

CHAPTER 1 Proposed Project

1.1 Introduction

The Sonoma 101 East Washington Interchange Improvements Project (Project) consists of interchange improvements along the East Washington Street Interchange portion of U.S. Route 101 (Route 101) in Petaluma, Sonoma County, California. The main purpose of the proposed Project is to reduce present recurring traffic congestion and to address traffic that will result from planned future commercial developments. To this end, the proposed Project includes reconfiguration of the southbound on-ramp and construction of a new northbound diagonal on-ramp and a new bridge that will free-span Washington Creek.

The Project was initially proposed as a part of the Marin-Sonoma Narrows High Occupancy Vehicle (HOV) Widening Project (Marin-Sonoma Narrows Project) scope, but is being analyzed herein as a separate Project so that the immediate traffic concerns of local residents can be adequately addressed. The Project, as proposed, would be compatible with the future highway improvements proposed by the Marin-Sonoma Narrows Project, which is currently in the environmental compliance stage.

1.2 Project Location

The Project site, which includes a segment of Route 101 between Caulfield Lane and the Lynch Creek overcrossing, is located entirely within the limits of the City of Petaluma, Sonoma County. Figure 1.2-1 shows the Project in a regional context, and Figure 1.2-2 shows the Project limits within the City of Petaluma. This portion of Route 101 consists of a four-lane highway mainline, with two northbound and two southbound lanes. The existing on- and off-ramps to Route 101 along this stretch of highway feed traffic to and from the mainline of Route 101 onto East Washington Street, a local four-lane roadway. The Project site is located in an area comprising a mix of land uses, including residential, commercial, and light industrial uses. To the east and west of the East Washington Interchange are residential tracts dating from the mid-1950s, to the north is a large commercial development, and to the south is a vacant lot. The southwestern end of the Project site is bordered by light industrial uses, including auto-repair shops and warehouses. The design phase of this Project included the consideration of various alternative alignments and ultimately found that the Project, as proposed, best satisfies the Project purpose while avoiding significant environmental impacts, including impacts to wetlands.

1.3 Project Purpose and Need

The Project has the following three main purposes:

- Reduce congestion for morning and evening commuters
- Improve access and circulation between Route 101 and local streets
- Enhance safety and operations.

Needs Associated With Reducing Recurrent Congestion

Recurring traffic congestion routinely backs up onto the mainline during morning and evening hours. Forecasted 2030 traffic volumes at the East Washington Street Interchange indicate that predicted increases in congestion would result in unacceptable operational conditions unless improvements are made at this location. Northbound Route 101 would be negatively impacted by queues from the northbound off-ramp that extend to the mainline.

Needs Associated with Enhancing Safety Operations

Traffic accident data for the Project within the limits of PM 4.0 to 5.1 were obtained from Caltrans for the 3-year period of April 1, 2001, through March 31, 2004. One hundred twenty-two collisions were recorded on the freeway segment from PM 4.0 to PM 5.1. Fifty-one of the collisions were rear-end collisions (41.8 percent of total). Forty-four of the accidents were hit-object (36 percent). The primary collision factors were speeding in 47 of the collisions (38.5 percent) and improper turns in 26 of the collisions (21.3 percent). The high percentage of rear-end collisions on dry pavement during daylight hours, combined with speeding, indicates that a contributing factor for many accidents was traffic congestion. The improvements identified as part of this Project are intended to help alleviate traffic congestion in the Project area, thus reducing the potential for these types of collisions.

Needs Associated With Connections between Local Streets and Route 101

Currently, the local street connections to Route 101 are congested. The proposed northbound, diagonal on-ramp would relieve congestion on the local streets, specifically at the intersection of East Washington Street and the Route 101 northbound ramps.

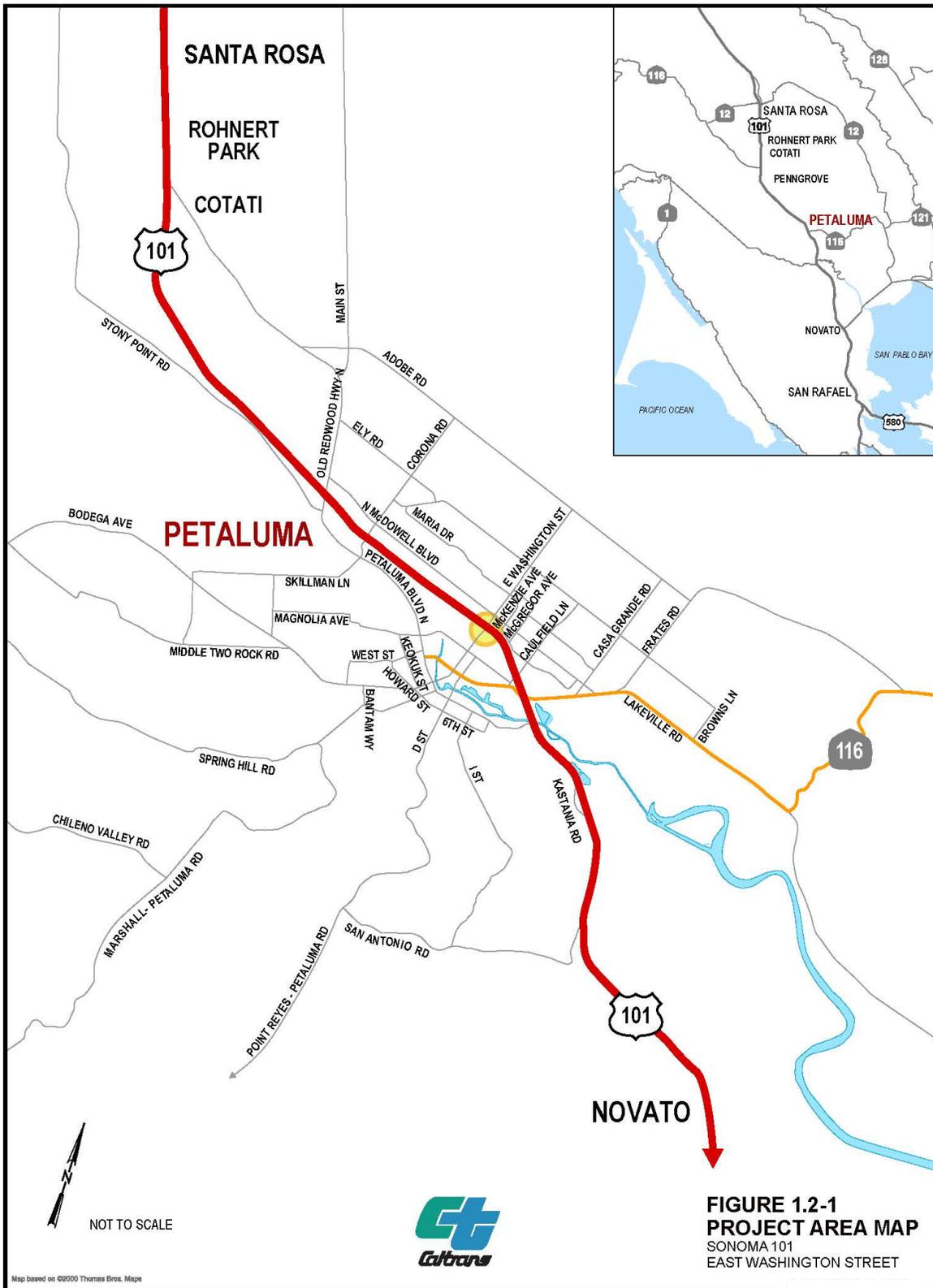
1.4 Funding

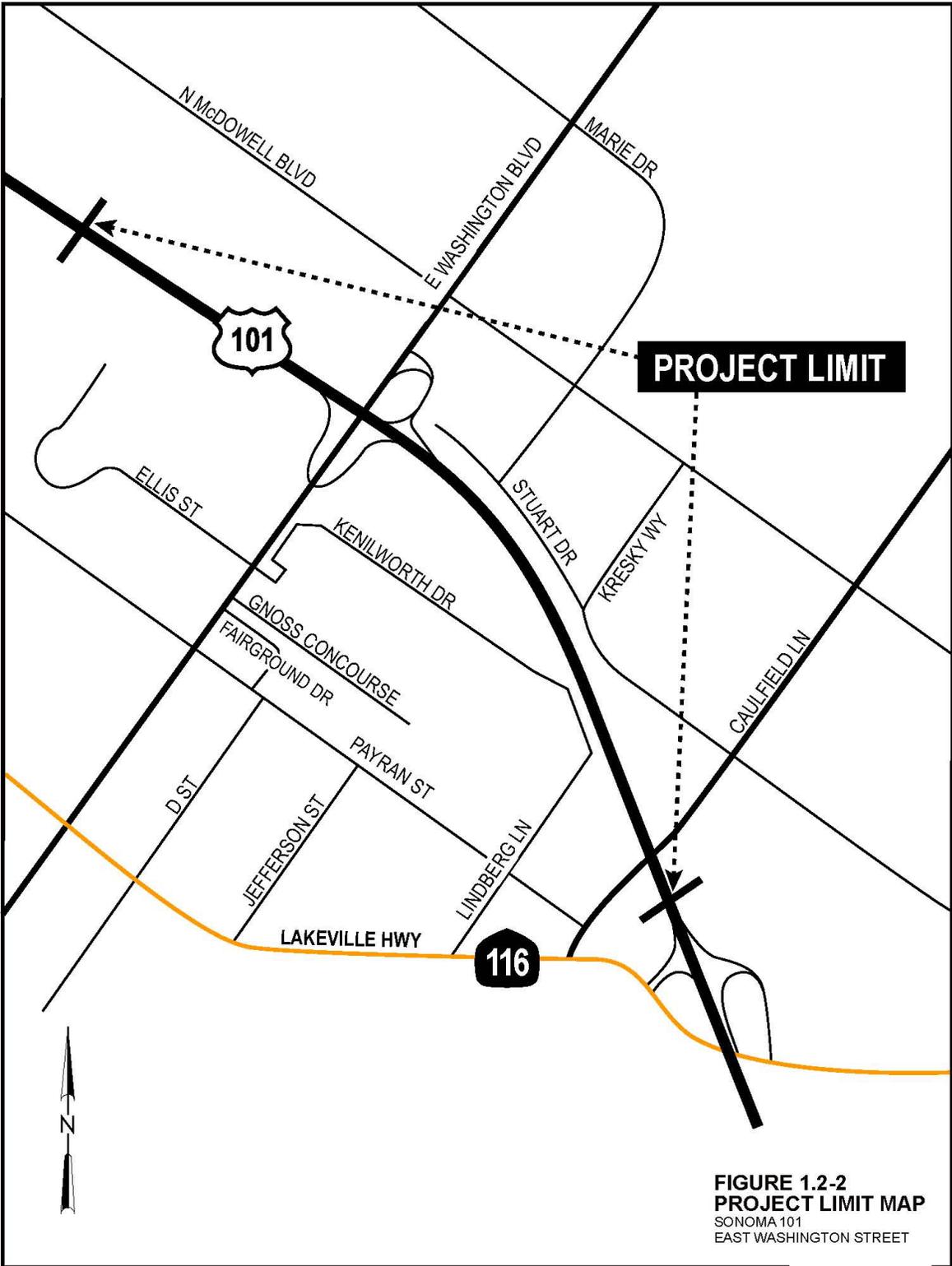
The total cost estimate for this Project is \$23.0 million. Of this, \$13.5 million would be allocated to construction costs. The remainder would be used for support costs such as the cost of designing the Project, obtaining permits, obtaining right-of-way (ROW) property, and environmental compliance. The proposed Project is funded through several funding programs: \$14.5 million from federally earmarked Transportation Improvement Program (TIP) funds, \$1.6 million through Traffic Congestion Relief Program, \$2.9 million from Measure M, \$4.0 million from Petaluma Community Development Commission.

1.5 Project Description

The total area of disturbance for the proposed Project consists of approximately 12.1 acres, including the highway segment (mainline), ramps and local roadways, construction staging areas, and utility easements. Approximately 2.7 acres of ROW, as well as three temporary construction easements, would need to be acquired for the purposes of Project construction and implementation. The Project is entirely within the City of Petaluma, in Sonoma County.

The main elements of the Project consist of reconfiguring the southbound on-ramp, widening the terminus of the northbound off-ramp from two lanes to four lanes, and adding a new northbound diagonal on-ramp with a new bridge to free-span Washington Creek. Figure 1.5-1 illustrates the





project improvements. Replacement tree planting is also proposed to address and minimize the adverse visual effects of construction-related tree removal.

1.5.1 Interchange Improvements

Following is a more detailed description of the proposed East Washington Interchange improvements.

Southwest Quadrant – The existing southbound diagonal on-ramp would be realigned to improve the curve radius and to include two lanes. The proposed on-ramp would consist of two lanes to accommodate future ramp metering. Approximately 0.94 acre of ROW would need to be acquired in this area. The ROW area would be acquired from the vacant lot located adjacent to the existing ROW fence.

Southeast Quadrant – At the terminus of the northbound diagonal off-ramp, the lanes would be widened from two to four lanes. Portions of the existing lanes of the northbound loop on-ramp that are presently used for traffic from westbound East Washington Street to northbound loop on-ramp would be reconstructed to carry traffic movement from northbound off-ramp to westbound East Washington Street.

Northeast Quadrant – A new northbound two-lane on-ramp would be added with a new bridge to span Washington Creek. A retaining wall and approximately 1.75 acres of ROW would be needed in this area. Existing underground and aboveground utility facilities, including gas, electric, telephone, cable TV, sewer, and water, would be relocated within a utility easement outside of the new ROW. East Washington Street would be widened to accommodate a right-turn lane to handle traffic from westbound East Washington Street to northbound Route 101. As part of a new cooperative agreement between the State and the City of Petaluma, traffic signals on East Washington would be synchronized between McDowell Boulevard intersection and northbound off-ramp intersection.

Washington Creek Bridge – The proposed bridge over Washington Creek would be a pre-cast clear span concrete structure. The length of the bridge would be approximately 119.6 feet (36.5 meters). The bridge elevation would be approximately 49 feet (15 meters) at the south end of the bridge and 46 feet (14 meters) at the north end of the bridge.

A Caltrans Structures Advance Planning Study determined the groundwater level in Washington Creek to be at 1.5-meter elevation. This elevation is considered low and distant relative to the location of the proposed bridge abutment and retaining walls. Dewatering in the vicinity of the creek is unlikely to be necessary, as construction would typically occur during dry months. However, if groundwater and surface runoff need to be prevented from entering any excavated areas (abutments, retaining walls, and footings), temporary trench drains, cofferdams, or some other drainage facility would need to be constructed. Pipes may be connected to cofferdams to carry water downstream in Washington Creek without impeding flow rates. Additionally, implementation of Caltrans Best Management Practices (BMPs) would prevent sedimentation of the stream channel and protect water quality.

To further minimize impacts to Washington Creek associated with Project construction, an environmentally sensitive area (ESA) would be designated along the top of the bank on either side of the creek. On the northeast side, project limits extend over Washington Creek; however, no work will be conducted on the northwest side of the creek.

1.5.2 Landscape Changes

Project-related landscape changes will consist of replacement planting and irrigation within the Project footprint. The estimated cost for a separate highway replacement planting project with planting, irrigation, and 3-year plant establishment period is \$575,000. Landscape construction is planned for the 2010/11 fiscal year following the completion of the roadway improvements.

1.5.3 Proposed Drainage Improvements

Preliminary drainage design requires one additional outfall to Washington Creek, which would be located in the northeast quadrant of the interchange. Based on soil investigations, footings on piles are proposed to support the retaining wall that would be constructed along East Washington Street. This wall is necessary to construct the right-turn channelization for traffic movement from westbound East Washington Street to northbound diagonal on-ramp.

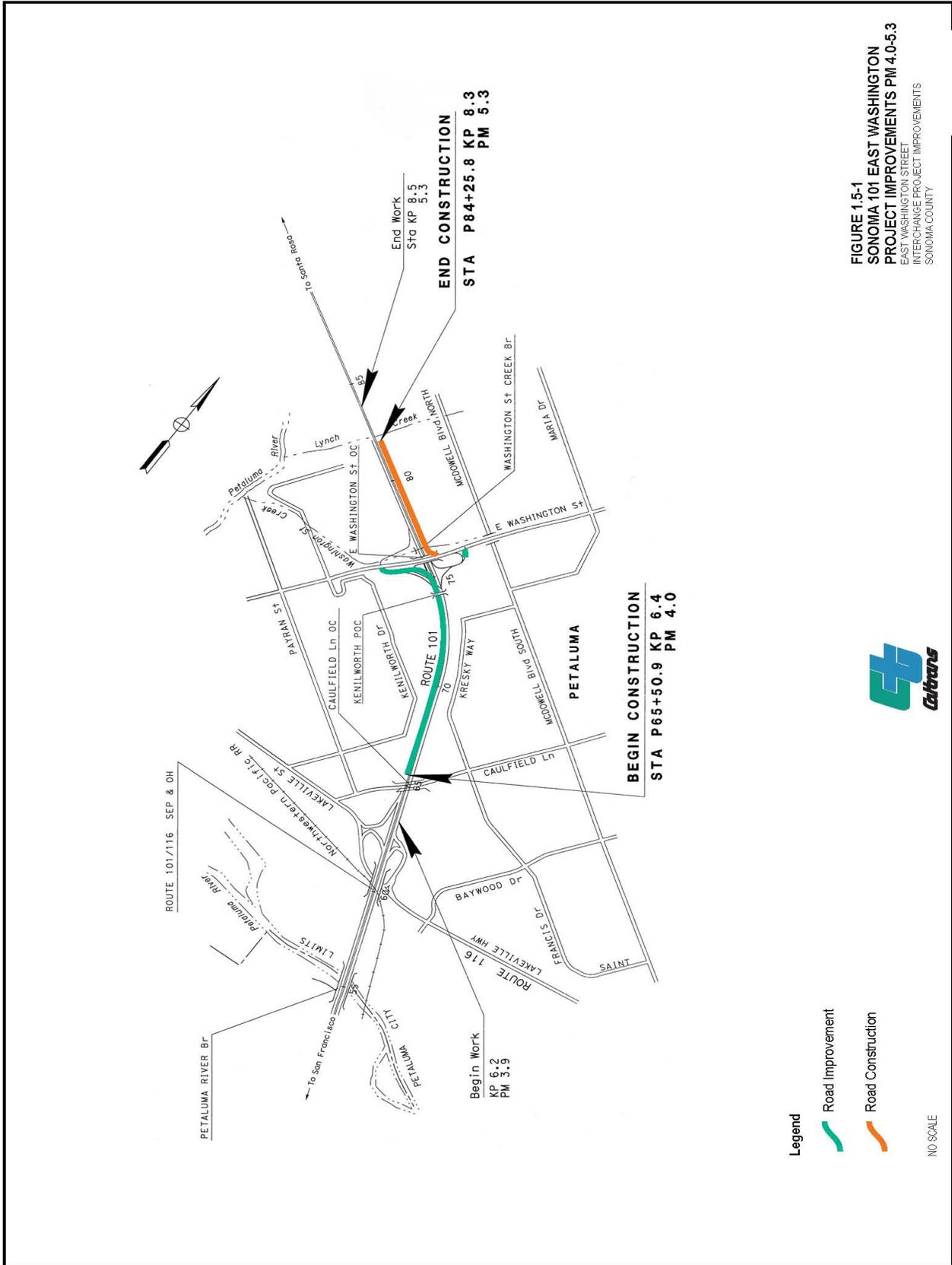
An ESA would be designated along the top of bank on both sides of Washington Creek in the northeast quadrant of the interchange. Caltrans treatment BMPs would be followed to ensure that no building materials would fall into the creek during construction of the new northbound on-ramp bridge. This work would be conducted during the lowest flows of the year.

A new 1.5-foot (450-millimeter [mm]) drainage system will be constructed to accommodate the runoff from the new northbound 101 on-ramp. This system will tie into a new 2.0-foot (600-mm) outfall to the Washington Creek, situated south of the mainline and immediately north of the proposed bridge that would span the creek. The runoff from the strip mall adjacent to the new on-ramp will be collected in a 1.5-foot (450-mm) drainage system located along the ROW line and connects to the 2.0-foot (600-mm) outfall at Washington Creek. The 2.0-foot (600-mm) outfall replaces the outfall of the existing roadside ditch to Washington Creek currently occupying this location. Drainage north of the new on-ramp will continue to utilize a portion of the existing ditch that drains into Lynch Creek.

A biofiltration strip is proposed along southbound 101 between the ROW and the edge of shoulder from just north of Caulfield Lane to the entrance of the southbound on-ramp from East Washington Street. The biofiltration strip will treat a quantity of stormwater equivalent to approximately 5.7 acres (2.3 hectares) of impervious area. The treated runoff will flow along a drainage ditch that lies to the south along the ROW.

Along East Washington Street, the existing drainage systems will be modified by a combination of extending and replacing existing culverts and inlets and placing new drainage inlets and 1.5-foot (450-mm) culverts.

To minimize impacts to Washington Creek, the following BMPs would be incorporated into the Project:



- Any in-channel work will be constructed between June 15 and October 15 to prevent sedimentation of the stream
- Removal and disturbance of riparian vegetation will be minimized and avoided to the fullest extent possible
- A Storm Water Pollution Prevention Plan (SWPPP) will be incorporated and implemented by the contractor to prevent sedimentation of the stream channel and protect water quality
- All affected trees within the Project area will be trimmed to International Society of Arboriculture (ISA) standards to ensure proper growth and vigor upon Project completion.

1.5.4 Construction Scenario

Construction of the proposed Project would occur in three stages over approximately 15 months. Staging of construction equipment would occur in various locations within the ROW, but outside of designated ESAs. ESAs would be delineated with an ESA fence to be installed along Washington Creek from top of bank to top of bank within the Project area. Work in the creek bed is not anticipated; however, some work on the bank may need to be conducted for bridge and on-ramp construction.

Construction of the proposed Project would require the relocation of several utility lines, including sewer, water, gas, electric, cable television, and telephone lines. Existing utility lines would be relocated to new easements outside of the proposed ROW. New easements would consist of a 15-foot (4.6-meter) water and sewer easement and a 10-foot (3.0-meter) easement for gas and electric, telephone, and cable television lines. Pacific Gas and Electric Company (PG&E) utility lines would be relocated prior to Project construction; all other utilities would be relocated as part of construction of the proposed Project.

1.6 Permits and Approvals Needed

1. U.S. Army Corps of Engineers (USACE) Section 404 Permit
2. Regional Water Quality Control Board Section 401 Permit
3. California Department of Fish and Game (CDFG) Streambed Alteration Agreement
4. State Water Resources Control Board General Permit