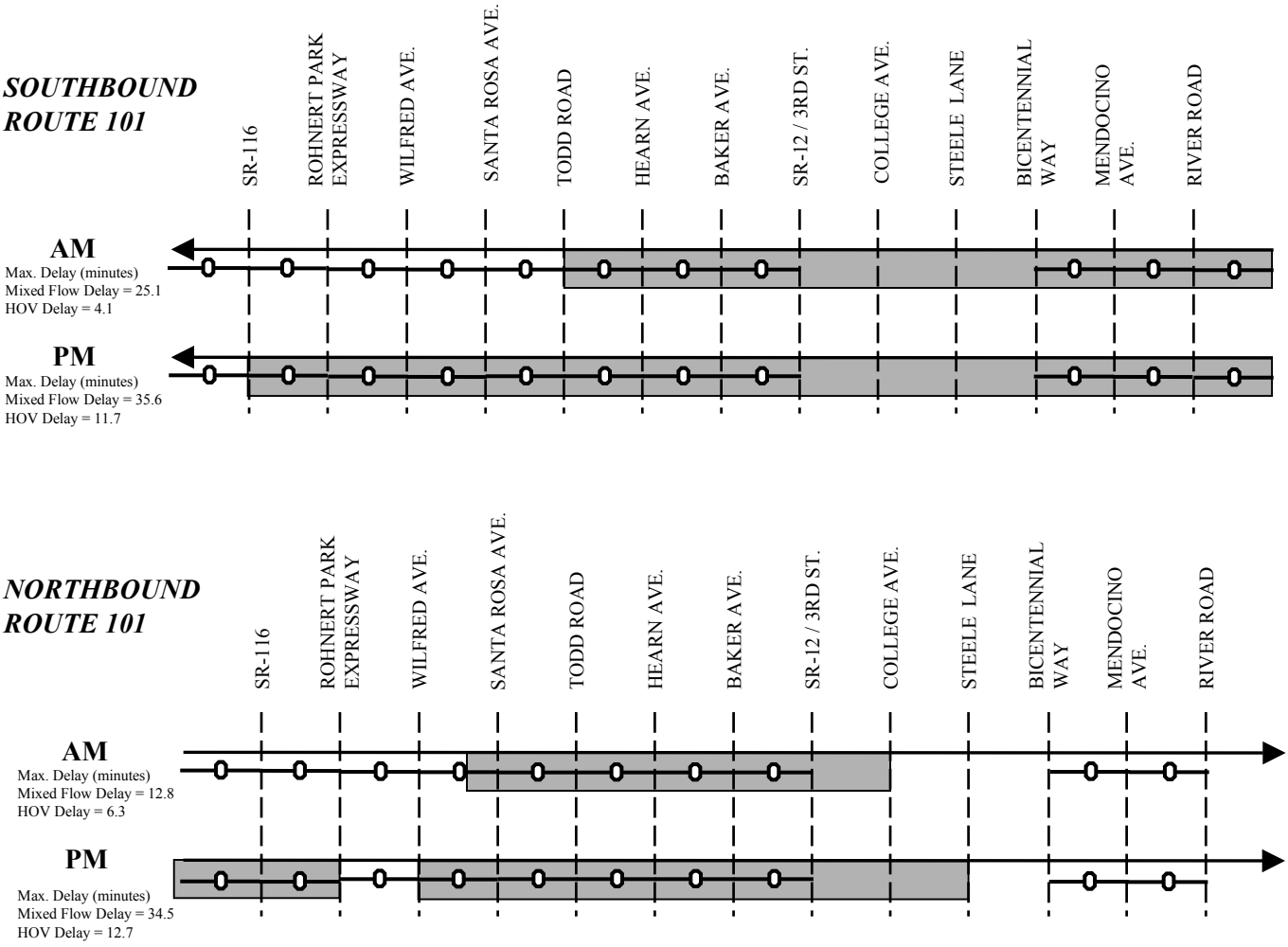
LEGEND

Congestion Area*

High Occupancy Vehicle Lane

Figure 1-4
2010 Without Proposed Project Scenario
Route 101 Congestion Analysis

* For congestion analysis, the congestion threshold is reached when demand volumes exceed capacity of 2100 vehicles per hour per lane.



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LEGEND

Congestion Area*

High Occupancy Vehicle Lane

Figure 1-5
2030 No-Build Scenario
Route 101 Congestion Analysis

* For congestion analysis, the congestion threshold is reached when demand volumes exceed capacity of 2100 vehicles per hour per lane.

Table 1-1. Theoretical Year 2010 Travel Delay on Route 101 for No-Build Scenario

Scenario	Maximum AM Delay (in min.)		Maximum PM Delay (in min.)	
	Mixed Flow	HOV Lane Users	Mixed Flow Lane	HOV Lane Users
Southbound				
Year 2010	15.8	12.5	8.8	7.6
Northbound				
Year 2010	8.4	3.6	6.3	3.8

Note: The table reflects the time savings for HOV users in the HOV lanes assumed to exist in 2010: from Rohnert Park Expressway to Highway 12.

Without the project, southbound delay on the two existing mixed flow lanes would approach 16 minutes during the AM peak hour and nearly nine minutes during the PM peak hour by Year 2010. Southbound carpools and buses can use the HOV lanes where they would be available from the interchange with SR-12 to the Rohnert Park Expressway. Northbound mixed flow lanes are projected to have nearly eight and one half minutes delay during the AM peak hour and more than 6 minutes delay in the PM peak hour by 2010. Little delay is anticipated in the HOV lane. However, neither the north end nor the south end of the study area would have HOV lanes. Therefore, HOVs might experience delays prior to reaching the HOV lanes . The maximum delay calculated for southbound HOVs approaches 13 minutes during the AM peak hour and 8 minutes during the PM peak hour by Year 2010, while the northbound HOV delays are expected to be less than 4 minutes during both the AM and PM peak hours (Caltrans 2003b).

[A note about theoretical delay calculations: because "peak hour analyses" do not account for congestion accumulated during previous hours, the calculated delays reflect only operations from a peak-hour demand assuming free-flow conditions during preceding hours. The traffic congestion over a cumulative multi-hour peak period would be higher than indicated by the peak hour analysis. Thus, the results cannot be directly compared to existing observed congestion.]

Table 1-2 lists the expected future Year 2030 travel delays for the No Build scenario resulting from bottlenecks in the traffic study area, corresponding to the queues shown graphically in Figure 1-5. The highway operations analysis assumed that the projects in the 2001 Regional Transportation Plan with committed funding status or in Track 1, and the projects listed in the 2001 TIP are complete, meaning that additional HOV lane projects in the traffic study area will result in continuous HOV lanes from Highway 116 in Cotati to the Route 12 interchange, and from the Bicentennial Way interchange to Windsor River Road. Projects which are expected to have some effect on 2030 congestion in the traffic study area follow.

- Rohnert Park Expressway interchange modification;
- Stony Point Road widening;
- Farmers Lane interchange modification/reconstruction;
- Route 101 HOV gap closure project in Marin County;
- Wilfred Avenue interchange modification and Route 101 HOV widening from Rohnert Park Expressway north to Wilfred Avenue;
- Widen Route 101 from 4 lanes to 6 lanes (including HOV lanes) from Route 37 in Marin County to Old Redwood Highway in Petaluma;
- HOV widening from Old Redwood Highway in Petaluma to the Rohnert Park Expressway interchange; and
- HOV widening from the Bicentennial Way interchange to Windsor River Road.

Table 1-2. Theoretical Year 2030 Travel Delay on Route 101 for the No-Build Scenario

Scenario	Maximum AM Delay (in min.)		Maximum PM Delay (in min.)	
	Mixed Flow	HOV Lane Users	Mixed Flow Lane	HOV Lane Users
Southbound				
Year 2030	25.1	4.1	35.6	11.7
Northbound				
Year 2030	12.8	6.3	34.5	12.7

Note: The analysis assumes that, in 2030, HOV lanes will already exist from interchange with Route 116 in Cotati and Route 12, and between Bicentennial Way and the Mark West / River Road interchange. The table reflects the time savings for HOV users in those segments.

Table 1-2 shows maximum anticipated delays in Year 2030. Southbound mixed-flow lane users would encounter up to 25 minutes of delay, with HOV lane users encountering about 4 minutes of delay. AM northbound travelers would experience up to 12.8 minutes of delay in the mixed-flow lanes and 6 minutes of delay in the HOV lane. All travelers could expect longer delays during the afternoon peak hour. Southbound vehicles using mixed flow lanes during the afternoon peak hour are expected to face up to 35.6 minutes of delay. Southbound HOV lane users, who can take advantage of the assumed HOV lanes, could experience up to 11.7 minutes of delay during the P.M. peak hour. In the northbound direction, afternoon peak hour traffic would experience up to 34.5 minutes of delay for mixed-flow lane users and up to 12.7 minutes of delay for HOV lane users.

Need Associated With Improving and Maintaining Transportation Linkages in Santa Rosa.

When Route 101 was initially constructed through the Santa Rosa area in the late 1950s and early 1960s, many local City streets were split, forcing vehicles and bicycles/pedestrians to take alternative routes to their destinations. Route 101 divided

several residential areas and one historic district (Railroad Square) from downtown Santa Rosa. As a result, Route 101 acts as a barrier to bicycle/pedestrian movements and in some respects to vehicle movement within the City. Also, congestion is often experienced throughout the entire day and on weekends at both College Avenue and Steele Lane due to the amount of traffic demand at these interchanges. By providing one additional roadway (6th Street under crossing) and two improved bicycle/pedestrian connections (3rd Street and College Avenue) under Route 101 in the downtown, and interchange/intersection improvements at College Avenue and Steele Lane, east/west flow through Santa Rosa would improve.

Needs Associated With Improving Route 101 Corridor Safety in Santa Rosa. Another primary concern for most freeway related projects is safety. Accident data for Route 101, College Avenue, and Steele Lane are presented below. The number of accidents that have occurred on Route 101 are a direct result of the level of congestion on the road, which has caused accident rates to increase.

Accident data was collected from April 1, 1999 through March 31, 2002 on Route 101 and the portions of College Avenue and Steele Lane within State owned right-of-way. Table 1-4 shows the number of accidents by type, while Table 1-5 shows the accident rates for the fatalities, fatalities plus injury accidents, and the total accidents per million vehicle miles traveled. Statewide average accident rates are developed by comparing the averages of similar freeway facilities and compares this rate to the accident rates experienced within the project area.

The majority of the accidents during the three year time period were attributed to driver inattention, speeding, and improper turn movements. Often, accidents occurred when vehicles blocked the through traffic lanes on College Avenue and Steele Lane as well as local intersections trying to access Route 101.

The overall accident rate for the section of Route 101 within the project area was nearly 36 percent higher than the Statewide average accident rate for similar type facilities. Increasing the capacity of Route 101 in Santa Rosa with the addition of HOV lanes and auxiliary lanes between the interchanges should help reduce the accident rates by allowing a more efficient movement of traffic onto and off of the freeway.

Table 1-3. Accidents by Type

Type of Accident	Route 101	College Avenue	Steele Lane
Broadside	6	11	37
Rear-End	493	13	29
Hit Object	63	4	6
Sideswipe	53	9	9
Head-On	0	1	0
Overturn	8	0	0
Auto Pedestrian	3	1	1
Other	4	2	1
Total	630	41	83
Accidents Involving Fatality	2	0	0
Accidents Involving Injury	214	14	34

Table 1-4. Accident Rates

Location	Total Accidents			Actual Accident Rate			Statewide Average Accident Rate		
	Total	FAT	INJ	Total	Fatal	F+I	Total	Fatal	F+I
Route 101	630	2	214	1.97	0.006	0.68	1.45	0.015	0.52
Northbound off-ramp to College Avenue	15	0	7	1.57	0.000	0.73	1.50	0.005	0.61
Southbound on-ramp from College Avenue	11	0	2	0.98	0.000	0.18	0.80	0.002	0.32
Northbound on-ramp from College Avenue	6	0	3	0.90	0.000	0.45	0.80	0.002	0.32
Southbound off-ramp to College Avenue	9	0	2	1.39	0.000	0.31	1.50	0.005	0.61
Southbound on-ramp from Steele Lane	9	0	4	0.71	0.000	0.31	0.80	0.002	0.32
Northbound off-ramp to Steele Lane	28	0	10	2.13	0.000	0.76	1.50	0.005	0.61
Northbound on-ramp from Steele Lane	8	0	4	1.20	0.000	0.60	0.80	0.002	0.32
Southbound off-ramp to Steele Lane	38	0	16	5.03	0.000	2.12	1.50	0.005	0.61

Notes: FAT = Fatality
INJ = Injury
F+I = Fatality plus injury accidents

The overall accident rates for the College Avenue interchange ramps were higher than the Statewide average at three of the four locations analyzed. The most prominent accident locations at this interchange are the southbound on-ramp and northbound on-ramp onto College Avenue. The accident rates for these locations were nearly 23 percent higher and 13 percent higher, respectively, than the Statewide average accident rate for on-ramps to freeway facilities. The overall accident rates for the Steele Lane interchange ramps were higher than the Statewide average at three of the four locations analyzed. The most prominent accident location at this interchange is the southbound off-ramp to Steele Lane, at nearly 235 percent higher than the Statewide average accident rate for similar off-ramp facilities. The accident rates for the

northbound on-ramp from Steele Lane and the northbound off-ramp onto Steele Lane were 50 percent higher and 42 percent higher, respectively, than the Statewide average accident rate for on-ramps and off-ramps. Increasing the storage capacity of the on and off-ramps to Route 101 as well as widening College Avenue and Steele lane under Route 101 should help reduce the accident rates by allowing a more efficient movement of traffic onto and off of the freeway.

1.3 Project Background

Route 101 through the project area was constructed between 1948 and 1968. Only minor operational and safety improvements have been implemented since. Currently, the freeway has four mixed-flow traffic lanes, two in each direction. Due to the lack of north/south parallel routes in the region, Route 101 continues to be a heavily traveled route in the Bay Area linking Sonoma County with San Francisco and the rest of the Bay Area to the south as well as Northern California and the Pacific Northwest to the north.

In the early 1980s, Caltrans began exploring the process of improving Route 101 to serve increased traffic. In 1989, the Route 101 Corridor Study Concept recommended a continuous 83-km (52-mi) HOV lane system on existing freeways from Marin County through Sonoma County to Windsor. The HOV system concept was not implemented at the time due to lack of funding. At about the same time, a study analyzed the feasibility of widening Highway 101 from four to eight lanes in Sonoma County from the Marin County line. This concept would have required substantial relocation of parallel City streets, commercial businesses, and residences. The combination of high cost and environmental and engineering constraints prevented the option from being pursued (Caltrans 1997a).

The Sonoma County Transportation Authority (SCTA) acts as Sonoma County's planning and programming agency for transportation projects. In 1993, the Sonoma County Congestion Management Program (CMP) Update was completed. In its seven year capital improvement program for roadway projects, widening Route 101 to six lanes for HOV capacity was outlined. As recommended by SCTA, the CMP indicated that HOV lanes should be constructed between Shiloh Road in Windsor south to the Sonoma/Marin County line.

In 1997, the Sonoma Marin Multi-Modal Transportation and Land Use Study, known as the Calthorpe study, expanded upon the results of the previous Route 101 Corridor

Study Concept Reports that were produced in the 1980s, and analyzed new alternatives to determine the most cost effective mix of transportation projects. The Calthorpe study concluded that construction of a HOV lane system along the freeway from SR-116 West in Cotati north to Windsor River Road in Windsor in conjunction with the creation of a rail transit system with complementary regional and feeder bus service would create a balanced transportation network. Passenger train service was analyzed on the existing NorthWestern Pacific rail line with 12 primary stations identified for potential use near the Route 101 corridor, including one in Santa Rosa (Calthorpe et al. 1997). Presently, planning for passenger rail service in the Marin-Sonoma Highway 101 Corridor is focused on the Sonoma-Marin Area Rail Transit (SMART) Rail District, which plans to provide service by 2007. Public scoping for the environmental process began in November of 2002. According to the Calthorpe study, SMART's passenger rail service would complement a regional system of HOV lanes on Route 101.

In 1997, the MTC published a report outlining and updating the Bay Area HOV lane program. This report identified the segment of Route 101 through Santa Rosa as often experiencing substantial and unpredictable peak period congestion. This report predicted the traffic situation to deteriorate in the future. HOV lane segments were proposed in Santa Rosa to combat the existing and anticipated congestion (Metropolitan Transportation Commission [MTC] 1997).

In 2000, Caltrans completed the environmental process for adding HOV lanes on Route 101 from Wilfred Avenue in Rohnert Park to SR-12 in Santa Rosa. Opened to traffic in November 2002, this project provided the first HOV lanes in Sonoma County.